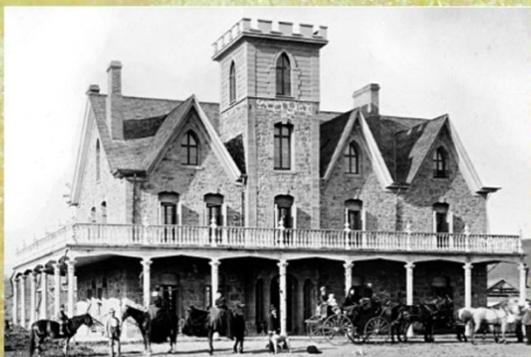


Marsh Creek State Park General Plan and Program Environmental Impact Report



**California Department of Parks and Recreation
City of Brentwood**



*Approved by the Park and Recreation Commission
January 2012*



MARSH CREEK STATE PARK

General Plan and Program Environmental Impact Report

This document represents the final General Plan and Program Environmental Impact Report approved by the State Park and Recreation Commission on January 27, 2012.

The Marsh Creek State Park general plan companion document titled "*Final EIR Response to Comments*," published separately, includes copies of public comment letters, Department responses, and related documents for compliance with CEQA.



Resolution 1-2012
Adopted by the
CALIFORNIA STATE PARK AND RECREATION COMMISSION
at its regular meeting in Brentwood, California
January 27, 2012

**General Plan and Environmental Impact Report
for the unnamed state historic park
known as Cowell Ranch/John Marsh**

WHEREAS, the Director of California State Parks has presented to this Commission for approval the proposed General Plan and Environmental Impact Report (Plan) for the state historic park property known as Cowell Ranch/John Marsh (Park); and

WHEREAS, the property was previously classified in May 2007 as a state historic park to recognize the significant native pre-historic and historic cultural resources contained in the unit, and to provide for the protection, interpretation, and education of the Park's cultural resources, as well as allow for these resources to be made available to the public consistent with their preservation for present and future generations; and

WHEREAS, the Park contains substantial open space consisting of rolling hills and valleys, grasslands, vernal pools, riparian habitat, the historic John Marsh house and its historic ranching landscape, and extensive and significant pre-historic archaeological sites; and

WHEREAS, the Park's purpose is to celebrate a rich pre-historic and historic presence and contribute to the existing regional open space network of eastern Contra Costa County; and

WHEREAS, the Plan provides conceptual parameters and guidelines for the long-term management, development, operations, and future public use and enjoyment of the unit; and

WHEREAS, the Plan includes the Environmental Impact Report (EIR) as a part of the General Plan, pursuant to Public Resources Code Section 5002.2 and the California Code of Regulations Section 15166 (CEQA Guidelines), providing discussion of the probable impacts of future development, establishing goals, policies and objectives, and addressing all the requirements of an EIR; and

WHEREAS, the Plan is subject to the California Environmental Quality Act (CEQA) and functions as a "tiered EIR" pursuant to Public Resources Code Section 21093, covering general goals and objectives of the Plan, and that the appropriate level of CEQA review will be conducted for each project relying on the Plan;

NOW, THEREFORE BE IT RESOLVED: This Commission has reviewed and considered the information and analysis in the Plan prior to approving the Plan, and this Commission finds and certifies that the Plan reflects the independent judgment and analysis of this Commission and has been completed in accordance with the California Environmental Quality Act; and be it

CONTINUED ON PAGE 2

CONTINUED FROM PAGE 1

RESOLVED: In connection with its review of the Plan prior to approving the General Plan, this Commission independently finds that the environmental conclusions contained in the Environmental Analysis Section of the Plan are supported by facts therein and that each fact in support of the findings is true and is based on substantial evidence in the record and that mitigation measures or other changes or alterations have been incorporated into the Plan which will avoid or substantially lessen the potential impacts identified in the Plan; and be it

RESOLVED: The California State Park and Recreation Commission hereby approves the Department of Parks and Recreation's General Plan and Environmental Impact Report prepared for the property known as Cowell Ranch/John Marsh dated October 2010; and be it

RESOLVED: The location and custodian of the Plan and other materials which constitute the record of proceeding on which the Commission's decision is based is: State Park and Recreation Commission, P.O. Box 942896, Sacramento, California 94296-0001, Phone 916/653-0524, Facsimile 916/653-4458; and be it

FURTHER RESOLVED: That a Notice of Determination will be filed with the Office of Planning and Research within five days of this approval.

Attest: This Resolution was duly adopted by the California State Park and Recreation Commission on January 27, 2012 at the Commission's duly-noticed public meeting at Brentwood, California.

By: ORIGINAL SIGNED BY Date: 1-27-12

Louis Nastro
Assistant to the Commission
For Ruth Coleman, Director
California State Parks
Secretary to the Commission



Resolution 2-2012
Adopted by the
CALIFORNIA STATE PARK AND RECREATION COMMISSION
at its regular meeting in Brentwood, California
January 27, 2012

**Naming the state historic park property
known as Cowell Ranch/John Marsh
as Marsh Creek State Park**

WHEREAS, the property was previously classified in May 2007 as a state historic park to recognize the significant native prehistoric and historic cultural resources contained in the unit, and to provide for the protection, interpretation, and education of the Park's cultural resources, as well as allow for these resources to be made available to the public consistent with their preservation for present and future generations; and

WHEREAS, Public Resources Code Section 5019.59, describing the intent of historic units, specifies that historical units shall be named to perpetuate the primary historical theme of the individual units; and

WHEREAS, the Park's unifying theme states that "as the last vestige of the Rancho Los Meganos, [the Park] holds the key to unlocking stories about the people attracted to this land over thousands of years and their interactions with the land, people, plants and animals;" and

WHEREAS, the Commission Statements of Policy, Policy II.2, *Classification and Naming Units, Features, Groves, and Trails of the State Park System* outlines guidance used to identify, classify, and name units of the State Park System; and

WHEREAS, the Department requested and received public input for naming suggestions and justification throughout the planning process; and

WHEREAS, the Department and this Commission considered several alternative names that recognize the Park's most significant prehistoric and historic cultural resources, natural resources, and the geographic setting, which included Los Meganos State Park, Rancho Los Meganos State Park, John Marsh State Park, Marsh Creek State Park, Pioneer State Park, and Cowell Ranch State Park; and

WHEREAS, the name Marsh Creek State Park is consistent with historic references to this property while it also acknowledges that this is the site of thousands of years of native occupation, it is the location of the historic John Marsh homestead, and suggests the natural resource values and wildlife habitats that continue to be important elements of this state historic park;

CONTINUED FROM PAGE 1

NOW, THEREFORE BE IT RESOLVED: The California State Park and Recreation Commission hereby approves the proposal for the Cowell Ranch/John Marsh property to be named Marsh Creek State Park; and be it

RESOLVED: The location and custodian of materials which constitute the record of proceeding on which the Commission's decision is based is: State Park and Recreation Commission, P.O. Box 942896, Sacramento, California 94296-0001, Phone 916/653-0524, Facsimile 916/653-4458.

Attest: This Resolution was duly adopted by the California State Park and Recreation Commission on January 27, 2012 at the Commission's duly-noticed public meeting at Brentwood, California.

By: ORIGINAL SIGNED BY Date: 1-27-12

Louis Nastro
Assistant to the Commission
For Ruth Coleman, Director
California State Parks
Secretary to the Commission

MARSH CREEK STATE PARK

General Plan and Program Environmental Impact Report

State Clearinghouse #2010102035

Arnold Schwarzenegger

Governor

Lester A. Snow

Secretary for Natural Resources

Ruth Coleman

Director of California Department of Parks and Recreation



California Department of Parks and Recreation

P.O. Box 942896

Sacramento, CA 94296-0001



City of Brentwood

January 2012



Executive Summary

Executive Summary

APPROACH TO THE GENERAL PLAN

An analysis of existing conditions was undertaken as a part of the general planning process, utilizing the collective knowledge of the Department of Parks and Recreation (California State Parks) and City of Brentwood staff, focused research of the physical and operational conditions, and research of relevant California State Parks, City and County planning documents. California State Parks and other interested agencies, along with landowners, recreational users, and other individuals provided information about the history and conditions at Marsh Creek State Park (Park), formerly Cowell Ranch / John Marsh State Historic Park, which was summarized in a written and graphic report. A geographic information system (GIS) was set up for the Park to compile much of the information currently known and collected about the natural and cultural systems of the Park and was used to structure the key issues that needed to be addressed and to make decisions, based on all data available.

California State Parks staff participated in several meetings and workshops to identify and develop strategies that address specific park management issues. Existing site data and preliminary opportunities and constraints were presented at a public workshop and scoping meeting held in May 2006. This session, together with a visitor survey, sought to inform the public about the general planning process and to solicit ideas for park enhancements and different visions for the Park's future. Public agencies in the region also provided feedback through the CEQA scoping process and attendance at workshops.

Based on all information gathered and stakeholder input, two alternative plans in addition to the no action plan were developed that provide choices for park use and management and were presented to the public in the spring of 2007. The Preferred Alternative C reflects California State Parks' mandate, public interests, relevant rules and regulations, the Park's purpose and vision, and opportunities and constraints in all planning areas. It will provide for the implementation of the parkwide goals and guidelines while balancing current and future needs to ensure longevity of the General Plan. The No Action Alternative A assumes no Plan would be implemented and the Park would only be opened to the public on a limited basis. Alternative B assumes that there would be additional facilities developed and uses permitted with more visitors, however is more limiting and planned for more short term demand.

SUMMARY OF THE PLAN

This General Plan (Plan) sets forth management zones that, based on existing conditions and resources as well as the landscape character, provide an overall intention for managing different areas of the Park, recognizing the uniqueness and diversity of the landscape. The four management zones are as follows:

- Visitor Facility Zone (VF)
- Natural Resource Zone (NR)
- Primary Historic Zone (PHS)
- Operations and Maintenance Zone (OM)

For each zone a summary of existing features, purpose and intent, resource goals, land use, and acreage is presented. The management zones are strategically located and sized to allow for a large portion of the Park

to remain undeveloped as open space to maximize natural and cultural resource protection. The VF zones are located at key locations around the perimeter of the Park and near the John Marsh House so that long term visitor planning affords flexibility and options for the type and size of facilities that can be developed, consistent with the Plan.

Parkwide management goals and guidelines will be used to implement all phases of Park use and future actions and to measure Plan success. These are set up for five broad planning areas with specific issue areas relevant to the Park within each category as follows:

Visitor Use and Facilities

- Visitor Facilities (FAC)
- Trails and Linkages (TRAIL)
- Interpretive Themes (INTERP)
- Concession Opportunities (CON)

Natural Resource Management

- Hydrology/Water Quality (WATER)
- Vegetation (VEG)
- Wildlife (WLIFE)
- Geology/Soils (GEO)
- Scenic/Aesthetic (SCENIC)

Cultural Resource Management

- Cultural Resource Inventory and Protection (CUL)

Operations and Maintenance

- Park Access and Circulation (ACCESS)
- Leases and Special Agreements (AGREE)
- Staffing Needs and Facilities (STAFF)
- Utilities (UTIL)

Local and Regional Planning

- Interagency Cooperation (COOP)
- Regional Plans (REG)
- Population and Demographics (POP)

Recognizing that the Park's carrying capacity is based on many factors including data collection, park purpose and the desired future conditions, a series of quality indicators were developed to set up a framework for measuring carrying capacity based on the planning areas outlined in the Plan. From these,

managers can use adaptive management strategies to determine when alternative management actions are needed to ensure that the desired conditions are being met.

The two alternatives developed to implement the Plan are respectful of the need to protect and preserve natural and cultural resources throughout the Park. Resource management activities are generally equal in resource protection across all alternatives however with provisions for different ways to accomplish resource goals. Also, in all three alternatives, the parkwide goals and guidelines provide for the Plan to be self-mitigating. The Preferred Alternative C provides a balance of additional visitor and operational facilities while still maintaining the essential character and resource base of the Park. This balance will allow for more visitors to use the Park over time, providing more diverse opportunities for a wider range of people. The table below summarizes the major features and uses that are being proposed in the Preferred Alternative C.

**Preferred Alternative C
Proposed Facility and Use Summary**

FACILITIES
John Marsh House rehabilitation and re-use
Internal trails and regional trail links
Trailheads
Vehicular parking and staging
Restrooms
Interpretive signage/station
Developed campsites (tent, cabin/yurt, group, equestrian, RV)
Hike-in campsites
Visitor center
Picnicking facilities (single and group)
Group gathering shelter
Park maintenance and storage
Cultural resource field station
Historic materials storage
Ranger station
Park administration/staff offices
Staff housing
USES
Hiking
Mountain biking
Horseback riding
Picnicking
Wildlife viewing
Environmental nature study and research
Cultural resources study and investigation
Ecological restoration
Plant and wildlife inventories and management

ENVIRONMENTAL ANALYSIS

The General Plan for Marsh Creek State Park reflects California State Parks' dual mandates as the steward of sensitive resources and the provider of recreation opportunities. The protection and restoration of natural and cultural resources are key components of the General Plan. Through the evaluation of environmental factors and potential impacts during the preparation of the Plan, it was developed to ensure that its implementation would not result in significant impacts to resources. This enables the Plan to be a self-mitigating document under CEQA. A document that is self-mitigating ensures that the Plan components reduce or eliminate significant impacts under CEQA. The environmental analysis prepared for the General Plan is programmatic in scope and does not contain project-specific analysis for the proposed actions recommended in the preferred alternative.

A description of each of the alternatives is provided in the environmental analysis, categorized by planning area and the differences between each of the options are noted. Potential for significant environmental effects were identified, and impact analysis was prepared for the following topics:

- Agricultural Resources
- Hydrology and Water Quality
- Air Quality
- Noise
- Biological Resources
- Cultural Resources
- Transportation and Traffic
- Utilities and Public Services
- Aesthetics

For each potential impact identified, the Plan guidelines serve as mitigation. When adhered to, these guidelines would maintain potential environmental impacts at a less-than-significant level for each environmental resource area.

The EIR was certified and the State Park and Recreation Commission approved the General Plan on January 27, 2012. Subsequent implementation projects enabled by Plan adoption will undergo additional project-level environmental analysis under CEQA.

TABLE OF CONTENTS

Page

1.	INTRODUCTION.....	1-1
1.1	INTRODUCTION TO THE PARK.....	1-1
	Location and Description of Marsh Creek State Park.....	1-1
	Regional Setting.....	1-1
	Purpose of Acquisition.....	1-1
	Naming and Classification.....	1-1
1.2	PURPOSE OF THIS GENERAL PLAN.....	1-2
	Subsequent Planning Actions.....	1-3
	Public Involvement Program.....	1-9
1.3	CONTENTS OF THE GENERAL PLAN AND ENVIRONMENTAL IMPACT REPORT ...	1-10
2.	EXISTING CONDITIONS	2-1
2.1	SUMMARY OF PARK CONDITIONS AND RESOURCES.....	2-1
	Parkwide Land Uses.....	2-1
	Surrounding Land Uses / Regional Context.....	2-1
	Significant Resource Values.....	2-7
	Physical Resources.....	2-7
	Aesthetic Resources.....	2-35
	Biological Resources.....	2-36
	Cultural Resources.....	2-57
	Existing Facilities and Services.....	2-68
	Regional Access and Circulation.....	2-68
	Park Access and Circulation.....	2-69
	Maintenance Services.....	2-70
	Utilities.....	2-70
	Public Services.....	2-71
	Interpretation and Education.....	2-72
	Existing Interpretation.....	2-72
	Local Support for Interpretation.....	2-73
2.2	PLANNING INFLUENCES.....	2-74
	Regional Recreational Resources.....	2-74
	Mount Diablo State Park.....	2-74
	Brannan Island State Recreation Area / Franks Tract State Recreation Area.....	2-74
	Round Valley Regional Preserve.....	2-74
	Morgan Territory Regional Preserve.....	2-75
	Black Diamond Mines Regional Preserve.....	2-75

TABLE OF CONTENTS

	Page
Los Vaqueros Watershed	2-75
Contra Loma Regional Park.....	2-76
Regional Trails	2-76
Systemwide Planning	2-79
California State Parks Mission Statement.....	2-79
Public Resources Code (PRC).....	2-79
California State Parks Operations Manual	2-80
California Recreational Trails Plan	2-80
California State Park’s Accessibility Guidelines	2-81
Statewide Historic Preservation Plan	2-81
Concessions Program Policies	2-81
Inventory, Monitoring, and Assessment Program.....	2-82
Regional Planning Influences	2-82
Contra Costa County General Plan	2-83
2030 Regional Transportation Plan for the San Francisco Bay Area	2-84
Metropolitan Transportation Commission (MTC) 2001 Regional Bicycle Plan	2-84
Contra Costa Countywide Comprehensive Transportation Plan.....	2-84
Contra Costa Countywide Bicycle and Pedestrian Plan.....	2-85
State Route 4 East Corridor Transit Study	2-85
Central Valley Region Water Quality Control Plan.....	2-85
Contra Costa County Flood Control District (CCCFC).....	2-85
City of Brentwood General Plan	2-85
City of Brentwood Parks, Trails, and Recreation Master Plan 2002	2-86
East Bay Regional Park District Master Plan.....	2-86
East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan	2-87
Vineyards at Marsh Creek EIR.....	2-87
Mount Diablo State Park General Plan	2-87
Los Vaqueros Reservoir Expansion Project.....	2-87
Population and Demographics.....	2-88
Employment	2-88
Household Income	2-89
2.3 ISSUES AND ANALYSIS	2-90
Visitor Use and Facilities	2-90
Key Issues.....	2-90
Natural Resource Management	2-95
Key Issues.....	2-95
Cultural Resource Management.....	2-98
Key Issues.....	2-98

TABLE OF CONTENTS

	Page
Operations and Maintenance.....	2-101
Key Issues.....	2-101
Local and Regional Planning.....	2-104
Key Issues.....	2-104
3. PARK PLAN	3-1
3.1 PLANNING MANDATES.....	3-1
California State Parks Mission	3-1
3.2 UNIT PURPOSE AND VISION	3-1
Declaration of Purpose.....	3-1
Park Vision	3-2
Sense of Place	3-3
Unit Classification	3-4
Justification.....	3-4
3.3 MANAGEMENT ZONES	3-5
Visitor Facility Zone (VF)	3-11
Existing Features.....	3-11
Purpose and Intent.....	3-11
Resource Goals.....	3-11
Land Use.....	3-12
Natural Resource Zone (NR)	3-14
Existing Features.....	3-14
Purpose and Intent.....	3-14
Resource Goals.....	3-14
Land Use.....	3-15
Primary Historic Zone (PHS)	3-16
Existing Features.....	3-16
Purpose and Intent.....	3-16
Resource Goals.....	3-16
Land Use.....	3-17
Operations and Maintenance Zone (OM).....	3-18
Existing Features.....	3-18
Purpose and Intent.....	3-19
Resource Goals.....	3-19
Land Use.....	3-19
3.4 DESCRIPTION OF PREFERRED ALTERNATIVE (ALTERNATIVE C).....	3-20
3.5 PARKWIDE GOALS AND GUIDELINES.....	3-27

TABLE OF CONTENTS

	Page
Visitor Use and Facilities	3-27
Natural Resource Management	3-36
Cultural Resource Management.....	3-44
Operations and Maintenance.....	3-48
Local and Regional Planning.....	3-54
3.6 RECREATION CARRYING CAPACITY	3-58
Characterization of Carrying Capacity.....	3-58
Adaptive Management.....	3-59
Quality Indicators at the Park	3-63
4. ENVIRONMENTAL ANALYSIS	4-1
4.1 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS.....	4-1
Purpose of the EIR.....	4-1
Focus of the EIR.....	4-2
Environmental Review Process.....	4-2
4.2 ENVIRONMENTAL ANALYSIS SUMMARY	4-3
Summary of Impacts and Mitigation.....	4-3
Summary of Alternatives Considered	4-4
Project Description.....	4-4
4.3 ENVIRONMENTAL SETTING.....	4-5
4.4 ALTERNATIVES TO THE PROPOSED PROJECT	4-5
Alternative A - No Project Alternative	4-5
Description.....	4-5
Alternative B.....	4-6
Description.....	4-6
Alternative C – Preferred Alternative	4-11
Description.....	4-11
4.5 ENVIRONMENTAL IMPACTS.....	4-11
Agricultural Resources.....	4-12
Impacts.....	4-12
Environmental Evaluation	4-12
Socioeconomic Considerations	4-13
Hydrology and Water Quality.....	4-14
Impacts.....	4-14
Environmental Evaluation	4-14

TABLE OF CONTENTS

	Page
Air Quality	4-15
Impacts.....	4-16
Environmental Evaluation	4-17
Climate Change.....	4-19
Impacts.....	4-19
Environmental Evaluation	4-19
Noise.....	4-21
Impact.....	4-21
Environmental Evaluation	4-21
Biological Resources	4-21
Vegetation.....	4-22
Wildlife.....	4-23
Cultural Resources	4-25
Impacts.....	4-25
Environmental Evaluation	4-25
Transportation and Traffic.....	4-26
Impacts.....	4-26
Environmental Evaluation	4-26
Utilities and Public Services.....	4-27
Impacts.....	4-28
Environmental Evaluation	4-28
Aesthetics	4-29
Impacts.....	4-29
Environmental Evaluation	4-29
4.6 CEQA-REQUIRED ANALYSIS	4-29
Environmental Effects Found Not to Be Significant	4-29
Geology and Soils.....	4-29
Hazards and Hazardous Materials	4-30
Land Use and Planning	4-30
Energy and Mineral Resources.....	4-30
Population, Employment, and Housing	4-30
Unavoidable Significant Effects on the Environment.....	4-31
Significant Irreversible Environmental Effects.....	4-31
Growth Inducing Impacts	4-31
Cumulative Impacts.....	4-32
5. REFERENCES.....	5-1
5.1 LITERATURE CITED	5-1
5.2 WEBSITES ACCESSED.....	5-9

TABLE OF CONTENTS

	Page
5.3 PERSONAL COMMUNICATIONS	5-9
6. GLOSSARY OF TERMS AND ACRONYMS	6-1
6.1 TERMS.....	6-1
6.2 ACRONYMS	6-5
7. REPORT CONTRIBUTORS	7-1

APPENDICES

- A Public Involvement Program
- B Lands and Realty
- C Additional Biological Resources Information
- D Additional Cultural Resources Information
- E City of Brentwood General Plan Goals and Policies

TABLE OF CONTENTS

Page

LIST OF TABLES

Table 1	Marsh Creek State Park General Plan Stakeholder Outreach Summary.....	1-9
Table 2	Marsh Creek State Park Soils.....	2-21
Table 3	Maximum Credible and Probable Earthquakes.....	2-26
Table 4	Characteristics of Watersheds within the Project Area.....	2-30
Table 5	Marsh Creek State Park Special-Status Plant Species.....	2-45
Table 6	Marsh Creek State Park Special-Status Wildlife Species.....	2-48
Table 7	Occupation and Land Ownership Timeline at Marsh Creek State Park.....	2-59
Table 8	John Marsh House Building Chronology	2-63
Table 9	City of Brentwood and Contra Costa County Population Forecast.....	2-88
Table 10	City of Brentwood and Contra Costa County Employment Forecast	2-89
Table 11	City of Brentwood and Contra Costa County Mean Household Income Forecast	2-89
Table 12	Plan Management Zones	3-6
Table 13	Visitor Facility Zone Land Use.....	3-12
Table 14	Natural Resource Zone Land Use.....	3-15
Table 15	Primary Historic Zone Land Use	3-17
Table 16	Operations and Maintenance Zone Land Use.....	3-19
Table 17	Facility Site Selection Criteria	3-35
Table 18	Marsh Creek State Park Recreation Carrying Capacity.....	3-60

TABLE OF CONTENTS

Page

LIST OF MAPS

Map 1	Regional Location	1-5
Map 2	Park Location	1-7
Map 3	Existing Land Use.....	2-5
Map 4	Existing Elevations	2-13
Map 5	Slope Analysis.....	2-15
Map 6	Geology.....	2-17
Map 7	Soils.....	2-19
Map 8	Farmland Classification.....	2-23
Map 9	Watersheds	2-31
Map 10	Biological Resources.....	2-41
Map 12	Management Zones.....	3-7
Map 13	Management Zones – Primary Historic Zone.....	3-9
Map 14	Alternative C (Preferred Alternative)	3-23
Map 15	Primary Historic Zone Alternative C.....	3-25
Map 16	Alternative B.....	4-7
Map 17	Primary Historic Zone Alternative B.....	4-9
Map 18	Cultural and Paleontological Resources (Confidential)	



Introduction – Chapter 1

The MISSION of the California Department of Parks and Recreation is to provide for the health, inspiration, and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.

1. Introduction

1.1 INTRODUCTION TO THE PARK

Location and Description of Marsh Creek State Park

Marsh Creek State Park (Park) is located in eastern Contra Costa County, southwest of the incorporated City of Brentwood on the eastern edge of the San Francisco Bay Area region and the western edge of the Central Valley. Map 1 shows the regional context of the Park. The Park is comprised of over 3,600 acres of hills and valleys ranging from approximately 110 feet to 500 feet in elevation. It is depicted on four USGS 7.5 minute topographical quadrangle maps, Antioch South, Brentwood, Byron Hot Springs, and Tassajara within the foothills of the Diablo Range, with Mount Diablo’s peak 10.5 miles to the west of the site. The property is accessed from Marsh Creek Road near its intersection with Camino Diablo Road. The eastern boundary of the Park fronts on Walnut Boulevard, while Briones Valley Road passes through the property on the west.

Regional Setting

Contra Costa County is one of nine counties in the San Francisco Bay Area. Contra Costa County extends from the eastern edge of the San Francisco Bay to the San Joaquin Delta and the Central Valley. It is the ninth most populous county in California. The Park is located in the eastern portion of the County, approximately 50 miles east of San Francisco and 50 miles south of Sacramento. Map 2 shows the location of the Park near the City of Brentwood in greater detail. The Park is adjacent to the City, which in turn is surrounded by agricultural lands and large open fields, which largely define the area’s mixed visual character. These agricultural lands and the expansive open space of the Diablo Range to the west of the City create a visual separation between the Park and neighboring communities and contribute to a rural “small-town” character.

Purpose of Acquisition

The Cowell Foundation sold approximately 3,647 acres of land to The Trust for Public Land in November of 2002. The state Coastal Conservancy, California Department of Fish and Game, Caltrans, the Wildlife Conservation Board, and U.S. Department of the Interior Bureau of Reclamation provided funding for the purchase to ensure long term resource and open space preservation. The Trust for Public Land subsequently transferred the property to California State Parks for ownership and management of the land. This land is in addition to the John Marsh homestead lands consisting of 16.4 acres, which have been in State Parks ownership since 1981. The City of Brentwood is providing financial and technical support to California State Parks to prepare a General Plan for long term management and visitor use at the Park.

Naming and Classification

Marsh Creek State Park is a new addition to the State Park System and at the start of the planning process had not been formally named or classified. One purpose of this planning process was to provide sufficient information to make a determination about unit naming and classification. Pursuant to Section 5019.50 of the California Public Resources Code (PRC), “all units that are or shall become a part of the State Park System, except those units or parts of units designated by the Legislature as wilderness areas pursuant to Chapter 1.3 (commencing with Section 5093.30) shall be classified by the State Park and Recreation

Commission.” Park unit classifications that may apply to the project area include the following categories and descriptions as excerpted from the PRC:

5019.53. **State parks** consist of relatively spacious areas of outstanding scenic or natural character, oftentimes also containing significant historical, archaeological, ecological, geological, or other similar values.

5019.56. **State recreation units** consist of areas selected, developed, and operated to provide outdoor recreational opportunities.

5019.59. **Historical units**, to be named appropriately and individually, consist of nonmarine areas established primarily to preserve objects of historical, archaeological, and scientific interest, and archaeological sites and places commemorating important persons or historic events.

5019.65. **State reserves** consist of areas embracing outstanding natural or scenic characteristics or areas containing outstanding cultural resources of statewide significance, including state natural reserves and state cultural reserves.

5019.68. **State wildernesses**, in contrast with those areas where man and his own works dominate the landscape, are hereby recognized as areas where the earth and its community of life are untrammelled by man and where man himself is a visitor who does not remain.

5019.71. **Natural preserves** consist of distinct nonmarine areas of outstanding natural or scientific significance established within the boundaries of other State Park System units.

5019.74. **Cultural preserves** consist of distinct nonmarine areas of outstanding cultural interest established within the boundaries of other State Park System units for the purpose of protecting such features as sites, buildings, or zones which represent significant places or events in the flow of human experience in California.

Unit classifications are approved by the State Park and Recreation Commission and are based on summaries of the unit’s resources and staff recommendations. The need for unit classification ensures proper identification and guidance in the management of visitor activities within the California State Parks’ guidelines for natural and cultural resource protection. In May 2007, the State Park and Recreation Commission classified this unit as a State Historic Park, but deferred the final naming until the completion of the General Plan.

1.2 PURPOSE OF THIS GENERAL PLAN

This General Plan is intended to document and set a vision for the future of Marsh Creek State Park. It provides an opportunity to evaluate and formulate a purpose and vision for the Park and to define its future significance as a major recreational resource located centrally within California. It also provides guidance for future natural and cultural resource management, recreational uses, visitor facilities, and interpretive opportunities. California State Parks is required to develop a General Plan and EIR for the Park in accordance with Public Resources Code (PRC) §5002.2 (referencing General Plan guidelines) and PRC §21000 et seq. (the California Environmental Quality Act [CEQA]). The purpose of the General Plan is to guide future development activities and management objectives at the Park and an approved General Plan is required prior to any major development at the Park.

Subsequent Planning Actions

Programs and projects that will be implemented as a result of the General Plan may require additional planning and environmental review. Possible subsequent planning actions include the preparation of specific management plans to protect sensitive resources or the development of specific project plans for new facilities.

Future planning efforts may also include the preparation of project-specific environmental compliance documents for implementation of management plans and subsequent development projects. These documents would tier off and be consistent with the General Plan's Program Environmental Impact Report (EIR). More information regarding this process is presented in Chapter 4. Finally, the General Plan may need to be amended if any new acquisitions are added to the Park or if any other circumstances make the plan no longer applicable.

This page intentionally left blank.

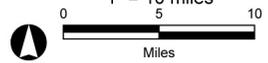


Sources: CA Spatial Information Library / USGS DEM / GreenInfo Network / EDAW

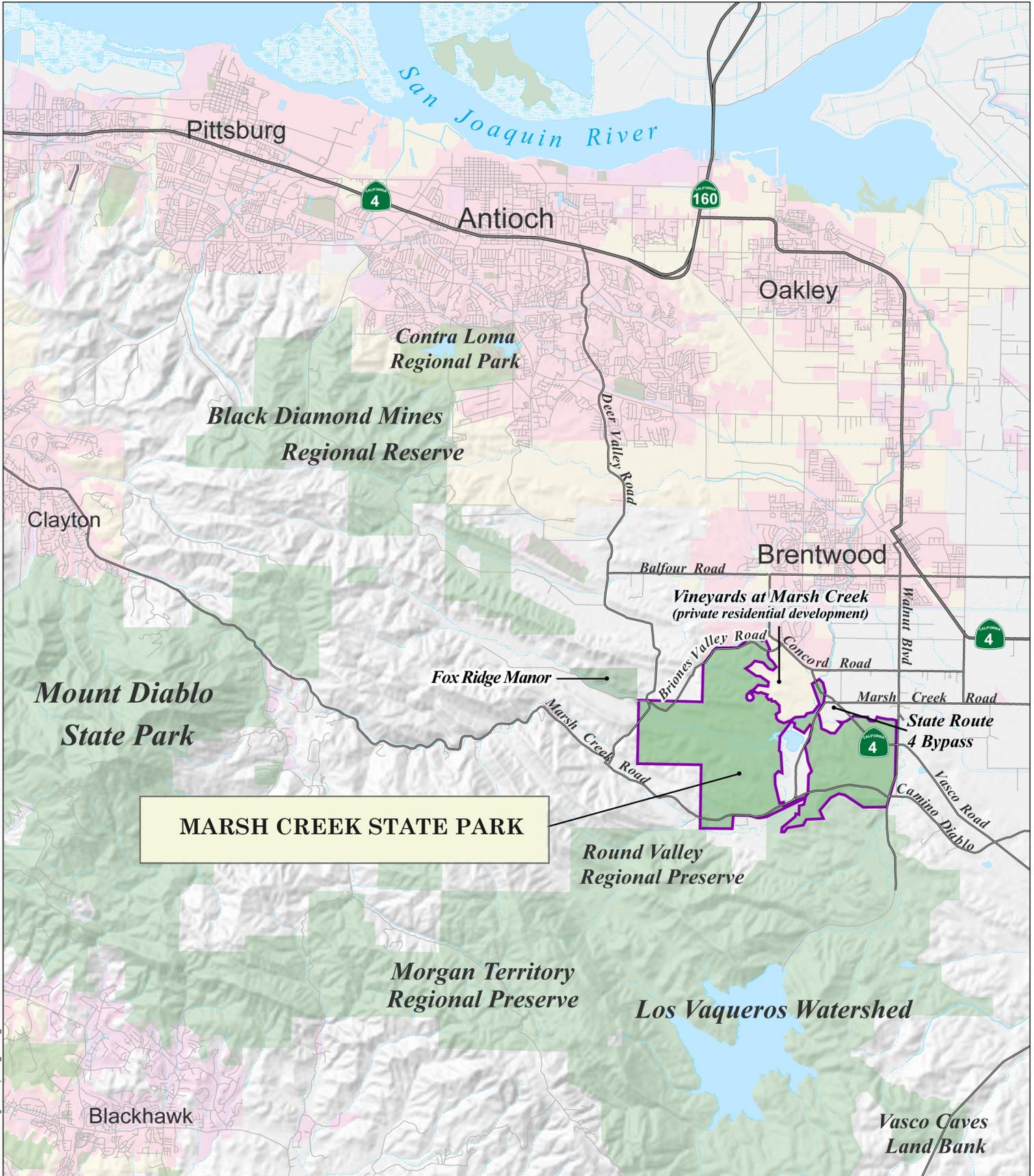
MARSH CREEK STATE PARK

Map 1
Regional Location

Scale 1 : 633,600
1" = 10 miles

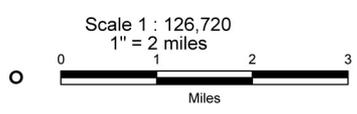


P:\2005\05010122.01\gis\arcmap\region_context_8x11.mxd



P:\2005\05010122.01\gis\sacmap\local_context_8x11.mxd

Sources: CA Spatial Information Library /
USGS DEM / GreenInfo Network / EDAW



MARSH CREEK STATE PARK

**Map 2
Park Location**

Public Involvement Program

California’s State Parks are managed for recreation opportunities, the preservation of natural and cultural resources, and use by the people of California. Public outreach is an important component of the park general planning process. Public ideas and opinions are sought at the outset and throughout the planning process to build public support for the General Plan to ensure that future goals and management of the Park are appropriate and will be supported by the general public. As a first step in building public support for the planning process, a mailing list was compiled using members of the John Marsh Historic Trust as well as interested community members and local political officials gathered from the City of Brentwood. The mailing list database, currently with 500 entries, has been maintained throughout the planning process and updated continually upon receipt of new information requests. In addition, a variety of methods, such as public meetings, surveys, newsletters, and land tours were used to reach out to stakeholders of the Park and to identify their needs and concerns for the Park’s future. Table 1 outlines the specific components and dates of the public outreach efforts for the Park.

The meeting summaries, stakeholder comments, Notice of Preparation, and the newsletters including a copy of the survey conducted, are provided in Appendix A. Information gathered from the survey and written and spoken comments received during the planning process are included in the summaries of the public meetings and the stakeholder summary. Stakeholder comments were received from the responses to the questionnaire, email, letters presented at the public workshops and comment cards provided at the public workshops. The second newsletter was mailed with a copy of the stakeholder summary. In order to ensure that visitors not on the mailing list were also surveyed copies of the second newsletter that were distributed during land tours and at public workshops also included the survey that was mailed with the first newsletter. Of the 500 questionnaires that were mailed, 57 (11.4%) were filled out and mailed back. Similarly, entries are deleted for survey respondents who indicate on the survey form that they want to be removed from the database.

Table 1
Marsh Creek State Park General Plan
Stakeholder Outreach Summary

DATE	FORMAT	PURPOSE
April 11, 2006	CEQA Notice of Preparation	Seek lead agency status; inform involved agencies and State Clearinghouse about project
April 2006	Newsletter 1 and Questionnaire (mailed)	Introduce the project and announce the first public workshop
May 17, 2006	Public Workshop No. 1	Share resource data information; receive insight and ideas from stakeholders
July 11, 2006	Agency Stakeholder Meeting No. 1	Inform local agencies about planning process and hear about relevant issues for Plan
October 12, 14, and 25, 2006	Land Tours Announcement	Provide guided access to allow visitors to see house and landscape
December 6, 2006	Agency Stakeholder Meeting No. 2	Update local agencies on preliminary alternative ideas
February 2007	Newsletter No. 2	Update stakeholders on status of planning process and announce second public workshop
March 20, 2007	Public Workshop No. 2	Provide summary of Plan alternatives and allow stakeholders to provide comments and feedback
March 2008	Schedule Update Announcement	Provide stakeholders with an update to the General

	(website)	Plan/EIR schedule
October 25, 2010	CEQA Notice of Availability and Meeting Announcement	Provide announcement that Draft Plan and EIR are available for public review and date for public workshop
November 4, 2010	Public Workshop No. 3	Provide stakeholders with a summary of the Draft General Plan and EIR

Note – Additional focus group meetings were held by California State Parks staff during the planning period with Save Mount Diablo, John Marsh Historic Trust, East Bay Regional Park District and the City of Brentwood City Council.

1.3 CONTENTS OF THE GENERAL PLAN AND ENVIRONMENTAL IMPACT REPORT

This document serves as the General Plan and Program Environmental Impact Report (EIR) for Marsh Creek State Park. The program-level EIR is included herein to analyze and disclose any significant and potentially significant effects that may result from implementation of the General Plan and allow for the Plan to be adjusted, if needed, to reduce potential negative impacts. Performing environmental analysis at this stage, early in the planning process, creates a plan for the Park that will have the fewest impacts during the implementation phases. The EIR informs decision makers and the public about the environmental consequences of the adoption of the General Plan, consistent with the requirements of CEQA and the state CEQA Guidelines. This document provides existing conditions, proposed recommendations and environmental review for land referred to as the Park which is defined as the land that is owned by California State Parks as shown within the boundary portrayed on maps prepared as part of the General Plan process.

This General Plan and EIR, is organized into the following chapters:

Chapter 1: Introduction provides general background information including the location, history, and creation of Marsh Creek State Park; summarizes California State Parks’ General Planning process; and outlines the contents and organization of the document.

Chapter 2: Existing Conditions describes the Park’s current physical conditions, including information on land use; significant physical, biological, cultural, aesthetic, and recreational values; and existing facilities. The Existing Conditions chapter also lists system wide and regional planning influences affecting the Park, describes the demographic profile of the region’s residents and the Park’s potential visitors, and lists issues to be addressed in the General Plan. This chapter serves as the environmental setting for the General Plan’s programmatic EIR.

Chapter 3: Park Plan identifies the goals and guidelines that will direct future management and operation of the Park. This chapter includes the Park Purpose and Vision, describes geographic-based management zones, and provides zone-specific and parkwide management goals and guidelines.

Chapter 4: Environmental Analysis contains the environmental impact analysis (programmatic EIR) for the General Plan, pursuant to the state CEQA Guidelines.

Chapter 5: References contains a list of the organizations and persons consulted during the preparation of this document, and a complete list of references.

Chapter 6: Glossary of Terms and Acronyms defines terms used in this document and identifies the full name or phrase represented by abbreviations.

Chapter 7: Report Preparers identifies the preparers of this General Plan and EIR.

The **Final EIR Response to Comments** document, published separately, contains all public comments received during the circulation of the Preliminary General Plan and Draft EIR, responses to these comments, and additional appendices, as applicable.

This page intentionally left blank.



Existing Conditions – Chapter 2

2. Existing Conditions

This chapter summarizes the existing land uses, significant resource values, existing facilities, and local and regional plans that influence the management, operations, and visitor experiences of the Park. The following information provides the baseline data upon which the goals and guidelines for the General Plan were developed and also serves as the environmental setting for environmental review under the California Environmental Quality Act (CEQA).

2.1 SUMMARY OF PARK CONDITIONS AND RESOURCES

Parkwide Land Uses

The Park is principally divided by Marsh Creek Road and by the Marsh Creek Dam and Reservoir that is owned and managed by the Contra Costa County Flood Control and Water Conservation District (CCCFCWCD). State Route (SR) 4 bisects the northeast corner of the Park near its intersection with Marsh Creek and further south, dividing the agricultural field into two parcels. Portions of the property lie within the Kellogg Creek watershed to the south of Camino Diablo Road. These lands form the northern boundary of the Los Vaqueros Reservoir and surrounding lands, managed by Contra Costa Water District (CCWD). Part of the Briones Valley lies between rolling hills that make up the largest contiguous acreage of the Park on the western side of Marsh Creek Road.

An important feature of the Park is the 16.4 acre John Marsh ranch complex (residence, tankhouse, pumphouse, bunkhouses, horse stable/tack room, granary, barn, corrals, and two vehicle sheds). The most dominant element of the ranch is the stone house that was completed in 1856. A more detailed description of this complex is provided in this chapter. Currently, the land is grazed. A corral area used for the ranching operations exists across from the main entrance along Marsh Creek Road and is accessed by cattle via an underground culvert near the entry gate. There is historical evidence of previous sand mining activity in the northern portion of the eastern hills where an abandoned mine is present. Previously, a portion of the Park in the east was farmed; crops included an apple orchard and corn. The property is not currently open to the public, except for occasional guided tours of the John Marsh House and adjacent areas. Currently, no public use facilities exist on the property. Map 3 shows the Park boundary, along with the property's existing land uses.

Surrounding Land Uses / Regional Context

Contra Costa Community College

The future Brentwood Center will be located on a 17-acre site in the City of Brentwood within the Vineyards at Marsh Creek, generally west of the intersection of the State Route 4 Bypass and Marsh Creek Road. The site is located near the Park boundary and the John Marsh House. The project consists of a new education center, a satellite site of Los Medanos College that would serve a maximum of 5,000 full- and part-time students. Two buildings would be located near the center of the site that would provide a total of approximately 88,000 square feet of classroom/office space. Each building would be two stories tall and approximately 35 feet in height. A total of 1,366 parking spaces would be provided in two surface lots (CCCD

2011)¹. The center would have a total of 80 full-time and 200 part-time employees, including faculty and staff. The education center would offer a general education curriculum, but would not function as a full-service community college campus. Consequently, it would be limited to classrooms, laboratories and administrative and faculty offices and would not have other uses typically associated with a community college campus, such as a library, gymnasium, athletic fields, auditorium/theatre, cafeteria, bookstore, student union or other student services.

Marsh Creek Reservoir and Dam

The Contra Costa Flood Control and Water Conservation District (CCFCWCD) owns a parcel located in the center of the Park that contains the Marsh Creek Reservoir and Dam and much of the riparian corridor surrounding the creek out to Marsh Creek Road. This facility is maintained by CCFCWCD for flood control purposes. In addition to these lands, CCFCWCD also holds a “flowage” easement or “area of inundation” over a portion of Park to the west of the reservoir that may limit the facilities and uses that can take place in this area. See Map 3, Existing Land Use which shows the area maintained for flood control.

Round Valley Staging Area

The East Bay Regional Park District leases and manages a portion of the Park along Marsh Creek Road for their Round Valley Regional Preserve staging area. This area is located south of Marsh Creek Road in the southern portion of the Park, south of Briones Valley, and contains parking for vehicles and horse trailers, vault toilet facilities, and a trailhead (Miwok Trailhead) providing access to the Round Valley Preserve.

Vineyards at Marsh Creek

The 481-acre Vineyards at Marsh Creek (Vineyards) development, adjacent to the Park on the north side, is located in the southwestern portion of the City of Brentwood’s Planning Area. It is located on Concord Avenue between Balfour Road and Marsh Creek Road. This development will include mixed use residential, as well as commercial and public facilities, including a winery and an amphitheater. The development is currently under construction.

State Route 4 Bypass

Segment 3 of the State Route 4 Bypass (SR 4 Bypass) is located north of the Park with an interchange at Marsh Creek Road, dividing the Park. The SR 4 Bypass project is an approved expressway (250-foot right of way) developed between SR 4 and a relocated Vasco Road. An upgrade to Marsh Creek Road provides a connector (with a 110-foot right of way) between the SR 4 Bypass and the existing SR 4. The SR4 bypass between Marsh Creek Road in Brentwood and Hillcrest Avenue in Antioch has been designated the “John Marsh Heritage Highway”.

Lands and Realty Overview

Park ownership includes several legal agreements for access and use over different segments of the Park. Also, as part of the public acquisition of the Park, some use restrictions and conditions were set by the public agencies who contributed to the funding of the acquisition. Appendix B summarizes the various easements

¹ Contra Costa Community College District. 2011 (February) Draft Supplemental Environmental Impact Report, New Brentwood Center. State Clearinghouse #2010112046. Martinez, California.

and rights-of-way that cross and intersect with the Park and existing acquisition use restrictions and conditions. These legal documents should be consulted during Plan implementation to ensure compliance and to verify geographic conditions and boundaries for the construction of future facilities. A detailed survey and land ownership record of the Park showing easements and encumbrances was prepared by California State Parks in 2004 and updated in 2006 and is also included in Appendix B.

This page intentionally left blank.

Placeholder page

Map 3 Existing Land Use

Placeholder back of map 3

Significant Resource Values

Physical Resources

Climate

California's Central Valley and Coast Range are characterized by a Mediterranean climate, with hot, dry summers and cool, wet winters. The Park is located near the San Francisco Bay Area Basin where summer temperatures are determined in large part by the effect of differential heating between land and water surfaces. Since land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of the cold ocean bottom water along the coast. Thus, on summer afternoons the temperatures at the coast can be 35 degrees cooler than temperatures 15 to 20 miles inland. At night this contrast usually decreases to less than 10 degrees.

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.

The San Francisco Bay Area Basin experiences moderately wet winters and hot, dry summers. Winter rains account for approximately 75% of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the Basin to another even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys. During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing are usually high and thus pollution levels tend to be low. However, frequent dry periods occur during the winter where mixing and ventilation are low and pollutant levels build up.

The U.S. Environmental Protection Agency requires the California Air Resources Board (ARB) and Bay Area Air Quality Management District (BAAQMD) to measure the ambient levels of air pollution to determine compliance with the National Ambient Air Quality Standards. To comply with this mandate, the BAAQMD monitors levels of various criteria pollutants at 26 monitoring stations within the San Francisco Bay Area.

Air quality conditions in the San Francisco Bay Area have improved since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days on which the region exceeds air quality standards have fallen dramatically. The San Francisco Bay Area Air Basin (SFBAAB) is in attainment of the state and federal ambient air quality standards for carbon monoxide (CO), nitrogen dioxide (NO₂), and sulfur dioxide (SO₂). Concentrations of CO, NO₂, and SO₂ registered at air quality monitoring stations within the SFBAAB were all below the state and federal ambient air quality standards.

Climate Change—Greenhouse Gases

Certain gases in the earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. The absorbed radiation is then emitted from the earth, not as high-frequency solar radiation, but lower frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth

emits lower frequency (longer wavelength) radiation. Most solar radiation passes through GHGs; however, infrared radiation is selectively absorbed by GHGs. As a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead “trapped,” resulting in a warming of the atmosphere. This phenomenon, known as the “greenhouse effect,” is responsible for maintaining a habitable climate on Earth. Without the greenhouse effect, Earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated compounds. Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of the earth’s climate, known as global climate change or global warming. It is extremely unlikely that global climate change over the past 50 years can be explained without the contribution from human activities (Intergovernmental Panel on Climate Change [IPCC] 2007).

According to overwhelming scientific consensus, climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants (TACs), which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO₂ is currently emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO₂ emissions, approximately 54% is sequestered through ocean uptake, uptake by northern hemisphere forest regrowth, and other terrestrial sinks within a year, whereas the remaining 46% of human-caused CO₂ emissions remains stored in the atmosphere (Seinfeld and Pandis 1998).

Similarly, impacts of GHGs are borne globally, as opposed to localized air quality effects of criteria air pollutants and TACs. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known, although the quantity would be enormous, and no single project would be expected to measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or micro climate.

Greenhouse Gas Emissions Sources and Inventory

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial and agricultural sectors (ARB 2009). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (ARB 2009).

Emissions of CO₂ are byproducts of fossil fuel combustion. CH₄, a highly potent GHG, results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N₂O is also largely attributable to agricultural practices and soil management. CO₂ sinks, or reservoirs, include vegetation and the ocean, which absorb CO₂ through sequestration and dissolution.

California produced 484 million gross metric tons of CO₂e in 2004 (ARB 2009). CO₂e is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. Combustion of fossil fuel in the transportation sector

was the single largest source of California's GHG emissions in 2004, accounting for 38% of total GHG emissions in the state (ARB 2008). This sector was followed by the electric power sector (including both in-state and out-of-state sources) (22%) and the industrial sector (20%) (ARB 2008).

Wind

The air flowing in from the coast to the Central Valley, called the Delta breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion (layers of warmer air over colder air). If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited and stagnant conditions are likely to result. In the winter, the Basin frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime airflow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the Basin.

Topography

Park elevations range from approximately 110 feet above mean sea level (msl) at the lowest elevation to approximately 500 feet msl at the highest location, and is characterized by open, rolling, grass-covered hills with scattered trees. Map 4 shows elevation across the Park. The Park's topography ranges from fairly level to steep. Briones Valley and the eastern portion of the Park near Walnut Boulevard vary from flat to five percent slope, while the remainder of the Park ranges from five to over 30 percent slopes. Map 5 is a slope analysis map of the Park.

Geology and Soils

Bedrock at the site consists of Upper Cretaceous² marine sedimentary rocks, Eocene³ marine sedimentary rocks, and Quaternary⁴ Marine/Alluvium. Map 6 shows the distribution of underlying geology in the Park. More than 75 percent of the Park is underlain by Upper Cretaceous marine sedimentary rocks, which consist of sandstone, shale, and conglomerate. The northern portion of the Park is underlain by Eocene Marine sedimentary rocks, which consist of shale, sandstone, conglomerate, and minor limestone which are mostly well consolidated. The easternmost portion of the Park is underlain by Quaternary Marine/Alluvium, which contains mostly nonmarine unconsolidated and semi-consolidated alluvium, lake, playa, and terrace deposits.

Soils in the Park are mapped as Capay clay (CaA) generally along Briones Valley with Pescadero clay loam (Pb) and Altamont clay (AbE) located north and south of Briones Valley (NRCS 1977). Other dominant soils in the Park include Los Osos clay loam (LhF) and Altamont-Fontana complex (AcF). Map 7 illustrates the Park soil types. Table 2 shows the soils present in the Park and their general characteristics (slope, erosion potential, and groundwater presence).

² The Cretaceous period occurred from 145 to 65 million years ago [mya], and is the "Age of Dinosaurs."

³ The Eocene period occurred from 55.5 to 33.7 mya.

⁴ The Quaternary Period occurred from 1.8 mya to present.

The Altamont series of soils consist of deep, well-drained soils that formed in material weathered from fine-grained sandstone and shale (NRCS 1977). Runoff varies from slow to rapid, and permeability is slow. These soils are located throughout the Park in slopes ranging from nine to 50 percent slope.

The Brentwood series consists of well-drained soils on valley fill with slopes between zero and two percent (NRCS 1977). These soils are formed in alluvium from sedimentary rock. Runoff and permeability is slow. A sliver of Brentwood clay loam is located in the southwestern portion of the Park, north of Marsh Creek Road.

The Briones series consists of somewhat excessively drained, moderately deep soils over sandstone (NRCS 1977). Briones soils are found on uplands and on strongly sloping to steep terrain. These soils have medium to rapid runoff and rapid permeability of the soil, but slow or very slow permeability in the sandstone. Briones loamy sand is isolated in areas on the north and east side of the Park, within areas between zero and 50 percent slope.

The Capay series consists of moderately well drained soils on lower edges of valley fill and on old benches that have been slowly dissected (NRCS 1977). These soils formed in alluvium from sedimentary rock and have slow runoff and slow permeability. Capay clay is located along the Briones Valley on zero to nine percent slope.

The Clear Lake series consists of poorly drained soils in basins in the coastal valleys (NRCS 1977). They formed in fine-textured alluvium and have very slow runoff and permeability. Clear Lake clay is present in an isolated patch in the eastern portion of the Park.

The Cropley series consists of moderately well-drained soils in small upland valleys (NRCS 1977). They formed in fine-textured alluvium from sedimentary rock. A sliver of Cropley clay is located in the central portion of the Park, on slopes ranging from two to five percent. Runoff and permeability for this soil is slow.

The Fontana series consists of well-drained soils underlain by fine-grained sandstone (NRCS 1977). These soils occur on uplands and have moderately slow permeability. Where the soils are exposed, runoff is slow to medium. Small patches of the Fontana-Altamont complex are located on the western portion of the Park, on slopes ranging from 15 to 30 percent.

The Kimball series of soils consists of very deep, well-drained soils formed in alluvium from mixed sources (NRCS 1977). Kimball soils are on fan terraces and have slopes of zero to 15 percent. They formed in alluvium from a variety of sources including sedimentary, metasedimentary, metabasic and granitic rock. They are well drained, with slow to medium runoff, and have very slow permeability.

The Linne series consists of well-drained soils underlain by calcareous interbedded shale and soft sandstone (NRCS 1977). They occur on lower foothills with slopes between five and 30 percent. Runoff for the series is medium and the permeability moderately slow. An isolated patch of Linne clay loam is found in the easternmost portion of the Park.

The Los Osos series consists of well-drained soils underlain by soft, fine-grained sandstone shale (NRCS 1977). Runoff ranges from medium to rapid and the permeability is slow. The Los Osos clay loam is located throughout the southwestern portion of the Park.

The Pescadero series consists of very deep, poorly drained soils that formed in alluvium from sedimentary rocks (NRCS 1977). Pescadero soils are located in basins on the Vineyards project site. They are poorly drained or ponded in concave slopes; with very slow runoff and very slow permeability.

The Rincon series consists of well-drained soils mainly on benches, formed in alluvial valley fill from sedimentary rock (NRCS 1977). Runoff varies from slow to medium and permeability is slow. Rincon clay loam occurs in isolated patches on the eastern portion of the Park on slopes ranging from zero to nine percent.

The Sorrento series of soils consists of very deep, well-drained soils that formed in alluvium mostly from sedimentary rocks (NRCS 1977). Sorrento soils are found on alluvial fans and stabilized floodplains and have slopes of zero to 15 percent. They are well drained, have negligible to medium runoff, and moderate to moderately slow permeability depending upon dominant texture and amount of stratification in the lower part of the profile. Sorrento silty clay loam occurs in the central portion of the Park, north of Marsh Creek Reservoir on nearly level terrain.

This page intentionally left blank.

Placeholder page

Map 4 Existing Elevations

Placeholder back of map 4

Placeholder page

Map 5 Slope Analysis

Placeholder back of map 5

Placeholder page

Map 6 Geology

Placeholder back of map 6

Placeholder page

Map 7 Soils

Placeholder back of map 7

**Table 2
Marsh Creek State Park Soils**

SOIL TYPE	SOIL NAME	SLOPE (%)	EROSION POTENTIAL	SEASONABLE WATER TABLE
Altamont Series				
AbD	Altamont clay	9-15	Slight to moderate; slight in areas of range.	None observed within 5 ft.
AbE	Altamont clay	15-30	Moderate where soil is bare.	None observed within 5 ft.
AcF	Altamont-Fontana complex	30-50	Moderate to high.	None observed within 5 ft.
Brentwood Series				
Bb	Brentwood clay loam	0-2	No erosion hazard.	None observed within 5 ft.
Briones Series				
BdE	Briones loamy sand	5-30	Moderate to high.	None observed within 5 ft.
BdF	Briones loamy sand	30-50	High where soil is bare.	None observed within 5 ft.
Capay Series				
CaA	Capay clay	0-2	No erosion hazard.	None observed within 5 ft.
Clear Lake Series				
Cc	Clear Lake clay	2-5	No erosion hazard.	None observed within 5 ft.
Cropley Series				
CkB	Cropley clay	2-5	Slight where soil is tilled and exposed.	None observed within 5 ft.
Fontana Series				
Fd	Fontana-Altamont complex	15-30	Slight to moderate.	None observed within 5 ft.
Kimball Series				
KaC	Kimball gravelly clay loam	2-9	Slight to moderate where soil is tilled or exposed.	None observed within 5 ft.
KaE	Kimball gravelly clay loam	9-30	Moderate where soil is bare.	None observed within 5 ft.
Linne Series				
LbE	Linne clay loam	15-30	Moderate where soil is bare.	None observed within 5 ft.
Los Osos Series				
LhF	Los Osos clay loam	30-50	Moderate where soil is bare.	None observed within 5 ft.
Pescadero Series				
Pb	Pescadero clay loam	Nearly level	None or slight where soil is tilled or exposed.	4 to 5 feet.
Rincon Series				
RbA	Rincon clay loam	0-2	Slight where soil is tilled and exposed.	None observed within 5 ft.
RbC	Rincon clay loam	2-9	Slight where soil is tilled and exposed.	None observed within 5 ft.
Sorrento Series				
Sm	Sorrento silty clay loam	Nearly level	None or slight where soil is tilled or exposed.	None observed within 5 ft.

Source: Natural Resources Conservation Service

Farmland Designations

The California Department of Conservation (CDC), Office of Land Conservation, maintains a statewide inventory of farmlands. These lands are mapped by the Division of Land Resource Protection as part of the Farmland Mapping and Monitoring Program (FMMP). The maps are updated every two years with the use of aerial photographs, a computer mapping system, public review, and field reconnaissance. Important farmlands are divided into the following five categories based on their suitability for agriculture:

- Prime Farmland is land that has the best combination of physical and chemical characteristics for crop production. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed.
- Farmland of Statewide Importance is land other than Prime Farmland that has a good combination of physical and chemical characteristics for crop production.
- Unique Farmland is land that does not meet the criteria for Prime Farmland or Farmland of Statewide Importance, but has been used for the production of specific crops with high economic value.
- Farmland of Local Importance is either currently producing crops or has the capability of production, but does not meet the criteria of the categories above.
- Grazing Land is land on which the vegetation is suited to grazing livestock.

Other categories used in the FMMP mapping system are “urban and built-up lands,” “lands committed to non-agricultural use,” and “other lands” (land that does not meet the criteria of any of the other categories). Map 8 shows the type of farmlands located within the Park. The majority of the land is designated Farmland of Local Importance. Grazing lands, as designated under FMMP are also scattered throughout the Park. Prime Farmland is limited to the easternmost section of the Park and comprises approximately 270 acres. Most of this land was historically used for an apple orchard, while a small portion in the north was planted in corn. These lands have not been farmed since 2005 since the apple orchard lease expired.

Landslides

Landslides have been mapped within the Park, on the slopes south of Briones Valley and in the northern portion of the Park (ABAG [based on USGS data] 1998). In addition, slides have been mapped on the slopes within the Park east of Marsh Creek Reservoir.

Faulting and Seismicity

Seismic sources near the Park include the Calaveras, Concord, Hayward, and Greenville/Marsh Creek faults. The Greenville/Marsh Creek and Calaveras faults are located about five miles and 15 miles, respectively, southwest of the Park. The Concord fault is located about 13 miles west of the Park. The Hayward fault is located approximately 26 miles west of the Park.

The San Andreas fault represents an active crustal plate boundary that is expected to produce the maximum probable earthquake for the region (RBF 2003). The Coast Range Great Valley fault is also near the Park, but is not fully understood with respect to its precise location and potential magnitude in the event of an earthquake. The maximum moment magnitude for the Great Valley fault is estimated to be approximately

Placeholder page

Map 8 Farmland Classification

Placeholder back of Map 8

6.7. Seismic activity of a moderate to large magnitude is anticipated to occur in the San Joaquin Valley in the future. Based on research conducted since the 1989 Loma Prieta earthquake, the U.S. Geological Survey (USGS) Working Group on Northern California Earthquake Probabilities concluded that there is a 62% probability of at least one magnitude 6.7 or greater quake, capable of causing widespread damage, striking the San Francisco Bay region before 2032 (ABAG 2003).

Three localized faults were identified during the preparation of the City of Brentwood's General Plan Update, 2001-2021 (RBF 2003). Two of these faults, the Antioch-Davis fault and the Brentwood fault, are located within the City, northeast of the Park. One additional fault, the Midland fault, is located within two miles of the City.

The Antioch-Davis fault is a north-northwest trending fault that is approximately 18 miles in length. No evidence has been found indicating recent activity on the Antioch-Davis fault. The Brentwood fault trends in a north-south direction approximately two miles east of the Antioch-Davis fault and is located on the Vineyards site adjacent to the Park. The Brentwood fault has not experienced recent activity (i.e. within the past 70,000 years) and is not considered active (ENGEO 2003a as cited in RBF 2003).

The Midland fault is located approximately two miles east of the Planning Area defined in the City of Brentwood's General Plan Update, 2001-2021 (RBF 2003). The fault is north-northwest trending and extends from the Byron area north through Dixon and the Capay Valley. There is no evidence of recent activity on the Midland fault, though earthquakes that occurred in the Vacaville-Winters area are suspected to have originated on this fault.

To estimate future seismic events on a particular fault and the potential effect of these events, an estimate of the potential magnitude of an event must be determined. The Maximum Credible Earthquake (MCE) is an estimate of the potential magnitude of seismic events. It is based on the maximum event that appears possible based on the current understanding of a particular fault as well as the local geology. The Maximum Probable Earthquake (MPE) is also an estimate of potential magnitude of an earthquake. The MPE is based on the maximum event that may be reasonably expected to occur within the next 100 years and therefore are of lesser magnitude and have a greater likelihood of occurrence than MCEs. The MCE and MPE for the faults believed to be active in the Park's vicinity are shown in Table 3. The Brentwood fault is not considered to be active and is therefore not included in Table 3.

**Table 3
Maximum Credible and Probable Earthquakes**

FAULT NAME	APPROXIMATE DISTANCE TO PARK	MAXIMUM CREDIBLE MAGNITUDE	MAXIMUM SITE ACCELERATION (G) ¹	PEAK SITE INTENSITY (MM) ²	MAXIMUM SITE ACCELERATION	MAXIMUM SITE ACCELERATION (G)	PEAK SITE INTENSITY
Antioch	1 to 2	6.5	0.36	IX	5.75	0.28	VII to IX
Calaveras	15	7.0	0.13	VIII	6.5	0.10	VII
Concord	13	6.75	0.14	VIII	6.25	0.11	VII
Greenville	5	7.0	0.22	IX	5.25	0.09	VI
Hayward	26	7.5	0.10	VII	6.75	0.07	VI
Midland	2 to 3	7.0	0.40	IX	6.25	0.30	VII to IX
San Andreas	44	8.3	0.08	VII	7.5	0.05	VI

Source: RBF 2003.

¹ G is the acceleration of gravity (9.8 m/s²) or the strength of the gravitational field. When there is an earthquake, the forces caused by the shaking can be measured as a percentage of gravity, or percent g.

² MM is the Modified Mercalli Scale, the most common intensity scale that measures an earthquake's "intensity" on people and buildings. The scale ranges from I to XII; each level corresponds to a level of damage that would be anticipated to occur.

The intensity of ground shaking depends on the distance from the earthquake epicenter to the site, the magnitude of the earthquake, site soil conditions, and the characteristic of the source. The Association of Bay Area Governments (ABAG) provides earthquake hazard maps that identify shaking intensity in the San Francisco Bay region from earthquakes along different faults. Shaking along the Greenville fault and San Andreas fault would result in the greatest intensity of shaking in the Park. Shaking intensity in the Park from an earthquake at the Greenville fault would vary from VII-Strong (nonstructural damage)⁵ to VIII-Very Strong (Moderate Damage)⁶ in the Mercalli Intensity scale (ABAG 2003). Shaking intensity in the Park from activity along the entire San Andreas fault would result in shaking intensities varying from V-Light (pictures move)⁷ to

⁵ Strong shaking is described in the Modified Mercalli Scale as follows: Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to masonry including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices (also unbraced parapets and architectural ornaments). Some cracks in masonry. Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.

⁶ Very strong shaking is described in the Modified Mercalli Scale as follows: Steering of motor cars affected. Damage to masonry; partial collapse. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.

⁷ Light shaking is described in the Modified Mercalli Scale as follows: Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Shutters, pictures move. Pendulum clocks stop, start, change rate.

VII-Strong (nonstructural damage), with the majority of the Park experiencing an intensity of VI-Moderate (objects fall).⁸

Water Resources

Surface Water

The California Interagency Watershed Map of 1999 identifies the Park encompassing portions of four watersheds: Sycamore Creek, Briones Valley, Deer Creek, and Lower Kellogg Creek. However, Sycamore Creek, Briones Valley, and Deer Creek are subwatersheds of the larger Marsh Creek watershed. Map 9 illustrates major watersheds in and around the Park.

Marsh Creek Watershed

The Marsh Creek watershed drains the north side of Mount Diablo and includes the cities of Oakley, Brentwood, and part of Antioch in eastern Contra Costa County (CALFED 2003). This watershed drains 128 square miles of rangeland, farmland, and urban land and is the second largest watershed in the County. Marsh Creek flows for approximately 30 river miles from its headwaters in the Morgan Territory, on the eastern flank of Mount Diablo, to its mouth at Big Break in the western Delta. The creek is an important ecological link between the Delta and the Diablo Range.

Marsh Creek's major tributaries – Briones, Dry, Deer, and Sand creeks – all flow southeasterly, draining the eastern highlands of Mount Diablo State Park and Black Diamond Mines Regional Preserve (CALFED 2003). Briones Creek, which drains the undeveloped Briones Valley, flows into Marsh Creek at Marsh Creek Reservoir, while Dry, Deer, and Sand creeks all flow into Marsh Creek within the city limits of Brentwood. All of the above creeks are typically intermittent, meaning they have little to no surface flow during the summer months (CCCWP 2004a). Approximately 75 percent of the Park is located within the Marsh Creek watershed.

The eastern reach of Briones Creek and western reach of Dry Creek are located within the Park. Marsh Creek is partially located within the Park and the northern reach of Dry Creek is located adjacent to the Park. Only the western arm of Marsh Creek Reservoir is located within the Park. Other unnamed drainages are also located within the Park.

Marsh Creek originates in the foothills of Mount Diablo and flows north through the cities of Brentwood and Oakley to the San Joaquin River Delta at Big Break (CCCWP and EOA 2004). It passes through diverse geology and topography, from the steep rocky headwaters to the alluvial plain north of Marsh Creek Reservoir. Since the turn of the century, farmers and flood control authorities have altered the channel and surrounding landscape to protect agricultural resources, such that Marsh Creek and its tributaries currently are managed by flood control structures, some of which are within or near to the Park. Marsh Creek and Briones Creek flow into Marsh Creek Reservoir located within an out parcel in the center of the Park. The reservoir has a storage capacity of 4,425 acre-feet and was created by construction of an earthen dam (DWR Bulletin 17-88 as cited in McNulty and Wickland 2003). The reservoir was originally built to accommodate a 50-year storm event, but due to siltation, the capacity of the reservoir has been reduced (DWR Bulletin 17-88;

⁸ Moderate shaking is described in the Modified Mercalli Scale as follows:
Felt by all. Many frightened and run outdoors. Persons walk unsteadily.
Windows, dishes, glassware broken. Knickknacks, books, etc., off shelves.
Pictures off walls. Furniture moved or overturned. Weak plaster and masonry cracked. Small bells ring (church, school). Trees, bushes shaken (visibly, or heard to rustle).

RBF 2003). A 54-inch box culvert serves as the primary outlet for the reservoir. The flow spills over an emergency spillway when the water level reaches an elevation of 191.8 feet, and both the culvert and the emergency spillway discharge directly into the Marsh Creek channel. When the water level reaches an elevation of 193 feet, a secondary auxiliary storage area located east of Marsh Creek Road begins to fill. Return flow from this area drains through an 18-inch pipe that traverses the dam and discharges back into the creek channel near the emergency spillway outlet.

Kellogg Creek Watershed

Approximately 25 percent of the Park lies within the Kellogg Creek watershed. The watershed encompasses more than 30 square miles of open space. Major water bodies include Kellogg Creek (located immediately east of the Park), Mallory Creek and Los Vaqueros Reservoir (both outside the Park).

Streamflow

Flows in Marsh Creek were measured by the USGS at Marsh Creek Reservoir from 1954 to 1983 (CALFED 2003). The mean annual runoff rate during that period was 8,525 acre-feet per year (af/y). The highest annual runoff occurred in 1983 and was 40,000 af/y. The driest year on record was 1976, where annual runoff was below the detectable limit. Stream data from 1970 (a year with both average rainfall and runoff) shows that much of Marsh Creek upstream of the Reservoir flows seasonally. However, a number of perennial pools exist in the upper watershed, fed by springs emanating from bedrock fractures.

Surface Water Quality

The water bodies within the Park are within the jurisdiction of the Central Valley Section of the Regional Water Quality Control Board (RWQCB). The Central Valley RWQCB Water Quality Control Plan (Basin Plan) identifies uses for surface water bodies in the Sacramento and San Joaquin River basins that are critical to management of water quality in California. Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning. The Basin Plan does not identify beneficial uses for these water bodies. In cases where beneficial uses are not designated, the Basin Plan specifies that “the beneficial uses of any specifically identified water body generally apply to its tributary systems” (CVRWQCB 1998). Marsh Creek and its tributaries are part of the Sacramento San Joaquin Delta system. The beneficial uses of the Sacramento San Joaquin Delta include the following: municipal and domestic supply; agricultural supply; industrial service supply; industrial process supply; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; wildlife habitat; and navigation.

The Basin Plan identifies water quality objectives for the following constituents: bacteria, biosimulatory substances, chemical constituents (including a variety of trace elements), color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity. The Basin Plan recognizes that historic and ongoing point and nonpoint source discharges impact surface waters, such that beneficial uses would be impaired or water quality would be degraded. The Basin Plan identifies Water Quality Limited Segments (WQLS)⁹ as one expression of water quality problems of water bodies.

⁹ Section 303(d) of the federal Clean Water Act (CWA) requires the State to identify surface waters that do not meet applicable water quality standards with certain technology-based controls. Segments of these surface waters, a.k.a. WQLS, are segments of water bodies where it is known that the water

Marsh Creek Reservoir, owned and managed by the CCCFCWCD, is used as a stormwater detention basin. The 278-acre reservoir was listed in 2002 by the state Water Resources Control Board (Resolution No. 2003-0009) as a WQLS under Section 303(d). The potential pollutant impairing the reservoir was identified as mercury, and the source of contamination was resource extraction. The reservoir does not meet water quality standards for mercury. The Total Maximum Daily Load (TMDL)¹⁰ priority for the reservoir was considered low.¹¹ Similarly, an 11-mile stretch of Marsh Creek (from Dunn Creek to Marsh Creek Reservoir), and a 10-mile stretch of Marsh Creek (from the reservoir to the San Joaquin River) were identified as impaired for mercury, and mercury and metals, respectively. The pollutant source was identified as resource extraction, with an additional note that all resource extraction sources are abandoned mercury mines located outside the Park boundary. The TMDL priority for both segments of Marsh Creek was considered low. A TMDL has not yet been prepared for these resources. The source of the mercury referred to by the TMDL is the abandoned Mount Diablo Mercury Mine in eastern Contra Costa County (located near the upper reaches of Marsh Creek along Dunn Creek). The mine is known to contribute mercury to Marsh Creek and Marsh Creek Reservoir from the leaching of tailings present at the site (Slotten et al. 1996 as cited in CCCWP and EOA 2004b). The mine is currently under private ownership.

In 1995, Slotten et al. conducted sampling of the Marsh Creek watershed to determine the sources and extent of mercury (total and methyl) in water, sediment and biota downstream of the Mount Diablo Mercury Mine (CCCWP and EOA 2004b). Based on the sampling results of 18 sites (within Marsh Creek Reservoir, Marsh Creek and its tributaries), mercury concentrations were compiled. Aqueous total mercury concentrations ranged from 3.2 to 949 nanograms per liter (ng/L), with the highest concentrations found in Dunn Creek. Total mercury concentrations directly downstream of mine tailings were two orders of magnitude greater than in receiving waters. Sediment total mercury concentrations in Marsh Creek Reservoir ranged between 0.24 and 1.48 mg/kg. The composite body tissues of invertebrates and muscle tissue of fish were also analyzed for mercury in Marsh Creek and the reservoir. Bioaccumulation studies indicated that aquatic organisms immediately below the mine tailings had the highest tissue concentrations in the watershed (Slotten et al. 1996 as cited in San Francisco Estuary Regional Monitoring Program 1996). Even small invertebrates contained up to 60 times the 0.5 parts per million (ppm) health guideline concentration of mercury for edible fish. With increasing distance from the mining area, concentrations within organisms fell, but were still significantly higher than upstream, control levels for the 10 miles downstream to Marsh Creek Reservoir, where they were also significantly elevated. Mass balanced calculations indicated that about 95 percent of the entire watershed's mercury load originated from the Mount Diablo mining area, of which 93 percent was from a relatively small patch of exposed mine tailings.

Contra Costa Water Program prepared several reports in fulfillment of National Pollutant Discharge Elimination System (NPDES) permit provisions for the San Francisco Bay Regional Water Quality Control Board.¹² The *Pollutants of Concern Source Assessment Report* identifies the annual loading (kg/yr) of PCBs,

quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards even after application of technology-based effluent limitations required by CWA Sections 301(b) or 306 (SWRCB 2003).

¹⁰ A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources.

¹¹ The priority refers to the RWQCB assignment for completion of TMDLs for the pollutants identified in their proposals for the section 303(d) list.

¹² The western portion of Contra Costa County is located within the San Francisco Bay Section of the RWQCB.

total mercury, chlordanes, and DDTs from Kellogg Creek and Marsh Creek watersheds, as shown in Table 4. Although PCBs, chlordane, and DDT are not identified as potential pollutants for Kellogg Creek and Marsh Creek, they are presented here for informational purposes only.

**Table 4
Characteristics of Watersheds within the Project Area**

WATERSHED	LAND AREA (ACRES)	ANNUAL RAINFALL (INCHES)	ANNUAL RUNOFF (INCHES)	LOADING ESTIMATES (MEAN) (KG/YR)			
				PCBS	MERCURY	CHLORDANE	DDT
Kellogg Creek	20,863	16	48	0.01	0.09	0.01	0.00
Marsh Creek	60,066	17	51	0.72	1.32	0.15	0.08

Source: CCCWP and EOA, 2004b.

Notes: PCBs are mixtures of up to 209 individual chlorinated compounds. There are no known natural sources of PCBs. Chlordane and DDT are persistent, bio-accumulative and toxic pollutants (PBTs) and Level 1 pesticides (organochlorine) by the USEPA. PBTs were banned in the 1970s but are still found in the environment today due to their persistent properties.

The Contra Costa Monitoring and Assessment Plan (CCMAP) is a long-term strategy initiated by the Contra Costa Water Program (CCWP) to assess the conditions of watersheds, water bodies, and water quality within Contra Costa County. The CCWP uses the benthic (the ecological region at the lowest level of a body of water) macroinvertebrate (BMI) community assemblages method as the primary indicator of water quality and watershed “health” (Crassey & Associates and EOA 2005). BMI sampling was conducted in the Lower/Middle Marsh Creek watersheds. Twenty standard metrics were calculated for evaluating the BMI data, separated into five categories as follows:

- Richness Measures (number of individual taxa);
- Composition Measures (percent composition of certain species and general measure of sample diversity);
- Tolerance/Intolerance Measures (abundance of individuals and percent of organisms that are highly tolerant to impairment);
- Functional Feeding Groups (percent of macrobenthos under a variety of conditions); and
- Abundance (estimated number of macroinvertebrates).

Placeholder page

Map 9 Watersheds

Placeholder back of Map 9

As noted in the assessment, indirect effects (e.g., increased pollutant load) and direct effects (e.g., increased imperviousness and runoff volume) of urbanization can adversely affect benthic macroinvertebrate communities (Crassey & Associates and EOA 2005). In general, biological metrics and physical habitat scores decrease from up- to down-stream, indicating lower biological integrity and watershed health in the more urbanized sections of the watersheds. Findings for the Lower Marsh watershed showed that the sampling station directly below the mine discharge point exhibited a significant decrease in all metrics compared to the station above the mine discharge point. The sampling results also showed that the station below Marsh Creek Reservoir had the lowest ranking score for Marsh Creek. Please refer to the *Contra Costa Monitoring and Assessment Plan (CCMAP) 2004 Rapid Bioassessment Project Report* for specific results of the study.

Groundwater

The majority of the Park does not overlie any groundwater basin. The northernmost tip of the Park (the detached northeastern parcel) overlies the Tracy subbasin, which is part of the larger San Joaquin Valley Tracy Groundwater Basin. The Tracy subbasin is drained by the San Joaquin River and one of its major westside tributaries, Corral Hollow Creek. The San Joaquin River flows northward into the Sacramento and San Joaquin Delta and discharges into the San Francisco Bay.

Due to the Park's proximity to the City of Brentwood, groundwater resources within the City are discussed herein. The Tracy subbasin underlies the City of Brentwood. The 539-square mile subbasin is defined by the areal extent of unconsolidated to semiconsolidated sedimentary deposits bounded by the Diablo Range on the west, the Mokelumne and San Joaquin Rivers on the north, the San Joaquin River to the east, and the San Joaquin-Stanislaus County line on the south (DWR 2003). The Tracy subbasin is comprised of continental deposits of Late Tertiary to Quaternary age. There are no published data available on the amount of groundwater in storage for this subbasin. The aquifer materials capable of yielding quantities of water suitable for municipal and/or agricultural purposes extend to depths of 600 feet (RBF 2003).

The City of Brentwood's current primary water source is groundwater that is supplied by wells throughout the City; seven wells provide approximately 67 percent of the City's water demand (RBF 2003). The remaining demands are met through a surface water agreement with the East Contra Costa County Irrigation District (ECCID) and treated under contract at CCWD's Randall-Bold Water Treatment Plant. There are two existing wells on Park property located near the John Marsh House however only one is operational.

The seven active wells in the City of Brentwood have a combined capacity of 6.8 million gallons per day (mgd), or 4,750 gallons per minute (gpm) (RBF 2003). Water pumped from the wells is treated by chlorination at the wellheads and pumped to the distribution system directly. The City's Urban Water Management Plan (UWMP) states that in general there is no apparent overdraft of the groundwater system and that there is sufficient recharge occurring during winter months when comparing groundwater conditions since the late 1950s. This would suggest that historical rates and patterns of extraction have not exceeded the safe yield of the basin (City of Brentwood, 2000 as cited in RBF 2003).

Natural groundwater recharge occurs at an average of 3,000 to 6,000 acre feet/year during normal years, and less than 2,000 af/y during drought years (RBF 2003). Natural recharge is derived from deep percolation of rainfall, storm flow in creek channels, and irrigation.

Flood-prone Areas

Beginning at the turn of the 20th century, humans began to confine the Marsh Creek channel upstream and downstream of the Park boundaries to its present location and build levees to protect farmland on the eastern side of the channel (CALFED 2003). As more surrounding lands were converted to agriculture and/or suburban/commercial use, incidents of flood damage to property and structures increased. In the last century, approximately nine miles of lower Marsh Creek and the lower reaches of Dry, Sand and Deer creeks have been channelized and associated habitats eliminated. Channel excavation, clearing, and straightening over the past century has resulted in the loss of more than 50 percent of the total stream channel length in the lower zone¹³ and elimination of nearly all the riparian and floodplain habitat along the margins of Marsh Creek where channelization has occurred.

The CCCFCWCD is the agency responsible for the maintenance and operation of major flood control facilities and stream channels throughout the eastern area of Contra Costa County (RBF 2003). The CCCFCWCD has instituted a number of programs to meet the demand for improved local flood control in the Brentwood area, including the preparation of the Marsh Creek Regional Drainage Plan (1990). County Drainage Areas 104 through 108 were established to plan, fund, and construct regional drainage improvements identified in the Marsh Creek Regional Drainage Plan, which would alleviate flooding within the Marsh Creek watershed. According to the CCCFCWCD, the John Marsh House site lies within Drainage Area 108.

One hundred-year flood zones are located south of Marsh Creek Reservoir, along stretches of Briones Valley Creek, Deer Creek, and Sand Creek passing through the central portion of the City, and portions of Marsh Creek north of Concord Avenue. Due to the original steep topography and lack of development in the Park, flooding has not been a problem in the past. The majority of the flooding has occurred downstream of the Park where development and urbanization has occurred. Flooding in the Park could occur along stretches of Marsh Creek during extreme storm events and adjacent to the CCFCWCD-owned Marsh Creek Reservoir and Dam. Map 3 shows the extent of the District's flood control easement within the Park.

Overtopping of the banks of Marsh Creek has been the primary cause of flooding in the Brentwood area (RBF 2003). The main reason for the flooding has been insufficient capacity in the channels to accommodate new development along the banks of Marsh Creek. One of the major factors contributing to flooding in the past was overtopping of Marsh Creek due to construction at Dainty Avenue and Central Avenue. Widening of the creek and Dainty Bridge to prevent overtopping was completed in 2000.

Existing Noise Environment

Noise in the Park currently comes from a variety of sources including roadway noise from adjacent roads (Marsh Creek Road, Deer Valley Road, Briones Valley Road, Camino Diablo Road, and Walnut Boulevard), the Southern Pacific Railroad, and other noise sources such as those from farming and construction operations in the vicinity of the Park. Typical noise levels in noise sensitive areas of the Brentwood General Plan Planning Area range from 44 dB to 53 dB Ldn. Noise from traffic on local roadways, as well as neighborhood activities, are the controlling factors for background noise levels in the Brentwood General Plan Planning Area.

¹³ The lower zone of Marsh Creek extends approximately 11 stream miles from the outfall of Marsh Creek Reservoir through the cities of Brentwood and Oakley and into the western Delta at Big Break (CALFED 2003).

The noise environment throughout the Park will be influenced primarily by visitor activities and motor vehicles. The majority of the current existing uses, with limited visitor use, constitute a minor noise source throughout the Park. However, noise from motor vehicles, including private automobiles and trucks, maintenance vehicles and ranching operations, is noticeable in the vicinity of roads. In addition, Park operations and maintenance activities occasionally generate noise. Noise-intensive operations and maintenance activities such as facility maintenance and use of motor-driven equipment do not contribute significantly to the noise environment. Noise occurs from nearby vehicular traffic, construction operations at the adjacent Vineyards at Marsh Creek development project, including the proposed amphitheatre located near the John Marsh Home (see Map 3), and overhead air traffic; however no noise data is currently available. Once construction at the Vineyards at Marsh Creek development is completed, there will be noise associated with activities at that site including events from the nearby amphitheater, residential and commercial use of the site near to the Park and associated vehicular traffic.

Some land uses are considered more sensitive to ambient noise levels than others because of their associated activities and degree of noise exposure, including both duration of exposure and level of insulation from noise. Residences, hotels and motels, schools, libraries, churches, hospitals, and parks and other outdoor recreation areas are generally more sensitive to noise than commercial and industrial land uses. Sensitive receptors in the Park include staff residences and Park visitors.

Aesthetic Resources

Local Setting and Visual Character

The Park is located in the southwestern corner of the City of Brentwood's Planning Area. The site is bordered on the north by the Vineyards at Marsh Creek mixed use development project which is currently under construction. Agricultural land uses are located north and east of the Park. To the south and west are large public open space expanses of rolling hills, including the Round Valley Regional Preserve and the Los Vaqueros watershed.

The Park itself consists of mostly undeveloped rolling hills and valleys vegetated with grasslands and scattered oak trees. Developed areas of the site include the historic John Marsh House, and associated ranch buildings, features and landscape, located in a north central portion of the site. The house is an example of the Gothic Villa style of residential architecture, built in 1856, and currently is in an advanced state of disrepair. Nevertheless, the house retains a significant amount of its original design and materials and still visually dominates its immediate surroundings.

The landscape surrounding the John Marsh House is generally open, undeveloped grassland. A dominant feature near the house is the Marsh Creek Dam. Across the road from the house are the corrals for the ranching operation. From the house, Marsh Creek Reservoir is not visible but the earthen dam structure is evident. Following Marsh Creek Road south to Camino Diablo Road, the reservoir becomes visible and adjacent riparian corridor that follows Marsh Creek. From various vantage points within the Park, views of Mount Diablo are clear and in the backdrop of the open, rolling hills of Marsh Creek State Park. Along Marsh Creek and Deer Valley roads, views into the Park display the open grasslands with minimal interruptions. Due to the bisection of the Park by Marsh Creek Road and the SR 4 Bypass, and the irregular Park boundary, it is not always possible to know if the views from the adjacent roads are of the Park or of small out parcels. Along Walnut Boulevard and Los Vaqueros Road, views of the Park are predominantly of grasslands that were former orchards. Parkland straddles Camino Diablo Road east of Marsh Creek Road and views here are of flatter grasslands with steeper foothills rising in the near distance. Internal views from many areas of the

Park lead the viewer back to Mount Diablo. The *Historic Period Properties Survey and Evaluation Report* (Bradley and Hill 2007) for the John Marsh Historic District includes several landscape photographs of existing conditions near the John Marsh House that documents the existing views. A comprehensive viewshed inventory has not been conducted for the Park and a more detailed understanding of the Park's best vantage points needs to be documented.

California Scenic Highway Program

In 1963, the California legislature created the Scenic Highway Program to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to the highways. The state regulations and guidelines governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq. A highway may be designated as “scenic” depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the travelers’ enjoyment of the view.

SR 4 is not an officially designated state scenic highway in this area, although one segment of SR 4 within Contra Costa County, between the intersection with SR 160 near Antioch and SR 84 near Brentwood, is eligible for scenic highway designation (California Department of Transportation 2005). No portion of this road near the Park or any other roads that would affect park management are currently designated scenic highways under this program.

Biological Resources

Introduction

Significant biological resources at the Park were determined through a review of existing documentation; consultation with biologists familiar with the local biological resources; and data collected by AECOM (formerly EDAA) biologists during reconnaissance-level surveys in May 2006. A resource is deemed significant if it is (1) important to the essential character of the Park and contributes, in part, to its statewide significance, or (2) is regionally significant, is an important component of a systemwide plan, or contributes to the preservation of regional or statewide biodiversity, or (3) is documented as significant on recognized preservation or protection lists or otherwise designated with special-status by a recognized authority (California State Parks Planning Handbook 2007).

Existing documentation from previous biological surveys on or adjacent to the property was reviewed and cited in this report by AECOM biologists and a list and summary of each are provided in Appendix C. These reports refer to surveys and analysis undertaken at the “Cowell Ranch” property. Where this is mentioned in the context of biological resource data collection, it refers to the current Park boundary as well as adjacent lands that are now part of the Vineyards at Marsh Creek development. The East Contra Costa County Habitat Conservation Plan/Natural Communities Conservation Plan (ECCCHCP) (ECCCHCPA 2006) was also reviewed. The inventory area for the ECCCHCP includes the Park and provides valuable information regarding the current status of sensitive and common biological resources in the region.

Additional sources of information reviewed by AECOM biologists included the California Natural Diversity Database (CNDDDB 2006) and the California Native Plant Society’s (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants (CNPS 2006). The CNDDDB search covered four USGS 7.5-minute quadrangles (Antioch South, Brentwood, Byron Hot Springs, and Tassajara) and captured similar habitat in a radius of

approximately 7.5 miles around the Park property. A map of the CNDDDB and other biological data for the Park is presented in Map 10.

Additionally, information provided in this section was also based on data provided by California State Parks from various recent survey efforts. State Parks staff conducted a field trip to the Park on May 13, 2007 along with representatives of the California Native Plant Society's East Bay Chapter Vegetation Committee. A variety of methods were utilized during this field visit to characterize select vegetation communities in Briones Valley, as well as locate populations of rare plants. Two methods were used for general vegetation sampling: Releve and Rapid Assessment. The Releve was conducted in annual grassland/alkaline habitat, and the Rapid Assessment was done in valley sink scrub habitat. To locate rare plant species, historic sites as well as nearby suitable habitat were searched (historic sites were from an LSA Associates, Inc. 1994 rare plant survey report). The Park contains plant communities that are unusual in Contra Costa County, including alkali flats and valley sink scrub. Detailed results of the two vegetation sampling plots were included in field forms on file with California State Parks. Rare plant species located in Briones Valley during the surveys are noted in Table 5. In June of 2007 and Spring of 2008, California State Parks also conducted amphibian surveys at the Park. A summary of the findings can be found in Appendix C. In February 2010 surveys of the vernal pools were conducted by LSA Associates, Inc. biologists in coordination with State Parks staff. Threatened vernal pool fairy shrimp (*Branchinecta lynchi*) were documented in 16 different pools in Briones Valley during these surveys (Shafer 2010).

Plant Communities and Wildlife Habitats

A classification system for plant communities and wildlife habitats was developed for the project area based on Sawyer and Keeler-Wolf (1995), Holland (1986), Mayer and Laudenslayer (1988), and is consistent with the classification system used in the ECCCHCP (ECCCHCPA 2006). A variety of plant communities and habitats occur in the Park, including grasslands, oak savannah and woodland, mixed riparian forest, wetlands, aquatic habitats, and orchards.

Grasslands

Non-Native Annual Grassland

The predominant vegetation community found on site is non-native annual grassland. Non-native annual grassland conforms to the California annual grassland series as described in Sawyer and Keeler-Wolf (1995). It typically occurs on fine-textured loams or clays that are somewhat poorly drained. This vegetation type is dominated by annual grasses and weedy forb species, mostly of Mediterranean origin, that have replaced native perennial grasslands and scrub primarily as a result of human disturbance. Scattered native wildflower species, representing remnants of the original vegetation, may also be common.

Characteristic non-native annual grasses commonly found on site include wild oats (*Avena fatua* and *Avena barbata*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), wild barley (*Hordeum* spp.), and Italian ryegrass (*Lolium multiflorum*), among others. Common non-native forbs include yellow star thistle (*Centaurea solstitialis*), long-beaked storksbill (*Erodium botrys*), bristly oxtongue (*Picris echioides*), hedge parsley (*Torilis arvensis*), common vetch (*Vicia sativa*), bur-clover (*Medicago polymorpha*), bellardia (*Bellardia trixago*), and black mustard (*Brassica nigra*), among others. Native species include gumplant (*Grindelia camporum*), blue dicks (*Dichelostemma capitatum*), chick lupine (*Lupinus microcarpus*), and common fiddleneck (*Amsinckia menziesii* var. *intermedia*), among others.

Native Perennial Grassland

Although most of the Park consists of non-native annual grassland, a north-facing hillside in the east-central portion of the property is dominated by purple needlegrass (*Nassella pulchra*) and native forbs. The valley needlegrass grassland is classified as a sensitive plant community (DFG 2003) and is described by Holland (1986); Sawyer and Keeler-Wolf (1995) describe it as purple needlegrass series.

Alkali Grassland

Alkali grassland is typically a sparse to densely vegetated plant community consisting of relatively few, low-growing plant species. Alkali grassland can also include small stands of valley sink scrub. Within the Park, valley sink scrub was identified during earlier surveys as occurring in the eastern portion of the northernmost drainage (LSA Associates, Inc. 1994) (Map 4). Alkali grassland does not conform to any specific series as classified by Sawyer and Keeler-Wolf (1995).

Characteristic plant species of alkali grasslands occurring in the Park include saltgrass (*Distichlis spicata*), alkali heath (*Frankenia salina*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), sand-spurrey (*Spergularia* sp.), and alkali-mallow (*Malvella leprosa*), among others. Locally uncommon species, including alkali peppergrass (*Lepidium dictyotum* var. *acutidens*), were also found in this community at the Park. Crownscale (*Atriplex coronata* var. *coronata*) and San Joaquin spearscale (*Atriplex joaquiniana*), recorded on site during earlier surveys (LSA Associates, Inc. and Botanical Research Group 1993, California State Parks and CNPS 2007), are also associated with this vegetation community.

Features commonly referred to as alkali scalds are frequently associated with alkali grasslands. Alkali scalds are relatively barren areas with a saline or alkaline crust on the soil surface, supporting little or no vegetation.

Ruderal Grassland

Ruderal grasslands are disturbed areas characterized by sparse non-native, typically weedy vegetation. Where vegetation is present, species that tend to colonize quickly after disturbance are typical, such as black mustard (*Brassica nigra*), thistle (*Cirsium* spp.), and wild radish (*Raphanus sativa*). Ruderal grassland does not conform to any specific series as classified by Sawyer and Keeler-Wolf (1995).

Grassland Associated Wildlife

Grassland habitats, both native and non-native, are used by reptiles and amphibians such as western toad (*Bufo boreas*), alligator lizard (*Gerrhonotus* spp.), western fence lizard (*Sceloporus occidentalis*), California tiger salamander (*Ambystoma californiense*), common garter snake (*Thamnophis sirtalis*), and western rattlesnake (*Crotalis viridis*). Birds commonly using grassland habitats include: burrowing owl (*Athene cunicularia*), horned lark (*Eremophila alpestris*), prairie falcon (*Falco mexicanus*), golden eagle (*Aquila chrysaetos*), and western meadowlark (*Sturnella neglecta*). Annual grasslands also provide important foraging habitat for the turkey vulture (*Cathartes aura*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), white-tailed kite (*Elanus leucurus*), and red-tailed hawk (*Buteo jamaicensis*).

A large number of mammal species such as the California vole (*Microtus californicus*), deer mouse (*Peromyscus maniculatus*), Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*), black-tailed jackrabbit (*Lepus californicus*), American badger (*Taxidea taxus*), San Joaquin kit fox (*Vulpes macrotis mutica*), and coyote (*Canis latrans*) use grassland habitats. Small rodents attract raptors (i.e., birds of prey) such as owls, which hunt at night, as well as day-hunting raptors, such as red-tailed hawk and northern harrier. Black-tailed deer (*Odocoileus hemionus*) also use grasslands.

Oak Savannah and Woodland

Oak savannah is typically defined as grassland with a tree canopy cover of 5 to 10 percent, and oak woodland is defined as having a canopy cover of greater than 10 percent. Scattered mature blue oaks (*Quercus douglasii*) and valley oaks (*Quercus lobata*) are located at the Park in isolated locations. Although areas were mapped as blue oak woodland (see Map 4), most areas probably should be classified as oak savannah due to their open canopies based on aerial photo interpretation. This community conforms to the blue oak series as described in Sawyer and Keeler-Wolf (1995).

Oak Savannah and Woodland Associated Wildlife

In general oak-dominated habitats support a wide variety of wildlife species (Mayer and Laudenslayer 1988). This rich fauna largely results from acorn production and the availability of cavities for breeding and cover in large oak trees. In fact, the presence of at least some oaks in any habitat type increases wildlife abundance (CalPIF 2002). Typical wildlife that use this habitat in the Park include California slender salamander (*Batrachoseps attenuatus*), western rattlesnake, acorn woodpecker (*Melanerpes formicivorus*), California quail (*Callipepla californica*), western bluebird (*Sialia mexicana*), and oak titmouse (*Baeolophus inornatus*).

Mixed Riparian Forest

Mixed riparian forest occurs along the banks of Marsh Creek within the eastern portion of the Park and outside the Park, adjacent to the eastern property boundary (see Map 4). It is composed of such tree species as Fremont cottonwood (*Populus fremontii*), western sycamore (*Platanus racemosa*), valley oak, red willow (*Salix laevigata*), and arroyo willow (*Salix lasiolepis*). Northern California black walnut (*Juglans californica* var. *hindsii*), here presumed to be waifs from agricultural stock, are also present in scattered locations. The understory is composed of shrubs such as Himalayan blackberry (*Rubus discolor*), California sagebrush (*Artemisia californica*), mugwort (*Artemisia douglasiana*), mule fat (*Baccharis salicifolia*), and blue elderberry (*Sambucus mexicana*). Minor amounts of emergent freshwater marsh vegetation such as umbrella sedge (*Cyperus eragrostis*) and rush (*Juncus* spp.) are also found along the creek channel. This community conforms to the Fremont cottonwood series as described in Sawyer and Keeler-Wolf (1995). Great Valley cottonwood riparian forest is considered a sensitive natural community by the California Department of Fish and Game (DFG) (2003) and is also regulated by the DFG.

Mixed Riparian Forest Associated Wildlife

Riparian woodlands are particularly valuable in their function as an interface between aquatic and terrestrial communities. Riparian zones provide nutrients, shade, and bank stabilization for aquatic systems, as well as nesting and foraging habitat, migration corridors, and refuges for wildlife. Common mammals found in this habitat type include raccoon (*Procyon lotor*), gray fox (*Urocyon cinereoargenteus*), striped skunk (*Mephitis mephitis*), and dusky-footed woodrat (*Neotoma fuscipes*). Numerous birds are also found in this habitat, such as Wilson's warbler (*Wilsonia pusilla*), yellow warbler (*Dendroica petechia*), red-shouldered hawk (*Buteo lineatus*), song sparrow (*Melospiza melodia*), and black-headed grosbeak (*Pheucticus melanocephalus*). Shrubs and fallen logs provide cover for smaller mammals, reptiles, and amphibians that may forage among the vegetation and leaf litter.

Wetlands

Wetlands are sensitive habitats dominated by herbaceous species that grow in perennially or seasonally flooded, ponded, or saturated soil conditions.

Permanent Wetlands

The permanent wetlands in the Park are characterized as freshwater marshes and seeps with a year-round water source. They contain permanently saturated soils that support few to several perennial and annual herbaceous hydrophytic plant species, plants that grow partly or wholly in water. These aquatic vegetation communities are generally found in areas that typically lack flowing surface water. Such communities are usually found where the water table is at or near the surface, or where subsurface seepage collects near the surface, such as along the toe of stream banks, on the lower portions of steep slopes, along fault lines or geological contacts, or at the heads of small swales. Permanent wetlands conform to the cattail series as described by Sawyer and Keeler-Wolf (1996).

Vegetation characterized by dense cattails (*Typha* sp.) was observed in Marsh Creek Reservoir adjacent to the Park and at a few stock ponds. Similar vegetation can be expected to develop in other stock ponds where standing water remains for sufficient periods, if grazing pressure is not too severe. Small, scattered stands of freshwater marsh vegetation were also observed along the channel of Marsh Creek, where they are associated with riparian woodland.

Seasonal Wetland

This plant association typically resembles a wetland community only following the wet season; it dries up rapidly in the summer and the wetland indicator species become dormant. During the dry season, such sites may not be readily recognizable as wetlands because upland grasses and forbs typical become established. A vernal pool is a subtype of seasonal wetland. Because of their unique hydrology, vernal pools support specialized plants adapted to growing in these stressful conditions. Seasonal wetland habitat does not conform to any specific series as classified by Sawyer and Keeler-Wolf (1995); however, the northern hardpan vernal pool series is recognized in their classification system.

Plant species found associated with seasonal wetlands in the Park include natives such as dwarf peppergrass (*Lepidium latipes* var. *latipes*), stipitate popcorn-flower (*Plagiobothrys stipitatus* var. *micranthus*), and dense willow-herb (*Epilobium densiflorum*), as well as non-native species such as rabbitsfoot grass (*Polypogon monspeliensis*), brass buttons (*Cotula coronopifolia*), swamp grass (*Crypsis schoenoides*), and loosestrife (*Lythrum hyssopifolia*).

Alkali Wetlands

Alkali wetlands support ponded or saturated soil conditions and occur as perennial or seasonally wet features on alkali soils. The vegetation of alkali wetlands is composed of halophytic plant species (plants that are adapted to saline environments) adapted to both wetland conditions and high salinity levels. Typical species include those common to both seasonal and alkali wetlands, such as salt grass (*Distichlis spicata*), alkali heath (*Frankenia salina*), and common spikeweed (*Centromadia pungens*).

Placeholder page

Map 10 Biological Resources

Placeholder back of Map 10

Wetland Associated Wildlife

Wildlife typically associated with wetlands in the area include amphibians, such as the western toad, Pacific treefrog (*Pseudacris regilla*), and California tiger salamander (*Ambystoma californiense*), and birds, such as black phoebe (*Sayornis nigricans*), great blue heron (*Ardea herodias*), and great egret (*Ardea alba*). Emergent vegetation in the permanent wetlands in the Park may support breeding songbirds such as marsh wren (*Cistothorus palustris*), song sparrow (*Melospiza melodia*), and red-winged blackbird (*Agelaius phoeniceus*) which have been found breeding in these areas of the Park (DPR 2007).

Aquatic Habitats

Aquatic habitats include open water areas that do not include emergent or riparian vegetation. In the Park these include ponds and streams, as described below.

Streams

Several streams are present in the Park. Most are categorized as intermittent or ephemeral streams that have seasonal flows, which depend primarily on groundwater and rainfall, respectively. Marsh Creek is a perennial stream and has flowing water year round during a typical year. Most of Marsh Creek is located outside of the Park, between the Briones Valley and Eastern Hills sections of the Park, but portions of the creek are in the Park, downstream of Marsh Creek Reservoir.

Ponds

Ponds are small perennial or seasonal water bodies. Ponds may occur naturally or may have been created or expanded for livestock use (stock ponds). Several ponds occur in and adjacent to the Park as shown on Map 4.

Aquatic Habitat Associated Wildlife

Like the riparian and wetland habitats, aquatic habitat is important because it provides essential habitat for both terrestrial and aquatic species. Many upland terrestrial species rely on seasonal and perennial streams as water sources. In summer and early fall, perennial streams provide the only available water in an otherwise dry landscape. In addition, ephemeral, intermittent, and perennial streams provide habitat for aquatic macroinvertebrates, which are an important food source for local and downstream populations of fish, birds, and other animals. Ponds provide breeding habitat for amphibians such as Pacific treefrogs, California red-legged frogs, and California tiger salamanders. They may also provide seasonal habitat for waterfowl and wading birds, as well as a water source for other wildlife.

Orchard

Orchards are those areas planted in fruit-bearing trees and occurred primarily along the eastern edge of the site. Orchards may provide habitat for common wildlife species such as raccoon, opossum (*Didelphis virginiana*), California vole (*Microtus californicus*), Brewer's blackbird (*Euphagus cyanocephalus*), American crow (*Corvus brachyrhynchos*), and yellow-billed magpie (*Pica nuttalli*).

Special-status Plant Species

Based on a literature review and habitats present, 24 special-status plant species were considered to have some potential to occur within the region or have been recorded historically in the vicinity of the Park (Table

5). Potentially suitable habitat is present in the Park for eight special-status plant species. Most of these species are associated with non-native annual grassland, alkali grassland, valley sink scrub, and northern hardpan vernal pools found on site. Species that are known or are likely to occur on site are discussed in more detail below.

Rare plant surveys conducted by LSA Associates, Inc. in 1993 and 1994 documented the following three special-status plant species on the Cowell Ranch property, including Park property: the San Joaquin spearscale (*Atriplex joaquiniana*); big tarplant (*Blepharizonia plumosa*); and crownscale (*Atriplex coronata* ssp. *coronata*) listed in Table 5.

San Joaquin Spearscale

San Joaquin spearscale is a CNPS List 1B species that inhabits meadows, seeps, and grasslands associated with chenopod or alkaline scrub plant communities with highly alkaline, clay soils. It is distributed throughout the southern Sacramento Valley, the San Joaquin Valley, and the eastern side of the North Coast Range.

A 1993 rare plant and floristic survey, conducted by Botanical Research Group (LSA 1993), took place in the month of July and mapped San Joaquin spearscale in four locations. Three populations of 350, 1200, and 500 plants were located in the west and central portions of Briones Valley, and a fourth population was found in the northeast corner of the property outside the Park, now being developed as a residential housing community (the Vineyards at Marsh Creek). In 1994, LSA Associates, Inc. conducted follow-up surveys to better capture the flowering periods of *Atriplex* species, which normally bloom in late summer and early fall. This survey presumably was more accurate than the earlier survey and mapped San Joaquin spearscale in three locations, all in the eastern end of Briones Valley.

In 2003, Sycamore Associates LLC conducted focused surveys for special-status plant species on the land that was previously part of Cowell Ranch, but is now part of the Vineyards development. These surveys were conducted on multiple dates throughout the year and found only a single San Joaquin spearscale plant. Other populations have been identified during surveys in the Los Vaqueros area south of the Park and plants were identified in Briones Valley during California State Parks and CNPS surveys in 2007.

Big Tarplant

Big tarplant is a CNPS List 1B species that inhabits annual grasslands, usually on slopes, with clay to clay-loam soils. This species is endemic to the Mount Diablo foothills and is found primarily in eastern Contra Costa, eastern Alameda, and western San Joaquin counties.

In 1994 rare plant and floristic surveys conducted on the Cowell Ranch property, four populations of big tarplant, varying in size from 50 to 10,000 individuals and in a few to several disjunct stands, were found (LSA 1994). Stands were mapped along the northern boundary and within the southern and eastern sections of the property. The larger populations were consistently observed on relatively steep (30 – 40 degrees), north to northeast facing slopes; no plants were seen on hilltops or in the bottom of drainages. Areas of this species within the Park boundary can be found on Map 10.

Prior surveys did not address the occurrence of big tarplant, as it was not listed as a sensitive species at the time, and the more recent survey (Sycamore Associates, LLC 2003) stated that no potential for occurrence existed at the Vineyards site.

**Table 5
Marsh Creek State Park Special-Status Plant Species**

SPECIES	ASSOCIATED HABITAT	POTENTIAL FOR OCCURRENCE	CNPS	DFG	USFWS
PLANTS					
<i>Amsinckia grandiflora</i> Large-flowered fiddleneck	Cismontane woodland and grasslands	Unlikely to occur. Presumed extirpated from Contra Costa County (ECCCHCPA 2006).	1B	CE	FE
<i>Arctostaphylos auriculata</i> Mount Diablo manzanita	Chaparral (sandstone)	Unlikely to occur. No suitable habitat on site	1B	--	--
<i>Arctostaphylos auriculata</i> Contra Costa manzanita	Chaparral (rocky)	Unlikely to occur. No suitable habitat on site	1B	--	--
<i>Aster lentus</i> Suisun Marsh aster	Marshes and swamps (brackish and freshwater)	Unlikely to occur. No suitable habitat is present and not included in CCCHCP (ECCCHCPA 2006).	1B	--	--
<i>Astragalus tener</i> var. <i>tener</i> Alkali milk-vetch	Grasslands, vernal pool, alkali flats	Unlikely to occur. Presumed extirpated from Contra Costa County (CNPS 2001).	1B	--	--
<i>Atriplex cordulata</i> Heartscale	Chenopod scrub, meadows and seeps, grasslands (sandy); saline or alkaline soils	Unlikely to occur. Identified in 1993, but 1994 surveys showed it was likely crownscale and misidentified in the previous survey (LSA 1993, 1994). Not included in ECCCHCP (ECCCHCPA 2006).	1B	--	--
<i>Atriplex coronata</i> var. <i>coronata</i> Crownscale	Chenopod scrub, alkaline soils, Valley and foothill grassland/alkaline, Vernal pools	Known to occur. Detected during botanical surveys in Briones Valley (LSA 1993, DPR and CNPS 2007).	4	--	--
<i>Atriplex depressa</i> Brittlescale	Chenopod scrub, meadows and seeps, playas, grasslands, vernal pools; alkaline and clay soils	Could occur. Although not detected in previous botanical surveys, suitable habitat is present.	1B	--	--
<i>Atriplex joaquiniana</i> San Joaquin spearscale	Chenopod scrub, meadows and seeps, playas, Valley and foothill grassland/alkaline soils	Known to occur. Detected during botanical surveys (LSA 1993, 1994) and in Briones Valley (DPR and CNPS 2007).	1B	--	--
<i>Blepharizonia plumosa</i> Big tarplant	Grasslands	Known to occur. Detected during botanical surveys (LSA 1993, 1994).	1B	--	--

**Table 5
Marsh Creek State Park Special-Status Plant Species**

SPECIES	ASSOCIATED HABITAT	POTENTIAL FOR OCCURRENCE	CNPS	DFG	USFWS
<i>Calochortus pulchellus</i> Mount Diablo fairy-lantern	Chaparral, cismontane woodland, riparian woodland, and grasslands	Could occur. Although not detected in previous botanical surveys, suitable habitat is present.	1B	-	-
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant	Grasslands; alkaline soils	Unlikely to occur. Not included in ECCCHCP (ECCCHCPA 2006).	1B	-	-
<i>Delphinium recurvatum</i> Recurved larkspur	Chenopod scrub, cismontane woodland, playas, grasslands; alkaline soils	Could occur. Although not detected in previous botanical surveys, suitable habitat is present.	1B	-	-
<i>Erodium macrophyllum</i> Round-leaved filaree	Cismontane woodland, grassland; clay soils	Could occur. Although not detected in previous botanical surveys, suitable habitat is present.	2	-	-
<i>Eschscholzia rhombipetala</i> Diamond-petaled California poppy	Valley/foothill grassland; alkaline, clay slopes and flats	Unlikely to occur. Presumed extirpated from Contra Costa County (CNPS 2001).	1B	-	-
<i>Eriogonum truncatum</i> Mount Diablo Buckwheat	Chaparral, coastal scrub, Valley and foothill grassland; sandy soils	Unlikely to occur. Historical range may have included Park. Presumed extirpated until rediscovered in May 2005 in Mount Diablo State Park.			
<i>Helianthella castanea</i> Diablo helianthella	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, grasslands	Could occur. Although not detected in previous botanical surveys, suitable habitat is present.	1B	-	-
<i>Hesperolinon breweri</i> Brewer's western flax	Chaparral, cismontane woodland, grassland; mostly serpentine soils	Could occur. Although not detected in previous botanical surveys, suitable habitat is present.	1B	-	-
<i>Hibiscus lasiocarpus</i> Rose-mallow	Marshes and swamps (freshwater)	Unlikely to occur. Not included in ECCCHCP (ECCCHCPA 2006).	2	-	-
<i>Lasthenia conjugens</i> Contra Costa goldfields	Cismontane woodland, alkaline playas, vernal pool, grasslands	Unlikely to occur. Presumed extirpated from the ECCCHCP inventory area (ECCCHCPA 2006).	1B	-	FE
<i>Madia radiata</i> Showy madia	Cismontane woodland, grasslands	Unlikely to occur. Presumed extirpated from Contra Costa County (CNPS 2001).	1B	-	-

**Table 5
Marsh Creek State Park Special-Status Plant Species**

SPECIES	ASSOCIATED HABITAT	POTENTIAL FOR OCCURRENCE	CNPS	DFG	USFWS
<i>Malacothamnus hallii</i> Hall's bush mallow	Chaparral, coastal scrub	Unlikely to occur. No suitable habitat on site.	1B	–	–
<i>Senecio aphanactis</i> Rayless ragwort	Cismontane woodland, chaparral, coastal scrub; alkaline soils	Unlikely to occur. Not included in ECCCHCP (ECCCHCPA 2006).	2	–	–
<i>Tropidocarpum capparideum</i> Caper-fruited tropidocarpum	Grasslands; alkaline soils	Unlikely to occur. Presumed extirpated throughout its range; last seen in 1957 (CNPS 2001).	1A	–	–
<i>Viburnum ellipticum</i> Oval-leaved viburnum	Chaparral, cismontane woodland, lower montane coniferous forest	Unlikely to occur. No suitable habitat on site.	2	–	–

Source: CNDDDB 2006

Notes:

California Native Plant Society (CNPS)

1A – Plants presumed extinct in California.

1B – Plants rare, threatened, or endangered in California and elsewhere.

2 – Plants rare, threatened, or endangered in California but more common elsewhere.

4 – Plants of limited distribution – a watch list.

California Department of Fish and Game (DFG)

CE - State listed, Endangered

CT - State Listed, Threatened

CSC - California Species of Special Concern

U.S Fish and Wildlife Service (USFWS)

FE - Federal Endangered

FT - Federal Threatened

FC - Federal Candidate

PT - Proposed for listing as Threatened

Potential for Occurrence Definitions:

Unlikely to occur: Potentially suitable habitat present, but species unlikely to be present on the project site because of current status of the species and very restricted distribution.

Could occur: Suitable habitat is available at the project site; however, there are few or no other indicators that the species might be present.

Likely to occur: Habitat conditions, behavior of the species, known occurrences in the project vicinity, or other factors indicate a relatively high likelihood that the species would occur at the project site.

Known to occur: The species, or evidence of its presence, was observed at the project site during reconnaissance-level surveys or was reported by others.

Special-Status Wildlife

A complete list of special-status species known to occur, or with potential to occur, at the Park is presented in Table 6. Based on the results of a CNDDDB search and prior biological inventories completed at the Park and adjacent properties, it was determined that the Park provides important habitat for the following special-status wildlife species and that these species should be considered significant resources based on

their known occurrence at the Park: vernal pool fairy shrimp, California tiger salamander (*Ambystoma californiense*), western pond turtle (*Actinemys marmorata*), California red-legged frog (*Rana aurora draytonii*), and burrowing owl (*Athene cunicularia*). In addition, nesting and wintering habitat for special-status raptors should be considered as a significant resource value at the Park. Future biological studies and additions to the state and federal lists of threatened and endangered species could result in additional species meeting the significant resource values criteria. As defined at the beginning of this section, significant resource values include those resources that are important to the essential character of the unit, are regionally significant, or are on recognized protection lists or otherwise designated with special-status by a recognized authority.

Species that are known or are likely to occur on site are discussed in more detail below.

Table 6
Marsh Creek State Park Special-Status Wildlife Species

SPECIES	ASSOCIATED HABITAT	POTENTIAL FOR OCCURRENCE	DFG	USFWS
INVERTEBRATES				
<i>Branchinecta longiantenna</i> Longhorn fairy shrimp	Vernal pools and swales	Could occur. Although potentially suitable habitat is present, the species was not detected during wet season surveys in 1996-1997 and 1997-1998 (ECS 1998).	-	FE
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	Vernal pools and swales	Known to occur.	-	FT
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	Vernal pools and swales	Could occur. Not detected during wet season surveys in 1996-1997 and 1997-1998 (ECS 1998). Although ponds were described at the time of the surveys as being too shallow, potentially suitable habitat may be present during wetter than average years.	-	FE
AMPHIBIANS AND REPTILES				
<i>Ambystoma californiense</i> California tiger salamander	Vernal pools and stock ponds in grasslands, with nearby ground burrows	Known to occur. Adults and larvae observed in several locations on site during surveys in 2003. Larvae also observed during California State Parks surveys in 2007 and 2008.	CT	FT
<i>Actinemys (=Clemmys) marmorata</i> Western pond turtle	Ponds, marshes, streams, and irrigation ditches	Known to occur. Adults observed in Marsh Creek. Likely occurs in other suitable habitat on site.	CSC	-
<i>Anniella pulchra pulchra</i> Silvery legless lizard	Areas with sandy or loose, loamy soils under sparse vegetation in chaparral or woodlands	Could occur. Potentially suitable habitat on site.	CSC	-

**Table 6
Marsh Creek State Park Special-Status Wildlife Species**

SPECIES	ASSOCIATED HABITAT	POTENTIAL FOR OCCURRENCE	DFG	USFWS
<i>Masticophis flagellum ruddocki</i> San Joaquin whipsnake	Open and dry grassland, salt scrub with burrows	Unlikely to occur. General range includes west side of the San Joaquin Valley and on the Valley floor in Kern County. Not included in ECCCHCP.	CSC	–
<i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	Scrub or chaparral habitat and adjacent oak woodlands and grasslands	Unlikely to occur. Very little suitable scrub habitat on or adjacent to the site.	CT	FT
<i>Phrynosoma coronatum</i> (frontale population) Coast (California) horned lizard	Variety of upland habitats that have low-bushes for cover, openings for sunning, and loose soil for burrows	Unlikely to occur. Not included in ECCCHCP.	CSC	–
<i>Rana aurora draytonii</i> California red-legged frog	Stock ponds, permanent aquatic habitats	Known to occur. Four adults observed in a stock pond on site in 1993. Larvae observed in a stock pond on site during California State Parks 2007 surveys.	CSC	FT
BIRDS				
<i>Agelaius tricolor</i> Tricolored blackbird	Freshwater marsh, riparian habitat, agricultural fields	Likely to occur. Breeding colony at Marsh Creek Reservoir; may forage on site.	CSC	–
<i>Aquila chrysaetos</i> Golden eagle	Grasslands, open woodlands	Known to occur. Observed foraging on site. Although nesting habitat on site appears marginal, known to nest in nearby woodlands.	CSC, FP	–
<i>Athene cunicularia</i> Burrowing owl	Open grasslands w/low vegetation and burrows	Known to occur. Detected during surveys in 1993 on site, and in multiple locations adjacent to site in 2003.	CSC	–
<i>Buteo swainsoni</i> Swainson's hawk	Oak savannah, riparian areas, open grasslands or agricultural fields	Known to occur. Suitable foraging and nesting habitat on site (DFG 2007).	CT	–
<i>Circus cyaneus</i> Northern harrier	Grasslands, marshes, agricultural fields	Known to occur. Suitable foraging and nesting habitat on site.	CSC	–
<i>Elanus leucurus</i> White-tailed kite	Open meadows, grasslands, and agricultural fields	Likely to occur. Suitable foraging and nesting habitat on site.	FP	–

**Table 6
Marsh Creek State Park Special-Status Wildlife Species**

SPECIES	ASSOCIATED HABITAT	POTENTIAL FOR OCCURRENCE	DFG	USFWS
<i>Eremophila alpestris actia</i> California horned lark	Grasslands, agricultural fields	Known to occur. Suitable foraging and nesting habitat on site.	CSC	--
<i>Falco mexicanus</i> Prairie falcon	Grasslands, open habitats with nearby cliffs	Known to occur. No suitable nesting habitat, but observed foraging on site.	CSC	--
<i>Lanius ludovicianus</i> Loggerhead shrike	Grasslands, savanna and riparian woodlands, scrubs and washes	Known to occur. Suitable nesting and foraging habitat on site (DPR 2007).	CSC	--
MAMMALS				
<i>Antrozous pallidus</i> Pallid bat (roosting)	Crevices in rocks, caves, mine, trees hollows, buildings, and bridges	Could occur. Buildings and abandoned mine could provide suitable roosting habitat.	CSC	--
<i>Taxidea taxus</i> American badger	Open grassland, shrub, woodland areas; friable soils; rodent food source	Could occur. Suitable habitat present, but not detected on site.	CSC	--
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	Open grassland, shrub, woodland areas; friable soils; rodent food source	Likely to occur. Site is part of historical range, and a solitary kit fox was observed immediately south of the site in 2008.	CE	FE

Source: CNDDDB 2006

Notes:

California Department of Fish and Game (DFG)

CT - State listed, Threatened

CSC - California Species of Special Concern

FP - California Fully Protected

U.S. Fish and Wildlife Service (USFWS)

FE - Federal Endangered

FT - Federal Threatened

Potential for Occurrence Definitions:

Unlikely to occur: Potentially suitable habitat present, but species unlikely to be present on the project site because of current status of the species and very restricted distribution.

Could occur: Suitable habitat is available at the project site; however, there are few or no other indicators that the species might be present.

Likely to occur: Habitat conditions, behavior of the species, known occurrences in the project vicinity, or other factors indicate a relatively high likelihood that the species would occur at the project site.

Known to occur: The species, or evidence of its presence, was observed at the project site during reconnaissance-level surveys or was reported by others.

Although considered unlikely to occur on the site, San Joaquin kit fox is also discussed in more detail below due to the regional importance of this state and federally listed species.

Invertebrates

Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp is federally listed as threatened. The majority of known populations inhabit vernal pools with clear to tea-colored water, most commonly in grass or mud bottomed swales or basalt flow depression pools in unplowed grasslands; however, at least one population reportedly occurs in sandstone rock outcrops and another population in alkaline vernal pools (USFWS 2006). This species has a wide range and a sporadic distribution within vernal pool complexes wherein the majority of pools in a given complex typically are not inhabited by the species.

On the Cowell Ranch property which included lands beyond the boundary of the Park, LSA Associates, Inc. (1993) collected vernal pool fairy shrimp from eleven separate waterbodies in the northern and eastern sections and suitable habitat reportedly exists in most seasonal wetland habitat on the property. Starting in 1996, Dr. Dick Arnold conducted surveys according to the USFWS *Interim Survey Guidelines for Vernal Pool Brachiopods* (1996b) at the Cowell Ranch (Entomological Consulting Services, Ltd. [ECS] 1998). The surveys occurred during the 1996-1997 and 1997-1998 wet seasons and found vernal pool fairy shrimp in seasonal wetlands located in Briones Valley and northeast sections of the property (ECS 1998; Sycamore 2003). The survey also identified suitable habitat. In 2003, Dr. Arnold conducted a follow-up habitat assessment for the project site and observed individuals presumed to be *B. lynchi* in a pool located in a portion of the project site where species were observed to occur in 1997 and 1998. In 2010, LSA Associates, Inc. surveyed vernal pools in Briones Valley in coordination with State Parks and documented vernal pool fairy shrimp in 16 different waterbodies (Shafer 2010).

Amphibians and Reptiles

California Red-legged Frog

The California red-legged frog is federally listed as threatened and is a California Species of Special Concern. California red-legged frog occurs from sea level to elevations near 5,000 feet msl. It has been extirpated from 70 percent of its former range and now is found primarily in coastal drainages of central California, from Marin County south to northern Baja California. Potential threats to the species include elimination or degradation of habitat from land development and land use activities, and habitat invasion by non-native aquatic species (USFWS 2002).

California red-legged frog requires a variety of habitat elements with aquatic breeding areas typically located within a matrix of riparian and upland dispersal habitats. Breeding sites of California red-legged frog include freshwater habitats such as pools and backwaters within streams and creeks, ponds, marshes, springs, and lagoons. Additionally, California red-legged frogs frequently breed in artificial impoundments such as stock ponds (USFWS 2002) and are often found hiding in dense emergent vegetation along the edges of pools or floating at the water's surface with just their eyes showing.

Within the Cowell Ranch property, suitable habitat for California red-legged frog occurs in the spring-fed stock ponds and in pools along Marsh Creek. Marsh Creek Reservoir also provides California red-legged frog habitat, but an abundant population of bullfrogs makes the chance of California red-legged frogs successfully reproducing there unlikely. During surveys conducted by LSA Associates, Inc. during July 1993, four California red-legged frogs were found in one spring-fed stock pond. These frogs were again observed on several other site visits through mid-September; however, no larvae or evidence of breeding were detected.

California red-legged frog larvae were found in a stock pond at the Park during surveys conducted by California State Parks in 2007, documenting breeding for this species at the site.

California Tiger Salamander

The California tiger salamander is federally and state listed as threatened. This large terrestrial salamander is generally restricted to grasslands below 2,000 feet. California tiger salamanders move from subterranean refuge sites (e.g., small mammal burrows) to breeding sites (e.g., vernal pools, seasonal ponds) following relatively warm winter and spring rains (October through May). Tiger salamanders can successfully breed in artificial impoundments (e.g., stock ponds) as long as they do not contain fish. Because tiger salamanders have been known to travel long distances to reach suitable breeding ponds, the DFG considers upland habitat within 2 kilometers (km) (1.24 mile) of potential breeding locations as potential habitat (USFWS and DFG 2003). A minimum of 10 weeks is required to complete development through metamorphosis (Jennings and Hayes 1994).

Detailed surveys conducted by LSA Associates, Inc. in 1993, resulted in the capture of larval California tiger salamander in twenty-nine separate waterbodies on the Cowell Ranch. One adult female in breeding condition was captured in a pool at the east end of the Ranch, near the junction of Deer Valley and Briones Valley roads. Suitable breeding habitat exists in numerous stock ponds and cutoff oxbows scattered throughout the project site. The primarily non-native grasslands with scattered oak trees surrounding the waterbodies are suitable upland habitat for adult salamanders, although few ground squirrel burrows were found at the time. During surveys by Sycamore Associates, LLC in 2003; however, several concentrations of ground squirrel burrows were identified as suitable upland habitat. This survey also identified numerous adult California tiger salamander in different portions of the project site while conducting protocol-level nocturnal surveys. Additionally, there are several reported occurrences of adult and larval tiger salamanders on or adjacent to the Cowell Ranch and many more in the surrounding areas (CNDDDB 2006).

Western Pond Turtle

The western pond turtle is a California Species of Special Concern. This aquatic turtle is found in a variety of habitats including lakes, rivers, streams, and stock ponds. They often bask on logs, mud banks or mats of vegetation. Females travel from aquatic sites into open, grassy areas to lay eggs in a shallow nest and it appears most hatchlings over-winter in the nest (Holland 1992; Jennings and Hayes 1994) so the young are less susceptible to winter flood events and predation from predators such as raccoons (Rathbun, et al. 1992). Two adult western pond turtles were observed upstream of Marsh Creek Reservoir during 1993 surveys by LSA Associates, Inc. Suitable habitat for western pond turtle occurs in the spring-fed stock ponds and along the banks of Marsh Creek and Marsh Creek Reservoir.

Birds

Raptors

Eastern Contra Costa County is recognized as a very important wintering habitat for many raptor species. The grassland habitat on site provides suitable foraging habitat during the nonbreeding season, as well as the breeding season. Several special-status raptor species have been observed using on-site habitats for shelter and foraging, including the following California Species of Special Concern: Cooper's hawk (*Accipiter cooperii*), golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis*), northern harrier (*Circus*

cyaneus), white-tailed kite (*Elanus leucurus*), merlin (*Falco columbarius*), prairie falcon (*Falco mexicanus*), and osprey (*Pandion haliaetus*).

Several mature oak trees are scattered throughout the grassland areas and mature cottonwoods, valley oaks, and sycamore trees line the banks of Marsh Creek. Although suitable nesting trees on site are relatively limited, raptors nesting in nearby woodlands may use the site for foraging. Special-status raptors that may nest on site include: Swainson's hawk, white-tailed kite, northern harrier and burrowing owl, and are discussed in more detail below.

Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*), California state listed as threatened, is likely to occur on site. They are known to occur in the Brentwood area (DFG 2002), and on April 16, 2003, H. T. Harvey & Associates' biologists observed several Swainson's hawks flying over the Park, and a probable nest was located immediately offsite along Marsh Creek, adjacent to the northeastern Park boundary. In 2004, an active nest was observed near Oakley (in Brentwood 7.5-minute USGS quad). The pastures present on Cowell Ranch provide suitable foraging habitat and the large trees along Marsh Creek provide potential nesting habitat. In 2006, two Swainson's hawks were observed flying over agricultural fields by the intersection of Concord Avenue and Marsh Creek Road, close to the Park. In 2007, Swainson's hawks were observed at a nest along Marsh Creek within the Park (pers. comm. with Jeff Alvarez and DFG).

White-tailed Kite and Northern Harrier

White-tailed kite is a fully protected species under the Fish and Game Code. Northern harrier is a California Species of Special Concern. The scattered trees in the oak savannah and riparian forest provide suitable nesting habitat for white-tailed kite in the Park. Northern harrier could nest in grasslands in the Park.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is a California Species of Special Concern that uses rodent or other burrows for roosting and nesting cover. Grasslands and open areas of shrubs are the primary habitat used by this species, which is often seen standing near the burrow entrance in the daytime.

Suitable habitat for burrowing owls was identified throughout the Park. A single burrowing owl was observed on, or near, the community college site (LSA 1993). During 2003, both a habitat assessment and protocol-level (CDFG 1995, California Burrowing Owl Consortium 1997) winter and nesting season focused surveys were conducted. The surveys recorded a total of nine burrowing owls on the Cowell Ranch site which included land outside of the current Park boundary, now being developed as residential housing (Sycamore Associates LLC 2003). Ground squirrel burrow concentrations were mapped in thirteen areas on the site. Burrowing owl signs (i.e., pellets, feathers, and whitewash) were found in seven of thirteen survey areas during winter surveys. One breeding pair was observed during the nesting season surveys in the northeast area of the Cowell Ranch property (Sycamore Associates, LLC 2003). Evidence of burrowing owls has also been observed around the dam of Marsh Creek Reservoir (Contra Costa County Flood Control and Water Conservation District 2011).

California Horned Lark and Loggerhead Shrike

California horned lark (*Eremophila alpestris actia*) and loggerhead shrike (*Lanius ludovicianus*), both California Species of Special Concern, have been observed on the site (Sycamore Associates, LLC 2003). Horned larks nest on the ground in open areas, grasslands, or agricultural areas. Loggerhead shrikes require open grassland or agricultural areas with scattered shrubs or small trees for perching, hunting, and nesting. The grasslands in the Park provide suitable nesting and foraging habitat for California horned lark and loggerhead shrike. Shrikes may also nest in the riparian forest areas along Marsh Creek.

Tricolored Blackbird

The tricolored blackbird is a California Species of Special Concern. Tricolored blackbirds nest in small (hundreds of birds) to large colonies (hundred-thousands of birds) and typically use marsh habitats or thorny shrubs such as blackberry brambles or thistle stands. A tricolored blackbird nesting colony has historically occurred at Marsh Creek Reservoir, adjacent to the Park. Tricolored blackbirds are likely to use the grassland habitat in the Park for foraging.

Mammals

San Joaquin Kit Fox

The San Joaquin kit fox (*Vulpes macrotis mutica*) is federally and state listed as endangered. San Joaquin kit fox prefer habitats of open or sparsely vegetated areas with gentle slopes and loose soils. In the northern portion of their range, they occupy grazed grasslands and open oak savannahs or woodlands.

Historically, the San Joaquin kit fox was reported to occur throughout the semi-arid habitats of the southern Central Valley and adjacent low foothills from Kern County to only as far north as Tracy (Grinnell et al. 1937, Orloff et al. 1986). By 1937, however, Grinnell et al. assumed that the kit fox had most likely been extirpated from the Tracy area, and the subspecies was believed to extend only as far north as southern Stanislaus County (Grinnell et al. 1937, Clark et al. 2002).

When the San Joaquin kit fox was added to the federal endangered species list in 1967, there were no known extant occurrences in San Joaquin County or northward. In the 1970s, range-wide surveys were initiated. One of these surveys extended the range of the kit fox northward beyond Tracy to Contra Costa County (Jensen 1972, Clark et al. 2002).

Relatively few San Joaquin kit foxes have been found in the northern portion of their range within the last few decades, despite a number of surveys (Hall 1983, DFG 1983, Bell 1994). Between 1996 and 2003, only 10 potential sightings totaling 13 kit foxes were reported for the entire northern portion of the subspecies' range (Yeoman 2003).

Surveys were conducted using detection dogs in the Tracy Triangle area (the area bordered by Highways 580, 205, and 5) in 2001 (Clark et al. 2002), and along the Delta Mendota Canal in Contra Costa and northern San Joaquin Counties, including the Tracy Triangle area, in 2001 and 2002 (Clark et al. 2003). All scat from the detection dog surveys was collected, genotyped, and found to be from red fox. No signs of kit fox were found during these surveys. These studies concluded that if kit foxes were present in the areas surveyed, they either occurred at very low densities rendering detection difficult, or they only occurred intermittently in these areas (Clark et al. 2003).

The current status of the San Joaquin kit fox in the Park is not conclusive, but past surveys for potential habitat did not produce evidence of the kit fox residing on the property. The first survey (LSA Associates, Inc. 1994) was a visual reconnaissance survey for suitable habitat. The survey identified 35 potential den sites; however, most were ground squirrel burrows and five had a large diameter (>9 inches), indicating coyote use. There were no dens found that showed any evidence of kit fox use. A subsequent survey (Sycamore Associates LLC 2003) assessed suitable habitat within the northeast section of the property prior to the Vineyards development. This survey incorporated tracking medium and camera stations around potential dens for 39 nights, but no kit fox or sign was detected during the course of the survey. A detailed study of the northern range of the San Joaquin kit fox (H.T. Harvey and Associates 1997), based on historical sighting records, shows the Park located along the northern edge of the geographic range they developed for the kit fox.

Documented historical sightings include numerous reports of the kit fox in adjacent and surrounding areas from 1972 – 2002. Early sightings noted in a report on the biological resources at Cowell Ranch by LSA, Inc. (1993) include Jensen (1972) documenting several kit fox sightings in the immediate area, Swick (1973) sighting two kit foxes on the east side of Walnut Boulevard adjacent to the Cowell Ranch, and Morell (1975) sighting a kit fox on or immediately adjacent to Cowell Ranch, at the intersection of Deer Valley and Briones Valley Roads. More recent occurrences include sightings to the south, in the vicinity of Byron and the Los Vaqueros Reservoir (1991, 1996, 1998, 2002, 2008), and several others to the northwest near the Black Diamond Mines and Antioch (1990 – 1992; 1995 - 1997) (CNDDDB 2006). Of these sightings, the closest (~2.6 miles) to the Park was located east of Walnut Boulevard and Old Vasco Road, from 1988 and 1989, and the most recent (2008) occurred near the Los Vaqueros Watershed Office immediately south of the project site. Sycamore Associates LLC report on the early evaluation for the San Joaquin kit fox (2003), provides a clear description of these occurrences.

Travel by San Joaquin kit fox from these known locations to the Park is not documented; however, given the kit foxes ability to move 6 to 10 miles in a night, it is possible that the kit fox could move through the property. Furthermore, the suitable habitat and active ground squirrel colonies at the Park could support limited denning, foraging, and movement through the site. No indication of kit fox is currently present within the Park. The Park has not been surveyed specifically for kit foxes or suitable habitat.

Sensitive Habitats

Sensitive natural communities that occur at the Park include purple needlegrass grassland, northern hardpan vernal pool, Great Valley cottonwood riparian forest, and waters of the United States.

Purple needlegrass grassland is recognized as a sensitive habitat by the DFG. This sensitive natural community occurs in the east-central portion of the Park and is described above under native perennial grassland.

Northern hardpan vernal pool is recognized as a sensitive habitat by the DFG and often is subject to USACE jurisdiction under Section 404 of the Clean Water Act. In extensive planning surveys for the Park (4,277 acres), 0.4 acres of northern claypan vernal pools were found in 6 natural and 12 artificial pools. Most pools varied in size between 300 and 1,500 square feet; the largest pool was 5,000 square feet (ECCCHCPA 2006).

Great Valley cottonwood riparian forest is recognized as a sensitive habitat by the DFG and is subject to regulation under Section 1602 of the Fish and Game Code. Great Valley cottonwood riparian forest occurs in the Park downstream of Marsh Creek Reservoir and is mapped as mixed riparian forest.

Waters of the United States, including wetlands, are subject to USACE jurisdiction under Section 404 of the Clean Water Act. Waters of the United States include navigable waters, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are somehow connected to any of these waters or their tributaries. Although wetland delineation has not been completed, Marsh Creek, other streams, ponds, and seasonal wetlands on the site may be under the jurisdiction of USACE.

Invasive Non-native Species

The grasslands of Cowell Ranch contain populations of a number of invasive non-native plant species. Patches of yellow star thistle (*Centaurea solstitialis*) occur in several areas of the Park. This species has the potential to take over large areas of grassland, Himalayan blackberry is found in the riparian areas along Marsh Creek. This plant can also be invasive and out-compete native riparian understory vegetation.

Non-native invasive wildlife species known to be present in the Park include European starling (*Sturnus vulgaris*) and bullfrog (*Rana catesbeiana*). European starlings are aggressive cavity nesters and often exclude native birds from suitable nesting sites, such as western bluebird, tree swallows (*Tachycineta bicolor*), and some of the smaller species of woodpecker. Starlings are highly gregarious and will form huge flocks in winter. Starlings are common throughout California and use a variety of urban, suburban, agricultural, and grassland habitats. Bullfrogs are voracious predators and may have contributed to the decline of a number of native amphibians in California, including federally listed species such as the California red-legged frog and California tiger salamander. Bullfrogs depend on perennial water bodies and are widespread in California waterways.

Grazing

Grazing has occurred in the Park for approximately 170 years. Grazing activities can have both adverse and beneficial effects on vegetation communities and wildlife habitat. Grazing has the potential to alter species composition within communities, disrupt ecosystem function, and alter ecosystem structure. Specifically, grazing may reduce or eliminate oak or other woodland species recruitment due to cattle eating saplings, soil compaction, and degrading water quality. However, some studies have shown that grazing benefits vernal pools (Robins and Vollmar 2001) such as those found in the Park.

As stated policy in the California State Parks Operations Manual, livestock grazing is an inappropriate use of parkland resources except under certain circumstances where a core park purpose is served. These core purposes of grazing include:

- When directly contributing to historic interpretation approved in a unit's General Plan;
- When necessary for a specific natural resource restoration purpose, which normally does not include fuels reduction or an alternative to extirpated ungulate grazing; or
- When it is a necessary component to an acquisition agreement, including scaled-down grazing to improve natural resources.

Cultural Resources

Pre-historic Natural Setting

A cultural resource is a resource that exists because of human activities. It is a term commonly used to include pre-historic-era sites and artifacts as well as historic-era (post-European contact) sites, buildings, structures, objects and districts. For the purposes of this discussion, the phrase “historic resources” may indicate post-European-contact resources or may be used to describe California Register of Historical Resources (CRHR)-eligible sites from any period. “Pre-historic” will be used to describe pre-European-contact sites or artifacts; and “archaeological sites or resources” will refer to sub-surface sites or artifacts.

The cultural resources encountered in the Park are a result of human behaviors in, and adaptations to, the environment. To better understand the origin and meaning of these resources, a cultural context must be established. The following paragraphs briefly summarize cultural developments through the pre-historic, ethnographic, and historic past. A further description of the natural setting as it relates to cultural resources can be found in Appendix D.

Pre-historic Setting

The Central California Taxonomic System (CCTS) was developed as a framework for comparing different archaeological sites in central California (Lillard et al. 1939; Heizer 1949). The earliest versions of the CCTS concentrated on the concept of cultural Horizons. However, the Horizon concept was considered too broad and later was broken down into cultural Patterns (Bennyhoff 1968) and further subdivided later yet into Phases or Aspects. A number of refinements added more subdivisions (Willy and Phillips 1958), and broke the system up by geographical as well as temporal differences (Bennyhoff 1977). A summary of the regional archeological background can be found in Appendix D. A chart showing the divisions of horizons/periods/districts and patterns in the Marsh Creek State Park project vicinity follows Bennyhoff (1982):

PERIOD	DATE	PATTERN	VARIATIONS
Historic Period	Post 1800		
Late Horizon/Emergent Period	A.D. 900–1800	Augustine	
	A.D. 700–900	Transitional	
Middle Horizon/Upper Archaic	200 B.C.–A.D. 700	Berkeley	(Meganos Aspect)
	500 B.C.–200 B.C.	Transitional	
Early Horizon/Middle Archaic	3000 B.C.–500 B.C.	Windmill	
Lower Archaic	6000 B.C.–3000 B.C.		
Paleo-Indian	10,000 B.C.–6000B.C.		

Source: Bennyhoff 1982.

Ethnographic Setting

The Park is located in an area of overlapping tribal territories belonging to the Northern Valley Yokuts, the Plains Miwok, and Costanoan Indians. For a description of the ethnographic setting see Appendix D.

Historic Setting (Post-European Contact)

The Spanish Period in “Alta California” began in 1775 when the Ayala expedition reached the San Francisco Bay area searching for a suitable location to establish a mission. Mission San Francisco de Asis (Mission Dolores) was established in San Francisco a year later, in 1776. The Mexican Period led to secularization of much of the mission system. The last of the mission land holdings had been relinquished by 1845, which provided lands to be distributed through the large Rancho land grants. Most of these lands were given over to livestock and ranching. American explorers, traders, and trappers were also moving west during this period, leading to the establishment of the “California-Oregon Road” (Samuelson et al. 1993). The Mexican War ended with the Treaty of Guadalupe Hidalgo of 1848, giving California to the United States.

Contra Costa County was one of the original 27 counties of California, and called Contra Costa because it was first seen by the Spanish from San Francisco and so was given the name “opposite coast” (Beck and Haase 1974). Mount Diablo, 3,849 feet high, stands near the center of the County. The mountain served as an easy landmark for early explorers including Pedro Fages in 1772 and Juan Bautista de Anza in 1776. The Bidwell-Bartleson company, the first overland emigrant wagon train to come to California over the Sierra Nevada Mountains, passed through the project area in 1841 using Mount Diablo as a landmark.

The Park property was originally part of the 13,316-acre Los Meganos Mexican Land Grant given to Jose Noriega, and subsequently purchased by Dr. John Marsh in 1837 (Beck and Haase 1974, Hoover et al. 1990). A timeline of events related to occupation and land ownership of the Park can be found in Table 7. Marsh was a native of Massachusetts, who studied the classics intending to be a minister, but later studied anatomy, worked with a local physician, and graduated from Harvard University with a Bachelor of Arts degree (1823). Marsh traveled for a number of years, settling briefly in Wisconsin before traveling to California by way of Mexico. While in Wisconsin, he apparently was employed as sub-agent for Indian Affairs at Prairie du Chien (Farris et al. 1988), and studied Indian culture, eventually writing a Sioux dictionary and grammar book (1831). Marsh had a half-Sioux wife, son (Charles), and daughter while acting as an Agent. His wife and daughter died in Wisconsin; when Marsh decided to move west he left his son in the care of the James Pantier family in Illinois. Marsh made his way to Santa Fe, New Mexico and then from there to Los Angeles (1836) where he became California’s first practicing doctor. Marsh sent word east to attract settlers, whom he received well but charged large sums for supplies and aid. The first planned overland immigration to California, the Bidwell-Bartleson party, which arrived at Marsh’s adobe in 1841, was a result of Marsh’s letters that were sent to the east. Marsh converted to Catholicism and became a naturalized Mexican citizen.

Marsh’s Harvard diploma was received as a medical diploma, and Marsh was given permission to practice medicine in Los Angeles, likely due to a shortage of doctors. He earned enough money over the course of a year that he was able to look further north for a large tract of land. Marsh bought Rancho de Los Meganos for \$500 and became the first Anglo settler in Contra Costa County (Samuelson et al. 1993). Beginning in 1838, Marsh lived in a small adobe structure along Marsh Creek, purportedly next to an Indian village. A detailed description of the history and construction of the house is provided in Farris et al. (1988) and the Historic Structure Report (Architectural Resources Group 2002). Marsh continued to practice medicine, although less and less over time, mostly focusing on establishing his cattle ranch, planting an orchard, and starting vineyards. Labor for these efforts may have come from the Indian villages. Marsh apparently also took an Indian woman as a mistress. By 1850 or so, his cattle herd had increased to approximately 6,000 head.

Marsh eventually married Abigail Smith Tuck, a New England school teacher who moved to California after the beginning of the Gold Rush (Farris et al. 1988). She found a position in Santa Clara, and boarded with a

Captain and Mrs. Appleton. While traveling with the Appletons to Antioch in 1851, Abigail met John Marsh; they were married very shortly thereafter and had a daughter, Alice, by 1852. Abigail was apparently unhappy living in Marsh’s small adobe; they developed plans for a new brick and stone house and construction began that fall. Construction did not proceed rapidly, as the house was not completed until 1856, a year after Abigail’s death. Marsh himself was murdered in 1856, possibly as a result of a feud with a neighbor.

After his death, the estate eventually was divided, half to Charles Marsh, who had recently come to California from Illinois, and half in trust to John Marsh’s daughter Alice. For the most part, the house was left unoccupied, although James Marsh (John’s nephew) lived there for three years and developed orchards nearby and Charles lived there intermittently; Charles allowed coal exploration on the ranch and leased parcels to sharecroppers. The house was severely damaged in an earthquake in 1868, but rebuilt. In 1870, the house and ranch were sold to James T. Sanford (Farris et al. 1988, Samuelson et al. 1993). Sanford mortgaged the house to the Savings and Loan Society of San Francisco, who took ownership of most of the land when Sanford defaulted in 1878. For the next 22 years, the property was leased to a series of tenant farmers and sharecroppers. In 1910, a group of Scottish investors, Balfour-Guthrie Investment Company, bought the property except for a small portion still held by Sanford’s estate that was acquired in 1913. The area around the house became a sheep ranch managed by John Morgan who lived there from 1913 to 1924. Throughout this period, the house continued to deteriorate.

Balfour-Guthrie installed an irrigation system, including pumping stations, concrete-lined canals and ditches, throughout the region, including on portions of the project area (Samuelson et al. 1993). Afterwards, they advertised across the nation and sold thousands of acres throughout the region which before had been used only for cattle, grain and alfalfa but could now support dairy farming, orchards, and vineyards, as well as vegetables and non-orchard fruits. In 1926, the Balfour-Guthrie Project, the Knightsen Irrigation District, and the Lone Tree Irrigation District consolidated to become the East Contra Costa Irrigation District. In 1924, the Cowell family purchased the Park property, and continued to use it for pastureland and limited agriculture. The Cowell Foundation transferred ownership of the John Marsh House and 10 acres of land to Contra Costa County in 1960. The State of California acquired ownership of the house and land immediately surrounding it in 1981, with a total of 16.4 acres. For a more detailed discussion of the historic land ownership and historic resources within the larger Park landscape see the Historic Period Properties Survey and Evaluation Report (Bradley and Hill 2007).

Table 7
Occupation and Land Ownership Timeline at Marsh Creek State Park

5100 B.C.	Approximate beginning of Native American occupation.
3350-550 B.C.	Intensive Native American occupation during the Windmill period.
A.D. 500-1776	Late period Native American occupation to the Historic Period.
1837	Marsh buys the <i>Rancho de Los Meganos</i> for \$500.
1838	Marsh moves to the Rancho.
1841	Bidwell-Bartleson party stops at Cowell Ranch en route to Mount Diablo.
1851	Marsh marries Abigail Smith Tuck.
1852	Daughter Alice is born.

Table 7
Occupation and Land Ownership Timeline at Marsh Creek State Park

1852-1856	The stone house is built.
1855	Abigail dies.
1856	Marsh is murdered and his estate is divided between son Charles and daughter Alice.
Unknown	Orchards are developed, coal exploration begins on the property, farmland is leased to sharecroppers.
1868	The house is damaged in an earthquake but repaired.
1870	The property is sold to James T. Sanford.
1878	Sanford defaults to the Savings and Loan Society of San Francisco.
Unknown	Tenant farmers and sharecroppers continue use of the property.
1897-1910s	The rear wing is built.
1900	Electricity and indoor plumbing are installed in the house.
1910	The house interior is updated.
1910	The Balfour-Guthrie Investment Company buys most of the property; elements of a larger irrigation district are planned for the property.
1913	The Balfour-Guthrie Investment Company buys the remaining part of the property.
1913-1924	John Morgan occupies the stone house and manages the property as a sheep ranch.
1924	Cowell family buys the property.
1926	Balfour-Guthrie Project, Knightsen Irrigation District and Lone Tree Irrigation District consolidate into the East Contra Costa Irrigation District.
1946-1947	First formal archaeological testing at the site, by Miles and Rogers of the Santa Barbara National Historic Museum.
1960	The Cowell Foundation transfers the stone house and 10 acres to Contra Costa County.
1971	John Marsh House placed on the National Register of Historic Places.
1977	The south wall of the John Marsh House begins to collapse.
1980s	Many of the windows and doors are removed as well as interior plaster and some flooring on the first floor.
1981	California State Parks gets the John Marsh House and 16.4 acres through two recorded deeds and begins shoring up the walls. Some archaeological testing is conducted.
1985	There is a partial collapse of the west wall.
1986-1987	Archaeological testing includes monitoring a 110-foot utility trench south of the John Marsh House.
1988	Archaeological testing is conducted beneath the house.
1994	William Self Associates, Inc. auger testing program to find the boundaries of CCO-548.
November 2002	Approximately 3,647 acres are acquired by California State Parks for a park.

Table 7
Occupation and Land Ownership Timeline at Marsh Creek State Park

2004	Holman & Associates testing program north of the project site.
2005-2006	Vineyards burial recovery program by Holman & Associates.
2005-2006	California State Parks conducts limited testing and burial recovery along the north and south banks of Marsh Creek.
June 8, 2006	California State Parks personnel trenching across Marsh Creek Road find another burial – is an extension of CCO-18/548.
August-September 2007	U.C. Davis excavations on north bank of creek.
February-May 2008	Archaeological monitoring for Marsh Creek Rd. extension by William Self Associates, Inc. results in identification and removal of eight burials.
May-June 2008	State Parks excavations of north bank of creek.
July 2008	State Parks and Far Western Anthropological Research Group, Inc. excavation of north bank of creek.

Ranch Property (John Marsh Historic District)

A Historic Period Properties Survey and Evaluation Report was prepared as part of the Vineyards at Marsh Creek development project to evaluate the National Register of Historic Places (NRHP) eligibility of the cultural landscape of the John Marsh House. The John Marsh House historic property consists of the John Marsh House, an early 19th and 20th century ranch complex, and the cultural landscape features surrounding these buildings. See Appendix D for a detailed description of why the report was completed.

The Historic Period Properties Survey and Evaluation Report provides an evaluation of NRHP for the John Marsh House historic property (referred to throughout this section as the John Marsh Historic District), for the bridge/dam across Marsh Creek (CA-CCO-674) as an individual property, and for the significance of the Lateral 7 canal (a part of the East Contra Costa Irrigation District [EECID] canal system CA-CCO-675H) in relation to the John Marsh Historic District.

In the analysis, Bradley examined the built and natural features of the surroundings of the John Marsh House, noting the improvements that were made, the period during which those improvements were made, and their connection to the owners/occupants of the stone house. Bradley determined that the landscape surrounding the house contributed to the house’s NRHP significance under Criterion B for its association with John Marsh during the period of 1838 when Marsh purchased the rancho and moved there, ending in 1871 when his children sold the property to James Sanford (Bradley 2006b).

This report provides documentation of the cultural landscape features surrounding the John Marsh House and evaluates the eligibility of this historic district under the NRHP criteria. The statement of significance for the John Marsh Historic District including a detailed description of the John Marsh Historic District (ranch property) with contributing features noted is included in Appendix D.

Architectural History (John Marsh House)

The John Marsh House is architecturally significant as an excellent example of the Gothic Villa style of residential architecture, popular during the middle of the 19th century. The house and its site are important artifacts of the rancho culture that dominated much of California after the secularization of the mission lands during the 1830s. The house and associated landscape are historically significant for the associations with a prominent early Californian, John Marsh. Other important themes include the development of the state, including frontier settlement, cattle ranching during the American period and river commerce on the Sacramento and San Joaquin rivers. Photos of the house in 1856 and 1925 can be found in Appendix D. Table 8 provides a timeline for building chronology of the house beginning with the start of construction on 1838. The John Marsh House was listed on the NRHP. The John Marsh Historic District was found eligible for the NRHP as a cultural landscape in 2007 (Bradley and Hill 2007). For more information regarding the nomination for the house on the NRHP and the relationship of this nomination to the John Marsh Historic District see the Historic Period Properties Survey and Evaluation Report and Appendix D of this Plan.

In January 1976 a Historic Structures Report (HSR) was completed by Ratchliff, Slama, and Cadwalader. A further investigation of the house was completed in 1986-87. In November 2002, an updated HSR was prepared for the house. The purpose of the HSR was to assemble historical information about the house and provide planning recommendations concerning its rehabilitation. The report contains a history, a construction chronology, a preliminary assessment of the condition of the house, materials testing data, architectural and structural evaluations of the building assessing its overall physical condition, drawings, historic and existing conditions photographs, and the costs associated with the rehabilitation of the John Marsh House for interpretive use (Architectural Resources Group 2002) and the summary that follows was adapted from this report. Information provided in this report has been used for the purpose of a grant application that was been made to the State for emergency stabilization of the house which was approved in 2007.

Today the John Marsh House is composed of the original 1856 sandstone and brick dwelling, two and one-half stories tall with a cellar, and a one-story, wood-frame wing, dating between 1897 and the 1910s. The footprint of the main body of the house (approximately 60 feet by 35 feet) and the rear wing (approximately 16 feet by 44 feet), is L-shaped. A shorter gable-roofed breezeway connects the wing to the main house. The first floor of the body of the house is organized around an L-shaped hall. The hall connects two grand entrance doors with sidelights and the longitudinal ell contains the main staircase in the rear. The first floor is arranged with double parlors to the south of the transverse ell and a dining room across the hall from the parlors. The keeping room or office and the kitchen are aligned at the north end of the house. The primary chambers or bedrooms are located on the second floor above the south parlors. There is a large second floor room above the dining room and small chambers or bedrooms opening off this room to the north. This room arrangement suggests a nursery with adjacent bedrooms for children. There are four attic rooms that open into one another and one tower room.

The rear wing is entered from a breezeway that links the two portions of the house. The rooms are simply arranged with a short hall, located against the north wall, leading to the rooms. A site plan of the John Marsh House and its immediate surroundings is included in Appendix D.

The primary exterior wall of the house is organized into four bays, each pierced by segmentally arched door openings at the first and second floors and pointed arched windows at the attic floor. Whereas three of the bays terminate in gables, the fourth terminates in a tower. The tower is masonry construction at the attic story, changing to wood frame construction with wood shingle siding above the adjacent ridge lines. The

north wall is fenestrated by arched windows at all three floors whereas the south wall, which collapsed in stages beginning in 1977, consists of a failing assembly of metal studs and roll roofing used as siding. Similarly to the east wall, an arched door opening with sidelights and a gable-roofed wall dormer mark the entrance to the hall at the west wall. The bay to the south of this entrance contains arched door openings at the first and second floors. The remaining portion of the wall is fenestrated only at its north end, marking the location of interior rooms.

The walls of the one-story wing are clad in rustic wood siding, asymmetrically fenestrated with large window openings, and the roof is clad in temporary roofing consisting of corrugated sheet metal. There is a toilet room addition projecting from the north wall that is in ruins.

At the main body of the house, flooring was removed from about one-half of the first floor and all of the first floor plaster wall and ceiling finishes were removed to permit archaeologists to excavate under the house. Much of the remaining plaster wall and ceiling finishes have been damaged from moisture penetration or substrate movement. The staircase is sound, although the lower section of the stair balustrade, including the newel post, is missing. The doors and windows were left *in situ* or are in storage in the building. The interior finishes in the rear wing are tongue-and-groove wood wall and ceiling finishes and flooring throughout.

Table 8
John Marsh House Building Chronology

1856	Construction of the house.
October 21, 1868	Hayward Earthquake destroyed the second level of the tower, the balcony at the lower level of the tower, and chimneys; falling masonry probably damaged the piazza which wrapped around the east, south and southern portion of the west exterior walls. The second level of the tower was rebuilt in wood and the piazza design was modified and rebuilt.
1878	First record of masonry deterioration and roof leaks.
1884	Installation of a new kitchen floor and plaster.
1897-1910s	Rear wing probably built.
c. 1900	Electricity and plumbing were installed.
c. 1910	The interior of the house was updated around 1910 when the wainscoting was installed in the room off the kitchen, and bathrooms were installed on the second floor.
c. 1900-1925	A concrete top coat was poured over the piazza tiles.
Before c. 1907	The tower walls were shingled and a new tower roof was built. The piazza was rebuilt.
1950s	Unspecified work to house.
1957	Partial collapse of piazza by this date.
1977	Collapse of south wall began.
1981	The first phase of shoring and tie rods was installed.
1985	Localized collapse at the west wall.
c. 1980s	Stud wall built to temporarily replace the masonry-built south wall. Many of the windows, screen windows and doors were removed and replaced with plywood protection.
1988	All interior plaster at the first floor and some of the flooring at the first floor was removed and

Table 8
John Marsh House Building Chronology

	disposed of.
1997	New temporary roofing, gutters and downspouts were installed.
2003-04	Emergency masonry repairs were completed.
2010	Emergency stabilization project to install seismic support and replace the south wall.
Unknown	The piazza was removed.
Unknown	The rear staircase was removed.
Unknown	Removal of interior mantels and portions of the staircase balustrade.

Current Conditions

The house is in an advanced state of disrepair, largely a result of decades of deferred and misinformed maintenance. Several components of the waterproofing assemblies installed in 1856 are not adequate and would be designed differently if installed today. By the last quarter of the 20th century, the erosive effects of rising damp¹⁴ on the base of the walls were apparent. Because of the deterioration discussed above, the masonry walls are undermined almost throughout the house. Mortar losses are severe, including losses not only of repointing mortar, but also of setting mortar throughout the exterior walls and at the base of the interior walls. Overloading of window sills, due to mortar losses and movement, has resulted in damage to the ends of window sills which in turn has resulted in local masonry collapses. Recent emergency repairs have been undertaken to correct the most serious of these conditions.

In general, the wood framing including the floors and roof framing are in good condition. Exceptions include areas repeatedly exposed to water, such as some joist ends, the framing adjacent to the collapsed south wall, and framing located below roof leaks. Mortar losses and the deterioration of bearing stone have undermined the masonry that supports the floor and roof framing in a few locations. Because the John Marsh House is an unreinforced masonry building, a seismic retrofit of the main body of the building and its wood-frame wing is required. At present the building tenuously supports gravity loads in several locations. Losses, such as the collapse of the south wall in 1977, have left the building vulnerable to earthquake shaking. The wood frame rear wing is in fair condition, although it lacks a complete perimeter foundation and portions of the protective roofing are missing. The toilet room addition at the north side of the wing is in complete disrepair. The mechanical, electrical and plumbing systems are not operational.

The eligible historic district of the cultural landscape has been affected by the adjacent development to the north of Marsh Creek, beyond the park boundaries. The adjacent lands no longer afford distant views of rolling grasslands and oak trees.

The predominant historic use of the landscape, cattle ranching, has left clear evidence behind in the form of fences, irrigation ditches, and ranch structures. The dominant features of the built environment are the John

¹⁴ Rising damp is the process whereby ground water is absorbed upward into the masonry walls of a building through capillary action. As the clay binder of the stone absorbs water, it expands, causing disaggregation of the stone. Similarly, salts, present in mortar and ground water, dissolve and expand, exerting pressure on the matrix of the stone.

Marsh House and associated ranch complex, Marsh Creek Reservoir to the south, and a seriously deteriorated check-dam near the house. No traces of Marsh's original adobe dwelling have been located.

Record Search

A Native American contact program was initiated in March 2006, when AECOM contacted the Native American Heritage Commission (NAHC), requesting a search of their Sacred Lands file and a list of individuals who might have information regarding Native American use of the Park. The NAHC provided a list of contacts that was received in April, and letters were sent to each person on the list on April 24, 2006. There were no replies to those letters. A second set of letters were sent to the same people on September 20, 2006. A response, from Ann Marie Sayers, Chairperson of the Indian Canyon Mutsun Band of Costanoan Indians, has been received. Ms. Sayers voiced her concern about the archaeological resources in the Park and how they might be protected. She also had some suggestions as to the naming of the Park which she thought should be an Indian name. Additionally, a phone conversation with Ms. Garibay, one of the Most Likely Descendants for the Vineyards at Marsh Creek development Project and the Park took place on February 12, 2008 and she stated that she had previously been contacted and had no further comments or questions regarding the proposed Park General Plan and associated environmental documents.

Background research, in the form of a record search performed by the Northwest Information Center (NWIC), was conducted in May 2006. In addition, a site visit was conducted May 8-9, 2006, including assisting in excavations at CCO-18/548 on May 8, 2006.

An information request was submitted to the NWIC in Rohnert Park, California for the Park to determine whether there were previously recorded cultural resources or if archaeological surveys had been performed within or in the vicinity of the Park.

The NWIC search included examination of information resources such as:

- OHP Historic Property Directory
- California Inventory (1996)
- California Historic Landmarks (1996)
- National Register of Historic Places (1996 and 2000)
- California Points of Historical Interest (1992 and updates)
- Historic Maps

Results

The historic maps and records cited above depict a number of roads and buildings, and the names of many of the early property owners. The John Marsh House is clearly depicted within Lot 37 of the Rancho Los Meganos, as Dr. Marsh's house on the 1862 General Land Office Plat Map, Township 1 North, Range 2 East. The John Marsh House was listed on the NRHP in 1971. It is also listed on the California Register of Historic Resources (CRHR). While the John Marsh House is not listed as a California Historical Landmark, the site of his murder, in Martinez, is listed (Landmark No. 722). The John Marsh Historic District was found eligible for the National Register of Historic Places as a cultural landscape in 2007 (Bradley and Hill 2007).

The NWIC reported that there are 26 known historic and pre-historic archeological sites within the Park boundary (Appendix D Table D-1) and another 17 sites within one mile of the Park boundary (Appendix D Table D-2), plus two new discoveries. Copies of the site records and a map depicting site locations may be found in a confidential cultural resource map on file with California State Parks. The NWIC also had records of 17 archaeological surveys (Appendix D Table D-3) that have been conducted within the project site and another 23 studies within a mile of the Park boundary (Appendix D Table D-4).

The results show that several previous surveys have been conducted within the Park, but it lacks a complete inventory. The entire spatial extent of CCO-18/548H has not been fully investigated and is currently unknown. A map of cultural resource locations that have been documented was prepared as part of the planning process. However, this archaeological information is confidential and is not included in the Plan.

Since the record search was completed, two new discoveries have been made. On June 8, 2006, California State Parks archaeologists used a backhoe to excavate an exploratory trench 33 meters east of Marsh Creek Road and within the alignment of Fairview Road, a proposed road alignment that would allow access to the future site of CCCD's new Los Medanos College branch (Parkman 2006a). California State Parks personnel identified a Native American burial approximately 140 centimeters below surface. Not enough of the remains were uncovered to distinguish the burial position or orientation of the remains, but an artifact, a "slate-pencil" type of charmstone, was found with the remains. This is a type of artifact associated with Windmill culture; others of this type have been uncovered during burial excavations at CCO-18/548, across Marsh Creek Road from this find, as well as from archaeological testing closer to the John Marsh House and from sites in the region.

The second site located since the record search was completed consists of a historic trash scatter located near the southern edge of the Vineyards development, near the CCO-18/548 burial removal project being conducted there. The new site, designated JMH-06-2, included over 100 sherds of undecorated whiteware, transfer-print earthenware sherds, yellowware, stoneware, undecorated porcelain fragments, cut and wire nails, clear, aqua, green, amber, and amethyst bottle glass fragments, two marbles, shell fragments, faunal remains, and more recent debris (Parkman 2006b). The historic USGS quadrangle map for the area indicates that there was a structure (possibly a barn) in the vicinity of the find. The artifact assemblage appears to date from approximately 1870-1910.

The sites found within the Park as well as within one mile of the Park property clearly reflect the past pre-historic and historic uses of the area. Numerous Native American village sites and farm complexes are known. Not surprisingly, they tend to cluster in the same areas, where there is easier access to water and more congenial terrain. Activities at the various historic sites are generally easily interpreted without having to undertake any archaeological testing programs; the remnant structures are mostly self-explanatory. Pre-historic archaeological sites (with the exception of bedrock mortars) may be more difficult to interpret without a sub-surface testing program to gather data which must then be analyzed and interpreted. Unfortunately, in the case of the sites in the vicinity of the Park, only CCO-18/548 has received any substantial archaeological attention. As a result, the use and times of use for other sites in the region is unknown.

The prime example of the confluence of pre-historic and historic use of the same ground is the John Marsh House itself, which was built atop a pre-historic mound village site (CCO-18/548) on the banks of Marsh Creek. The mound site was described in 1946 (Farris et al. 1988) as being:

"A very large pre-historic site, evidently deep in camp refuse...It is approximately three hundred and twenty feet at its longest axis, north-west, south-east and two hundred and

fifty feet wide. There seems to be indications of a cemetery or cemeteries outside of these bounds.”

Test excavations at CCO-18/548 have occurred in several phases (summarized from Farris et al. 1988). The first excavation could be said to be when a basement was dug for the original house construction in the mid-19th century and human remains were encountered. More formal testing was conducted by Miles and Rogers of the Santa Barbara Natural History Museum in 1946-1947. They made some test excavations immediately south of the house and found four ventrally extended burials, as well as midden soils, artifacts, and a hearth at about 3-4 feet below surface. Over time, much of the upper 18 inches of soil was removed from under the house to allow for repairs. Those excavations were separated by room and screened. Historic artifacts were most commonly recovered.

Clemmer (1961) attempted to locate the adobe that John Marsh lived in before the stone house was built. Clemmer used a historic account that described the adobe as being 125 feet north of the northwest corner of the house. He excavated several units and trenches in an attempt to intersect some part of the building; his most interesting find consisted of a silt lens that may have been the residue of a 1874-era lake adjacent to the house. Clemmer also reported seeing six housepits at the site, as well as an obsidian blade, projectile fragments and a broken charmstone.

A limited testing program was carried out in 1976, but apparently was aimed at exploring the foundations of the stone house rather than the pre-historic site. Two archaeological test units and a post hole were excavated in 1981, located on the northeast and southwest sides of the stone house, adjacent to the piazza. Historic artifacts were found in the upper 50 centimeters of the excavation; pre-historic artifacts including obsidian, chert, and quartzite flakes, obsidian biface fragments, pestle fragments, a bone awl, and stone scrapers were recovered. Features, including a historic drainpipe support made of rock, a French drain, a possible pre-historic hearth, and a living surface were identified within the units, as well as fragments of possibly human bone. Units excavated in 1981 and 1982 demonstrated that there were “clean” soils deposited under the floors of the house and over the top of the pre-historic midden in some areas.

Excavations in 1986-1987 focused on a utility trench area at the stone house and concluded that there had been from 1.5-2 feet of midden redeposited across the surface of the site from the excavation of the basement. The archaeologists identified a hard-packed living surface at approximately 3-4 feet below the current ground surface, indicating that it had originally been about 2 feet below surface at the end of the pre-historic era. Three test units were dug during this effort. Each included architectural features and some disturbed soils. Pre-historic artifacts were found in the disturbed soils, as well as a burned surface at approximately 3 feet below surface in one unit.

The utility trench mentioned above ran for a total of 110 feet, was 2 feet wide and 2 feet deep, beginning in the back yard of the stone house and running southward. The trench profile offered a view of an upper, shallow historic deposit on top of midden soils. The trench proceeded beyond the edge of the midden mound at that location. The trench intersected a historic trash deposit about 8 inches thick and just below the surface that was at least 8 feet long. The debris included bricks, mortar, window glass (possibly from the 1880s), and a fence post base.

The 1987 effort also included an attempt to locate John Marsh’s original adobe structure. The archaeologists hand excavated two shallow trenches in a slightly different direction than Clemmer. They encountered hard-packed sediments that they speculated were deposited by the lake that was historically adjacent to the house, and recommended that a subsequent effort with a backhoe might be worthwhile.

More substantial testing occurred in 1988, when some soils were dug out from below the house. Additionally, a unit was placed to further explore the burned surface identified in 1986. Additional testing found more of the same type of stratigraphy; an upper historic zone, a mixed transitional zone, then a pre-historic midden deposit below. The midden deposit included stone tools and tool fragments, flakes, groundstone fragments, shell beads, bone awls, charcoal, faunal remains, disarticulated human remains, and other expected types of artifacts.

William Self Associates, Inc. archaeologists conducted a testing program at CCO-548 in 1994 (Harrington 1995) that consisted of 23 auger holes dug to a depth of nearly 3 meters (Harrington et al. 1995). They encountered human remains with associated *Haliotis* pendants and beads and a charmstone that they interpreted as indications of the Windmill Pattern. They also found what they interpreted as the northern site boundary approximately 100 meters north of Marsh Creek.

Site CCO-18/548 continues northward from the stone house to the other side of Marsh Creek and points north, as well as likely extending to the east. The University of California, Davis, in conjunction with State Parks, conducted mitigation excavations on the north bank of Marsh Creek during August and September 2007 resulting in the recovery of Windmill and earlier site deposit. Numerous radiocarbon dates indicated that earlier materials date from between 6,000 and 6,600 years ago, while the Windmill occupation was dated from 3,100 to 3,900 years ago. State Parks continued the excavation of the lower older deposit in May-June 2008. In July 2008 State Parks, with assistance from Far Western Anthropological Research Group, Inc., completed the north bank excavations and site stabilization examining additional site deposit. These excavations also resulted in the removal of four sets of human remains that were in immediate jeopardy of eroding out the cut bank into Marsh Creek. William Self Associates, Inc. provided archaeological monitoring for the Marsh Creek Road extension during February and May of 2008 resulting in the identification and removal of eight burials.

The archaeological resources at Marsh Creek State Park are some of the most unique and important within the California State Park System. Research has indicated that the first inhabitants occupied the area by at least 7,000 years ago. At about 4,000 years ago the Windmill culture made its first appearance at Marsh Creek. The Windmill people represent one of the most sophisticated and advanced pre-historic cultures of aboriginal California. They lived up and down the Central Valley, with their heartland being the Delta region. These findings are important because they shed light on a rare and unique manifestation of a pre-historic culture in California seldom seen in the archaeological record. Statewide, less than ten Windmill sites have been identified and fewer have been excavated. The Windmill occupation eventually gave way to what is called the Meganos people, who carried on the Windmill culture until about 1,000 years ago. Evidence of these people also exists at the Park. The archaeological deposit contained within the Park and the data it holds allows modern researchers to provide a deeper and fuller understanding of the pre-historic cultures of central California. A summary of archaeological sites located within the Park can be found in Appendix D.

Existing Facilities and Services

Below is a description of facilities and services at the Park excluding the John Marsh House and ranch complex as this is detailed in the cultural resources section above and in Appendix D.

Regional Access and Circulation

The nearest major highway to the Park is SR 4, which is four miles away at its closest point. Marsh Creek Road is sometimes used as a connector between Walnut Creek and SR 4 to Stockton, a route which

eliminates travel through Concord, Pittsburg, and Antioch, and provides a pleasant drive through Clayton Valley along the northeastern base of Mount Diablo.

Marsh Creek Road is mostly an east-west oriented rural roadway that connects SR 4 with Camino Diablo Road. For much of its length, Marsh Creek parallels Balfour Road. The roadway currently provides one lane per direction. Marsh Creek Road is a designated Route of Regional Significance as per the Contra Costa Countywide Transportation Plan.

Toward the south, Vasco Road connects the Park with the city of Livermore and Interstate 580, some 15 miles away. Vasco Road is a two-lane rural roadway that connects the East County area to Livermore and other elements of the regional freeway system. The posted speed limit on Vasco Road is 55 mph. Sellers Avenue is a two-lane rural roadway that functions as one of the major north-south roadways in Brentwood. Sellers Avenue parallels SR 4 and serves as the approximate eastern boundary for the City of Brentwood and the Park. Deer Valley Road is a two-lane rural roadway that serves as the western limit of the Park. Deer Valley Road connects to Hillcrest Avenue and SR 4 in the city of Antioch. The posted speed limit on this road is 45 MPH with warning signs for lower speed limits in sections with significant horizontal and vertical curves. Deer Valley Road is a designated Route of Regional Significance. Camino Diablo Road is a two-lane rural roadway that represents the southern limit of the Park. Camino Diablo Road's significance is the connections it provides to other regional roadways such as Marsh Creek Road, Vasco Road, and Byron Highway. For reference, the intersection of Camino Diablo Road and Marsh Creek Road has an unusual configuration and will be represented in this report as three separate stop-sign controlled intersections. For operational assessments, the worst level of service for each of the separate intersections will be reported. John Muir Parkway is a new two-lane roadway that will be built on portions of existing segments of Concord Avenue. This roadway will provide a continuous connection from Fairview Avenue to Balfour Road (RBF Consulting 2004).

Park Access and Circulation

The main entry road into the Park branches off the western terminus of Marsh Creek Road, skirting the edge of a field until the road turns sharply southwest, approaching the front of the house. The entry drive up to the house is aligned with the front door of the John Marsh House. The section of the entry road from Marsh Creek Road up to where it turns back southwest was built sometime in the early to mid-20th century. The section of the drive that leads up to the house is older and a road to the house has been located in this general alignment since at least the 1870s.

There is remnant of an entry road to the property through the walnut orchard at the north end of the property. This road enters the property from Marsh Creek Road, a few hundred feet north of the main entry road. It traverses southwest and ends just west of the portion of the entry drive that currently approaches the house. The road bed may have at one time been graded, but today it is difficult to distinguish the road from the surrounding field. It is not known when this road was built, but it appears in a photograph taken around 1916.

The entry road to the house continues west past the north side of the house to the complex of ranch buildings. This section of the road passes through a gate and encircles the outside edge of the corral. The alignment of this road is probably contemporary to the ranch building complex (primarily 1930s to 1950s).

Just north of the John Marsh House, a road perpendicular to the entry road continued west to the concrete bridge over Marsh Creek to a couple of sheds originally on the west side of the creek. The bridge today is a concrete ruin given that the original wood bridge deck and rail has been removed.

There is a concrete sidewalk in the backyard of the John Marsh House that connects the back of the house to a collapsed shed. This sidewalk is about three feet wide. Its exact date of construction is not known, but it was probably built in the early to mid-20th century. There is a culvert under Marsh Creek Road that connects to the corral area located on the east side of the road. Although this culvert is related to ranching, a historic land use for the property, it is a contemporary feature related to moving livestock under Marsh Creek Road.

There are several old ranch roads, current roads that are used for the existing ranch operation and other historic roads and trails across the Park. Currently an inventory has not been completed, so a map of these circulation patterns does not exist.

Maintenance Services

Currently, there are no maintenance staff assigned to the Park.

Utilities

An existing summary of utility locations does not exist for the Park and since most of the land was transferred to California State Parks recently, a full inventory of service locations and capacities has not been completed. A summary of existing utilities within the area that could ultimately service the Park is provided below.

Water Supply and Wastewater Treatment

Current water supply for the ranching operation and existing occupied buildings near the John Marsh House is provided through one functional on-site well located within the John Marsh house complex. Another well located in this vicinity is present but not operational. Wastewater is handled through an on-site septic system located within the John Marsh house complex and serves the existing caretaker's residence. An as-built survey of existing water supply and related infrastructure does not exist. Future facilities will require connections to water and wastewater mains that may exist along Marsh Creek with water coming from the City of Brentwood or the CCWD.

Solid Waste

The Park is located in the unincorporated area of Contra Costa County, just outside of the Brentwood city limits. The waste collected by the Brentwood Disposal Service from the unincorporated areas of Contra Costa County is taken to the Contra Costa Transfer and Recycling Facility in Pittsburg, approximately 15 miles from the Park. Waste is then transferred to Potrero Hills Landfill in Solano County, approximately 50 miles away.

Natural Gas and Electricity

Natural gas and electricity service to the Park is supplied by Pacific Gas & Electric (PG&E) Corporation.

Telecommunications

The Park is within the service area of AT&T and currently serves customers throughout the City of Brentwood.

Public Services

(Text in the public services section is excerpted from RBF Consulting, November 2003)

Fire Protection and Emergency Medical Services

Currently, there are no California State Park Peace Officers (Rangers) assigned to the Park. Nearby Mount Diablo State Park rangers as well as other Park staff in the vicinity are available as needed to assist in emergency and related services at the Park. Additionally, the East Contra Costa Fire Protection District (ECCFPD) provides fire protection and first-response medical emergency services to the cities of Brentwood and Oakley, and the unincorporated areas of Bethel Island, Byron, Discovery Bay, Knightsen, and Marsh Creek-Morgan Territory. The Park is located within the service area of the ECCFPD. The Contra Costa County Board of Supervisors governs the ECCFPD. The ECCFPD has nine existing fire stations with fire suppression capabilities (Station numbers 51, 52, 54, 57, 58, 59, 93, 94, and 95). The ECCFPD's staff includes a total of 117 uniformed and non-uniformed personnel, including full time and paid on-call officers. Fire Station #52, which was built in 2001, would provide fire protection services to the Park. Fire Station #52 is located at 201 John Muir Parkway, approximately 1.5 miles north of the Park. At any given time, Station #52 is staffed with a captain, a fire engineer, and a fire fighter. Station #52 is equipped with what is known as a Type 1 Structural Response Fire Engine and a Type 3, Wildlands Engine. Station #52 is also the satellite "wing" office for the City of Brentwood Police Department.

Existing Mutual Aid and Automatic Agreement

The ECCFPD has a mutual aid and automatic agreement with local and state agencies. In the event of a major emergency, other fire districts, such as the Contra Costa Fire Protection District, the San Ramon Valley Fire Protection District, and CALFIRE, would provide additional fire services to the ECCFPD. Mutual aid would occur when the ECCFPD local fire stations requests local or state fire agencies for assistance. California State Parks peace officers would be assigned to the Park unit once it is officially opened and would also be eligible to participate in any mutual aid agreements in the area.

Existing Emergency Medical Services

The firefighters and engineers of the ECCFPD are licensed Emergency Medical Technicians (EMTs). EMTs are trained to provide basic emergency medical services, such as Cardio-Pulmonary Resuscitation and splint application. Paramedic services in the City of Brentwood are provided by a private agency called the American Medical Response (AMR). Medical emergencies are treated at Sutter Delta Medical Center, which is located in the City of Antioch at 3901 Lone Tree Way. The City of Brentwood approved the construction of the John Muir Medical Center in March of 2003 for medical services. Phase 1 of the John Muir Medical Center project will be to construct the medical center. The center will provide medical offices and in- and out-patient facilities. Phase 2 of the John Muir Medical Center project will be to construct the hospital facility, which is scheduled to be completed by the fifth year of construction. The proposed John Muir Medical Center would be located on Balfour Road, off of the State Route 4 Bypass, just north of the Park within five miles.

Existing Police Protection Services

Currently, there are no California State Park Peace Officers (Rangers) assigned to the Park. The City of Brentwood Police Department provides police protection services to the City of Brentwood and could be called upon to assist in mutual aid if needed. Currently, the Brentwood Police Department (BPD) is operating with the following personnel: 48 sworn officers, 8 administrative staff, 6 community service officers, 3 reserve officers, 22 Brentwood Active Citizen Uniformed Patrol (BACUP) volunteers, and 7 police chaplains. The number of sworn officers in Brentwood has increased 106 percent since 1992.

California Highway Patrol

The California Highway Patrol (CHP) ensures safety and provides law enforcement services to the public as they use California's highway transportation system. Highways that are patrolled by the CHP near the Park include Highway 4 and Highway 160. In addition, the CHP contracts with the Contra Costa County Sheriff's Department to provide patrol services on some unincorporated roads in the County. Roads that are patrolled by the CHP near the Park include Marsh Creek Road and Concord Avenue. The CHP also assists local police and sheriffs during emergencies when requested.

Contra Costa County Sheriff's Department

The Contra Costa County Sheriff's Department provides law enforcement services to the rural and unincorporated areas of the County. The Sheriff's Department would assist the Brentwood Police Department during major emergencies when requested by the Brentwood Police Department. These situations are infrequent, but nonetheless occur. These infrequent calls do not substantially impact the service responsibilities of the Sheriff's Department.

Interpretation and Education

California State Parks utilizes a range of resources to develop interpretation and educational programs for all units in the State Park System. The main purpose for any interpretive project in California State Parks is to communicate with visitors and relate the Park's intrinsic character and values to visitors in a meaningful way. Interpretation can relate new information, stimulate the senses, challenge the imagination, as well as incite new perspectives. Interpretation enhances the public's understanding and enjoyment of the natural, cultural, and recreational resources in the California State Parks System by encouraging appreciation of their values as set forth in the *Workbook for Planning Interpretive Projects in California State Parks*. California State Parks has a tiered and iterative approach to interpretive planning that it follows for all units, each phase informing the next. Following this planning process wherein the interpretive themes and periods are established, a Parkwide Interpretation Management Plan will be prepared which includes an Interpretive Master Plan and Implementation Plan. Specific project plans then follow which serve to develop detailed planning and budgeting for site specific projects.

Existing Interpretation

The Park currently does not have an interpretive program as it has not been open to the public. As part of this planning process, California State Parks has conducted a series of land tours for interested individuals to see the Park. Also, an informative newsletter was prepared to begin educating the local community about the Park and informing them of the planning process. The John Marsh Historic Trust has previously

conducted tours of the John Marsh House and held occasional events related to raising awareness for the rehabilitation of the house.

An interpretive plan was prepared by California State Parks for the John Marsh House in 1986 and recommended the three primary themes or topics for interpretation of John Marsh, including locations in the John Marsh House where these themes should be developed. The first theme is related to the part of his life prior to arrival in California including his family background, his education and why he went to Wisconsin and Minnesota. The second recommended primary theme from the 1986 plan was Marsh's life in California and the plans and development of the house. The last concept is related to the "Green and Gold Land of Opportunity." Sub-themes related to this topic would focus on Native American "displaced" people and John Marsh's relationship to those that inhabited the ranch before he arrived as well as what happened to the house and the property after his death. Recent archaeological investigations have revealed important pre-historic occupation dating back approximately 7,000 years, extending the interpretive periods. These concepts have been broadened as interpretive themes for inclusion in this General Plan and are presented in Chapter 3.

Local Support for Interpretation

In addition to California State Parks, other local entities that could provide insight for developing interpretive programming at the Park include the John Marsh Historic Trust whose emphasis is on John Marsh and his historic house, East Contra Costa Historical Society and the City of Brentwood. The Historical Society has a wealth of information about the historic settlement in the region spanning several eras and could serve as a partner to assist in providing historic materials for future interpretive programs. The City of Brentwood has expressed interest in working with local school groups to provide educational programs at the Park, possibly in partnership with the management of the future amphitheater at the adjacent Vineyards at Marsh Creek community.

There is currently no available information for future users of the Park but a summary of the local and regional population and demographics can be found in Section 2.2 Planning Influences. Overall, the City of Brentwood area has grown rapidly, following regional and statewide trends for population growth. The Park is the largest, undeveloped open space near and within the City's Sphere of Influence. The remainder of the City contains neighborhood parks and some of these are developed with sports facilities. The Park has the potential to serve much of the City of Brentwood's residents seeking more passive park uses such as hiking and day use within a larger, undeveloped and natural setting. Additionally, the Park could serve a regional population of mixed use trail users who are seeking longer, continuous trail segments that link the Park with regional open space lands. These trail users as well as other visitors across the State may seek overnight accommodation at the Park in order to spend more time in the area or as part of a long distance trail experience. Map 11 shows the Park's location within the regional open space lands. Land uses surrounding the Park are outlined in Section 2.1 and include mixed use development, including a wide range of small and large lot residential lands. The Park will ultimately be the largest open and undeveloped parcel within the City of Brentwood surrounded by predominantly residential land uses. These land uses will affect the future interpretive programming for the Park by influencing the type and duration of the visitors to the Park.

2.2 PLANNING INFLUENCES

Regional Recreational Resources

Below is a summary of public open space lands surrounding the project area as well as their facilities and an overview of the regional trails that traverse the region. Map 11 shows the regional trails and open space in relationship to the Park.

- Mount Diablo State Park
- Brannan Island State Recreation Area / Franks Tract State Recreation Area
- Round Valley Regional Preserve
- Morgan Territory Regional Preserve
- Black Diamond Mines Regional Preserve
- Los Vaqueros Watershed
- Contra Loma Regional Park

Mount Diablo State Park

Mount Diablo State Park is located approximately 10 miles west of the Park, and is also owned and managed by California State Parks. The over 20,000-acre park is located on Mount Diablo, which rises to a 3,849-foot peak and offers impressive views of the San Francisco Bay area and beyond. The park is host to an array of geologic features, habitat types, plant communities and wildlife. Within the park, miles of trails for hiking, biking, horseback riding, as well as a museum, guided tours, interpretive programs, and a variety of camping opportunities are available to visitors. Additional types of recreational activities that frequently occur at the park include picnicking, backpacking, nature study, photography, hang gliding, special events, kite flying, bird watching, and astronomy. In 1986, the park recorded an annual attendance of over 500,000 people and projected an annual increase of 15 percent annually due to increased population of the surrounding communities. There are three vehicular access points at Mount Diablo: to the north off Mitchell Canyon Road, to the northwest off North Gate Road, and to the south off Blackhawk/Diablo Road (California State Parks 1989). On the eastern edge of the site, visitors on foot, bike or horse can access the park via Finley Road from Morgan Territory Park, operated by the East Bay Regional Park District (EBRPD web access 2006).

Brannan Island State Recreation Area / Franks Tract State Recreation Area

Located approximately 15 miles northeast of the Park and 13 miles north of Antioch are Brannan Island and Frank's Tract State Recreation Areas, owned and operated by California State Parks. Brannan Island is a 336-acre park offering picnicking, boating, fishing, and swimming. Frank's Tract is approximately five miles southeast of Brannan Island, and is mostly underwater. Frank's Tract offers a unique recreational experience as it is accessible only by boat with fishing, waterfowl hunting, swimming, boat rentals, and boat-in camping available.

Round Valley Regional Preserve

The Round Valley Regional Preserve is located in eastern Contra Costa County, just southwest of the Park, and is owned and operated by the East Bay Regional Park District. The Preserve contains 2,024 acres of

grassland, oak woodland/savannah, shrubland and riparian woodland plant communities. This diversity of habitats supports a variety of wildlife, both common and special-status species. Round Valley Regional Preserve has vehicular access (via Marsh Creek Road) and parking at the northeastern corner of the park, just south of the Park site (EBPRD web access 2006). The EBRPD leases this land from California State Parks for the staging area. The Preserve offers unpaved trails for hiking, biking and equestrian use, and includes a 25-person group campsite. A field archery range is also available at the site. Many of the Preserve's trails connect with adjacent open space preserves or parks, enabling non-vehicular access to hundreds of miles of trails, camping, and recreation (EBPRD web access 2006).

Morgan Territory Regional Preserve

The Morgan Territory Regional Preserve is located west of the Round Valley Regional Preserve, and just southwest of Mount Diablo State Park. The Preserve is owned and operated by the East Bay Regional Park District. Morgan Territory's 4,000 acres inhabit the lower foothills of Mount Diablo's southeastern edge. Vehicular access and a staging area are accessible via Morgan Territory Road, which lies along the northern edge of the park (EBPRD web access 2006).

Morgan Territory Regional Preserve offers hiking, biking and equestrian trails, picnic sites and backpacking camps. Trails at this Preserve connect with Mount Diablo State Park to the west as well as Round Valley Regional Preserve to the east (EBPRD web access 2006).

Black Diamond Mines Regional Preserve

The Black Diamond Mines Regional Preserve is located approximately five miles northwest of the Park. The preserve encompasses close to 6,000 acres of grassland, foothill woodland, mixed evergreen forest, chaparral, and stream corridors. The wildlife hosted by this diverse array of habitat types is diverse, with over 100 species of birds, mountain lions, bobcats, and the golden eagle. The Preserve and surrounding area also has a rich cultural heritage, having been inhabited first by Native Americans, then becoming California's largest coal mining operation with over 4 million tons of coal ("black diamonds") removed from the earth, and home to hundreds of miners and their families in a variety of coal mining towns that were settled in this vicinity from the 1860s to the turn of the century (EBPRD web access 2006).

Today, the Preserve has 65 miles of unpaved trails through these significant natural and cultural sites. The Black Diamond Mount Diablo Trail exits the park to the southwest and runs approximately three miles to Mount Diablo State Park. The Contra Loma Regional Preserve is northwest of the Black Diamond Mines Regional Preserve, and is accessible by trail. Black Diamond Mines Regional Preserve offers a visitor center, picnic areas, and backpack camps (EBPRD web access 2006).

Los Vaqueros Watershed

The Los Vaqueros watershed consists of 19,300 acres of open space surrounding a 1,500-acre reservoir. The reservoir is owned and managed by CCWD and was constructed in 1998 to improve the quality of drinking water for CCWD customers within Contra Costa County (CCWD web access 2006).

Recreational opportunities at the watershed include fishing, boating (boat rental only; no public boat launch), picnicking, an interpretive center, and hiking on over 55 miles of trails throughout the watershed. Multi-use trails are also available for biking and horseback riding. Camping, hunting, and dogs are prohibited at the watershed (CCWD web access 2006).

Contra Loma Regional Park

The Contra Loma Regional Park is located approximately five miles northwest of the Park. This 776-acre park is centered on an 80-acre reservoir that is host to an array of water-based activities, including swimming, fishing, boating, and windsurfing. Swimming lessons and a junior lifeguard program are also available. The East Bay Regional Park District manages the lands surrounding the reservoir, although the U.S. Bureau of Reclamation owns the land. The CCWD owns and maintains the reservoir (EBPRD web access 2006).

Other activities available at the Park include picnicking, hiking, running, biking and horseback riding on miles of paved and unpaved trails. There is no overnight camping available at the Park (EBPRD web access 2006).

Regional Trails

Existing and proposed trails that have the potential to connect to or otherwise affect the Park are included in this section.

- Marsh Creek Trail (partially completed)
- San Francisco Bay to San Joaquin River Trail (partially completed)
- Diablo Trail
- Juan Bautista de Anza National Historic Trail (partially completed)
- Mokelumne Coast to Crest Trail / Delta De Anza Trail (partially completed)

Marsh Creek Trail

The Marsh Creek Trail is a paved, multi-use trail that extends south from Big Break Regional Shoreline to Creekside Park in the City of Brentwood. The trail is owned and managed by the East Bay Regional Park District. At present, the trail remains incomplete and is proposed to extend through the Park, connecting to the Round Valley Regional Preserve and eventually terminating in the Morgan Territory Regional Preserve. Contra Costa County's Bicycle and Pedestrian Plan highlights this trail as a future off-road bicycle trail (EBRPD web access 2006).

San Francisco Bay to San Joaquin River Trail

The San Francisco Bay to San Joaquin River Trail is largely incomplete, but proposed to extend from the San Francisco Bay at Big Break Regional Shoreline to Niles Canyon, and would share the same alignment as the aforementioned Marsh Creek Trail (EBRPD 1996).

Diablo Trail

The Diablo Trail is an approximately 30-mile multi-use trail that extends through six different open spaces in the East Bay: Shell Ridge Open Space, Diablo Foothills Regional Park, Mount Diablo State Park, Morgan Territory Regional Preserve, the Los Vaqueros watershed and Round Valley Regional Preserve. The trail currently ends at the Round Valley staging area on Marsh Creek Road, within the State Park. The trail route follows pre-existing trails, however signage is lacking in some areas. The non-profit group Save Mount Diablo, and others have proposed to eventually expand the Diablo Trail into a 60 to 70 mile loop, creating the Diablo Grand Loop Trail.

Placeholder page

Map 11 Regional Open Space and Trails

Placeholder back of Map 11

Mokelumne Coast to Crest Trail/ Delta De Anza Regional Trail

The Mokelumne Coast to Crest Trail and the Delta De Anza Regional Trail connect to the northern portion of the Marsh Creek Regional Trail. After this juncture, the trail continues west as the Delta De Anza Trail, and connects with the Black Diamond to Mount Diablo Trail (Mokelumne Coast to Crest Trail Council web access 1996).

Juan Bautista de Anza National Historic Trail

The Park is approximately 10 miles west of the de Anza National Historic Trail, and is one of the few parks near the trail that offers hiking and other recreational opportunities.

The Juan Bautista de Anza National Historic Trail commemorates the route followed by a Spanish commander, Juan Bautista de Anza in 1774-76 when he led his soldiers and families to found a presidio and mission near the San Francisco Bay. The trail route extends over 1,200 miles from Arizona to California, circumnavigating Contra Costa County to terminate at the Golden Gate National Recreation Area, which is owned and operated by the National Park Service. The trail route connects over 120 sites related to Spanish colonial history in California and Arizona. The majority of the route is vehicular, while portions of the trail are accessible locally by hiking, horseback riding, or biking (NPS web access 2006).

Systemwide Planning

The following codes and policy documents provide information for park management:

- California State Parks Mission Statement
- Public Resources Code
- California State Parks Operations Manual
- California Recreational Trails Plan (Phase One)
- California State Park's Accessibility Guidelines
- Statewide Historic Preservation Plan
- Concessions Program Policies
- Inventory, Monitoring, and Assessment Program

California State Parks Mission Statement

The California State Parks mission statement is “to provide for the health, inspiration, and education of the people of California by helping to preserve the state’s extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high quality outdoor recreation.”

Public Resources Code (PRC)

PRC Sections 5019.50–5019.80, Classification of Units of the State Park System, provides guidelines for the designation of State Park units and guiding principles for State Park improvements and management of resources. The PRC regulates the classification of different types of State Parks and provides guidelines for

upkeep and improvements. This code will be used as a reference to plan appropriate improvements within the Park.

California State Parks Operations Manual

The California State Parks Operations Manual provides the policies and procedures that are pertinent to the operation of the State Park System. It is intended as a working document for California State Parks personnel.

Section 0300, Natural Resources

The California State Parks Operations Manual Section 0300, Natural Resources, is the basic natural resource policy document for the State Park System. The policies, definitions, processes, and procedures contained in this chapter guide the management of the natural resources under the jurisdiction of California State Parks, including naturally occurring physical and biological resources and associated intangible values, such as natural sounds and scenic qualities. These policies, definitions, processes, and procedures amplify the legal codes in the PRC, the California Code of Regulations, and the California State Park and Recreation Commission's Statement of Policies and Rules of Order as they pertain to the natural resources of the State Park System.

Section 0400, Cultural Resources

The California State Parks Operations Manual Section 0400, currently under revision, is the cultural resource policy document for the State Park System. The Operations Manual, Section 1832 of the Resource Management Directives (1979) and the Cultural Resources Management Handbook (2001) provide the policies, definitions, processes and procedures to guide the management of cultural resources under the jurisdiction of California State Parks, including pre-historic and historic archaeological sites, historic buildings, features and landscapes, and Native American cultural resources. These policies, definitions, processes and procedures interpret the legal codes in the PRC, the California Code of Regulations, State Historic Building Code, the Secretary of the Interior's Standards, a Memorandum of Understanding between State Parks and the Office of Historic Preservation, Executive Order W-26-92, and the California State Park and Recreation Commission's Statement of Policies and Rules of Order as they pertain to the cultural resources of the State Park System.

California Recreational Trails Plan

The California Recreational Trails Plan (DPR 2002) was prepared by the California State Parks and released in June 2002. It identifies 12 trail-related goals and lists general action guidelines designed to reach those goals. The goals and their action guidelines will direct the future actions of the California State Parks' Statewide Trails Office regarding trail programs. This plan will be followed by a more comprehensive Statewide Trails Plan (Phase Two). Phase One serves as a general guide for trail advocates and local trail management agencies and organizations in planning future trails and developing trails-related programs. Phase One identifies statewide, long distance connector trails, one of which is in the immediate vicinity of the Park, the Mokelumne Coast to Crest Trail. Additionally, other regional trails near the Park have the potential to connect with Bay area and Central Valley trails identified in the Plan. Phase Two will use parts of Phase One as a guide and will incorporate data and generally accepted planning practices, including additional public input and comment.

The mission of the Statewide Trails Office is to:

Promote the establishment and maintenance of a system of trails and greenways that serves California's diverse population while respecting and protecting the integrity of its equally diverse natural and cultural resources. The system should be accessible to all Californians for improving their physical and mental well-being by presenting opportunities for recreation, transportation, and education, each of which provides enhanced environmental and societal benefits.

California State Park's Accessibility Guidelines

The Americans with Disabilities Act (ADA), the federal law that prohibits discrimination on the basis of disability, is applicable to all actions by the states, including the preparation of state park general plans. In compliance with the ADA, California State Parks published *California State Park's Accessibility Guidelines* which was first published in 1994 as *The Access to Parks Guidelines*. The *Accessibility Guidelines* details the procedure to make state parks universally accessible while maintaining the quality of park resources. Also included in the guidelines are recommendations and regulations for complying with the standards for accessibility. California State Parks has also published the *All Visitors Welcome: Accessibility in State Park Interpretive Programs and Facilities (2003a)*, which provides guidance on developing accessible interpretive programs and facilities. The California State Parks' *Transition and Trail Plans for Accessibility in State Parks (2001)* outlines California State Parks' commitment to achieve programmatic access throughout the State Park System and in each of the parks. The visions of these guidelines and plan are embodied in this General Plan.

Statewide Historic Preservation Plan

The California State Park's Office of Historic Preservation published the 2006-2010 Comprehensive Statewide Historic Preservation Plan that guides the vision for historic preservation in California. The document provides goals and objectives that clarify preservation priorities and recommendations on meeting historic preservation needs for technical assistance, education, economic incentives, preservation partnership, and government participation.

Concessions Program Policies

The California State Park and Recreation Commission's Statements of Policy specifies policy that guides the enlistment of concessionaires within California State Parks in Policy I.4 "Operating Contracts." This policy documents provisions for leases and permits; program and concessionaire conflict resolution; outsourcing; contracts; interpretive concessions; public stakeholder meetings; performance bonds and sureties. Concessions programs provide a very important part of the visitor experience at California State Parks. Concessionaires offer facilities, services, and goods that the state could not otherwise provide, ranging from traditional food services and campground grocery stores, to off-road vehicle tours and rafting trips. Within the system's historic parks, concessionaires help California State Parks achieve its educational mission by providing historical reenactments and other educational programs, which are known as "interpretation." The Commission defines "interpretive concession" as a concession that provides an educational service to the public by exemplifying skills reflective of the State Park's interpretive period or theme through products sold, services rendered, or interpretive programs provided. These programs add vitality, interest, and excitement to California's fascinating heritage as preserved and protected by California State Parks.

California State Parks establishes partnerships with a variety of businesses, nonprofit organizations, and public agencies through concession contracts, cooperative agreements, and operating agreements to offer the public these goods and services. The way in which these opportunities are made available to the public is regulated by Public Resources Code Section 5080 et seq.

Inventory, Monitoring, and Assessment Program

As indicated by its name, the purpose of the California State Parks' Inventory, Monitoring, and Assessment Program (IMAP) is to inventory, monitor, and assess the condition of natural resources in the State Park System. The goal of the program is to prepare IMAP plans for each of the state parks using the Environmental Condition Assessment (ECA) process. ECA is a multi-level process for establishing long-term monitoring that uses "environmental indicators" as a primary tool to assess current resource conditions and to detect change in these conditions over time.

The natural resources that may be included in the ECA are wildlife, vegetation, and physical assets. The ECA process is used to identify the significant resources that will be inventoried and monitored. The resulting data is then used to modify and update the monitoring program, in adaptive management of a park, and for proactive planning. ECA emphasizes scientifically based resource management practices and allows park staff to understand how the resource condition of a park affect the visitor experience and the health of ecosystems outside of the park.

Regional Planning Influences

The following local and regional plans have an influence on the management, operations, and visitor experiences of the Park. These documents should be periodically reviewed for important new information as they are continually updated. Summaries of these plans are included below.

- Contra Costa County General Plan
- 2030 Regional Transportation Plan for the San Francisco Bay Area
- Metropolitan Transportation Commission (MTC) 2001 Regional Bicycle Plan
- Contra Costa Countywide Comprehensive Transportation Plan
- Contra Costa Countywide Bicycle and Pedestrian Plan
- Contra Costa Transportation Authority SR 4 East Corridor Transit Study
- Central Valley Region Water Quality Control Plan (Basin Plan)
- Contra Costa County Flood Control District Projects
- East Bay Regional Park District Master Plan
- City of Brentwood General Plan
- City of Brentwood Parks, Trails and Recreation Master Plan
- East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan
- Vineyards at Marsh Creek EIR
- Mount Diablo State Park General Plan

- Notice of Preparation of Environmental Impact Report for the Los Vaqueros Reservoir Expansion Project

Contra Costa County General Plan

The Contra Costa County General Plan expresses the goals and policies that guide the future growth, development and conservation of resources within the County until 2020.

Contra Costa County encompasses 805 square miles and is approximately forty miles from east to west and 20 miles from north to south. The Contra Costa County General Plan designates three separate regions within the County: west, central and east. The west and central regions are currently more urbanized and populous than the eastern region. The eastern region is targeted for the greatest future increase in population within the County, especially in the northeastern areas of Pittsburgh and Antioch. The remaining section of east Contra County is referred to as Other East County. This region is larger geographically, with the majority of lands designated as agricultural, watershed or open space. The Park is located within the Other East County Region along with the City of Brentwood. All lands that comprise Park are designated as Parks and Recreation in the General Plan (Contra Costa County 2004, 2005).

Open Space/Conservation

The Contra Costa County General Plan establishes an Urban Limit Line (ULL) intended to ensure preservation of agricultural, open space and other non-urban uses within the County. The ULL was established to maintain the County's 65/35 Land Preservation Standard, which states that 65 percent of lands within the County must be maintained as agricultural, open space, wetlands, parks and other non-urban uses. No adjustments to the ULL can be made that would violate the 65/35 Standard and no adjustments are allowed within the period of a General Plan. The decision of whether lands were to be located within or outside of the ULL were based on a number of factors, including geographic location and proximity to existing development, physical characteristics of the site such as soil type, slope, and presence of valued resources, or prior designation as open space, parks, or recreation areas. The Park and areas south, west, and some north and east are located outside of the ULL.

Policies and goals relevant to the Park are primarily found within the Open Space Element of the County's General Plan. Additional elements of relevance are the Land Use Element, which describes the overall land use policies and goals of the County, and the Conservation Element, which provides policies to protect natural resources.

The County General Plan defines three major components of the Open Space Element: (1) a policy framework for the preservation of open space lands, (2) an open space map identifying County lands subject to the policies contained within the General Plan, and (3) an implementation program. According to the County General Plan, Open Spaces consist of areas with scenic resources, outdoor recreation, and/or historic or cultural resources. The General Plan identifies the Major Open Space and Major Parks within the County and provides definitions of the types of uses/activities associated with these areas. The Park is designated as a Major Park and defines its use as:

“Intended to provide a broad range of recreational opportunities, which may include hiking, biking, equestrian use, fishing, swimming, camping, or group sports, etc. Preservation of historical structures is also included in this grouping (Contra Costa County 2005).”

The County General Plan states that Major Parks and Open Spaces are valuable to the County, as they enable the preservation of lands for passive and active forms of recreation, as well as aid the conservation of unique natural, scenic, or cultural resources within the County. The County General Plan identifies the State of California and the East Bay Regional Park District as the major park landholders within the County.

The Open Space Element provides maps of regional bicycle, hiking, and equestrian trails throughout the County. The County General Plan encourages the development of local trails that will coordinate with this regional system to provide not only recreational opportunities and access, but also function as a circulatory network.

The Conservation Element of the County General Plan recognizes the need to manage these Open Space lands to preserve valuable ecological resources, and provides goals and policies that aid preservation. According to the Conservation Element, significant ecological resource areas are defined as; (1) areas containing rare, threatened and endangered species; (2) unique natural areas; or (3) wetlands or marshes.

2030 Regional Transportation Plan for the San Francisco Bay Area

In 2005, the Metropolitan Transportation Commission (MTC) updated their regional transportation plan for the San Francisco Bay Area. The Plan details the current and future investments and strategies required to maintain, manage, and improve the surface transportation network in the nine-county San Francisco Bay Area, which includes Contra Costa County. The Plan includes programs to maintain the existing transportation network and improve transportation system management. Additional related planning documents include the regional transportation improvements within the vicinity of the Park. This includes several phases of additional widening and expansion of SR 4 to eventually accommodate four lanes of traffic in the Park. As part of the Regional Transit Expansion Program, a proposed expansion of the BART/East Contra Costa rail system is proposed to provide service to and beyond Brentwood.

Metropolitan Transportation Commission (MTC) 2001 Regional Bicycle Plan

MTC's Regional Bike Plan was published in 2001 as a component of the 2001 Regional Transportation Plan. MTC published an update of the Regional Transportation Plan in 2005, but the 2001 Regional Bike Plan is the most up-to-date version available. The goal of the 2001 Regional Bike Plan is to ensure that bicycling is a convenient, safe and practical means of transportation throughout the nine-county San Francisco Bay Area for all residents. The Plan states several objectives in order to meet this goal, including definition of a regionally significant bicycle route, identification of gaps in the existing network and the means to eliminate them, and identification of programs that enable local jurisdictions to become more bicycle-friendly. The regional bicycle network identified by this plan is primarily utilitarian in function, focusing on connectivity throughout the region. Connections emphasized by the plan are to all incorporated towns and unincorporated areas with populations greater than 5,000 people, mass transit, major activity centers (including parks), and business districts.

Contra Costa Countywide Comprehensive Transportation Plan

The 2004 Update to the Contra Costa Countywide Comprehensive Transportation Plan is the second update to the original 1995 Transportation Plan. The 2004 update is intended to provide the overall direction and a coordinated approach for achieving and maintaining a balanced and functional transportation system within Contra Costa County. The Plan clarifies the vision for the transportation system of Contra Costa and provides the goals, strategies and specific projects for achieving it.

Contra Costa Countywide Bicycle and Pedestrian Plan

The Contra Costa Countywide Bicycle and Pedestrian Plan was adopted in 2003 and is intended to support the long-term vision of the Contra Costa Countywide Comprehensive Transportation Plan. The overall purpose of the Bicycle and Pedestrian Plan is to assess the needs of bicyclists and pedestrians in Contra Costa County, and identify a set of countywide improvements and implementation strategies that will encourage more people to walk and bicycle. To achieve this, the Plan sets forth five goals, as well as policies and actions that will help achieve each goal. These goals include the expansion, improvement and maintenance of existing pedestrian and bicycle facilities, improved safety, and planning for the needs of bicyclists and pedestrians. The Plan recognizes that Contra Costa County's existing land use and topography present obstacles as well as opportunities for walking and bicycling. Thus, the importance of the Plan is to define a functional network of bikeways throughout Contra Costa County that will help local jurisdictions integrate their bikeway systems to the countywide and neighboring networks.

State Route 4 East Corridor Transit Study

The Contra Costa Transportation Authority and the Bay Area Rapid Transit (BART) District spearheaded the Route 4 East Corridor Transit Study and published the results of the study in 2002. The study examined transportation needs and alternatives for the communities of eastern Contra Costa County that would be in addition to the expanded SR 4 Bypass. The study established transportation goals, developed a series of alternatives, and selected a preferred alternative based on that alternative's ability to meet project goals. The preferred alternative proposed the construction of a new mass transit service called "eBART" that would extend existing BART facilities at a much lower cost than a typical BART system. The alternative identifies three phases of project development, with completion dependent upon the availability of funds. The second phase of this project would establish an eBART mass transit system to Byron, and would serve the community of Brentwood.

Central Valley Region Water Quality Control Plan

The preparation and adoption of water quality control plans (Basin Plans) is required by the California Water Code (Section 13240) and supported by the federal Clean Water Act. Basin Plans are prepared, adopted and amended by statewide Regional Water Quality Control Boards (RWQCBs) and ultimately approved by the State Water Resources Control Board (State Water Board). The Park lies within the Central Valley area of the State Water Board's jurisdiction. The goal of the Basin Plan is to designate or establish waters and their beneficial uses to be protected, water quality objectives that will protect those uses, and to provide a program of implementation needed for achieving the objectives.

Contra Costa County Flood Control District (CCCFCD)

In 2002, the CCCFCD purchased 218 acres upstream of the Marsh Creek Reservoir for future expansion. Expansion of the reservoir is needed to expand storage capacity to improve flood protection levels. This work, as well as seismic retrofitting of the dam and habitat restoration is planned and the District is seeking funding to refine and implement the plans. No construction date is projected. (Detjens, pers. comm. 2010).

City of Brentwood General Plan

The City of Brentwood is a rapidly growing city in eastern Contra Costa County. The City of Brentwood is located northeast of the Park, and a portion of the Park is within Brentwood's city limits. The City's General

Plan represents the fundamental values of the City of Brentwood and its vision of future development. The current plan for the City was established in 2001 and sets forth the goals and policies that will enable the City to realize its vision through 2021. Three elements within the plan are relevant to the planning process for the Park: Land Use, Conservation/Open Space, and Circulation.

The Land Use Element states the overall land use goals and policies for the City of Brentwood, and also provides land use designations for all areas within the City's Planning Area. A stated goal of the City is to maintain a high quality environment, noting the importance to the community of maintaining a rural, small-town atmosphere and open space setting. An additional goal of the Plan is to preserve and enhance the views of dominant natural features.

There are three categories of land use designations for the Park. The City's does not have jurisdiction over the land use at the Park however the designations are noted here for informational purposes only. The area of the Park within the City's Sphere of Influence is generally in the northern portion of the site. This area is designated as Urban Reserve. The John Marsh House and immediately adjoining property are designated as Park and the remainder of the site is designated Permanent Open Space. These designations do not specifically define uses or activities that can occur and are presented here for information only. A map showing these land uses can be found in the City of Brentwood General Plan. The Conservation/Open Space Element of the City's General Plan identifies goals that will provide for the protection of agricultural lands, preservation of natural and cultural resources, and preserve and enhance natural open space areas in and around the Brentwood Planning Area. Appendix E provides a summary of related goals and policies for open space and conservation in the City's Planning Area.

City of Brentwood Parks, Trails, and Recreation Master Plan 2002

In 2002, the City of Brentwood published its Parks, Trails and Recreation Master Plan, updating the 1994 Plan, as well as incorporating elements of the 1991 Creek Trails and Revegetation Master Plan, the 1995 East Bay Regional Park District Trails Feasibility Study and the 1995 Brentwood Bicycle Transportation Plan. The Plan is coordinated with the City's General Plan to guide community recreation and open space planning until 2012.

The guiding philosophy of Brentwood's Parks, Trails and Recreation Master Plan is that parks, trails, open space, and recreation opportunities can enhance the everyday lives of its residents as well as increase the economic vitality of the community. The primary purpose and goal of the Master Plan is to establish a vision of a livable city and provide the means by which the community can attain that vision. In the Existing Parks, Trails and Recreation Resources section, regional parks that are resources of the residents of Brentwood are listed. The Park will be an important addition to these resources and within the regional context of other public parks, trails and open space areas surrounding Brentwood.

East Bay Regional Park District Master Plan

The Master Plan for the East Bay Regional Park District was prepared in 1997 with the intent to define the vision, mission and priorities for the District for the subsequent ten years. The Plan states that public service is the primary function of the District, and the Master Plan provides policies and guidelines in order to achieve the highest standards of service in resource conservation, management, interpretation, public access and education. The policies seek to guide development in a way that maintains a balance between protection and conservation of resources and recreational uses of parklands.

East Bay Regional Park District is currently preparing an update of the District's Master Plan, a policy document that guides the District in future expansion of parks, trails, and services. The District provides and manages the regional parks for Alameda and Contra Costa counties, a 1,700 square mile area which is home to over 2.5 million people. The District manages 65 regional parks, over 108,000 acres of open space, and 1,200 miles of trails. The District's Master Plan update is scheduled to be completed in late 2011.

Accompanying the plan is the Master Plan Map, which was updated in 2007 and outlines several proposed new areas within the Park District's jurisdiction. The 2007 Master Plan Map focuses on creating new regional trails, expanding the District to include the Fox Ridge Manor property adjacent to the new Marsh Creek State Park, and expanding existing parks as well as creating new regional parks in a number of areas including Deer Valley, the Byron wetlands area, and Bethany Reservoir.

East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan

The East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (ECCCHCP) was approved in 2007, to provide a framework for the protection of natural resources in eastern Contra Costa County for a thirty-year period. The primary goal, as described by the ECCCHCP, is to obtain authorization for incidental "take" (to harass, harm, hunt, capture, etc.) of 28 listed and non-listed species (covered species) for future urban development in the cities of Clayton, Pittsburg, Brentwood, and Oakley, as well as other unincorporated areas within eastern Contra Costa County.

Vineyards at Marsh Creek EIR

The Vineyards at Marsh Creek EIR was prepared in 2003 for the City of Brentwood to assess the environmental impact of the partially developed Vineyards at Marsh Creek Project and adjacent annexation sites, one of which is the John Marsh House site. Annexation of the John Marsh House site into the City's municipal boundaries allows for the provision of municipal services by the City of Brentwood. The Vineyards project is located immediately adjacent to the Park and is a partially developed mixed-use plan consisting of 1,200 low-density residential homes, 350 multi-family units, 200,000 square feet (sf) of commercial/retail/civic uses, 30,000 sf of office space, a 115,000 sf hotel/conference center, and a 170,000 sf winery with a 1,000-seat outdoor amphitheater.

Mount Diablo State Park General Plan

The General Plan for Mount Diablo State Park was approved in November of 1989 with the intent to guide future projects that optimize public enjoyment of the park's natural, cultural, and recreational resources. The General Plan for Mount Diablo State Park is relevant to current planning efforts because the Park is within the same geographic area and is also owned and managed by California State Parks. Although Mount Diablo State Park is much larger than Marsh Creek State Park, (20,000+ acres vs. 4,000 acres), visitor use, resource management and environmental information can inform the Marsh Creek State Park General Plan, and also enable appropriate planning to ensure visitor services and amenities are complementary when appropriate.

Los Vaqueros Reservoir Expansion Project

The Los Vaqueros Reservoir is located southeast of the Park. The CCCFCWCD manages the Reservoir, and together with the Bureau of Reclamation, prepared an EIR to assess the proposed effects of Reservoir expansion. In March of 2010, the District certified the Environmental Impact Report and approved a project to expand the reservoir to 160,000 acre-feet from the current 100,000 acre-feet to provide reliable water in

drought periods and improve water quality. The objectives of this project are to develop alternative sources of water to support fisheries protection, to ensure a reliable water supply within portions of the San Francisco Bay Area, and to improve the quality of water deliveries to Bay Area municipal and industrial water customers. Construction is planned to begin in 2011. The Reservoir is within the same watershed (Kellogg Creek) as the eastern edge of the Park, and the Reservoir's proximity to the Park establishes the relevance of this project and related studies to planning activities.

Population and Demographics

Incorporated in 1948, the City of Brentwood has historically focused on maintaining its rural heritage and protecting the agricultural resources within and surrounding Brentwood. However, in the late 1960s, the community began to experience rapid population growth. This population growth continued through the 1970s, and escalated during the 1980s and 1990s. Between 1980 and 1990, Brentwood's population grew from 4,434 to 7,563 persons. Much of this population growth occurred as a result of growth pressures from western Contra Costa County and the greater San Francisco Bay Area region. Between 1990 and 2000, the population grew by 15,739 persons to reach a total of approximately 23,300 (2000 U.S. Census). According to the California Department of Finance, the current population (January 2006) is estimated at approximately 45,892 persons. According to the ABAG population projections, the City of Brentwood is estimated to have a population of 62,100 by the year 2025.

According to California Department of Finance estimates, Contra Costa County is home to 1,029,377 residents. Residents have been attracted to Contra Costa County primarily due to the availability of rapid transit, proximity to major employment centers in Oakland, San Francisco and the Silicon Valley, as well as employment growth within the County along the I-680 corridor and Tri-Valley area. The relatively affordable housing prices in the County compared to other Bay Area counties also contributes to population growth. The eastern part of the County has seen a considerable amount of population growth in recent years. Table 9 shows expected population figures for the years between 2010 and 2025 for the City of Brentwood and Contra Costa County.

Table 9
City of Brentwood and Contra Costa County Population Forecast

	2010	2015	2020	2025
Brentwood	51,700	55,600	59,000	62,100
County	1,055,600	1,102,300	1,150,900	1,200,500

Source: Association of Bay Area Governments, Projections 2005

Employment

The City of Brentwood (including its Sphere of Influence) was estimated to have approximately 17,680 employed residents in the year 2005, while the number of jobs available in the City was estimated to be approximately 6,750 (ABAG 2005). The ratio of local jobs to local population is below that of most surrounding cities (i.e., there are fewer jobs per resident in Brentwood than other local cities) and the County at large. By 2010, the City is projected to have 21,720 employed residents, while the number of local jobs is estimated to reach 7,930 (ABAG 2005). At least 61 percent of employed Brentwood residents are currently commuting to work available outside the City.

The major employers in eastern Contra Costa County are predominantly service-based. The major employers within the City of Brentwood continue to be the municipal government, local school districts, and large retail operations. These employment trends are anticipated to persist into the near future. Given the City's existing and forecast imbalance between jobs and employed residents, Brentwood is likely to remain linked to, and dependent on, the wider Bay Area as a place of employment for its residents. However, locally, job growth in the City of Brentwood is anticipated to occur at a more rapid rate than in surrounding Contra Costa County.

The County has one of the fastest growing workforces among Bay Area counties, with growth in its employment base driven primarily by the need to provide services to an increasing local population. Nevertheless, the number of white-collar jobs has increased in the County due to the decentralization of office-related employment to the County from other parts of the region, particularly San Francisco. However, ABAG expects that the County will continue to provide bedroom communities for the workforce of other Bay Area counties. Table 10 shows projected employment figures for Brentwood and the County for the years between 2010 and 2025.

Table 10
City of Brentwood and Contra Costa County Employment Forecast

	2010	2015	2020	2025
Jobs in Brentwood	7,930	9,730	11,780	13,940
Employed Residents	21,720	24,210	26,480	28,620
Jobs in County	406,010	439,020	472,830	507,790
Employed Residents	501,100	541,800	583,400	625,400

Source: Association of Bay Area Governments, Projections 2005

Household Income

According to ABAG estimates, mean household income in the City of Brentwood is expected to increase steadily, from now to 2025. Mean household income for 2005 was estimated at \$84,600, and is expected to rise to \$106,500 by 2025.

According to ABAG estimates, mean household income in the County is expected to increase steadily, from now to 2025. Mean household income for 2005 was estimated at \$89,300, and is expected to rise to \$111,800 by 2025. Table 11 shows mean household income estimates for Brentwood and the County.

Table 11
City of Brentwood and Contra Costa County
Mean Household Income Forecast

	2010	2015	2020	2025
Brentwood*	\$89,700	\$95,800	\$101,800	\$106,500
County*	\$93,900	\$99,700	\$105,600	\$111,800

Source: Association of Bay Area Governments, Projections 2005

* In constant 2000 dollars.

2.3 ISSUES AND ANALYSIS

This section summarizes the key issues that will be addressed in the General Plan as well as a summary of opportunities and constraints as supporting documentation for these issues. The issues and their associated opportunities and constraints have been identified and documented from numerous sources during the planning process including user surveys and letters, public and planning team meetings, diverse and knowledgeable California State Parks staff, and academic research and reports. A detailed constraints analysis was performed utilizing GIS data layers to map the information with the highest sensitivity or potential to have a negative impact on natural and cultural resources. This mapping was used to summarize the issues and analysis presented in this section and to develop conceptual plans for the management zones and alternatives presented in Chapter 3. The following have been identified to cover the range of issue topics and these will also be used in Chapter 3 to categorize the Park goals and guidelines:

- Visitor Use and Facilities
- Natural Resource Management
- Cultural Resource Management
- Operations and Management
- Local and Regional Planning

Visitor Use and Facilities

Key Issues

- Visitor Facilities (FAC)
- Trails and Linkages (TRAIL)
- Interpretation and Education (INTERP)
- Universal Accessibility (UNI)
- Concessions (CON)

Visitor Use and Facilities Issues

Visitor Facilities (FAC)

The Park has been open for limited public guided tours since its acquisition in 2002; however, there are currently no public facilities at the Park. There are select locations available for siting and building facilities, and an opportunity to make new facilities universally accessible. The John Marsh House and surrounding site can serve as a focal area of the Park to greet visitors and provide a central meeting place to launch other activities. There are also other locations within the Park that can act as staging areas to connect with other local and regional recreational facilities or for special events. There may be an opportunity to create a trail connecting the Park and the proposed amphitheater located in the Vineyards at Marsh Creek. Trails, day use, education, camping, interpretation, and special events are some of the activities that could have associated facilities to enhance visitor experience of the Park.

Visitor Use and Facilities Issues, cont.

Opportunities

- Deer Valley Road and the Marsh Creek Road and Walnut Boulevard access points at the Eastern Hills area could be enhanced to provide Park facilities, such as restrooms, trailheads and visitor contact information.
- There are opportunities to provide a range of camping options as there are a lack of facilities in the area. As local and regional populations grow, there will be an increase in demand for these facilities.
- The John Marsh House has the potential to be a focal area within the Park and may serve as a visitor center, interpretive facility, overnight accommodations, academic research station, day use area and group meeting place.
- Existing ranching and farming structures such as corrals, barns and fencing could be used to educate visitors about previous uses of the Park.

Constraints

- Facility planning should take into consideration the need to balance visitor needs with resource protection and minimize impacts to natural and cultural resources within the Park.
- Lack of a public water connection throughout the Park may require the construction of new wells to accommodate visitor facilities in some locations.
- The John Marsh House is currently unsafe and unstable and can only be visited via guided tours.
- Additional natural and cultural resource inventories need to be conducted before facilities are sited and developed.

Trails and Linkages (TRAIL)

The majority of the Park is currently publicly inaccessible by trail or road. There are many trails and old ranch roads known to exist in the Park, although they have not been mapped. A plan for public access and recreation within the Park can explore the potential for using sustainable practices in designing trails and linkages, such as reusing existing trails as an alternative to building new ones, provided they are in locations that will minimize impacts to resources and serve as environmentally sustainable trails. This will serve the dual purposes of minimizing habitat disturbance and facilitating historic interpretation and education. Additional trails may be required for connecting to existing and proposed regional trails from the Park to Round Valley Regional Preserve in the south and to Black Diamond Mines Regional Reserve to the northwest. These connector trails would allow links to Mount Diablo State Park.

Opportunities

- There are many opportunities for providing a diversity of local trails based on use (hiking, mountain biking, and equestrian), location, landscape typology, and surface treatments.

Visitor Use and Facilities Issues, cont.

- Opportunities exist for providing interpretive trails that explore the unique cultural resources within the Park.
- A trails assessment and management plan needs to be completed incorporating the re-use of old ranch roads and trails as Park access routes to reduce the need for new trails and roads.
- Provide connections to existing and proposed local and regional trails and surrounding open space lands, such as the Marsh Creek Trail, Diablo Trail, the Round Valley Regional Preserve and the Los Vaqueros watershed (see Map 11).
- Connect visitors from downtown Brentwood to the John Marsh House and adjacent parklands via the Marsh Creek corridor.
- The need for and layout of additional trails should be determined based on projected visitor use and the carrying capacity of the Park.
- Limitations on crossing Marsh Creek Reservoir and Marsh Creek Road need to be assessed and potential solutions addressed.
- Explore partnerships with allied agencies and trail user groups for maintenance, trail patrols and stewardship.
- There is a need to establish a monitoring program to document and assess resource damage resulting from trail use.
- Maintain habitat integrity and minimize fragmentation through appropriate trail planning.

Constraints

- Formal trails and ranch roads have not yet been mapped in the Park.
- There are safety, security and liability limitations connecting the John Marsh House site with the Round Valley staging area through lands owned by the Flood Control District.
- The Park is bisected by existing and proposed roads making trail connections that may require bridging.
- Trails need to be located and designed to minimize disturbance to sub-surface archaeological resources.

Interpretation and Education (INTERP)

The Park's history and character offer many opportunities for interpretive and educational programs, such as guided walks, themed tours, and interpretive trails. Interpretive facilities can aid in fostering understanding and appreciation of the Park, which can assist California State Parks in stewardship efforts. An early interpretive plan prepared by California State Parks along with new information received as part of this planning process will help support the development of interpretive themes. Framing the interpretive themes around the Park's cultural and natural resource diversity will provide an opportunity to integrate educational and interpretive programs into a variety of visitor uses and activities.

Visitor Use and Facilities Issues, cont.

Opportunities

- Opportunities exist for presenting the unique John Marsh House and associated cultural landscape through themed trails, guided and self-guided tours, and interpretive exhibits.
- Utilize existing farming and ranching facilities for visitor facility use such as demonstrations and interpretation of historic agricultural and ranching activities.
- Presentation of pre-historic Native American themes, through interpretive trails, guided and self-guided tours, and interpretive exhibits.
- Showcase the unique natural resources of the Park, such as the vernal pools, the alkali meadows and grasslands, and the riparian corridor along Marsh Creek.
- Explore alternative methods for interpreting sub-surface cultural resources and the various eras of habitation.
- An interpretation management plan could be developed to promote education and awareness while protecting sensitive resources from adverse impacts associated with increased recreational use. The management plan would more specifically define the objectives, methodologies and concepts for how the general plan goals and guidelines will be achieved.
- Investigate opportunities to partner with interested individuals, universities and organizations for interpretive programs, Park events and planned group use of the Park.
- There are a range of historic and cultural themes that can be developed to create an innovative interpretation and education program at the Park.

Constraints

- A program for promoting visitor interpretation and awareness of the rich history and cultural landscape of the Park is not yet developed.
- Additional research, field investigation and resource evaluation would be helpful to interpret the archaeology and the Park's built environment.

Universal Accessibility (UNI)

Providing for universal accessibility will allow for a full range of users to enjoy the Park. New facilities and trail openings will be designed to provide optimal accessible opportunities throughout the Park. Site topography and natural features may limit the location and extent of accessible trails however, including opportunities for users with varying degrees of ability will be a key consideration while planning future uses and activities within the Park. There are many opportunities to allow persons with varying degrees of ability to explore areas of the Park. In the historic core, historic structures may limit the possibilities for full accessibility due to pre-existing and historically significant features.

Visitor Use and Facilities Issues, cont.

Opportunities

- Allow visitors, particularly near the entrance and around the homestead site, with varying abilities to experience the Park's unique resources.
- Provide accessible trails within the lower valley and some side slopes while preventing adverse impacts to sensitive resources.
- Areas of the Park that can be adapted and designed to best accommodate universal accessibility should be identified and integrated into the recreational program for the site when future activities are being planned.

Constraints

- Site topography, natural features and sensitive biological communities and cultural resources may limit areas that can be made accessible.

Concessions (CON)

There are opportunities to add concessions that complement the site's character and enhance overall park function and interpretive ability. Potential exists to re-use existing buildings for concessions depending on appropriateness of use and condition of the buildings. Ease of access to the Park and its close proximity to the City of Brentwood could encourage concessions for such activities as overnight accommodation, equestrian use, special events and other uses.

Opportunities

- Concessions can embellish the interpretive programs at the Park.
- Opportunities exist to provide for various complementary concession types, particularly, to assist with management of overnight accommodations.
- There is an opportunity to evaluate the viability of providing concession services that complement and enhance the Park's operations needs.
- There are opportunities to define the type of concession activities that would be appropriate to the natural character and historic nature of the Park.

Constraints

- It is not known whether the level of visitor use warrants a viable concession operation.
- Information related to visitor and operational needs needed to develop concessions at this location is currently lacking since the Park has not been previously opened.

Natural Resource Management

Key Issues

- Vegetation (VEG)
- Wildlife (WLIFE)
- Hydrology/Water Quality (WATER)
- Geology/Soils (GEO)
- Scenic/Aesthetic (SCENIC)

Natural Resource Management Issues

Vegetation (VEG)

Existing vegetation inventories are not current. In order to protect and manage sensitive vegetation communities and minimize visitor impacts, it is necessary to conduct vegetation inventories and map vegetation communities by location and attributes. Some information on rare, threatened and endangered plant species exists for the Park but needs updating and confirmation. Grazing has occurred over time, however, its effects on native vegetation and wetland resources are only partially documented. The extent and pervasiveness of invasive species within the Park has only partially been assessed. Management programs and strategies should be developed to ensure protection of native and sensitive vegetation communities.

Opportunities

- There are opportunities to rehabilitate and restore unique vegetation communities and plant species, such as oak woodland based on historic presence, and alkali grasslands.
- There are opportunities to restore portions of Marsh Creek and associated riparian corridors.
- Opportunities exist for vernal pool habitat enhancement and restoration.
- There are opportunities to update and incorporate previous and on-going inventory of the Park's vegetation communities into a GIS.
- There is an opportunity to determine the adequacy of the existing wetlands inventory and to define and fill data gaps.
- Reintroduce extirpated plant species that historically occurred at the Park such as the Mount Diablo buckwheat (*Eriogonum truncatum*).

Constraints

- The extent and degree of invasive species have not been determined, although yellow star thistle and artichoke thistle are present.
- The use of grazing needs to be better understood, including its effects on sensitive vegetation and the role of grazing in vegetation management programs.

Natural Resource Management Issues, cont.

Wildlife (WLIFE)

Although information is available on special-status species found within the Park, more focused species inventories and studies are needed to ensure adequate management programs are undertaken for the protection of all state and federally listed species. Exotic species control needs to be considered as part of a comprehensive wildlife management plan. Based on a review of existing documentation, relevant state databases and reconnaissance-level field surveys, the Park provides or has the potential to provide important habitat for five special-status species, in addition to providing nesting and wintering habitat for special-status raptors.

Opportunities

- Many unique habitat types that are important to wildlife species such as vernal pools, ponds, grasslands, oak woodland/savannah and riparian forest can be found in the Park.
- Protect and enhance wildlife habitat in order to maintain and enrich wildlife diversity.
- There may be opportunities to develop a vernal pool management plan that will help guide the maintenance of sensitive species and associated vernal pool hydrology and vegetative diversity.
- There is potential to enhance raptor habitat and increase local populations.
- There are opportunities to protect and enhance existing and potential habitat corridors and to provide connectivity with other wildlife habitats in the region.
- Opportunities exist to partner and cooperate with local groups and universities to assist with additional inventory and mapping to supplement existing data.
- There are opportunities to define protocols for future wildlife inventories so they can be included in future budget allocations.
- There may be opportunities to conduct focused and detailed on-site studies and analyses for known special-status species.

Constraints

- For some species there are inadequate on-site species surveys currently available.
- Lack of a sensitive species management plan to develop ideal conditions for vernal pool and grassland species.
- Exotic species such as bullfrogs along Marsh Creek and domestic species from the adjacent residential development pose threats to native wildlife.

Natural Resource Management Issues, cont.

Hydrology/Water Quality (WATER)

The park provides quality watershed land for groundwater recharge and nearby creeks and streams. Marsh Creek runs through the Park and historically provided anadromous fish habitat. The reservoir immediately adjacent to the Park contains mercury contaminated water and soils, hence public access will be limited.

There are a series of man-made ponds at the Park that require more documentation on water quality and hydrology.

Opportunities

- Monitor water quality in Marsh Creek and identify recommendations for habitat improvements.
- Evaluate man-made ponds and gather data on water quality and hydrologic function.
- Explore potential to restore native fisheries in Marsh Creek within the Park and working with local groups and agencies leading these efforts.

Constraints

- Portions of Marsh Creek through and adjacent to the Park have been extensively altered through past flood control and other structural changes to the alignment and hydrology of the creek.
- Enlargement or alteration of the Marsh Creek Dam may affect hydrology of Marsh Creek and associated riparian habitat.

Geology/Soils (GEO)

Certain steep slopes and soils across the Park are subject to erosion. A portion of the site has high quality agricultural soils that may allow for future leasing of the former apple orchard area to keep these areas farmed. Soils and geotechnical investigations should be considered before specific site design is undertaken to ensure that new facilities and uses avoid hazard areas or are developed in areas that will cause erosion or permanent damage to soils. High quality agricultural soils should be preserved as much as is practicable through careful planning and siting of facilities in these areas.

Opportunities

- There may be opportunities to maintain farming at the Park, to preserve the high quality agricultural soils.

Constraints

- Existing trails or ranch roads have been used over sensitive soils and may require extensive erosion control.
- Some areas of the site contain highly compacted soils not able to support vegetation, limiting opportunities for successful vegetative rehabilitation and erosion control.

Natural Resource Management Issues, cont.

Scenic/Aesthetic (SCENIC)

Many portions of the Park offer dramatic, uninterrupted views of the surrounding landscape in all directions, particularly of Mount Diablo, and contribute to the overall sense of beauty and character of the Park. Additionally, the predominantly open and undeveloped nature of the Park provides for views dominated by the natural setting with minimal human influences. The landscape aesthetic includes historical and cultural elements, the most dominant being the John Marsh House/ranch site. Some of the adjacent land uses, such as new development at the Vineyards at Marsh Creek are beginning to encroach upon the open and undeveloped views. The construction of the State Highway 4 Bypass changed the views from the John Marsh House and adjacent ranching landscape.

Opportunities

- Interpret and preserve the overall scenic character of the Park landscape, the unique relationships that define it, and the natural aesthetic setting within which it occurs.
- There are opportunities to enjoy and preserve the views from the Park to the surrounding landscape, particularly the view to Mount Diablo.
- Protect the views that contribute to the unique cultural landscape character of the Park.
- Significant viewsheds, vistas and vantage points can be identified and mapped.
- An inventory of the cultural landscape elements and relationships that contribute to the scenic and aesthetic character of the Park, beyond the John Marsh Historic District, could be undertaken.
- There are opportunities for park development and use programs to explicitly provide for the protection and enhancement of scenic and visual resources, so that future activities will not adversely affect the unique aesthetic character of the Park.
- Opportunities exist to buffer some of the objectionable views from the Park using criteria developed in a viewshed analysis for the Park.

Constraints

- Currently, there are no criteria to determine the effects of land use and management activities on the views from and within the Park.

Cultural Resource Management

Key Issues

- Cultural Resource Inventory (CUL)
- Cultural Resource Protection (CUL)

Cultural Resource Management Issues

Cultural Resource Inventory (CUL)

Based on previous studies and investigations, the Park contains cultural resources representing pre-historic occupation and use, as well as historic ranching and mining. Many of these resources have been mapped, but the existing inventory may not be comprehensive and additional resources may need to be included. The John Marsh House is a major focal point of the historic era resources and requires stabilization and rehabilitation to be maintained and utilized to its full capacity. The original adobe site remains unidentified, and the actual extent of pre-historic remains is unknown. Further, a comprehensive historic resources inventory and evaluation for the ranch complex within the historical context of the early 20th century and a cultural landscape inventory for the Park have not been done. This information is important for planning for future uses and activities in this area, and for determining best management strategies for the protection of these resources.

Opportunities

- Additional research to prepare a more comprehensive inventory of pre-historic and historic resources within the Park could be undertaken.
- The preparation of a cultural landscape inventory and evaluation of the Park, including areas beyond the John Marsh Historic District, would inform site specific design of future facilities and interpretive programs.
- A comprehensive research strategy to understand the larger temporal evolution of human settlement patterns in the Park and the region, including additional historical contexts within which to evaluate the current ranch complex built in the 20th century, could be developed.
- The Park may be the center of an enormous Windmiller period settlement that extends well beyond Park boundaries. Further exploration of the archaeological site may shed light on the development of the unique features that are the hallmarks of Windmiller culture.
- Opportunities exist to define the site boundaries for site CCO-18/548.
- There are opportunities to consult with local Native American representatives with regard to the archaeological exploration of pre-historic sites.
- There may be opportunities to retain and reuse the existing ranch complex.

Constraints

- Landscape analysis is a complex process, requiring evaluation within a larger context that extends beyond the Park and encompasses a wide variety of factors.

Cultural Resource Management Issues, cont.

Cultural Resource Protection (CUL)

There is documented archaeological evidence that the homestead site and surrounding ranch areas contain valuable remains suggesting the presence of a massive pre-historic occupation area dating back to the Middle Archaic Period. Subsequent European settlement and ranching activities have created the potential for a rich cultural landscape spanning millennia. Currently, there is no management program in place for the protection of these resources. In addition, the John Marsh House requires stabilization and there is no on-site location for the storage and display of recovered artifacts.

Opportunities

- Opportunities exist to develop management strategies for protecting cultural resources in the Park and to provide for the storage and display of recovered artifacts.
- A comprehensive cultural resources management program could be developed which would address the need for systematic inventories and accommodate future resource identification.
- Development of a comprehensive rehabilitation plan could provide guidance for repairing the architectural features and structures on site. The plan would address rehabilitation priorities and phasing with a view to balancing short-term and long-term goals.
- A cultural resources monitoring program could be developed for ongoing evaluation of site conditions and ground disturbance.
- There is an opportunity to identify an appropriate location on site for a collections facility with provisions for maintenance and resource conservation.
- Opportunities exist to protect/stabilize cultural sites around the Marsh Creek check dam.
- Eligibility forms may be prepared to nominate CCO-18/548 to the National Register of Historic Places.
- There is an opportunity to coordinate with local colleges to encourage students to do thesis or dissertation-level research on pre-historic and historic resources in and around the Park.
- Eligibility forms may be prepared for the John Marsh Historic District and to update the 1971 National Register nomination for the house.
- Development of a maintenance plan for the John Marsh House could assist with long-term operations in together with stabilization and rehabilitation.
- The existing ranch complex could be retained and adapted for re-use where feasible.

Constraints

- The John Marsh House is architecturally unstable and expensive to repair.
- Adjacent new construction visually detracts from the historic setting.
- Any ground-disturbing activities, particularly in the vicinity of CCO-18/548, may impact portions of significant archaeological or architectural sites and features.

Cultural Resource Management Issues, cont.

- CCO-18/548 is being severely eroded in the area of the failed check dam; bank stabilization is needed to halt the ongoing damage to the site.
- Drawing attention to cultural resources may encourage looting of sites. Efforts should be taken to minimize visitor opportunities to take “souvenirs” home that have been taken from sites in the Park.

Operations and Maintenance

Key Issues

- Park Access and Circulation (ACCESS)
- Leases and Easements (AGREE)
- Staffing Needs and Facilities (STAFF)
- Utilities (UTIL)

Operations and Maintenance Issues

Park Access and Circulation (ACCESS)

Local and regional traffic and safety affect Park access and circulation, and should be addressed in planning for future use and development. Additional evaluation of traffic conditions and safety along major access routes is needed. Legible and strategically located signage is necessary for attracting visitors to the Park, orientation and direction, and for managing ingress and egress from the Park.

Opportunities

- Opportunities exist to manage ingress and egress from the Park through appropriate signage and the evaluation of local and regional traffic patterns and safety features.
- Future safety improvements for ingress and egress from the Park can be recommended.

Constraints

- Access from Marsh Creek Road and Walnut Boulevard is not designed for public use and needs evaluation for safety and engineering upgrades.
- The State Route 4 Bypass segments the Park and makes it difficult to direct visitors to the Park.
- A main entry point for visitors to the Park needs to be established.

Operations and Maintenance Issues, cont.

Leases and Easements (AGREE)

Current and past land uses should be reviewed and assessed to determine whether they should be expanded or restricted in the future, as well as how they affect Park operations, visitor use and experience, and resource protection. Existing utility easements have the potential to disrupt Park use and disturb resources as improvements are made. Out parcels within the Park, such as lands owned by the Contra Costa Water Conservation and Flood Control District, require close coordination. The existing lease that East Bay Regional Park District holds for the Round Valley staging area requires coordination for future management of this area and opportunities for expanded visitor use. The proximity of Marsh Creek Reservoir offers a recreational benefit, although careful planning and interagency coordination is required for managing and protecting core reservoir functions and associated habitats. Easements are currently held by an adjacent developer permitting construction of certain infrastructure and access.

Opportunities

- Provide for a staging area to serve as a trailhead or access into the Park as part of a Caltrans park and ride facility where the SR 4 Bypass right of way is adjacent to the Park boundary.
- There is potential to cooperate with CCCFCWCD to provide controlled access to, and use of, the reservoir for recreation, if feasible.
- There is an opportunity to work with CCCFCWCD to provide access over their land for trail connections.
- Opportunities exist to consult with organizations and individuals to whom land is leased to understand future needs and desires.
- There are opportunities to work with EBRPD to expand the staging area at Round Valley.
- Current locations within the Park where leased uses and other agreements are taking place should be reviewed to assess the effects on Park resources.

Constraints

- The flowage easement adjacent to the reservoir may limit use of the area and should be considered in future Plan implementation.

Operations and Maintenance Issues, cont.

Staffing Needs and Facilities (STAFF)

Existing buildings could be adapted for storage, office or other operations uses. If existing buildings are not suitable or cannot be brought up to current codes, a new ranger station and other necessary buildings for on-site work and operations may be needed. There is a need to establish a central point for California State Parks operations for future management of the Park and for law enforcement. Temporary staff and others such as academics performing resource research and inventory could be housed on site on a seasonal or temporary basis. The Park currently has some existing buildings and infrastructure associated with the historic homestead and ranching operations. There is a potential for re-use of some or all of these facilities based on their condition and appropriateness of proposed uses. The presence of abandoned mine shafts in some areas of the Park present some management and safety challenges that should be addressed in park development and use.

Opportunities

- Programming for staff facilities to determine how to meet future operations and maintenance could be developed.
- There are opportunities to define the minimum and maximum staff resources required to operate the Park based on existing and proposed uses.
- There is an opportunity to partner with the City of Brentwood to develop staff facilities.
- Opportunities exist to evaluate the condition of existing buildings and infrastructure and undertake necessary rehabilitation.
- There may be opportunities to re-use some of the existing buildings, facilities and infrastructure associated with the homestead and ranching operations.
- There are opportunities to improve safety in areas of the Park that contain abandoned mine shafts. The locations of existing mine shafts can be defined and mapped, access to these areas should be restricted and emergency management measures should be implemented.

Constraints

- There is no indoor workspace or storage area for vehicles and supplies.

Utilities (UTIL)

Opportunities

- There are opportunities to determine the extent of future facilities and define infrastructure requirements and limitations.
- The priority of phased improvements can be determined, and such improvements would be planned as staff and monies become available.

Operations and Maintenance Issues, cont.

Constraints

- There is no current source for connection to potable water at the Park.
- Due to the size and configuration of the Park with areas that are fragmented, utility connections will be more costly.

Local and Regional Planning

Key Issues

- Interagency Cooperation (COOP)

Local and Regional Planning Issues

Interagency Cooperation

Future management and operations of the Park as well as successful park programming will require strategic partnerships with key agencies that have a stake in park planning and implementation. Current and future planning efforts in the region may also have an effect on park resources and will need to be reviewed to ensure consistency and compatibility with park efforts. Future visitors, particularly adjacent neighbors, need to be kept informed of park initiatives and management goals to allow for cooperation and assistance in resource protection, law enforcement and stewardship. The cooperative effort with the City of Brentwood for this planning process is the first step in possible future endeavors to allow the Park to continue to be an integral recreational and educational focal point within the community of Brentwood.

Opportunities

- Reach out to agencies and landowners to encourage their participation and ensure their awareness of recommended planning projects and potential California State Parks actions.
- Partner with EBRPD and the City of Brentwood for regional trail connections.
- Establish academic relationships with the proposed community college for education and interpretive programs.
- Partner with non-profit groups for inventories, resource management, and historic interpretation.
- Coordinate with the CCCFCWCD on reservoir expansion and dam upgrades to ensure compatibility with Park access and resource protection goals.
- Opportunities exist to develop a Memorandum of Understanding or similar agreement with agencies to share resources and ensure coordinated implementation of Park management.



Park Plan – Chapter 3

3. Park Plan

Following the California State Parks' Mission and other planning mandates, the Park Plan establishes the long-range purpose and vision for the future of Marsh Creek State Park. Specific goals and supporting guidelines further clarify this purpose and vision. These are designed to provide a solid foundation for continued resource protection, preservation, and restoration, as well as visitor facility development, recreation and interpretation at the Park. The goals and guidelines also serve as design and implementation parameters for required subsequent management and development plans.

While driven by current issues, the General Plan is visionary in nature. It is designed as a dynamic document that provides managers with the opportunity to incorporate newly emerging technologies and improved management concepts for resolving current issues, along with the ability to provide adequate direction for resolving issues that may arise in the future.

3.1 PLANNING MANDATES

Management of Marsh Creek State Park is directed by a hierarchy of mandates. The most general mandate is the California State Parks' Mission. Each unit in the State Park System defines its purpose and vision, which must ultimately fulfill the California State Parks' Mission. The General Plan for each unit further defines the unit purpose and vision by providing goals and guidelines by which the management of the Park is guided. The unit classification is derived from the State Parks classification system. Goals and guidelines must be consistent with the unit classification. Management plans and development plans "translate" the goals and guidelines into everyday management activities.

California State Parks Mission

The California State Parks' Mission is to:

"Provide for the health, inspiration, and education of the people of California by helping to preserve the State's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high quality outdoor recreation."

3.2 UNIT PURPOSE AND VISION

The unit purpose and vision serve as guidelines for the future management of the Park. They are related, yet distinct, planning concepts that provide a context and direction for future management and planning efforts. If there is a change in the character of a park unit, such as a significant expansion in size and diversity of park resources, there may be a need for updating a unit's declaration of purpose, vision, and classification in order to provide more appropriate resource protection, park management, and visitor opportunities. The Park's declaration of purpose and vision are described in more detail below.

Declaration of Purpose

The Declaration of Purpose describes the purpose of the Park and is the broadest statement of management goals designed to fulfill its vision. A Declaration of Purpose is required by PRC Section 5002.2(b), "setting forth specific long-range management objectives for the Park consistent with the park's classification..."

The Declaration of Purpose is the “mission statement” for each unit of the State Park System. It guides the contents of the general plan and therefore the future management of the unit. The Declaration of Purpose for Marsh Creek State Park is as follows:

“The purpose of Marsh Creek State Park is to celebrate a rich pre-historic and historic presence and contribute to the existing regional open space network of East Contra Costa County. This Park will seek to further document the Native American use and extent of pre-historic habitation and landscape features and to retain and preserve important aspects of the historic ranch complex and its associated landscape features. The John Marsh House will be stabilized and rehabilitated to be available for future visitors for education, interpretation and other adaptive use. The Park will also manage the diverse natural resources that define the property including open foraging land for raptors, vernal pools, grassland habitat and oak woodland/savannah. The Park’s purpose will also include being open to the public for a mixture of land-based recreational activities that provide education and interpretation about this special Central Valley historic location. This park will be linked with other adjacent parklands through a trail network that will provide local and regional mixed-use trail opportunities. Management of the Park will be focused on balancing cultural and natural resources as well as public access and recreation in cooperation with the City of Brentwood and other public entities. Park management will also take into account the future of this Central Valley location and the growing and diverse population that will come to enjoy the Park and learn about the special resources.”

Park Vision

The Park Vision describes the future essential character and overall appearance of the Park during various phases of General Plan implementation and, ultimately, upon completion of plan development.

Marsh Creek State Park encompasses the last remaining lands of Rancho Los Meganos for future generations. For the first time since the John Marsh House and surrounding complex was purchased in 1981, the Park will be open to the public and become an example of a unique blend of pre-historic, historic and cultural landscape resources amidst a rich array of natural resources. Park managers will strive to balance these resources and allow for a mix of visitor uses and activities that will serve the increasing Central Valley population.

A central focal area of the Park will be the Primary Historic Zone, encompassing the John Marsh House which will ultimately be rehabilitated for a range of visitor uses including a multi-layered interpretive program to relay to visitors the history and development of the house and ranch and John Marsh’s significance in the region. The stone house will be rehabilitated so that visitors can visit this distinctive example of architecture and experience a ranch setting once common in the area. Park interpretive programs will also highlight the pre-historic resources within the Primary Historic Zone that pre-date John Marsh and focus on the unique Windmill Culture which made its first appearance at Marsh Creek over 4,000 years ago as well as earlier occupation dating back 7,000 years. The Primary Historic Zone will also be a place for visitors to connect with the Marsh Creek trail and head to various other places in the Park and to enjoy picnicking and interpretive activities.

The Park will be integral in the regional open space network connecting the City of Brentwood with surrounding parklands for short and long distance hiking. Various types of overnight accommodations will

be provided in strategic locations within the Park including alternative camping such as yurts or cabins, developed car and recreational vehicle camping and hike-in sites. Academic research will be encouraged, as the pre-historic resources are significant regionally and state-wide and can provide greater insight to cultures dating back several thousands of years.

Visitors of all abilities will also have access to other areas of the Park via staging areas that will connect key regional trail corridors with remote areas of the Park. These trail corridors will provide opportunities to see the historic landscape and its special plant and animal communities including Briones Valley and the northern Dry Creek area as well as the Eastern Hills. Visitors will have options to hike through various areas of the Park on continuous trail networks or to take shorter loop hikes. The full trail network will be integrated with day use areas and interpretive and educational viewing stations that will connect visitors with the reason that certain areas are special or how the landscape has changed over time.

The scenic quality of the open landscape will be protected and will provide a sense of an open and undeveloped landscape with a clear view of nearby Mount Diablo. The rolling oak-studded grasslands and vernal pools will provide important habitat to sustain native wildlife species including raptors and grassland birds. Native plants found at the Park will be protected and may ultimately be one of the only locations in the region where these species can thrive. The undulating topography will remain intact and not be unduly altered to change the character of the historic, cultural landscape.

Continued documentation of cultural and natural resources will provide more information about the unique features in the Park and methods to manage the Park with an inherent awareness about resources not yet discovered. Partnerships will be essential for long term implementation of the Park vision. Partners for visitor services, partners for cultural resource documentation and interpretation and partners to continue the inventory of special plant and wildlife that inhabit the Park will be integral in Park management. Through partnerships and the development of Park maintenance and management facilities, a clear presence of multi-disciplined staff will be cooperatively working together for long term stewardship of the Park, providing a refuge for all visitors to experience a healthful and educational place in their community. The Park experience will result in creating new land stewards of the future, living in healthful appreciation for the open, undeveloped landscapes of an earlier era.

Sense of Place

California's state parks offer memorable take home impressions of this state's natural and cultural heritage. Parks possess a sense of place. Many visitors experience it when first arriving, intuitively understanding the special qualities that enabled the site's protection, preservation, and interpretation. Awareness brings a connection and also a sense of belonging for many people.

At Marsh Creek State Park visitors become conscious of layers of history—a place where different people have lived for millennia. California Indians have called this land home for thousands of years. Now dominating the landscape is the Gothic stone house of 19th century pioneer John Marsh. Visitors taking a footpath from the parking area south of Marsh Creek Road encounter other wooden ranch buildings that offer yet more clues to the people who once resided here.

The Park preserves many elements that have provided essential habitat for both wildlife and people. Visitors may picture people playing, eating, working, building and enjoying the land. Low-lying hills with grasslands and oaks once provided seeds, bulbs, and acorns for the Indian people. Barns and equipment at the farmstead recollect the Mexican land grant and later ranch uses when cattle were raised for the hide trade

and later for their meat. The land is hallowed ground. It holds the graves of untold people buried here over the centuries. Consider that today's visitors are only the most recent people to pass through this landscape.

Bicyclists, hikers, and equestrians will share the route to explore Briones Valley. Some visitors follow paths leading beyond the Park's boundaries. Along the trail modern buildings pass from view. Noises from the road and adjacent neighborhoods fade away. A meadow lark's song is carried on the wind. Visitors see Marsh Creek flowing as it has for thousands of years and become aware of the abundant ecosystem that attracted people to this site. Rings of golden wildflowers bloom around vernal pools that dry out as the season advances. At a marshy spot, individuals gather rushes to preserve the centuries-old basket weaving traditions of the region's native Miwok people.

Traveling out of the valley into the rolling foothills, expansive views surround the visitor. Mount Diablo dominates the horizon. At once at home in this place, visitors appreciate the people who chose to live here and the land which continues to bring enjoyment to the region's current residents. They understand the importance of the Park for the land's preservation.

Unit Classification

This unit was classified by the California State Park and Recreation Commission on May 4, 2007 as a State Historic Park. Pursuant to PRC Section 5019.59, State Historic Parks are defined as follows:

5019.59. Historical units, to be named appropriately and individually, consist of nonmarine areas established primarily to preserve objects of historical, archaeological, and scientific interest, and archaeological sites and places commemorating important persons or historic events. The areas should be of sufficient size, where possible, to encompass a significant proportion of the landscape associated with the historical objects. The only facilities that may be provided are those required for the safety, comfort, and enjoyment of the visitors, such as access, parking, water, sanitation, interpretation, and picnicking. Upon approval by the commission, lands outside the Primary Historic Zone may be selected or acquired, developed, or operated to provide camping facilities within appropriate historical units. Upon approval by the State Park and Recreation Commission, an area outside the Primary Historic Zone may be designated as a recreation zone to provide limited recreational opportunities that will supplement the public's enjoyment of the unit. Certain agricultural, mercantile, or other commercial activities may be permitted if those activities are a part of the history of the individual unit and any developments retain or restore historical authenticity. Historical units shall be named to perpetuate the primary historical theme of the individual units.

Justification

The John Marsh House and the original 16.4 acres of land were acquired by California State Parks in 1981 for its unique cultural resources. The house was listed on the National Register of Historic Places in 1971. Under the house and along Marsh Creek, Native American remains as old as 7,000 years have been located. The remaining property is composed of open grass and oak covered hillsides, much as it was 150 years ago.

The Primary Historic Zone, which includes the John Marsh House is approximately 35 acres located between the Marsh Creek flood control dam, the Vineyards subdivision of approximately 1,300 residential homes and commercial space, Vineyards Parkway which is a main route of travel into the subdivision, and the future site

for a new community college. The associated cultural landscape, the 7,000 year old Native American site, and the John Marsh home constitute the heart of the Primary Historic Zone of the new Park. The Parks' remaining 3,600 acres of rolling hillsides of grassland and oaks are remnants of the 13,000 acre Rancho Los Meganos.

Marsh Creek State Park offers the opportunity to meet every aspect of the California State Parks mission. The cultural and natural resources offer a wonderful opportunity to provide for excellent interpretive and educational programs while providing for high-quality outdoor recreation.

3.3 MANAGEMENT ZONES

Management zones in this General Plan describe the overall management purpose and intent for future use of specific areas within the Park. The creation of management zones helps park managers to focus activities and facilities in locations within the Park that are environmentally and logistically suitable.

The proposed zones for the Park are as follows:

- Visitor Facility (VF) Zone
- Natural Resource (NR) Zone
- Primary Historic (PHS) Zone
- Operations and Maintenance (OM) Zone

The description of the management zones below includes each zone's unique characteristics and key existing features that are intended to be considered and incorporated into future plan implementation. Management zones provide the basis for the direction of the type and intensity of development and use within each area of the Park. Natural and cultural resources exist in all zones within the Park and, as described below, shall be protected and managed as part of the future development of the zones.

For each of the management zones the definition includes the following:

- Existing Features
- Purpose and Intent
- Resource Goals
- Land Use

The following table (Table 12) shows the management zones and their acreage. Maps 12 and 13 show the layout and naming of the management zones across the Park.

**Table 12
Plan Management Zones**

ZONE NAME	ZONE ACRES
Visitor Facility – Briones Valley	170.9
Visitor Facility – Dry Creek (north)	17.7
Visitor Facility – Dry Creek (south)	235.7
Visitor Facility – Eastern (north)	112.3
Visitor Facility – Eastern (south)	217.4
Visitor Facility – Historic Area (east)	3.9
Visitor Facility – Historic Area (west)	30.5
Visitor Facility – Round Valley	135.6
Subtotal – Visitor Facility	924.0
Natural Resource – Briones Valley	1963.9
Natural Resource – Eastern Hills	572.2
Natural Resource – Marsh Creek parcels	22.9
Subtotal – Natural Resource	2204.2
Primary Historic (Appurtenance Lease)	3.5
Primary Historic (east)	21.1
Primary Historic (west)	38.8
Subtotal – Primary Historic	63.4
Operations and Maintenance – Eastern (north)	112.3
Operations and Maintenance – Eastern (south)	156.1
Operations and Maintenance – Historic Area	5.9
Operations and Maintenance – Round Valley	46.3
Subtotal – Operations and Maintenance	320.6
ZONES – TOTAL	4087.6 ¹
PROPERTY* – TOTAL	3675.8 ²

*Property total shown here is based on GIS mapping and may not match official California State Parks survey due to variations in calculation methods. For the purpose of the General Plan, parcel shown as A1 on the California State Parks survey for public recreation use, (3.5 acres) is counted in the Park total shown above.

¹ Does not include Marsh Creek Road ROW = 7.6 acres, which is not included within any of the 4 zones.

² Zones overlap; therefore, the total zone acreage is greater than total property acreage.

Placeholder page

Map 12 Management Zones

Placeholder back of Map 12

Placeholder page

Map 13 Management Zones – Primary Historic Zone

Placeholder back of Map 13

Visitor Facility (VF) Zone

Existing Features

Occupying an area of 924 acres, the VF Zone is divided into three major sub-zones, namely, the Historic Area, the Eastern Area, and the Round Valley Area. Table 12 shows the acreages for each of the visitor facility zones. Smaller and less dense, visitor facilities are also proposed for one area in the heart of Briones Valley and in the north in an area known as Dry Creek. The Historic Area encompasses the John Marsh House and its immediate surroundings. Most of the surrounding landscape is open grassland with scattered oak trees. It is accessed from Marsh Creek Road through the existing main entry to the John Marsh House site. This sub-zone is defined based on the Park's northern boundary, the John Marsh House and the existing buildings and cultural resources.

The Eastern Area is located along the eastern edge of the Park and encompasses a part of the Eastern Hills and the isolated portion of the Park north of the State Route 4 Bypass. This site contains former farmland and consists primarily of open grasslands. It is accessed from Walnut Boulevard along the eastern boundary of the site. This sub-zone is defined by the Park's eastern boundary and the hills to the west. The Round Valley Area is located at the southwestern corner of the Park and contains the existing Round Valley Staging Area and Miwok Trailhead currently leased to East Bay Regional Park District. This sub-zone is defined by the southern Park boundary along the Round Valley Regional Preserve and is accessed by Marsh Creek Road.

Purpose and Intent

The purpose of the VF Zone is to provide recreational facilities and services to Park visitors. Visitor facilities and services are centered around the Park's vehicular access points to provide easy access, minimize additional road development, and provide access to local water and power facilities. The intent of the VF Zone is to provide Park visitors with developed recreational facilities in an appropriate location that allows for both a developed recreational experience as well as an opportunity to venture into the natural environment of the Park's interior for a more undeveloped, remote recreational experience. Many of the recreational facilities within the Park are situated outside of, although in proximity to, the Park's sensitive natural areas to ensure protection of these resources while also allowing visitors access to the Park's natural areas.

Resource Goals

The resources associated with this zone are the cultural and historic elements, including buildings and landscape features, as well as the natural environment, viewsheds, existing road access points, and existing connections to water and power facilities. Development of recreation resources within this zone should respect and protect natural and cultural resources through the sensitive siting and architecture of new structures as well as preservation of the configuration of existing site features. In addition, the undeveloped landscape of this zone and surrounding zones contains rolling terrain with scattered oaks as well as views of Mount Diablo, all of which contribute to the sense of place and open space setting of the Park. Future recreational development should also respect and protect viewshed values and seek to maintain the open space setting of the Park.

Land Use

Activities in the VF Zone will include those activities associated with the Park’s visitor facilities and services, such as trail use, picnicking, camping, wildlife viewing and equestrian activities. Equestrian activities and facilities could include trail riding, equestrian campsites, staging areas, concessions for horse rental, stables or an arena. Facilities in the Historic Area will include picnic sites, a group gathering building, restrooms, and a parking/staging area. The Eastern Area, located along Walnut Boulevard, could include a public visitor center, developed campsites (RV and tent sites), group camps, hike-in sites, alternative campsites (tent cabin, yurt, cabin), restrooms, picnic sites, equestrian use and sites for special events. The Round Valley Area will contain hike-in sites, equestrian, and tent campsites, picnic sites, restrooms, and a parking/staging area. The Dry Creek and Briones Valley areas will contain fewer developed facilities, limited to parking/staging areas, restrooms, and picnic sites at Briones Valley. All VF Zone areas will have trails/trailheads and interpretive facilities, consisting of signage as well as interpretive stations at Briones Valley and Round Valley. Table 13 provides a summary of features, facilities/infrastructure, and activities proposed for the VF Zone.

Table 13 Visitor Facility Zone Land Use		
	EXISTING	PROPOSED
Features		
Road access	X	X
Historic resources	X	To remain
Pre-historic resources	X	To remain
Native vegetation & wildlife habitat	X	To remain
Moderate slopes	X	To remain
Connection to electricity	X ¹	X
Connection to potable water	- ²	X
Facilities/Infrastructure		
Trails	-	X
Trailheads	X (Miwok Trailhead) ³	X
Vehicular parking & staging	X (Round Valley Staging Area) ³	X
Restrooms	(Round Valley only)	X
Interpretive signage/station	-	X
Developed campsites	-	X
Hike-in campsites	-	X
Visitor center ⁴	-	X
Picnicking facilities	-	X

**Table 13
Visitor Facility Zone Land Use**

	EXISTING	PROPOSED
Group picnicking facilities	-	X
Environmental study facilities (Group gathering building) ⁵	-	X
Uses		
Hiking	-	X
Mountain biking	-	X
Horseback riding	-	X
Picnicking	-	X
Wildlife viewing	-	X
Environmental nature study & research	-	X
RV camping ⁶	-	X
Developed tent camping ⁷	-	X
Alternative camping (yurts, cabins) ⁸	-	X
Hike-in camping ⁹	-	X
Equestrian camping (single and group) ¹⁰	-	X
Group camping ¹¹	-	X
Interpretive programs	-	X
Guided walks	-	X
Special events	-	X

¹ At Eastern facility area only.

² Assume connections are present along existing roadways.

³ Currently leased and managed by the East Bay Regional Park District.

⁴ At Eastern Visitor Facility only.

⁵ At Historic Area Visitor Facility only.

⁶ 100 sites at Eastern Visitor Facility.

⁷ 75 sites total, 45 at Round Valley Visitor Facility, 30 at Eastern Visitor Facility.

⁸ 20 sites at Eastern Visitor Facility.

⁹ 3-5 sites at Round Valley Visitor Facility, 3-5 sites at Eastern Visitor Facility.

¹⁰ 8 single sites and 2 group sites at Round Valley Visitor Facility.

¹¹ 3 sites at Eastern Visitor Facility.

Natural Resource (NR) Zone

Existing Features

The NR Zone is the largest zone in the Park, and covers an area of 2,204 acres. It encompasses nearly all of Briones Valley and the Eastern Hills, and also includes a part of the Flood Control Easement associated with Marsh Creek and Marsh Creek Reservoir (located north of the Primary Historic Zone). The NR Zone contains many of the sensitive natural resources within the Park, in addition to the many cultural resource sites scattered throughout most of the Briones Valley. Habitat types such as blue oak woodland, freshwater marsh, valley sink scrub, grassland and vernal pool can be found in hills and flatlands of this zone. Such habitats provide for a variety of wildlife and plant species, including many special-status species such as the California tiger salamander, red-legged frog, vernal pool fairy shrimp, and burrowing owl. The NR Zone also contains existing grazing land as well as the abandoned mine.

The NR Zone is the most natural of the four zones and does not contain any development apart from Camino Diablo Road which crosses the southern portion of the Eastern Hills area. This zone is essentially the interior portion of the Park and contains the majority of the rolling hills and wide expanses of open space in the Park, which provide outstanding views of the surrounding area, in particular Mount Diablo.

Purpose and Intent

The purpose of the NR Zone is to protect and enhance the sensitive natural resources of the Park, including the riparian corridor along Marsh Creek, Briones Valley and associated habitats, and the hills to the east. The intent of the zone is to protect and manage natural resources to, where feasible, restore a landscape that is largely similar to what existed when Native California Indians lived here, while also allowing visitors to access and enjoy these resources. Therefore, extensive developed facilities are not appropriate in this zone, but rather low-impact facilities that provide for visitor enjoyment with minimal disruption to the natural environment.

Resource Goals

The resources associated with this zone are the large tracts of native habitats, existing cultural sites, and scenic vistas. Land management activities should reduce invasive species, protect and restore native vegetation, protect wildlife, and help communicate to Park visitors the importance and value of the natural resources contained within the zone. Future development within the NR Zone will be carefully sited to avoid disturbance to sensitive habitats and species and minimize alterations to the surrounding natural environment and ecosystem functioning. As the Park is already fragmented due to easements, roads and adjacent development, management of the NR Zone will aim to avoid further fragmentation resulting from haphazard maintenance activities, inappropriate placement of new facilities, and visitor overuse and avoid additional negative impacts from existing easements and associated activities. Goals for this zone also include maintaining the area as part of a larger, regional wildlife corridor. Placement and size of visitor uses, primarily trails and interpretive information, will be planned to minimize encroachment of the regional wildlife corridor.

Land Use

Activities in the NR Zone shall include a full array of resource management actions as appropriate, as well as recreational uses associated with multi-use trails, including hiking, mountain biking, and horseback riding, as well as wildlife viewing and nature appreciation/study. Several trails are proposed that will begin within the VF Zone and cross the NR Zone in order to connect to other sites or trails, as well as provide visitors the opportunity to experience the natural environment of the NR Zone. Interpretation signage and an interpretive station are proposed to help educate users on habitat values, plant and wildlife species, as well as appropriate behavior within the Park. Additionally, the abandoned sand mine will be managed to ensure public safety and the potential for guided tours in the future (if the site can be made safe for the public), or restoration of the area will be explored. To manage vegetation, a variety of tools will be used to control and/or eliminate invasive species and protect and enhance native vegetation. Grazing is permitted to continue until a vegetation management plan and related cultural goals are established.

There are opportunities to restore vernal pools, unique vegetation communities and plant species, as well as portions of Marsh Creek and associated riparian corridors. Table 14 provides a summary of features, facilities/infrastructure, and activities proposed for the NR Zone.

Table 14 Natural Resource Zone Land Use		
	EXISTING	PROPOSED
Features		
Locally important farmland/grazing land	X	Interim
Wetlands/marshes/seeps	X	To remain
Grasslands/meadows	X	To remain
Vernal pools	X	To remain
Special-status species habitat	X	To remain
Facilities/Infrastructure		
Trails	-	X
Interpretive signage/station	-	X
Abandoned mine	X	X
Wildlife viewing platforms	-	X
Ranch roads	X	X
Uses		
Plant protection and restoration	-	X
Wildlife protection	-	X
Wildlife viewing	-	X
Hiking	-	X

Table 14 Natural Resource Zone Land Use		
	EXISTING	PROPOSED
Mountain biking	-	X
Horseback riding	-	X
Grazing	X	Interim
Environmental nature study & research	-	X
Guided walks	-	X
Interpretive programs	-	X

Primary Historic (PHS) Zone

Existing Features

The PHS Zone, designated as the “John Marsh House Historic Zone” by the Park and Recreation Commission (January 27, 2012), is the smallest of the four zones at only 63 acres, all of which surround the John Marsh House and the corrals across Marsh Creek Road from the house. Besides the historic John Marsh House and surrounding ranch complex (residence, tankhouse, pumphouse, bunkhouses, horse stable/tack room, granary, barn, corrals, and two vehicle sheds), the PHS Zone includes corrals, pre-historic sites, Native American burials and other evidence of occupation. Many cultural resources have been identified within the Park, although there is no comprehensive inventory. Additional research, survey, and evaluations are needed to fully understand the cultural resources and cultural landscape of the Park. The PHS Zone is the core cultural resources area of the Park due to the richness of the resources and time frame that they span. Although this is the core area, other areas of the Park also contain cultural and historic resources and these will be treated with equal protection.

Purpose and Intent

The purpose of the PHS Zone is to protect, preserve, and interpret the multi-layered pre-historic, historic and cultural landscape features found here. Though cultural resources are present throughout the Park, the PHS Zone encompasses a high concentration of valuable cultural resources not found with such diversity in other State Historic Parks. The intent of the zone is to educate visitors regarding the pre-historic and historic resources of the Park while also ensuring these resources are protected and restored. The intent of creating this zone is also to manage cultural resources and ensure their long term protection.

Resource Goals

The resources associated with this zone are comprised of the pre-historic and historic elements, including buildings, landscapes and other surface and sub-surface sites. PHS Zone resources also include the land surrounding the cultural resources, which provides a setting and context for Park visitors to understand the cultural resources. Future development and restoration in this zone will carefully maintain the integrity of the cultural resources present in the zone. Park management will develop treatment measures to protect

known cultural sites and those found in the future. Treatment measures, based on existing California State Parks policies, could include avoidance, specific protective measures (e.g., fencing), site monitoring, and methods to preserve, restore, or enhance cultural resource values. Park management will also follow departmental manuals to consult with Native Americans regarding any cultural resources found in the future and potential future ethnographic use of the site. Interpretive and educational materials and programs prepared for the Park should focus on the history of the Park, its importance in the cultural history of the area and state, as well as respectful and appropriate behavior when encountering cultural resources. Additionally, further cultural resource research will be permitted and encouraged, especially research involving a comprehensive inventory of pre-historic and historic resources, a cultural landscape inventory for the ranch site, and developing a strategy to understand and illuminate the larger temporal evolution of human settlement patterns in the Park.

Land Use

Activities in the PHS Zone shall include research, interpretive programs, and cultural resource protection, preservation, appreciation, and education. Research associated with archeological remains including excavations needed to investigate the presence or extent of sub-surface resources is permitted in this zone. Additionally, trail, day use and lodging facilities in this zone will provide for uses such as hiking, mountain biking, horseback riding, guided walks, picnicking, overnight accommodations, and special events where they are consistent with use zone designations and found to have no significant resource impacts. Overnight accommodations would be limited to adapted reuse of structures. A cultural resource field station is planned in this zone as either part of an existing rehabilitated structure or a portion of a new building. This would be used by cultural resource specialists as part of research and or storage of materials needed for archeological or other cultural resource investigation or documentation. Grazing and other agricultural uses should feature livestock breeds and crop varieties appropriate to the site’s history and that assist in interpreting the ranching and farming that occurred there. Livestock grazing and agriculture should be managed to avoid impacts to the significant archaeological resources within the PHS Zone. Due to the presence of natural resources in the zone, in addition to cultural resources, the PHS Zone will also provide opportunities for environmental nature study and research. Table 15 provides a summary of features, facilities/infrastructure, and activities proposed for the PHS Zone.

Table 15 Primary Historic Zone Land Use		
	EXISTING	PROPOSED
Features		
Historic resources	X	To remain
Pre-historic resources	X	To remain
Road access	X	X
Native vegetation & wildlife habitat	X	To remain
Moderate slopes	X	To remain
Corrals	X	To remain
Facilities/Infrastructure		

**Table 15
Primary Historic Zone Land Use**

	EXISTING	PROPOSED
John Marsh House	X	To remain
Ranch complex	X	X
Cultural Research Field Station	-	X
Trails	-	X
Overnight accommodation ¹	-	X
Interpretive signage/station	-	X
Visitor center	-	X
Staff housing/offices	-	X
Day use facilities	-	X
Uses		
Locally important farmland/grazing land	X	To remain for Interpretive purposes
Cultural resource protection, preservation, appreciation, and education	-	X
Interpretive programs	-	X
Overnight accommodation ¹	-	X
Hiking	-	X
Mountain biking	-	X
Horseback riding	-	X
Picnicking	-	X
Cultural resource study & research	-	X
Environmental nature study & research	-	X
Guided walks	-	X

¹ Overnight accommodations may include restroom and dining facilities through concession.

Operations and Maintenance (OM) Zone

Existing Features

The OM Zone covers approximately 320 acres of land on the far eastern side of the Park along Los Vaqueros Road and a small area around the John Marsh House as well as at Round Valley. The location of these areas makes them strategic places for this zone as they are easily accessible by vehicle, and fairly flat, in addition to

being adjacent to either significant existing or proposed developments, and as such the OM Zone overlaps with three pieces of the VF Zone.

Purpose and Intent

The purpose of the OM Zone is to provide an area for Park operations and maintenance needs and facilities. The intent of the zone is to keep the Park’s administrative, operational, and maintenance activities close to necessary related facilities, but separated enough from public use areas so as not to disturb the recreational and interpretive experience. The existing resources, such as the John Marsh House, the pre-historic sites, and the natural environment, as well as proposed recreational facilities will be the dominant features within the zone, with operations and maintenance facilities integrated into this landscape as less visible features.

Resource Goals

The resources associated with this zone are the cultural and historic elements, including buildings and other surface and sub-surface sites, recreational facilities, and the natural landscape. Future development in the OM Zone will respect and protect these resources through careful siting and architecture of new structures that corresponds with other developments and does not degrade the character of the area and scenic viewsheds. Development of operations and maintenance facilities will also adequately provide for existing and future land management needs to minimize continued disruption to the environment and setting of the Park.

Land Use

Activities in the OM Zone will include the majority of the Park staff’s administrative, operations, and maintenance activities. A ranger station, offices/conference area, and storage of maintenance materials/equipment, vehicular, and historic materials will also be included within this zone. Resource and park management activities along with staging/mobilization of operational/maintenance activities and staff training will take place in this zone. Table 16 provides a summary of features, facilities/infrastructure, and activities proposed for the OM Zone.

Table 16 Operations and Maintenance Zone Land Use		
	EXISTING	PROPOSED
Features		
Road access	X	X
Moderate slopes	X	To remain
Proximity to infrastructure	X	X
Facilities/Infrastructure		
Ranger station	-	X
Maintenance storage	-	X
Historic materials storage	-	X
Vehicular storage	-	X

Table 16 Operations and Maintenance Zone Land Use		
	EXISTING	PROPOSED
John Marsh House	X	To remain
Existing buildings	X	X
Office/conference area	-	X
Uses		
Resource management	-	X
Storage	-	X
Staging/mobilization	-	X
Park management	-	X
Staff training	-	X

3.4 DESCRIPTION OF PREFERRED ALTERNATIVE (ALTERNATIVE C)

Three alternatives were evaluated in the planning process. The Preferred Alternative (Alternative C) proposes the highest level of visitor service development of the three alternatives. General locations of new facilities and primary features of Alternative C can be found on Maps 14 and 15. A general description of the preferred alternative is summarized below by planning area. For further description of the alternative's management zones, see Section 3.3.

Visitor Use and Facilities: The Preferred Alternative proposes several visitor facilities at five areas around the Park. Proposed facilities for day use, overnight use and special events include picnic sites, parking areas, restrooms, a visitor center, and a group gathering area. Many camping facilities are also proposed, including RV, tent, equestrian, group, walk-in, and alternative campsites (tent cabin, cabin, yurt). Guided walks and interpretive programs, along with multi-use trails, wildlife viewing platforms, and an interpretive station are also proposed to provide facilities for visitor education.

Natural Resource Management: Alternative C proposes resource management efforts to protect and restore native habitats along with multi-use trails throughout natural resource areas to allow a variety of user's access to natural areas. Protection and restoration of native plants, as well as protection of wildlife, are proposed in Alternative C. Maintenance of the abandoned mine to ensure public safety, as well as exploration of the potential for public education and interpretation are proposed in the Preferred Alternative. Vegetation management is proposed and could include several techniques and methods, including grazing and prescribed burning. Alternative C also includes allowing and encouraging nature study and research.

Cultural Resource Management: A cultural resource field station, overnight accommodations, and three trail links are proposed for the historic area surrounding the corral in Alternative C. Overnight accommodations would be limited to temporary quarters for visiting researchers or participants in environmental learning programs. A cultural resource field station would be used by cultural resource specialists as part of research and/or storage of materials needed for archeological or other cultural resource investigation or

documentation. The Preferred Alternative also focuses on completely rehabilitating the John Marsh House and using the area for a visitor center and staff offices, in addition to education and interpretation purposes.

Management and Operations: The Preferred Alternative proposes two ranger stations and maintenance areas, as well as storage for historic materials, park maintenance equipment, and vehicles. Existing buildings would be stabilized and re-used to house park operations.

Local and Regional Planning: Alternative C would implement the goals and guidelines for this planning area, including regional trail connections and coordination with other agencies, in the same manner as the other two alternatives.

This page intentionally left blank.

Placeholder page

Map 14 Alternative C (Preferred Alternative)

Placeholder for back of Map 14

Placeholder page

Map 15 Primary Historic Zone Alternative C

Placeholder for back of Map 15

3.5 PARKWIDE GOALS AND GUIDELINES

This section presents Parkwide Goals and Guidelines for achieving the Declaration of Purpose and Vision Statement relating to all aspects of future Park management. Goals and guidelines are defined in the California State Parks Planning Handbook:

Goal—General, overall, and ultimate purpose, aim or intent toward which management will direct effort. Goals are not necessarily measurable except in terms of the achievement of component objectives which attainment of the goal involves.

Guidelines—General set of parameters that provide directions towards accomplishing goals.

This section is organized following the broad categories outlined in Section 2.3, Opportunities and Constraints:

- Visitor Use and Facilities
- Natural Resource Management
- Cultural Resource Management
- Operations and Maintenance
- Local and Regional Planning
- Sustainability

For each category a series of goals is identified based on specific issues and needs identified for this unit, as well as the desired future condition based on the Park purpose and vision. These apply to all geographic areas of the Park. Each goal has guidelines to provide specific future actions that can be implemented to achieve goals in the future. Goals are numbered (e.g., FAC 1) and referenced in the Program EIR to indicate which goals and guidelines mitigate potential environmental impacts. For each goal, one or more guidelines are provided to give direction in accomplishing the goal. Goals and guidelines provided herein are prepared to set the stage for achieving the desired future condition with current available information and data. It should be emphasized that it is impossible to anticipate or realize all Park issues requiring guidance in the future. It is expected that as more research, data collection, monitoring, reconnaissance take place and more of the Park's features and activities are recorded, goals and guidelines may need to be adjusted or revised.

Visitor Use and Facilities

Visitor uses and facilities define the primary uses and facilities that complement the Park and provide the key characteristic infrastructure needed to accommodate a range of visitors through the implementation of the Park vision. The following topics have been defined and described in Chapter 2, Existing Conditions, of this document and are presented in this section under the following categories:

- Visitor Facilities (FAC)
- Trails and Linkages (TRAIL)
- Interpretive Themes (INTERP)

- Concession Opportunities (CON)
- Universal Accessibility (UNI)

Visitor Use and Facilities

Visitor Facilities (FAC)

Visitor facilities are intended to complement the Park's character and to ensure long-term protection of the resources while allowing for public access and enjoyment. In reviewing the need for and type of visitor facilities appropriate for the Park, one factor to be considered is the type, intensity, and quantity of recreational facilities in the immediate and local vicinity. The adjacent parks provide a variety of day-use and overnight land-based recreation opportunities. The increasing Central Valley population indicates that there may be an increased demand for camping and overnight facilities and diverse ethnic groups require options for a variety of facility types.

Goal (FAC 1)

Provide facilities that will enhance visitors' enjoyment of the Park's history and character, respond to local and regional recreation needs, and avoid resource degradation.

Guidelines

- Provide a mixture of facilities for day use and limited overnight accommodations to serve a wide range of visitor needs.
- Expand and improve visitor access at Marsh Creek Road (Round Valley trailhead) and Deer Valley Road.
- Provide recreational opportunities within a regional context to ensure facilities are developed based on demographic trends and demand.
- Utilize the John Marsh House, the ranch complex, and surrounding visitor zone as a centralized focal point for visitors providing a mix of day use and limited overnight accommodation.
- Provide picnicking and camping facilities that celebrate the unique Park characteristics and accommodate visitors of varying abilities.
- Provide visitor facility management that incorporates visitor data, regional demographics, and resource data to support the need for a certain type and intensity of visitor facilities.
- Integrate visitor facilities with other day use and trail development, concentrating these developments to minimize impacts on the resources and to reduce energy consumption.
- Re-use existing facilities, such as the corral area, for interpretation, visitor day use area, or other uses that may be part of a concession plan.
- Develop site designs for new facilities that cluster development in prescribed visitor use zones, reducing ground disturbance and possible impacts to biological and cultural resources.

Visitor Use and Facilities, cont.

- Design facilities in areas designated as Prime Farmland to minimize alteration of the natural landform, utilize permeable pavements, maintain soil values of the site and for compatibility with open space values of the area.

Trails and Linkages (TRAIL)

Trail use by a variety of users will be the primary form of recreation at the Park. Based on a parkwide inventory and analysis, old ranch roads and cattle trails have left a series of paths winding through the Park. A trail management plan, including trail maps, needs to be developed to inform users of where they can go, what uses are permitted, and to assess roads and trails for sound environmental management and accessibility. Key linkages with surrounding open space lands should be plainly marked so visitors know that they can connect with adjacent parklands.

Goal (TRAIL 1)

Design trails and manage use to preserve natural and cultural resources and provide for optimum visitor experiences.

Guidelines

- Develop a maintenance plan for trails to ensure minimal operations efforts, minimization of erosion, and implementation of best management practices in keeping with resource management goals.
- Map wildlife corridors to minimize or avoid developing trails that bisect these corridors or fragment habitats.
- Locate trails where they will not damage cultural resources or wetlands, vernal pools, or other environmentally sensitive habitats and resources.
- Establish a trail monitoring program to ensure that resources are not being damaged from trail use.
- Design and construct all trails according to the California State Parks Trail Handbook.

Goal (TRAIL 2)

Provide a variety and range of trail experiences in response to trail user needs.

Guidelines

- Identify future trail routes and connections and to determine single-use and multi-use options based on visitor experience and resource protection needs.
- Address ADA accessibility of all new trails and alterations to existing trails.
- Explore the best locations for linking to adjacent lands such as the Round Valley Regional Preserve, Los Vaqueros Watershed, and existing and proposed regional trails, such as the Marsh Creek Trail and Diablo Trail.

Visitor Use and Facilities, cont.

- Explore the potential to connect visitors in downtown Brentwood to the John Marsh House via Marsh Creek.
- Provide interpretive signage to allow for self-guided educational trails.
- Explore options for short and long duration loop trails.

Goal (TRAIL 3)

Provide an appropriate amount of trails in a variety of locations throughout the Park.

Guidelines

- Use old ranch roads as trails as an alternative to building new trails and/or reducing the amount of new trails required, if these can be designed sustainably and according to California State Parks trail requirements.
- Develop and maintain a system of multi-use trails.
- Explore the best locations for north to south and east to west trails that connect the different Visitor Facility Zone areas throughout the Park.
- Assess and address limitations on crossing Marsh Creek Reservoir and Marsh Creek Road.

Interpretation and Education (INTERP)

Interpretation is a form of communication that provokes audience awareness about the inherent value and meaning of the park's resources. Interpretation may utilize several forms of media to provide visitors with higher quality experiences and enhanced awareness that fosters better understanding of resource stewardship. Interpretive themes are specific messages about the significant features and elements found at the park and can be used to relay important information about resource protection, park history, and other messages. The Park's location, history, and previous inhabitants as well as current resources and land uses, offer many theme opportunities. The interpretive mission of Marsh Creek State Park is to provide interpretive and educational programs, facilities and media to communicate the significance of its multi-layered pre-historic and historic cultural resources, as well as the Park's diverse natural resources.

The following interpretive periods, primary themes, and goals and guidelines form the basis for future interpretive and educational programs and facilities. The interpretive vision for the Park is to utilize the John Marsh House Historic Zone (Primary Historic Zone) as a central meeting point for orienting visitors and through effective forms of interpretation enable visitors the opportunity to learn about all aspects of the Park's landscape and features.

Visitor Use and Facilities, cont.

Collections Statement

Collections at the Park will be made up primarily of artifacts and objects that are collected from within the Park or in the immediate vicinity, in the event that such resources cannot remain in their original locations. The collections will be used when developing interpretive programs, and portions of the collections may be available for visitor display. The collections may be stored and/or exhibited in the Primary Historic Zone or in a nearby operations or visitor use zone in suitable facilities consistent with California State Parks' guidelines.

Interpretive Periods

The long cultural history of the Park is unusual in that it presents multiple interpretive periods with two significant primary eras.

Primary Periods

A primary interpretive period focuses interpretation on the time period of greatest significance in the Park's cultural history. The significance is determined by important events associated with the park site, or by notable existing historic or pre-historic resources at the site.

A primary period will center on the pre-historic culture of pre-Windmillers and Windmillers people (circa 3000 B.C. – 500 B.C.).

A second, but no less important primary period in the Park, will encompass John Marsh, Mexican California, 19th century native peoples, American emigration, the California Gold Rush and the late 19th century and 20th century, agriculture and ranching, open space preservation, recreational access, Park management and stewardship up to the present.

Park Unifying Theme

As the last vestige of the Rancho Los Meganos, Marsh Creek State Park holds the key to unlocking stories about the people attracted to this land over thousands of years and their interactions with the land, people, plants and animals.

Primary Theme 1: Rare Pre-historic Resources

Pre-historic remains and burials along Marsh Creek provide a rare glimpse of the Windmillers period, dating back 5,000 years ago. These and other pre-historic resources provide a snapshot of diverse human occupation.

Primary Theme 2: John Marsh and Post-native Settlement History

Emigrant John Marsh not only affected settlement during California's Mexican era and later in the California Gold Rush, but also influenced its built environment, including the distinctive stone house.

Primary Theme 3: Cultural Landscape

Historically, ranching and agriculture have shaped the landscape, leaving clues about earlier people and their settlement patterns.

Visitor Use and Facilities, cont.

Primary Theme 4: Natural Resources

The Park plays a key role in protecting regional habitats and wildlife corridors.

Primary Theme 5: Local and Regional Recreation

The Park provides opportunities for short and long-term mixed use recreational activities that promote a healthy lifestyle for urban dwellers.

Goal (INTERP 1)

Develop interpretive and educational programs utilizing available park resource information and the appropriate methods and media.

Guidelines

- Develop parkwide Interpretation Management Plans to guide the production of interpretive facilities, programs, and activities.
- Develop interpretation about John Marsh and the house and ranching complex he developed.
- Develop interpretation of the Park's cultural landscape that explores its evolution.
- Develop interpretation exploring the Park's natural resources including its important role for habitat preservation amid adjacent urban development.
- Develop interpretation promoting recreation appropriate to the Park and the region.

Goal (INTERP 2)

Develop park interpretive programs and facilities to encourage diverse public participation far into the future.

Guidelines

- Create interpretive opportunities using a mix of programs and facilities such as guided and self-guided walks, interpretive signage and outdoor exhibits, campfire programs, visitor center displays, a group gathering area, lectures and school field trips.
- Create accessible interpretive facilities and programs and employ guidelines outlined in *All Visitors Welcome: Accessibility in State Park Interpretive Programs and Facilities*.
- Identify strategies for removing barriers to language, education and economic classes during the interpretive planning phases for the Park.

Visitor Use and Facilities, cont.

Goal (INTERP 3)

Establish a collaborative and partner relationship with the City of Brentwood and other interested parties to provide diverse, accurate and innovative interpretive and educational programs at the Park that are accessible to one or many visitors.

Guidelines

- Explore the potential to use facilities through cooperative agreements, such as the amphitheatre at the adjacent Vineyards at Marsh Creek development site, to provide a large group staging area that allows access to the Park's historic core.
- Interpret sub-surface cultural resources in consultation with Native American and archaeological organizations.

Goal (INTERP 4)

Utilize interpretation to communicate important messages to visitors regarding the long-term management and stewardship of Park resources.

Guidelines

- Develop a comprehensive, accessible, easy to maintain regulatory, informational, and interpretive signage system that minimizes visual and physical impacts to resources.
- Develop interpretive programming that helps achieve other Park management goals including resource protection, public safety, wildfire hazards, human impacts, and other issues.

Goal (INTERP 5)

Through interpretation, encourage visitors to participate in safe and healthful recreation activities that engender a better appreciation for Park resources.

Guidelines

- Develop educational and interpretive services about the value of the dark nighttime sky and the importance of its protection.
- Develop interpretation to support the best recreational uses of the Park.

Visitor Use and Facilities, cont.

Universal Accessibility (UNI)

There is ample opportunity to plan and design for universal accessibility in new facility plans. It is more feasible to plan for universal accessibility of new facilities than to retrofit existing facilities. The proposed visitor use and facility zones are located in places within the Park that will allow for accessibility to be incorporated into site designs for all proposed facilities. They are also evenly distributed to access a wide range of areas in the Park and generally provide easy road access and flat areas that will assist in developing facilities that are ADA compliant.

Goal (UNI 1)

Provide universally-accessible park facilities and high-quality recreational opportunities for all visitors.

Guideline

- Provide universal access to the park's recreation facilities and resources where feasible, including buildings and their contents, historic structures and landscapes, roads, walkways and trails, and the park's important natural and cultural resources, in accordance with the *Americans with Disabilities Act (1990)* and *California State Park's Accessibility Guidelines*. Provide universal accessibility for employees in work areas and in park residences as they are developed or renovated.
- Use the California *Historic Building Code* as a guideline for providing appropriate accessibility in historic structures. The code provides alternative regulations to facilitate access and use by persons with disabilities to and throughout buildings, structures, and sites designated as qualified historic buildings or properties. Reasonably equivalent access alternatives are evaluated as part of this process.

Concession Opportunities (CON)

Goal (CON 1)

Provide concession opportunities that will support the purpose and vision for the Park and enhance the visitor experience without compromising the Park's resources.

Guidelines

- Choose concessions that are appropriate for the natural and historic character of the Park and enhance California State Parks' ability to provide a quality visitor experience while meeting other General Plan goals.
- With the help of recreation user groups and concessionaires, develop concession plans and special events that serve a viable population and that will be successful.
- Ensure that any concessions clearly support the Park's visitor programs.
- Explore the potential to use concessions to build upon the Park's interpretation programs and operate overnight accommodations within the Park.

In addition to goals and guidelines for park visitor and maintenance facilities, certain criteria are utilized to assist in site specific design of future facilities to minimize impacts to resources and to provide for efficient and cost effective development. Table 17 provides a summary of design criteria that can enhance the final location and design of future park improvements.

Table 17
Facility Site Selection Criteria

FACILITY OR IMPROVEMENT	SITING CRITERIA
All Facilities and Improvements (including restroom/toilet structures)	Outside 100-year floodplain for buildings and major infrastructure Site outside sensitive and special-status natural resource areas and sensitive cultural resources, or where effects can be minimized and mitigated Reduce development footprint on farm soils Provide restroom facilities in close proximity to group staging and interpretive programs
Visitor Center	Easy and safe access to major roadway Availability of utilities (e.g., water, sewer or septic, electricity) Large enough area to accommodate parking lot and buildings Provide where there are opportunities for interpretation Without significant effect on scenic resources, as seen from roadways, trails, and scenic viewpoints
Hike-in Campgrounds	Connection to trails Close proximity to recreational resources
Campgrounds Alternative Overnight Facilities	Large enough area to accommodate parking lot and buildings Availability of utilities (e.g., water, sewer, electricity) Connection to roadway Close to recreational resources
Day use Areas	Large enough area to accommodate parking lot and buildings Availability of utilities (e.g., water, sewer, electricity) Connection to roadway
Administrative and Operational Center (Maintenance Facility, Ranger Station, Employee Housing)	Large enough area to accommodate parking lot and buildings Availability of utilities (e.g., water, sewer, electricity) Connection to roadway Central/convenient location within park unit and District Average slope of less than 10% Without visual obstruction of scenic resources as viewed from roadways, trails, and scenic viewpoints
Trails and Access	Connection to roadway and parking areas Meets California State Parks accessibility standards Connection to regional trail network
Bike Ways	Sufficient roadway shoulder width, if on roadway Connection to regional network
Scenic Viewpoints	View of prominent, notable, or characteristic park feature Opportunity for park interpretation Easy and safe access to major road

**Table 17
Facility Site Selection Criteria**

FACILITY OR IMPROVEMENT	SITING CRITERIA
Parking Area	Meets California State Parks accessibility standards Close to recreational resources or trails Easy and safe access to major road Opportunity for Park interpretation and/or orientation

Note: All facility site selection to include universal access.

Natural Resource Management

Natural resource management goals encompass all significant natural resource or physical elements found at the Park. These contribute to the values that make the Park unique, and long-term stewardship is essential to ensure that these resources are sustained and preserved for the future. These resources have been defined and described in Chapter 2, Existing Conditions, of this document and are presented in this section under the following categories:

- Vegetation (VEG)
- Wildlife (WLIFE)
- Hydrology/Water Quality (WATER)
- Geology/Soils (GEO)
- Scenic/Aesthetic (SCENIC)

Natural Resource Management

Vegetation (VEG)

Management of vegetation in the Park focuses on further documentation of individual species, verifying the extent of plant communities, addressing invasive species and long-term protection of rare, threatened and endangered species. Long-term management also seeks to utilize state of the art vegetation management tools to ensure that vegetative resources are not threatened from visitor use or other aspects of park management. Successful management includes working with knowledgeable partners and monitoring to ensure adequate efforts are being made to protect resources.

Goal (VEG 1)

Protect, maintain, and where appropriate, restore locally and regionally important native plant communities.

Natural Resource Management, cont.

Guidelines

- Prepare a vegetation management plan and associated maps that will, where feasible, approximate the landscape as it was when Native California Indians lived here and that is linked to the Park's cultural resource goals.
- Identify tools and techniques, such as prescribed fire, to manage unique communities, including vernal pools, alkali sink scrub, and native grasslands.
- Restore native plant communities, including oak woodland/savannah, native grasslands, and riparian forest along Marsh Creek and other drainages.
- Cooperate with regional conservation plans and policies, including the East Contra Costa County HCP/NCCP, so long as such programs are consistent with the Park's natural resources goals.
- Encourage interested parties, such as local groups and university researchers, to study and monitor native plant communities in the Park.

Goal (VEG 2)

Manage special-status plants and sensitive plant communities for habitat enhancement and protection of special-status species.

Guidelines

- Comply with the State and Federal Endangered Species Acts and other applicable regulations aimed at the protection of special-status plant species and sensitive communities when planning and implementing park projects or management programs.
- Update existing inventories to further document and map locations of special-status species and their habitats.
- Maintain a GIS-based sensitive species database for the Park, including mapped locations of occurrences and specialized habitats, listing status, and current population trends.
- Encourage the continuation of research in the Park and promote partnerships with research institutions and regulatory agencies to protect and enhance special-status species.
- Conduct a feasibility analysis for reintroduction of extirpated species that historically occurred at the Park.
- Minimize conflicts between special-status species management and public use.

Goal (VEG 3)

Protect native plant communities and special-status plants, and effectively manage invasive and non-native species.

Natural Resource Management, cont.

Guidelines

- When implementing habitat restoration projects and landscaping around facilities outside the Primary Historic Zone, use native species that are appropriate to the site and that are obtained from native plant species within Park boundaries or closely surrounding areas. This includes transplanted cuttings and rootstocks or seedlings and saplings grown from collected seed that are genetically compatible. Ensure that all mulches are free of foreign seed.
- Identify invasive and non-native species at the Park and prepare a management plan to manage and remove these species over time. Priority for control efforts should be given to those species that are most invasive, ecologically detrimental, and/or conspicuous at the Park. Maintain a database on distribution and abundance of target populations. Coordinate with the Bay Area Early Detection Network (BAEDN) and use the BAEDN target weed list as a resource for regional invasive species information. State Parks Weed Information Mapping System (WIMS) is an appropriate protocol to use for weed mapping.
- Avoid fragmentation of large intact habitat areas when constructing new facilities and siting trails.
- Provide visitors with information about invasive species damage to native communities and control efforts.
- Coordinate with adjacent park and open space management agencies to facilitate management of invasive species.

Goal (VEG 4)

Preserve the diversity of the Park's native grasslands.

Guidelines

- Identify stands of native grasslands and develop a plan to restore this habitat to appropriate locations within the Park.
- Consult with experts and review existing reports on grasslands and other California State Parks policies for current information on preservation and management of native grasslands.
- Evaluate the use of native grassland management tools and their beneficial or detrimental effects to native species and wetland resources as part of an overall Park vegetation management plan. Potential grassland management tools could include, but are not limited to, the use of prescribed burning, grazing, mowing, and herbicides.
- If the vegetation management plan identifies grazing as an appropriate grassland ecosystem management tool for the Park, develop a grazing management plan to ensure proper grazing management for the benefit of resources.

Natural Resource Management, cont.

Wildlife (WLIFE)

A wide range of mammals, birds and amphibians rely on the Park's special habitats, which are influenced by both the coastal and valley environments. Common, sensitive, and special-status species exist at the Park and in some instances use the open space as a corridor within larger, regional habitats. Some species habitats have been threatened by surrounding development in the region, making the Park a refuge for native wildlife. The Park plans for wildlife management will augment work being proposed in the East Contra Costa Habitat Conservation Plan. Management of wildlife requires additional documentation and a comprehensive approach to ensure all viable habitats have been considered, including a plan to sustain viable wildlife populations.

Goal (WLIFE 1)

Protect, conserve, and enhance existing native wildlife populations and their habitats.

Guidelines

- Conduct additional wildlife inventory and mapping efforts to supplement on-site species surveys.
- Reduce wildlife access to human food and garbage by using wildlife-proof trash containers throughout the Park, including administration, camping, day use, and lodging areas.
- Control exotic animal populations (e.g., bullfrogs, predatory fish) in areas where they threaten native populations.
- Monitor populations of pest animals such as feral cats, wild dogs, and feral pigs to evaluate the effect on native populations and to provide information for developing control programs.
- Encourage and allow investigations of wildlife in the Park, including the distribution and occurrence of special-status species and their habitats, to further understanding of wildlife resources and their condition.

Goal (WLIFE 2)

Protect, conserve, and enhance ecosystems that provide important wildlife habitat values.

Guidelines

- Protect, preserve, and monitor important habitat features such as riparian trees, mature trees with cavities, downed trees, and snags, where they do not conflict with health and safety issues.
- Promote ground squirrel populations in order to support predator populations and other burrow-associated wildlife species, where compatible with other management goals.
- Avoid disturbance to important wildlife habitats including oak woodland/savanna, native grasslands, vernal pools, wetlands, and riparian forest.

Natural Resource Management, cont.

- Enhance areas that support or potentially support special-status species or other important wildlife species.
- Assess stock ponds and other artificial aquatic habitats in the Park to determine their importance to native species. Develop a pond maintenance/removal plan that balances the preservation of special-status wildlife populations in ponds with the prevention of downstream erosion.
- Work with stakeholders in the vicinity of the Park to coordinate efforts to restore habitats and preserve habitat linkages.

Goal (WLIFE 3)

Manage the Park's wildlife habitats for the protection and perpetuation of special-status wildlife species.

Guidelines

- Develop a comprehensive management plan for special-status species in the Park, with recommendations for maintaining self-sustaining populations.
- Protect special-status wildlife species occurring within the Park. Establish a monitoring program for known special-status wildlife locations on a long-term basis to develop baseline data, assess the health of the populations for future management, and take corrective actions, if necessary.
- Maintain a GIS-based sensitive species database for the Park, including mapped locations of occurrences and specialized habitats, listing status, and current population trends.
- Before construction of facilities and trails, survey site-specific areas of potential impact for the presence of special-status species to avoid and minimize adverse impacts to wildlife, their movement, and habitat.
- Institute seasonal prohibition of activities during breeding periods and enact appropriate mitigation measures if needed (e.g., buffer zones, restricted access) to adequately protect special-status species during critical times of the year (e.g., breeding season, dispersal).

Goal (WLIFE 4)

Preserve the biodiversity and genetic integrity of local wildlife populations, where possible.

Guidelines

- Utilize the East Contra Costa County HCP/NCCP to assist in identification and mapping of existing wildlife corridors and explore opportunities to enhance wildlife corridors.
- Ensure that new facilities, land uses, and management activities avoid habitat fragmentation and comply with local, State, and federal regulations when applicable.

Natural Resource Management, cont.

- Cooperate with regional conservation plans and policies, including the East Contra Costa County HCP/NCCP when such programs are consistent with Park's natural resources goals.

Hydrology/Water Quality (WATER)

The quality and quantity of surface water and groundwater and natural hydrologic patterns are integral to the Park's physical health. Much of the native flora and fauna depend on the scattered expressions of surface and subsurface waters in the Park. Hydrologic function is related not only to activities that take place in the Park but also to surrounding land uses, as the Park contributes to the regional watershed. Many of the Park stock ponds are man-made and have altered natural drainage patterns.

Goal (WATER 1)

Prevent degradation of the Park's wetlands, vernal pools, ponds, Marsh Creek and other watercourses related to trampling, surface runoff, and sedimentation.

Guidelines

- Avoid access to Park wetlands, vernal pools, ponds, Marsh Creek, and other watercourses that may cause negative impacts. Provide key, well-marked visitor access points to wetlands and vernal pools and provide interpretive signage to educate visitors about habitat sensitivity.
- Establish minimum buffers and site-specific guidelines for siting future facilities as well as campsites and associated facilities away from wetlands, vernal pools, ponds, and watercourses.
- Inventory, map, and evaluate stock ponds and adjacent earthen dams for removal, maintenance, or restoration. Consider a range of options, including removal of stock ponds that are documented as not supporting special-status species, to restore the natural landscape, reestablish natural watercourses and drainages, and reduce erosion and the potential for dam failure. Consider the cultural landscape as well as potential effects on special-status plant and wildlife species, and evaluate the best solution in coordination with DFG and cultural landscape specialists.
- Avoid trail crossings over springs or riparian corridors. Only build bridges over such crossings where essential and practicable.
- With development of horse-related facilities, implement measures to reduce transport of pollutants from animal waste to natural springs, ponds, and other watercourses.
- Provide native plantings for erosion control around degraded pond shores.

Goal (WATER 2)

Minimize stormwater runoff, promote high quality surface water and groundwater recharge, and prevent soil erosion.

Natural Resource Management, cont.

Guidelines

- Design, construct, and maintain buildings, roads, trails, campsites, and associated infrastructure to minimize erosion and stormwater runoff.
- Consider seasonal requirements of aquatic plant and wildlife species, and plan any work that would result in streambed alteration or riparian disturbance to avoid adverse impacts on these species where feasible.
- Review and incorporate the water quality protection standards and control measures in the Water Quality Control Board's Basin Plans for the region.
- Consult the Clean Water Act for current stormwater management guidelines and comply with National Pollution Discharge Elimination System (NPDES) requirements where applicable. Limit impervious surfaces to minimize runoff; consider the use of permeable materials for new or expanded pedestrian and vehicular surfaces.

Geology/Soils (GEO)

The surface landscape and dramatic topography of the Park are a direct result of the area's subsurface geology and are major contributors to the character and ecology of the Park. Underlying geologic formations and soils can be damaged through erosion caused by vehicular use or other disturbance that reduces plant cover. The eastern portion of the Park contains prime and unique agricultural soils and could be used to continue a lease for farming or for interpretive purposes about historic farming at the Park.

Goal (GEO 1)

Protect the Park's geologic resources and consider limitations of geological and soil resources when planning and constructing new facilities or allowing visitor use.

Guidelines

- Monitor vehicular access to assess and contain damage to soils or existing or potential erosion.
- Use research efforts to document and educate visitors and Park staff about the possible impacts to geological resources. Perform necessary geotechnical investigations prior to restoration of buildings or siting of new facilities and prevent development in potentially hazardous locations.
- Minimize development footprint and cluster new facilities in the Eastern operations and visitor zones to protect prime and important farmland soils.

Natural Resource Management, cont.

Scenic/Aesthetic (SCENIC)

Scenic and aesthetic resources encompass viewsheds, open landscape and character-defining elements, architectural styles, and other features found on site. The scenic qualities are perpetuated by the undeveloped landscape, consisting of open (grassland) and closed (woodland) vegetation defined by scattered large stately oaks as well as the rolling topography. The layout and configuration of the built structures on the site and their materials also contribute to the overall historic character, affecting scenic quality. Signage can also convey an image or identity for the Park, contributing to the aesthetic experience. The dark nighttime sky is an important resource for celestial viewing and contributes to the remote and natural setting of the Park.

Goal (SCENIC 1)

Protect and enhance scenic vistas and large, expansive open space areas, and maintain these free from visual and physical disruptions.

Guidelines

- Identify and map significant viewsheds, vistas, and vantage points.
- Conduct a visual assessment prior to the placement of new structures and site features that need to be located in an identified viewshed. Avoid placement of new structures or other obstructions at or near key vista points, such as the Route 4 Bypass corridor and adjacent to the John Marsh House.
- Minimize the development of new structures and reduce existing structures and other features that visually and physically fragment open space.

Goal (SCENIC 2)

Ensure that new structures are compatible with the Park's historical character, contributing characteristics and natural resources.

Guidelines

- Prior to building new structures explore adaptive re-use of existing structures.
- Ensure that the mass and scale of new structures are compatible with those of existing structures and do not dominate the surrounding landscape.

Goal (SCENIC 3)

Ensure that new facilities and infrastructure are compatible with the character of the Park.

Guidelines

- Identify a common and unified set of site-related details and materials (gates, surface materials, fences, etc.) to ensure they provide a positive contribution to the character of the Park.

Natural Resource Management, cont.

- Avoid introduction of materials not in keeping with the local and onsite character.
- Develop a signage and wayfinding system that incorporates guidelines and standards for signage as well as the location, distribution, and frequency of signs.
- Consult with California State Parks cultural and historic resource specialists when designing structures and features within the Primary Historic Zone.

Goal (SCENIC 4)

Avoid light pollution, where possible, to protect the dark nighttime skies for celestial viewing.

Guidelines

- Prevent aesthetic and environmental damage from duration and intensity of lighting and fixtures.
- Ensure that light fixtures are designed and placed only as needed and are in keeping with site character. Minimize intensity by considering techniques such as low voltage fixtures and downlighting.
- Work with the County, local entities involved with development around the Park, and neighboring landowners to minimize adverse effects from light sources outside the boundaries of the Park.
- Use properly shielded light fixtures in park facilities and minimize the use of exterior lighting to preserve dark skies as a resource.
- Design lighting systems and facilities that minimize light pollution on site and to neighboring areas. Incorporate energy efficient light fixtures into new site designs and building restoration.

Cultural Resource Management

Cultural resource management goals encompass all significant cultural resources at the Park with the understanding that these resources cover sub-surface archaeological elements and the built environment including historic structures and cultural landscapes. There is a rich, multi-layered series of cultural events and habitation that has taken place at the Park and will require a management approach that is responsive of all eras that contribute to the history of the land. These resources have been defined and described in Chapter 2, Existing Conditions, of this document and are presented in this section under the following category:

- Cultural Resource Inventory and Protection

Cultural Resource Management

Cultural Resource Inventory and Protection (CUL)

Management goals and guidelines are intended to guide future actions and decisions about cultural resource management within this State Historic Park. The goals are associated with long-term protection, preservation, and stabilization of cultural resources. Recommendations for inventories, documentation, and additional management and treatment plans, as well as the creation of a Memorandum of Understanding that will form a multi-representational advisory group to direct the future implementation of site specific projects, are provided for in this section.

Goal (CUL 1)

Protect, stabilize, and when possible, preserve all cultural resources located within the Park in accordance with PRC Section 5019.59 pertaining to the classification of a State Historic Park, PRC Sections 5020 et seq., Executive Order W-26-92, and the Department’s Cultural Resource Management Directives.

Guidelines

- All projects or undertakings in the Park will avoid or minimize impacts to cultural resources.
- All projects or undertakings in the Primary Historic Zone that involve ground breaking will involve a qualified archaeologist and a Native California Indian monitor.
- In the case pre-historic human remains are inadvertently encountered during a Park project or undertaking, all work in the area will cease and the following procedures, as identified in the Department’s Cultural Resources Handbook, will be followed: the archaeologist and monitor will contact the District Superintendent, secure the area of the find, and contact the County Coroner. The County Coroner will determine if the remains are pre-historic or not and, if they are, the Coroner has 24 hours to notify the Native American Heritage Commission.

Goal (CUL 2)

Complete an inventory to identify and document all cultural resources in the Park, as well as delineate the precise boundaries of the archaeological resources within the Primary Historic Zone.

Guidelines

- Systematically survey and document (Archaeological Survey Report, DPR 523 records, etc.) all of the Park’s cultural resources.
- GPS record and map all cultural resources in the Park and create a GIS layer of the information.
- Identify potential properties to the National Register, for example, the potential John Marsh Historic District and any potential cultural landscapes, traditional cultural properties, or sacred sites.
- Conduct a limited, subsurface testing program to determine the extent of CA-CCO-18/548H.

Cultural Resource Management, cont.

Goal (CUL 3)

Prior to site specific project implementation in the Primary Historic Zone, prepare a parkwide Cultural Resources Management Plan (CRMP), based on the findings in the inventory.

Guidelines

- The CRMP will include procedures to minimize damage to all cultural resources, both pre-historic and historic, through a review process and the application of best management practices.
- The CRMP will address Native California Indian access to the Park for ceremonial, spiritual, and gathering activities and will inform Native American groups that certain Native American practices, such as the gathering of traditional materials, require a permit when performed within State Park lands. Native American gathering permits allow for the managed gathering of materials, prevent inadvertent significant impacts to natural resources, and promote adherence to departmental mandates or policies regarding natural resources or other park procedures, facilities, or resources, while enabling State Park rangers and other staff to be aware of and supportive of such practices.
- The CRMP will provide interpretive language that addresses the history and ongoing evolution of contemporary Native California Indian people and cultures associated with the Park.
- The CRMP will identify stakeholders and/or park partners that may potentially join a park advisory group.

Goal (CUL 4)

Prior to site specific project implementation in the Primary Historic Zone, establish an advisory group of partners bound by a Memorandum of Understanding (MOU) between California State Parks, the Native American Heritage Commission (NAHC), the Native California Indians identified and maintained on the Most Likely Descendants (MLD) list, and possibly the State Historic Preservation Officer (SHPO), to work in conjunction with each other on site specific facility development plans.

Guidelines

- The District Superintendent and a Department Cultural Resource Specialist(s) will represent California State Parks.
- A designee will represent the NAHC.
- A designee will represent the Native California Indians identified on the MLD list.
- A designee may represent SHPO.
- Additional designees may be identified.

Cultural Resource Management, cont.

Goal (CUL 5)

Prior to site specific project implementation in the Primary Historic Zone, prepare an Archaeological Resources Treatment Plan (ARTP), in accordance with the advisory group's MOU, which stipulates measures and specific procedures in the event of the discovery of significant cultural resources including artifacts, objects, features, as well as Native American human remains, during any ground disturbing projects, facility development, or other unanticipated discoveries.

Guidelines

- The ARTP will provide a framework for all future site specific development in the Primary Historic Zone.
- Preservation in place and avoidance of significant archaeological resources will be the preferred manner of mitigating impacts.
- Project managers will develop project descriptions in consultation with the advisory group during the pre-planning phase of site specific projects in the Primary Historic Zone.
- Develop an archaeological monitoring program under the direction of the advisory group to monitor all facility development and ground disturbance activity in the Primary Historic Zone.
- The ARTP will address the care of non-burial related artifacts in consultation with the advisory group.

Goal (CUL 6)

Manage the use and maintenance of the National Register listed John Marsh House and the National Register nominated archaeological site CA-CCO-18/548H according to the United States Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties.

Guidelines

- Develop a plan for pursuing stabilization and possible rehabilitation of the John Marsh House.
- Retain and protect existing design and historic fabric as much as possible.
- Explore the potential of a John Marsh Historic District to the National Register of Historic Places.
- Maintain the historic viewshed.

Goal (CUL 7)

Expand the understanding of the context for the historic cultural landscape as it relates to the landholdings in the Park beyond the John Marsh House area and era.

Cultural Resource Management, cont.

Guidelines

- Retain a ranch-like character in the Primary Historic Zone that does not have an adverse effect on either the National Register listed or eligible cultural resources.
- Develop a 20th century historic context within which to document and evaluate the ranching complex and related historical archaeological sites.
- Document and evaluate additional elements of the cultural landscape such as features associated with ranching and agriculture and other contributors to a historic rural landscape, using the National Register and California Register criteria.
- Consult cultural landscape specialists before implementing projects that may affect or have negative impacts on cultural landscape contributing elements and features.

Operations and Maintenance

Infrastructure and operations are at the core of a functional unit and integral to meeting the Park's purpose and vision and managing resources and visitor uses. Because future staffing and management structures may change, interagency and intra-district cooperation and sharing of personnel and resources can make it easier to ensure efficient operations and up-to-date infrastructure. Existing infrastructure and operations have been defined and described in Chapter 2, Existing Conditions, of this document and are presented in this section under the following categories:

- Park Access and Circulation (ACCESS)
- Leases and Special Agreements (AGREE)
- Staffing Needs and Facilities (STAFF)
- Utilities (UTIL)

Operations and Maintenance

Park Access and Circulation (ACCESS)

Public access to the Park is currently limited to one location off Marsh Creek Road. Deer Valley Road and Walnut Boulevard are the other major roads that will service the Park. Interior park access is limited by parcels such as the flood control lands situated in the center of the Park and the division of the eastern areas of the Park by the SR 4 Bypass. The proposed staging areas and visitor access are dispersed throughout many areas along existing roads but clear signage and safety needs to be designed in cooperation with transportation authorities. Additionally, creating improved ingress and egress from Marsh Creek Road and Deer Valley Road and new access on other local roads may require considerable safety improvements such as turning lanes. Staff and visitor access and circulation needs to be coordinated and maintained to optimize efficiency, security, emergency access, and enjoyment of the Park while remaining in keeping with the site's character.

Operations and Maintenance, cont.

Goal (ACCESS 1)

Provide a safe and well-signed ingress and egress to the Park.

Guidelines

- Work with Caltrans and Contra Costa County to identify immediate, short-term safety and signage improvements that can be made and ensure that these are incorporated into regional transportation plans and budgets.
- Map and document existing internal Park roads and ascertain those that will best serve long term operations and those that can be restored or closed.
- Identify the projected long-term infrastructure needs to adequately manage for future increased visitor use.
- Ensure that signage provides clear information for access to the Park.
- Assess local and regional traffic patterns to identify potential actions to improve ingress and egress to the Park.
- Assess the traffic impacts of proposed land uses and facilities prior to development in order to ensure that appropriate traffic facilities and management are incorporated into site designs. Evaluate the potential for a staging area as part of a Park and Ride facility adjacent to the SR 4 Bypass.

Goal (ACCESS 2)

Provide intermodal emergency access to key areas of the Park.

Guideline

- Ensure that emergency access is permitted for Park staff members and entities, such as CAL FIRE, for wildland fire access and other such uses.

Goal (ACCESS 3)

Provide a well-defined, safe entry handling all visitors and a variety of vehicles during peak-use days and all seasons.

Guideline

- Design an up-to-date entry with current and future vehicular and safety needs. The up-to-date entry should respect the Park's character, by considering such things as minimizing road widths and using appropriate surfaces.

Goal (ACCESS 4)

Provide well-defined visitor access and use areas with clear signage.

Operations and Maintenance, cont.

Guidelines

- Maintain and enhance the existing entry road to maximize efficiency and safety for parking, day use, cattle corrals, and any future facilities.
- Develop and maintain clear signage for visitor access and orientation throughout the Park.
- Develop a comprehensive transportation improvement plan as part of the Park's Roads and Trails Management Plan to explore the optimum safety and design solutions that will minimize impacts to natural and cultural resources and the visual character of the Park.
- Provide signs clarifying public property boundaries where necessary and provide visitors with information regarding Park rules, wayfinding, and regulations to minimize public/private use conflicts and trespassing.

Goal (ACCESS 5)

Secure access to the abandoned mine area to maximize public safety.

Guidelines

- Define and map locations of existing sand mine shafts. Use appropriate methods (fencing, signage, etc.) to improve visitor safety at the abandoned mine.
- Interpret the dangers associated with the mine.
- Work with the Department of Conservation for proper closure of the existing mine shafts.

Goal (ACCESS 6)

Address the threat of wildland fire and the associated danger to human life in the Park.

Guidelines

- Limit access points into the Park, monitor visitor use patterns, and provide clear information about fire danger.
- Monitor regional fire weather information and other fire ecology data to understand onsite fire danger and relay this information to visitors.
- Coordinate and collaborate with local jurisdictions, fire safe councils, neighborhood associations and Park neighbors in developing wildfire management plans and strategies.
- Incorporate educational information regarding fire in the wildland-urban interface zone into the Park's signage and interpretive materials and programs.

Operations and Maintenance, cont.

Leases and Special Agreements (AGREE)

- The Park has a variety of legal agreements including leases and easements with different entities. These affect Park management and Plan implementation as they may limit where new uses or facilities can take place or may require future staff coordination to monitor and maintain these agreements. It is important that these agreements are kept up to date and that they respect the purpose and vision of the Park while honoring any legal requirements. The approval of the General Plan will set forth a new vision for the Park that future legal agreements and their implementation will need to comply with Park goals and guidelines.

Goal (AGREE 1)

Research, evaluate, and establish effective and appropriate methods for Park vegetation management.

Guidelines

- Continue existing monitoring of vegetative species composition in some grazed areas and improve the program to include monitoring in other locations as well as for other parameters such as wildlife species composition and effects on habitat values.
- Evaluate the use of grazing as a grassland management tool as part of an overall park vegetation/ecosystem management plan, consistent with California State Parks policies on livestock grazing.
- Thoroughly review monitoring reports, adjust enclosures and intensity of grazing accordingly and based on goals for species composition and other ecological requirements.
- Ensure cattle are not causing environmental degradation, particularly at ponds and springs.
- Grazing may be maintained at the Park until a vegetation management plan is developed.

Goal (AGREE 2)

Investigate and seek opportunities for securing leases, easements or parcel additions from willing sellers that are consistent with the goals and guidelines of the Plan and improve the functionality of the Park.

Guidelines

- If opportunities arise to purchase adjacent parcels for park use, California State Parks should investigate ways to obtain the necessary funding.
- Contact adjacent landowners to identify any parcels that may be for sale and that are suitable and desirable as park additions.
- If deemed feasible, seek a new lease to manage the farmland in the eastern portion of the Park to maintain historic agriculture in the area and utilize the quality soils located there.
- Coordinate with regional open space management agencies, planning agencies, and non-profit organizations to identify acquisition and easement opportunities.

Operations and Maintenance, cont.

Goal (AGREE 3)

Ensure that all leases, easements, access agreements, or other legal arrangements are in the best interests of the Park's purpose and vision.

Guidelines

- Discuss future needs and desires with lessees and easement holders and incorporate information into site designs and management plans.
- Review all legal agreements regularly and check operating language to ensure compatibility with the Park's mission, visitor experience, and operations, and monitor any physical effects over time.

Staffing Needs and Facilities (STAFF)

The proposed plan calls for strategic locations where new staff and operations facilities would have the least impact on resources, would be clustered with other facilities to reduce infrastructure requirements, and would have good road access resulting in a quality level of staff presence for safety, enforcement, and efficient maintenance. The proposed locations also allow for flexibility to de-centralize staff operations and provide two potential locales for a base and ancillary operations. Identifying long-term needs and plans for staff operations will prevent piecemeal development.

Goal (STAFF 1)

Ensure that park housing meets fire safety and functionality according to local building codes.

Guidelines

- Allow use of the existing ranch house for staff housing if deemed in conformance with applicable building and fire codes and if not deemed to reduce or diminish the intrinsic value to the Park's cultural landscape.
- Ensure adequate office space and ranger station to provide self-contained, onsite management while continuing to interpret historical structures.
- Explore opportunities to provide staff housing away from the ranch complex and separate from public access areas.

Goal (STAFF 2)

Provide adequate, all-weather work space and materials storage for maintenance functions and associated vehicular storage.

Guideline

- Design multi-purpose all-weather work areas for storage of supplies and tools, and work areas in proximity to vehicle storage and maintenance areas, that are consistent with best management practices for stormwater drainage, etc.

Operations and Maintenance, cont.

Goal (STAFF 3)

Centralize Park operations and administrative functions.

Guideline

- Provide a headquarters/ranger station to accommodate administrative, enforcement, and management staff needs onsite.

Goal (STAFF 4)

Allow and promote Park employment opportunities for researchers and seasonal interns.

Guideline

- Identify opportunities for providing housing or other needs that would attract and provide for researchers and seasonal workers.

Goal (STAFF 5)

Provide adequate staffing of the Park to meet General Plan goals.

Guidelines

- Determine minimum and maximum staff resources required to operate the Park as stated in the General Plan.
- Determine adequacy of staff facilities and recommend methods of meeting future needs.

Utilities (UTIL)

Current and up-to-date utility needs for the Park will require upgrades to existing service and the installation of new service in additional areas of the site. Currently, the most constraining limitation is the lack of potable water in many locations where new development is proposed. Current water storage and distribution are limited and expansion is also restricted based on the limited ability to access certain remote portions of the Park. Similarly, wastewater treatment is limited and currently not available in areas where new campgrounds and sanitary facilities are being planned.

Goal (UTIL 1)

Ensure long-term infrastructure functioning of the Park.

Guidelines

- Provide for the installation of a potable water supply and distribution of water to buildings and key visitor locations.

Operations and Maintenance, cont.

- Identify other utility needs and implement utility improvements comprehensively to avoid unnecessary site disturbance and expensive rerouting of utility corridors and junctions over time.
- Determine the extent of future facilities and define infrastructure requirements. Develop a long-term utilities plan that is compatible with other Park goals and guidelines.

Goal (UTIL 2)

Use water effectively to reduce water demand.

Guidelines

- Employ water conserving design and fixtures in new construction, wherever possible.
- Use native plant materials and employ other water conserving techniques for landscaping.

Local and Regional Planning

Local and regional planning encompasses coordination and cooperation with landowners, advisory boards, regulatory agencies, and municipalities in the vicinity of the Park. The land around the Park and visitors to the Park and in the region are continually changing and can affect the use and condition of the Park. Issues and topics related to local and regional planning have been defined and described in Chapter 2, Existing Conditions, of this document and are presented in this section under the following categories:

- Interagency Cooperation (COOP)
- Regional Plans (REG)
- Population and Demographics (POP)

Local and Regional Planning

Interagency Cooperation (COOP)

Outreach to and cooperation with sister agencies and adjacent landowners can greatly benefit the Park and its activities. Issues that may be relevant to local residents about land use in the Park, as well as to regulatory requirements, can be clarified early in the planning and design process.

Goal (COOP 1)

Coordinate with all adjacent landowners, Park lessees, concessionaires, easement holders, and local and State agencies to share resources, when possible, and ensure coordinated implementation of Park management actions.

Local and Regional Planning, cont.

Guidelines

- Document mutual aid protocol for the Park and confirm cooperating agencies, including CAL FIRE for emergency, rescue, fire, or other incidents requiring mutual aid.
- Identify regulatory requirements and permits needed for Park actions and communicate early with the associated agency to prevent review delays.
- Develop a relationship with the proposed community college for education and interpretive programs.
- Partner with non-profit organizations for inventories, resource management, and historic interpretation.
- Consult with the Contra Costa County Flood Control District on reservoir expansion, dam upgrades, recreational use of the reservoir, and reservoir crossings to ensure compatibility with Park access and resource protection goals.

Regional Plans (REG)

There are many efforts to accommodate the continuing population growth in the region; these are being documented in a variety of plans by local and state agencies. Additionally, many surrounding privately owned ranches are being subdivided and developed. Overlapping planning efforts can cause oversight of important issues relevant to Park planning and surrounding land uses can greatly influence the Park's management and operations.

Goal (REG 1)

Share information with local and regional jurisdictions regarding the potential impacts to the Park from regional planning initiatives and surrounding development, to ensure compatibility with the Park's purpose and vision.

Guidelines

- Regularly review applications to Contra Costa County for development in the vicinity of the Park and comment when appropriate.
- Review and comment where applicable on Contra Costa County General Plan updates and regional projects.
- Coordinate with regional open space advocates and open space management agencies to identify common planning concerns.

Local and Regional Planning, cont.

Population and Demographics (POP)

Lack of detailed visitor attendance data can inhibit the planning of Park facilities and the anticipation of staffing needs and operations. Because of the Park's central location, the Park can serve coastal as well as Central Valley residents with varying recreational desires and abilities. Following the regional and local population and demographic data, documenting this information, and collecting visitor profiles will aid in future management of the Park.

Goal (POP 1)

Incorporate visitor use data and regional population and demographic information in planning and construction projects at the Park.

Guidelines

- Begin visitor attendance data collection efforts to provide detail about visitor use, duration, satisfaction, volumes, and seasonality of visitation.
- Follow regional population and demographic reports such as the U.S. Census and countywide projections to ascertain future visitor needs and priorities.

Climate Change and Sustainability

New policies and regulations related to climate change, greenhouse gas emissions and sea level rise may have an effect on future planning and implementation of the Park plan. Park planning and operations should consider steps and actions to reduce greenhouse gas emissions related to vehicular fleets and visitor access, waste reduction, energy efficiency, green building, and environmentally preferable purchasing. Parks and open space areas will become even more important refugia for plants and animals as well as for carbon sequestration. Sustainability is one of many important elements in the design, development, and operation of park facilities and all aspects of park management. A widely used definition of sustainable development is a “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Sustainability is integrated as a basic tenet of this General Plan, as illustrated in the management guidelines and recommendations for facility locations based on a natural and cultural resource-based opportunity and constraints analysis. Sustainability includes incorporating practices that reduce carbon emissions related to global climate change. Plan implementation will consider developing solutions that consider reducing the carbon footprint of future projects as much as practicable. Sustainable design practices can also be incorporated into future area-specific projects during the planning and design phases. The benefits of sustainable design concepts and practices include:

- Increasing environmental benefits (conservation of natural resources and reduced waste).
- Reducing operating costs through less energy consumption.
- Promoting better health for Park visitors (for example, through use of fewer toxic and low-emitting materials and interior climate control).
- Increasing operations and maintenance efficiency (more durable products, less maintenance of toxic substances, lower maintenance costs from resource and energy conservation).

Local and Regional Planning, cont.

- Using adaptive management techniques to monitor and adjust approaches to resource and visitor management for long-term benefits.

Goal (CLIM 1)

Coordinate with City and County transportation agencies to develop strategies and action plans for more energy efficient access for Park visitors and fleet management such as shuttle service and car-pooling.

Guidelines

- Review state, county, and city climate action plans and identify opportunities and actions to incorporate the use of a regional shuttle service from key locations to access the Park.
- Use low emission or alternative fuel vehicles for Park operations and maintenance.
- Encourage the use of public transportation and car-pooling in outreach and education to Park visitors.
- Encourage cycling to the Park and provide bike storage and racks for employees and visitors.

Goal (CLIM 2)

Incorporate energy efficient and green building practices for all applicable Park facilities and operations.

Guidelines

- Implement energy efficiency and green building standards that identify specific actions for new buildings, Park maintenance and operations and visitor management to reduce energy usage, increase efficiency and utilize renewable energy sources.
- Programs such as LEED (Leadership in Energy and Environmental Design) shall be consulted for development of facilities and site-related construction.
- Educate and train Park staff in best management practices for energy conservation and provide visitors with information about Park practices related to energy efficiency and conservation.

Goal (CLIM 3)

Consider sea level rise when planning, designing and siting new facilities and Park operations.

Guidelines

- Consult current available scientific information when considering best practices related to global climate change and sea level rise when planning and designing future infrastructure and facilities.

Local and Regional Planning, cont.

- Identify areas that may be affected by future sea level rise due to climate change and ensure that new facilities, storage areas and other infrastructure are not located in areas that will be inundated as sea level rise.
- Avoid construction in areas that may be subject to future flooding due to climate change.

Goal (CLIM 4)

Employ recycling and waste reduction practices in Park development, visitor services and Park operations.

Guideline

- Identify and implement techniques for recycling and reuse of materials.

3.6 RECREATION CARRYING CAPACITY

This section describes California State Parks' guidance for measuring carrying capacity for State Park holdings. It also presents examples of environmental quality indicators to be used for monitoring the success of the desired future conditions presented in Section 3.5 as goals and guidelines.

Characterization of Carrying Capacity

Carrying capacity as it relates to recreation has been discussed and defined in a variety of forums at both the state and federal levels. Federal land management and recreation agencies have developed several models for analysis of resource conditions, monitoring, and assessment of the visitor use impacts. In the United States, Limits of Acceptable Change (LAC) was first implemented to address visitor management issues in designated wilderness managed by the U.S. Forest Service (USFS) in the Bob Marshall Wilderness of Montana. The National Park Service uses a derivative system known as the Visitor Experience and Resource Protection (VERP) planning process. *Visitor Capacity on Public Lands and Waters*, a report by the federal Interagency Task Force on Visitor Capacity on Public Lands, provides another approach to visitor capacity on lands used for recreation.

PRC Section 5019.5 requires California State Parks to assess carrying capacity for proposed park plans:

Before any park or recreational area developmental plan is made, the department shall cause to be made a land carrying capacity survey of the proposed park or recreational area, including in such survey such factors as soil, moisture, and natural cover.

PRC Section 5001.96 further states that:

Attendance at state park system units shall be held within limits established by carrying capacity determined in accordance with Section 5019.5.

The California State Parks' Planning Handbook provides the following definition:

Recreation carrying capacity can be defined as a prescribed number and type of visitors that an area will accommodate given the desired natural/cultural resource conditions, visitor experiences, and management program.

The Planning Handbook notes that the plan should include established goals and guidelines for visitor use management that will lead to the desired future conditions. It also states that:

Carrying capacity (use limits) may be established for a unit (or individual areas) at the time when more detailed information is made available; more appropriately during the preparation of management plans.

Because this General Plan is a first step in long term planning and development at the Park, certain data related to the number of visitors and their intensity of use are unavailable. As the Park will be managed adaptively, as new information is understood, a series of environmental quality indicators have been developed and are summarized in Table 18. To fully address recreation carrying capacity, the following key components are necessary:

- Data Collection—Chapter 2, Existing Conditions, is a summary of all known data that are available and were collected as part of this planning process. The discussion recognizes that there is not a complete baseline of data for the Park, and that some of the goals defined in this Plan identify the types of future data collection that are still needed.
- Park Purpose—this chapter sets forth the Park’s purpose and vision.
- Desired Future Conditions—Section 3.5 in this chapter describes the desired future conditions in the form of goals and guidelines.
- Quality Indicators—these are based on the desired future conditions and suggest when alternative management actions (adaptive management) are needed to ensure that the conditions are being met. Table 18 below summarizes quality indicators for Marsh Creek State Park.
- Plan Implementation—Subsequent planning actions required for implementation of the General Plan are defined in Chapters 1 and 4 as they relate to CEQA compliance.

Adaptive Management

Adaptive management is an explicit and analytical process for adjusting management and research decisions to better achieve management objectives; wherever feasible, this process should be quantitative. Adaptive management recognizes that knowledge about natural resource systems is uncertain. Therefore, some management actions are best conducted as experiments in a continuing attempt to reduce the risk arising from that uncertainty. The aim of such experimentation is to find a way to achieve the objectives as quickly as possible while avoiding inadvertent mistakes that could lead to unsatisfactory results. The concept of adaptive management represents the common sense of "learning by doing" (Goodman and Sojda).

Adaptive management is a tool to assist in addressing recreation carrying capacity and is included in this General Plan. Adaptive management is an ongoing, iterative process of determining desired conditions, selecting and monitoring indicators and standards that reflect these desired conditions, and taking management action when the desired conditions are not being realized.

Table 18
Marsh Creek State Park Recreation Carrying Capacity

PLANNING AREA	GOAL	QUALITY INDICATORS	MANAGEMENT ACTIONS
Visitor Use and Experience	Preserve and enhance optimum and diverse experiences for a wide range of visitors.		
Visitor Facilities		<ul style="list-style-type: none"> • Visitors complain about lack of necessary facilities or overcrowding. 	<ul style="list-style-type: none"> • Limit access during peak times or make necessary improvements to facilities to alleviate overcrowding.
Trails		<ul style="list-style-type: none"> • Conflicts such as accidents occur between users on multi-use paths. 	<ul style="list-style-type: none"> • Consider limiting use of certain trails during peak times. • Implement even-day/odd-day use. • Develop trail user groups.
Interpretive Themes		<ul style="list-style-type: none"> • Visitors complain about lack of Park information. • Visitors display disrespect toward Park resources. 	<ul style="list-style-type: none"> • Interpretive materials and programs may need to be increased.
Concession Opportunities		<ul style="list-style-type: none"> • Certain key Park programs cannot be fully implemented without concessionaire participation. 	<ul style="list-style-type: none"> • Supplement Park operations with seasonal or temporary assistance from concessionaires.
Natural Resource Management	Protect and preserve, restore and rehabilitate the Park's physical, scenic, vegetative, and wildlife resources.		
Scenic/Aesthetic		<ul style="list-style-type: none"> • Scenic vistas are reduced or interrupted with features not compatible with landscape character. 	<ul style="list-style-type: none"> • Remove incompatible structures or elements. • Use screening to hide or lessen the impact of incompatible elements.
Geology/Soils		<ul style="list-style-type: none"> • Erosion is occurring along old, existing trails or farm roads, or adjacent areas as evidenced by exposed tree roots, ruts, and runoff. 	<ul style="list-style-type: none"> • If erosion is caused by visitor use, limit intensity, duration, or type of use accordingly. Consider trail closure and removal.
Hydrology		<ul style="list-style-type: none"> • Sedimentation is evident in ponds and springs. 	<ul style="list-style-type: none"> • Ensure adequate plant cover over erodible soils or provide temporary stabilization during construction.

Table 18
Marsh Creek State Park Recreation Carrying Capacity

PLANNING AREA	GOAL	QUALITY INDICATORS	MANAGEMENT ACTIONS
Vegetation		<ul style="list-style-type: none"> • There are reduced occurrences of special-status species. • Invasive species are spreading or new occurrences are becoming evident. 	<ul style="list-style-type: none"> • Restore or reintroduce lost species. • Increase or alter removal program for invasive species. • Revegetate disturbed areas with native species. • Restrict use of the area. • Require weed-free feed for horses brought into the Park.
Wildlife		<ul style="list-style-type: none"> • Wildlife is disturbed. • Reduced occurrence of threatened and endangered species. • Increase in non-native or invasive species. 	<ul style="list-style-type: none"> • Close backcountry campgrounds and other areas during sensitive wildlife breeding/ nesting seasons.
Cultural Resource Management	Document, protect, restore and interpret the layered cultural resources spanning thousands of years.	<ul style="list-style-type: none"> • Cultural resources are damaged from public use. 	<ul style="list-style-type: none"> • Limit visitor use in sensitive areas. • Provide interpretation and public education opportunities to assist with protection of resources. • Incorporate data recovery efforts or cover the resources.
Operations and Maintenance	Ensure efficient, safe and adequate infrastructure and operations.		
Park Access and Circulation		<ul style="list-style-type: none"> • Accidents occur along Marsh Creek Road accessing the Park. 	<ul style="list-style-type: none"> • Work more vigorously with appropriate transportation agencies (Contra Costa County, Contra Costa County Transportation Authority, City of Brentwood, Caltrans) to get improvements funded and implemented.
Staffing Needs and Facilities		<ul style="list-style-type: none"> • Inadequate facilities for increases in visitor use. • Existing staff cannot respond adequately to prevalent safety issues and overcrowded conditions. • Summer interns cannot be adequately accommodated. 	<ul style="list-style-type: none"> • Explore feasibility of upgrading existing structures. • Add temporary housing on site. • Increase staff as appropriate. • Reduce number of visitors allowed in the Park or levels of use.

Table 18
Marsh Creek State Park Recreation Carrying Capacity

PLANNING AREA	GOAL	QUALITY INDICATORS	MANAGEMENT ACTIONS
Leases and Special Agreements		<ul style="list-style-type: none"> • Current grazing activities do not conform to resource management goals. 	<ul style="list-style-type: none"> • Amend or terminate terms of lease.
Utilities		<ul style="list-style-type: none"> • Lack of sanitary facilities causes environmental degradation. 	<ul style="list-style-type: none"> • Provide chemical or vault toilets in key visitor locations or reduce Park use.

If California State Parks determines that the entire Park or a specific area of the Park is not meeting the desired future conditions set forth herein, then adaptive management action would begin. See Table 18 for examples of management actions that would be employed as part of an adaptive management program. Monitoring could determine whether the failure to achieve the desired condition was caused by natural variation (e.g., by a natural storm event) or by human-induced variables (e.g., overcrowding or trampling associated with hiking). Management actions may be needed to improve the visitor experience or to reduce impacts to the resources and could include, but are not limited to, the following:

- Site management (e.g., facility design, barriers, site hardening, area/facility closure, redirection of visitors to suitable sites);
- Regulation (e.g., the number of people, the location or time of visits, permitted activities, or allowable equipment);
- Enforcement of regulations (e.g., patrols, notification, citations);
- Education (e.g., information signs and exhibits, interpretive programs, visitor center exhibits, brochures and fliers, public meetings, meetings with user groups); and
- Altering access (e.g., parking in proximity to sensitive resources, limiting certain types of access such as vehicular access in certain areas).

Quality Indicators at the Park

Quality indicators will assist Park managers in determining whether desired future conditions are being met. Desired future conditions at the Park are outlined Chapter 3. For each of the planning areas, an overall goal is presented in Table 18, and quality indicators and corresponding management actions are shown for specific topics to assist in documenting recreation carrying capacity. Planning areas discussed in Table 18 are as follows:

- Visitor Experience and Education
- Natural Resource Management
- Cultural Resource Management
- Operations and Maintenance

This page intentionally left blank.



Environmental Analysis – Chapter 4

4. Environmental Analysis

4.1 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS

This Program EIR has been prepared to provide an environmental assessment of the General Plan for Marsh Creek State Park included in this document. California State Parks is the lead agency for this EIR. This assessment is designed to inform California State Parks decision-makers, responsible agencies, and the public of the environmental consequences of implementation of the General Plan. This General Plan for the Park, with all of its chapters, addresses all of the points required by Article 9 (§§15120–15132) of the State CEQA Guidelines; therefore, it constitutes an EIR, as required by PRC §§5002.2 and 21000 et seq. As lead agency, California State Parks has authority to approve the General Plan based on the environmental analysis. This plan will be submitted to the California State Park and Recreation Commission, which has sole authority for the plan’s approval and adoption.

The General Plan and Program EIR are combined herein as one document. Chapter 2, Existing Conditions, serves as the environmental setting for the environmental analysis and Chapter 3, Park Plan, serves as the project description. The plan chapter includes goals and guidelines that set forth the desired future condition for the Park. Combining the preparation of the General Plan with the environmental analysis provides the opportunity to mitigate impacts of the General Plan through the goals and guidelines. For impacts that are identified in this section, the goals and guidelines from Chapter 3 that mitigate them are noted.

Purpose of the EIR

The purpose of this Program EIR is to inform decision-makers and the public about any significant and potentially significant impacts that may result from the implementation of the General Plan, provide mitigation measures to reduce any significant impacts, and determine the level of significance after mitigation. In addition, the document provides information on any significant impacts that cannot be avoided; growth-inducing impacts; effects found not to be significant; and significant cumulative impacts of past, present, and reasonably foreseeable future projects.

This is a Program EIR for the General Plan, and does not contain project-specific analysis of projects recommended in the General Plan. Because the General Plan is a long-range plan, additional management planning, design documentation, schematic design, and construction documentation would be completed as necessary before Park improvements are made. Future projects will undergo subsequent CEQA review as appropriate. Project-specific environmental compliance documents should tier off and be consistent with the General Plan’s Program EIR.

Accordingly, the General Plan and Program EIR constitute the first tier of environmental review. “Tiering” in an EIR prepared as part of a general plan allows agencies to deal with broad environmental issues at the general planning stage, followed by more detailed examination of actual development projects (that are consistent with the plan) in subsequent EIRs or negative declarations. Later EIRs may incorporate by reference the general discussion from the broader EIR, in this case the General Plan, and concentrate solely on the issues specific to the later projects (PRC §21093, State CEQA Guidelines §15152). Additionally, permits required for future implementation projects would be secured as part of subsequent planning actions and environmental review.

Focus of the EIR

California State Parks established the focus of the Program EIR after considering comments from public agencies and the general public regarding the General Plan. California State Parks completed a Notice of Preparation (NOP) on April 11, 2006 (Appendix A). In addition, a public scoping session on the General Plan and Program EIR was held on May 17, 2006, to inform the public of the process, solicit comments, and identify areas of concern.

The following issues are addressed in this Program EIR:

- Agricultural Resources
- Hydrology and Water Quality
- Air Quality
- Noise
- Biological Resources
- Cultural Resources
- Transportation and Traffic
- Utilities and Public Services
- Aesthetics

Environmental effects found not to be significant, and therefore not addressed in detail in this Program EIR, are discussed in Section 4.6 of this chapter and include:

- Geology and Soils
- Hazardous and Hazardous Materials
- Land Use and Planning
- Energy and Mineral Resources
- Population, Employment and Housing

Environmental Review Process

Consistent with CEQA requirements, affected agencies, organizations, and persons who may have an interest in this project have been contacted during the preparation of this Program EIR. This included the circulation of an NOP, which began a 30-day comment period. The purpose of the NOP was to inform agencies and the general public that a General Plan and EIR was being prepared for Marsh Creek State Park, and to invite specific comments on the scope and content of the EIR. Letters and comments were received and are summarized in the stakeholder issues summary found in Appendix A. See Chapter 1 for a complete summary of the public outreach efforts conducted for this project.

A Notice of Availability of the Draft Program EIR was published concurrently with the public distribution of the Preliminary General Plan. A 45-day review period (from the date of the Notice of Availability) was provided for the public and agencies to review and comment on the Draft Program EIR. California State

Parks filed a Notice of Completion with the Governor's Office of Planning and Research, State Clearinghouse, when the Preliminary General Plan and Draft Program EIR was completed.

Reviewers of the Draft Program EIR were encouraged to focus on the sufficiency of the document in identifying and analyzing the potential environmental impacts of the General Plan. Comments on the Draft Program EIR were submitted in writing before the end of the 45-day comment period. Following the close of the public review period, California State Parks prepared responses to comments on the content and conclusions of the Draft Program EIR and revised the Preliminary General Plan as necessary to address those comments. The Draft Program EIR and technical appendices, together with the responses to comments document (a separately published document), constitutes the Final Program EIR.

California State Parks reviewed the Final EIR for adequacy and it was considered for certification pursuant to the requirements of §15090 of the State CEQA Guidelines. California State Parks certified the Final EIR and approved the General Plan. A Notice of Determination was prepared and filed with the State Clearinghouse. The Notice of Determination included a description of the project, the date of approval, and the address where the Final EIR and record of project approval were available for review.

After certification of the EIR and General Plan approval, subsequent environmental review will be limited to the requirements outlined in the adopted mitigation measures for the project or focused on new, subsequent projects that could move forward under the approved General Plan. There will also be subsequent California State Parks review of phasing, siting, and grading plans to ensure that they are consistent with the General Plan. If California State Parks finds, pursuant to §15162 of the State CEQA Guidelines, that no new effects could occur or no new mitigation measures would be required, California State Parks can approve the activity as being within the scope of the project covered by this Program EIR. In such a case, no new environmental documentation would be required. However, if a proposed phase of the project would have effects that were not examined in this Program EIR, preparation of an additional environmental document would be required (State CEQA Guidelines §15168(c)(1)).

4.2 ENVIRONMENTAL ANALYSIS SUMMARY

Summary of Impacts and Mitigation

The General Plan for Marsh Creek State Park reflects California State Parks' dual mandates as the steward of natural and cultural resources and the provider of recreation opportunities. Chapter 3, Park Plan identifies goals and guidelines for resource management, visitor experience and interpretation, local and regional planning and infrastructure and operations. The goals and guidelines of this General Plan seek to avoid potentially significant adverse effects on the environment.

An evaluation of the potential for significant adverse environmental effects to agricultural resources, hydrology and water quality, air quality, noise, biological resources, cultural resources, transportation and traffic, utilities and public services and aesthetics is provided in Section 4.5. The specific guidelines noted in the mitigation section for each environmental topic, would maintain potential environmental impacts at a less-than-significant level when implemented.

The protection and restoration of natural and cultural resources are key components of the General Plan. Much of the Park will remain undeveloped, keeping wildlife habitat intact, scenic resources protected, and native vegetation preserved. The General Plan also emphasizes watershed and water quality preservation; pre-historic, historic, and cultural landscape protection; and interpretation. Additionally the Plan allows for

staff and public safety, appropriate infrastructure and operations, and coordination with regional planning efforts and initiatives. The Plan also identifies conceptual locations for proposed park facilities which would be located in the least environmentally constrained areas of the Park and clustered near existing development, as shown on Alternative maps 14 and 15.

The environmental analysis prepared for the General Plan is programmatic in scope. The Plan also includes guidelines that will govern project-level environmental review of future projects to avoid or minimize any potential adverse site-specific effects to resources during construction or operations of the facilities.

Summary of Alternatives Considered

Two concept alternatives were considered during development of the General Plan. Each alternative includes resource management actions to protect the physical resources of the site balanced with different scenarios for visitor facilities and experiences, while maintaining the Park purpose and vision. In alternatives B and C, provisions have been made for infrastructure and operations and coordination with local and regional planning agencies and other entities. The parkwide goals and guidelines provided in Chapter 3 apply to both alternatives however the Preferred Alternative provides the most balanced scenario to implement these. An environmental evaluation of the alternatives is provided in Section 4.4. The following summarizes the alternatives:

- **Alternative A:** No action. This alternative assumes no Plan would be implemented and the Park would not be opened to the public with a full range of uses and activities.
- **Alternative B:** Short-term demand plan; balance of future visitor facilities and resource management. This alternative anticipates increased future visitation with a provision for additional facilities, however is more limiting in what can be built to accommodate future use.
- **Alternative C:** Long-term demand; more extensive visitor facilities. This alternative envisions a longer term demand for recreational facilities in the region and will allow for more ultimate build-out as may be needed and allowing more flexibility where facilities can be placed and their size and intensity.

Section 4.4 also includes an analysis of the No Project Alternative, as required by the CEQA Guidelines (Section 15126.6[e]). This alternative evaluates the positive and negative environmental aspects of the proposed General Plan in terms of the conditions that would occur if it was not adopted. Alternative C is considered the Preferred Alternative as it incorporates the features and elements that will best implement the goals and guidelines of the General Plan. The Preferred Alternative was selected after considering public and responsible agency feedback on the three concept alternatives; it addresses the environmental concerns of the public and meets resource agency rules and regulations.

Project Description

Chapter 3, Park Plan, constitutes the project description with the Park purpose and vision, a delineation of management zones, and parkwide goals and guidelines. These describe the General Plan project and its components.

4.3 ENVIRONMENTAL SETTING

Chapter 2, Existing Conditions, is a description of the existing Park environment and significant resource values within the Park and the local and regional vicinity and serves as the Environmental Setting for the Program EIR.

4.4 ALTERNATIVES TO THE PROPOSED PROJECT

The CEQA Guidelines require the description and comparative analysis of a range of reasonable alternatives that have been developed to avoid or substantially lessen one or more of the significant effects identified for the project analyzed in the EIR (CEQA Guidelines Section 15126.6 [c]). Although no significant impacts have been identified for the General Plan (when considering the guidelines that would be implemented with the plan to avoid or limit potential environmental effects to a less-than-significant level), the following discussion is intended to inform the public and decision-makers of project alternatives that could be implemented and the positive and negative aspects of those alternatives. This section also includes an analysis of the No Project Alternative, as required by the CEQA Guidelines (Section 15126.6[e]).

Two concept alternatives were presented to the public for comment at the second public meeting held at the City of Brentwood offices on March 20, 2007. California State Parks considered the local community input received at this public meeting and in comment letters received before and after the meeting when selecting the preferred alternative. They considered statewide interests, the park's purpose and vision, environmental constraints, and resource agency rules and regulations. The Preferred Alternative is a combination of elements selected from each of the two concept alternatives.

An environmental evaluation of the two concept alternatives considered during development of this General Plan, and the No Project Alternative, is provided below. For each alternative, a brief discussion of its principal characteristics is followed by an analysis of the alternative. The emphasis of the analysis is on the alternative's relative environmental effects compared to the proposed General Plan and a determination as to whether or not the alternative would reduce, eliminate, or create new significant impacts.

Alternative A - No Project Alternative

Description

As required by the CEQA Guidelines (Section 15120.6[e]), the No Project Alternative is to be analyzed in an EIR to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. If the General Plan for Marsh Creek State Park was not approved, the existing situation would continue with respect to park use, operation, and resource management. Development within the park would be restricted to projects that address public health and safety issues; repair, replace, or rehabilitate an existing facility; provide a temporary facility, so long as no permanent commitment of resources is made; or emergency measures for the immediate protection of public health and safety or a natural or cultural resource (PRC 5002.2[c]). None of the park facilities proposed in the General Plan would be developed. Additionally, environmental enhancements and restoration programs that may require additional funding sources may not be implemented.

Alternative B

Description

Alternative B proposes fewer visitor facilities compared to Alternative C, the Preferred Alternative. In addition, the facilities proposed in Alternative B are for a more limited segment of recreationists than Alternative C. Natural resource management is similar under both alternatives, however cultural resource management is focused more on stabilization in Alternative B rather than complete rehabilitation of the John Marsh House and use as in Alternative C. Alternative C was selected as the Preferred Alternative over Alternative B. The facilities and uses in Alternative B will overall have less ground disturbance in the initial phases of construction and implementation therefore, less short term negative environmental impacts. However, Alternative C anticipates more long term use of the Park and allows for appropriate facilities and design guidelines to ensure that impacts are not significant. The build-out of Alternative C facilities will be phased and may not be built if visitor demand or site-specific conditions preclude the need or ability to construct these facilities with minimal impact. In the long term, if Alternative B was implemented, visitors and Park use may exceed what the facilities can handle, causing negative environmental impacts. Alternative C is designed to anticipate recreational trends well into the future and plan for appropriate use at this Park while still maintaining significant undeveloped land for natural and cultural resource protection. The following describes Alternative B in more detail for each planning category. Maps 16 and 17 illustrate the main components of Alternative B.

Placeholder page

Map 16 Alternative B

Placeholder for back of Map 16

Placeholder page

Map 17 Primary Historic Zone Alternative B

Placeholder for back of Map 17

Visitor Use and Facilities. Visitor facilities are proposed for only three areas in Alternative B compared to five areas in Alternative C; there are no facilities proposed in the Briones Valley or Dry Creek areas in Alternative B. The proposed visitor facilities in Alternative B are less developed than Alternative C, for instance at Round Valley Visitor Facility vault toilets are proposed instead of flush toilets. Additionally, at all three visitor facility areas, parking for fewer vehicles and fewer day use areas are proposed in Alternative B compared to the Preferred Alternative. At Round Valley, more hike-in campsites are proposed in Alternative B than in Alternative C, however no developed or equestrian campsites are proposed in Alternative B. At the Eastern Visitor Facility, less developed and group campsites are proposed and no alternative camping or hike-in campsites are proposed in Alternative B compared to the Preferred Alternative. Additionally, a visitor center is not proposed in Alternative B.

Natural Resource Management. Management of natural resources in Alternative B would be similar to Alternative C. Only hiking would be allowed in the Briones Valley area under Alternative B, as compared to Alternative C where multiple uses would be allowed on trails through the valley. Additionally, Alternative B proposes fewer (two less) trail segments through natural areas than the Preferred Alternative.

Cultural Resource Management. Both Alternative B and Alternative C propose a cultural resources field station and connections to three main trails in the Primary Historic Zone. However, at the John Marsh House, the focus of cultural resource management in Alternative B is on stabilizing the house for guided tours and special events whereas in Alternative C, the focus is on complete rehabilitation and reuse of the area for a visitor center, overnight accommodation, and staff offices.

Operations and Management. In Alternative B, only one ranger station is proposed, compared to two in Alternative C; however, two maintenance areas are proposed in both alternatives. At the historic area operations facilities, Alternative B focuses on temporary park maintenance storage, stabilizing or removing ranch buildings, and reusing only some of the existing buildings, whereas Alternative C would stabilize and reuse more buildings and focus on storage for historic materials and park maintenance equipment and vehicles.

Local and Regional Planning. Alternative B would implement the goals and guidelines for this planning area, including regional trail connections and coordination with other agencies, in the same manner as Alternative C.

Alternative C – Preferred Alternative

Description

Please see the description of Alternative C provided in the Plan Chapter 3, Section 3.4.

4.5 ENVIRONMENTAL IMPACTS

The purpose of this section is to identify impacts of the General Plan that have the potential to be significant. These impacts will require more detailed analysis when management plans and area development plans are prepared.

According to §15382 of the State CEQA Guidelines, a significant impact on the environment refers to:

“a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance.”

Significant environmental impacts may be associated with visitor use, maintenance, facility construction or rehabilitation, or development projects. Adverse impacts can range from negative visual impacts to degradation of water quality to the disturbance or loss of cultural and natural resources.

This analysis uses criteria from the model Initial Study Checklist (Appendix G of the CEQA Guidelines) and CEQA’s mandatory findings of significance (PRC 21083, Guidelines §15065 and §15064.5) as tools for determining the potential for significant environmental effects. Appropriate mitigation may reduce the impact to less than significant. “Mitigation” is defined as an action or actions that will:

- Avoid the impact altogether by not taking a certain action or parts of an action;
- Minimize impacts by limiting the degree or magnitude of the action and its implementation;
- Rectify the impact by repairing, rehabilitating, or restoring the impacted environment;
- Reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action; or
- Compensate for the impact by replacing or providing substitute resources or environments (State CEQA Guidelines §15370).

As discussed above, this Program EIR is a first tier environmental document; as such, proposed development and associated mitigation are general in nature. Implementation of the goals and guidelines contained in the General Plan would avoid or reduce potential impacts at this programmatic level to less than significant levels. The following potential impacts refer to proposals within the existing Park boundaries as described in the General Plan.

Agricultural Resources

This section analyzes impacts related to agricultural resources that could result from implementation of the General Plan.

Impacts

With implementation of the General Plan, impacts on agriculture would be avoided through sensitive design and siting of facilities and other land uses. In addition, goals and guidelines would be in effect to avoid any potential impacts or reduce them to a less-than-significant level.

Environmental Evaluation

Implementation of the General Plan may result in the conversion of land designated as Prime or Unique Farmland, as per the Farmland Mapping and Monitoring Program, to publicly accessible recreational and related operational uses. Most of Marsh Creek State Park was historically used for grazing and other agricultural purposes. Portions of the Park are classified as Prime (225 acres) or Unique Farmland (20 acres) or Farmland of Local Importance (1,990 acres). No portion of the Park is designated as Farmland of Statewide Importance (Important Farmland) pursuant to FMMP. It is possible that California State Parks

may seek to establish an agricultural lease within the former orchard site which is located in the eastern portion of the Park in an area designated as Prime Farmland. The Preferred Alternative proposes that portions of the lands that are designated as Prime Farmland be areas where visitor use and associated facilities as well as maintenance and operations facilities could take place. This could result in the conversion of designated farmland as per FMMP. The proposed visitor use and operations zones located in the Prime Farmland areas of the Park constitute approximately 268 acres. However it is not anticipated that all of this Prime Farmland would be converted, as the proposed visitor and operations zones have been sized for the most flexibility in siting facilities to reduce ground disturbance and conversion of farmland and for efficient use of energy and infrastructure installation and distribution. Visitor and operation facilities will be clustered within these zones to ensure the least amount of farmland conversion. Only a portion of the Prime Farmland within the Park would be converted to Park facilities. The loss of Prime Farmland is currently estimated to be approximately 50 acres or less. The development of Park facilities would take place on the least amount of land needed within the use zones and the impact to agricultural resources would be less-than-significant. Additionally, large areas of the Park that are designated as Farmland of Local Importance (approximately – 1,500 acres or 75% of the total amount of Farmland of Local Importance and 50% of Prime and Unique Farmland) pursuant to FMMP would be preserved as open space as they are part of the proposed Natural Resource Zone. Future conversion of any farmland will also be reviewed on a case by case basis as particular projects are analyzed under project-level CEQA reviews.

In a memorandum dated May 4, 2005, The Natural Resources Agency described its policy for all departments to “recognize the importance of both permanent preservation of productive agricultural land and restoration, protection, and management of the state’s natural, historic, and cultural resources.” In selecting and developing resource-related projects, departments “should consider ways to reduce effects on productive agricultural land.” The policy indicates that to minimize these effects departments should review the mitigation strategies presented in the CALFED Final Programmatic EIS/EIR (CALFED 2000) and incorporate them, where appropriate.

To ensure consistency with The Natural Resources Agency policy memorandum concerning productive agricultural land and restoration of natural resources and with the CALFED strategy examples for minimizing effects on agricultural lands California State Parks is incorporating the following measures as modeled on the CALFED agricultural land and water strategies, in addition to the Goals and Guidelines found in Chapter 3. The CALFED strategies that would be most compatible with the Goals, Guidelines, and Vision found in the General Plan include the following:

- Site and align program features to avoid or minimize impacts on agriculture;
- Examine structural and nonstructural alternatives to achieving project goals in order to avoid impacts on agricultural land.

Socioeconomic Considerations

While social and economic consequences are not in of themselves environmental impacts under CEQA, this section discusses socioeconomic considerations related to agricultural production resulting from implementation of the proposed General Plan, in keeping with The Natural Resources Agency policy. The Park may be able to attain another lease for agricultural production purposes located within the former orchard area in order to place it in active production again, and that will provide an economic benefit for the agriculture industry as well as for the Park. If a lease cannot be attained, the land will be preserved as open space and for public enjoyment. Overall social effects of the proposed project will be enhanced as a portion

of the Prime Farmland will be available for the public for recreational facilities and uses such as the interpretation of historic farming in the area which would allow preservation of the farmland and public education.

The goals and design criteria and associated guidelines found in Chapter 3 will serve to minimize or eliminate the potential for impacts on agriculture associated with General Plan implementation. Guidelines that would apply within the Park's designated farmland are under Visitor Facilities (FAC 1) which require that site designs for new facilities cluster development to minimize ground disturbance. Trails under Goal (TRAIL 1) are to be located where they will not damage environmentally sensitive habitats or resources. Table 17 sets forth specific design criteria that would further limit the amount of farmland that would be converted as part of the proposed development. A guideline under Goal (GEO 1) states "minimize development footprint and cluster new facilities in the Eastern operations and visitor zones to protect prime and important farmland soils" which will also serve to minimize impacts to farmland.

Hydrology and Water Quality

This section analyzes impacts related to hydrology and water quality that could result from implementation of the General Plan.

Impacts

With implementation of the General Plan, impacts on hydrology and water quality would be avoided through sensitive design and siting of facilities and other land uses. In addition, goals and guidelines would be in effect to avoid any potential impacts or limit them to a less-than-significant level.

Environmental Evaluation

Developments provided for under this General Plan have the potential to adversely affect hydrology, water quality, and groundwater supplies within the Park due to an increase in visitation once the Park officially opens. Visitor use will most likely gradually increase as people learn about the Park when it officially opens. Nearby Mount Diablo State Park sees more than a half million day use visitors per year, however Marsh Creek State Park will not have the same facilities or attraction as Mount Diablo, given that Mount Diablo is the highest peak in the region, so the estimated number of visitors at the Park will be considerably less. The development of proposed facilities and paving of unpaved roads and parking areas would slightly increase the impermeable surface area within the Park, thereby resulting in an increase in runoff—and potential polluted runoff—in developed areas. New trails utilized by hikers, equestrians and mountain bikers also have the potential to effect water quality if trails are overused, users create new, unauthorized trails or if the location and slope of the trail causes erosion or stormwater runoff in unwanted areas. Trail location, design and condition would be monitored through goals and guidelines in the plan as well as trail best management practices developed by the Department. Trails would be checked and monitored and where needed alterations or maintenance would be implemented to avoid resource degradation. Increases in vehicle traffic within the Park, resulting from new facilities and the anticipated increase in visitor use could increase vehicle-associated pollution in runoff, including rubber, oil, and gasoline, and other vehicle-associated chemicals although best management practices will be incorporated into the design and implementation of all park facilities, substantially reducing these types of impacts.

Finally, development of a potable water supply for visitor use has the potential to rely on groundwater supplies in the area. Reliance on groundwater supplies has the potential to result in groundwater depletion;

however, this would not be substantial, and the amount of undeveloped land in the Park would be available to help replenish local groundwater supplies. Overall, the area of protected open space would be approximately 2500 acres or 68% of the total land area within the Park.

Construction activities associated with development under this General Plan, including digging, grading, filling, paving and construction of new structures also have the potential to affect hydrology and water quality by increasing erosion and sedimentation and by generating polluted runoff. Construction activities could expose loose soils, potentially increasing erosion and siltation. In addition, a variety of types of construction equipment and related chemicals would be used during construction, potentially resulting in the release of vehicle- and construction-related chemicals into surface water, groundwater, or runoff. Construction activities therefore have the potential to result in further significant impacts on water quality within and downstream of the Park; however, these impacts would be short term and would be managed during construction to eliminate the potential for water quality impacts. Overall, the Plan provides for protection and enhancement of portions of the watersheds that the Park is part of and contributes to therefore providing a beneficial effect on the hydrology and water quality in the region. Because the Park includes few flood prone areas and development is not proposed in these areas, this General Plan would have no impact associated with flooding and floodplains.

The goals (WATER 1 and 2) and associated guidelines found in Chapter 3 will serve to minimize or eliminate potential impacts on hydrology, water quality, and floodplains associated with General Plan implementation. Additionally, design, siting, and construction of facilities, including structures, campgrounds, trails, roads, and parking areas, shall incorporate such practices as those listed below:

- Develop and implement a stormwater pollution prevention plan to control erosion and sedimentation both during and after construction, thereby reducing water pollution.
- Place construction debris in refuse containers at least daily.
- Dispose of refuse at least weekly; burning or burying refuse inside the Park is prohibited.
- When feasible, schedule construction activities— particularly those resulting in substantial soil disturbance—during periods of low precipitation and low groundwater to reduce the risk of accidental hydrocarbon leaks or spills reaching surface water and/or groundwater, reduce the potential for soil contamination, and minimize erosion of loose materials in construction areas.
- Dispose of volatile wastes and oils in approved containers for removal from construction sites to avoid contamination of soils, drainages, and watercourses.
- Inspect equipment for hydraulic and oil leaks before it is used on construction sites, and implement inspection schedules to prevent contamination of soil and water.
- Maintain absorbent pads, booms, and other materials onsite when heavy equipment is used, so as to contain oil, hydraulic fluid, and solvents.

Air Quality

This section analyzes impacts related to air quality that could result from implementation of the General Plan.

Impacts

With implementation of the General Plan, impacts on air quality would be avoided by following the Plan's goals and guidelines, BAAQMD's CEQA Guidelines and the SJVUAPCD's Guide for Assessing and Mitigating Air Quality Impacts; therefore, air quality impacts resulting from this project would be less-than-significant.

Regulatory Setting

Assembly Bill 32 (2006), California Global Warming Solutions Act

In September 2006, Governor Schwarzenegger signed AB 32 (Chapter 488, Statutes of 2006), the California Global Warming Solutions Act of 2006, which enacted Sections 38500–38599 of the California Health and Safety Code. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires reduction of statewide GHG emissions to 1990 levels by 2020 (an approximately 15% reduction from existing statewide GHG emissions). This reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. AB 1493 required that the ARB develop and adopt, by January 1, 2005, regulations that achieve “the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light-duty trucks and other vehicles determined by ARB to be vehicles whose primary use is noncommercial personal transportation in the state.” However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control GHG emissions from vehicles under the authorization of AB 32.

AB 32 requires ARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves the reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Executive Order S-20-04 (2004)

Governor Schwarzenegger signed Executive Order S-20-04, the California Green Building Initiative, on December 14, 2004, establishing the state's priority for energy and resource-efficient high-performance buildings. The executive order sets a goal of reducing energy use in state-owned and private commercial buildings by 20% in 2015, using nonresidential Title 20 and Title 24 standards adopted in 2003 as the baseline. The California Green Building Initiative also encourages retrofitting, construction, and operation of private commercial buildings in compliance with the state's Green Building Action Plan.

Bay Area Air Quality Management District

In June 2010, the BAAQMD adopted CEQA Guidelines to assist lead agencies in evaluating air quality impacts from proposed projects and plans in the San Francisco Bay Area Air Basin (SFBAAB) within which the Park lies. The Guidelines provide procedures on how to evaluate, measure, and mitigate air quality impacts

generated from land development, construction, and operation activities. The Guidelines focus on criteria air pollutant, greenhouse gas, toxic air contaminant, and odor emissions generated plans or projects.

Environmental Evaluation

Construction

Implementation of the General Plan would require construction activities associated with new visitor facilities, operation and maintenance facilities, and other miscellaneous park features (e.g., roadway alteration, trail access). Construction activities would not occur continuously throughout the implementation of the General Plan. Rather, construction activities would occur intermittently and temporarily in distinct areas of the Park. During these times, construction-related emissions of reactive organic gases (ROG), oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), particulate matter with aerodynamic diameter less than 10 microns (PM₁₀), and particulate matter with aerodynamic diameter less than 2.5 microns (PM_{2.5}) would be generated from sources including, but not limited to heavy-duty construction equipment, material delivery trucks, on-site power generators, and construction worker vehicles. It is not anticipated that implementation of the General Plan would construct a substantial number of facilities simultaneously, but would instead construct facilities gradually over time. Therefore, it is not expected that average daily construction-related criteria air pollutants and ozone precursors would exceed any of the BAAQMD's thresholds of significance. However, future site specific projects would require separate environmental review where construction-related emissions would be addressed in further detail. In order to avoid and minimize construction-related emissions, the proposed project would implement all of the BAAQMD's Basic Construction Mitigation Measures. If construction-related emissions are determined to exceed any of the BAAQMD's thresholds of significance, the proposed project shall implement the BAAQMD's Additional Construction Mitigation Measures and any additional measures to reduce emissions to a less-than-significant level.

Operation

The General Plan does not propose the introduction of stationary sources of air pollution into the Park; however, it does provide for increased visitor use and associated vehicle travel. Visitors are expected to come from the local neighborhood, including adjacent and nearby residential developments, as well as from other areas in the County, region, and state. Visitors will most likely be recreationists who currently use park and open space lands in the area and will utilize the Park to connect with regional trail links or long distance hiking and camping activities. Additionally, the Park will provide additional facilities for day use that current local visitors may not have access to in this immediate area. Projected numbers of visitors to the Park are not known; however, visitors to the nearby regional Round Valley trailhead across Marsh Creek Road were recorded at 76,500 in 2008 (Tong, pers. comm. 2010). These visitors could easily use the Park and there could be more visitors at other visitor access points. Mount Diablo State Park receives approximately 650,000 day use visitors annually; however, Marsh Creek State Park is not being designed to accommodate nearly the same number of visitors as are attracted to Mount Diablo State Park. Visitor access at the Park will be somewhat limited by parking facilities which, at full build-out, would be 443 vehicles, accommodating approximately 665 people at peak times, not including foot and cycling access. By providing additional facilities and attracting additional visitors, implementation of the General Plan would result in increased vehicle traffic to and from the Park, as well as on roadways within the Park. This net increase in vehicular traffic to and from the Park would also cause a net increase in criteria air pollutant and precursor emissions discussed above for construction. However, the net increase in visitor vehicle emissions would be considered minor given the limited parking of 443 vehicles at full build-out and peak use as well as limited

driving within the Park. Parking will be provided at the perimeter of the Park immediately adjacent to existing roads avoiding extensive vehicular use and idling to access the Parks' facilities.

Compared to the surrounding land uses, such as the adjacent Vineyards at Marsh Creek mixed use development, the Park's vehicular emissions, even with maintenance and operations, would be significantly less. Transportation analysis performed for the Vineyards at Marsh Creek development calculated approximately 1600 trips that would be generated on area roadways during PM peak use over the long term, projected through the year 2025 (RBF Consulting 2004).

CO Concentrations

The perimeter parking would also provide a variety of options for parking that would minimize the need for vehicles to idle while waiting for a parking space. This feature would help avoid a CO hotspot (i.e., exceedance of California Ambient Air Quality Standard [CAAQS]) in the parking lot or elsewhere in the Park. CO concentrations typically disperse rapidly; however, conditions such as large volumes of idling vehicles, stagnant meteorological conditions, and unfavorable topography (e.g., canyon or enclosed area) can help generate CO concentrations that exceed the CAAQS. It is anticipated that no CO hotspots would occur as a result of the proposed project due to the dispersed and optional parking areas, the amount of protected open space that the plan provides and low vehicle volumes.

Toxic Air Contaminants

Construction of the Park facilities could utilize diesel-fueled heavy-duty construction equipment, which would generate diesel particulate matter (diesel PM). Diesel PM has been classified as a carcinogen by the ARB. As discussed above, construction activities would occur intermittently and temporarily. Therefore, it is not anticipated that construction activities would generate large quantities of diesel PM for substantial periods. Considering these facts, and the highly dispersive nature of diesel PM, it is not anticipated that construction activities would expose sensitive receptors to substantial concentrations of diesel PM.

Following build out of the Park, some vehicles could be diesel-fueled and operational activities would generate diesel PM emissions that could affect visitors and nearby residents. However, similar to the construction activities described above, these operational emissions would be dispersed around the entire project site and would occur intermittently. Furthermore, these levels of diesel PM from park operations would not be anticipated to generate levels of diesel PM greater than those associated with typical roadways. Therefore, it is not anticipated that implementation of the General Plan would expose any sensitive receptors to substantial concentrations of diesel PM.

Odors

Implementation of the General Plan would not involve the construction of any odor source. Typical odors sources include land uses such as wastewater treatment plants, landfills, industrial metal processing facilities, and food processing facilities. During construction of Park facilities, exhaust from diesel-fueled equipment could generate some unpleasant odors. However, as discussed above, construction emissions would be intermittent and temporary in nature. In addition, if roadways were to be widened, reconstructed, or constructed, off-gas emissions from asphalt paving could be a nuisance to some visitors. Similar to all construction activities, asphalt paving odor emissions would be temporary and would cease following completion of that phase. Therefore, it is not anticipated that implementation of the General Plan would expose a substantial number of receptors to objectionable odors.

Plan Goal CLIM 1 provides a guideline for further reducing vehicle emissions through car-pooling, shuttle service, and alternative fuel vehicles. Additionally, the measures detailed in the BAAQMD CEQA Guidelines will serve to minimize or eliminate potential impacts on air quality associated with General Plan implementation. Planning, implementation, and construction shall incorporate the BAAQMD's Basic Construction Mitigation Measures into the design, construction, and specifications of each project. These measures include:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, and other loose material off-site shall be covered.
- All visible mud or dirt rack-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measures Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- A publicly visible sign shall be posted with the telephone number and person to contact at California State Parks regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Climate Change

This section analyzes impacts associated with implementation of the General Plan related to climate change and greenhouse gas (GHG) emissions.

Impacts

With implementation of the General Plan, impacts on climate and greenhouse gas emissions would be minimized by following goals and guidelines (CLIM 1-4) and therefore, climate change impacts resulting from this project would be less than significant.

Environmental Evaluation

In June 2010, BAAQMD adopted its new CEQA Air Quality Guidelines, which included thresholds of significance for evaluating plan- and project-level impacts related to climate change and greenhouse gas emissions. The BAAQMD's plan-level threshold of significance is based on operational emissions associated

with typical land-use development projects such as residential, commercial, and industrial projects. The plan for the Park is not as intensive as other land uses. It should be noted that the proposed project would involve GHG sources such as motor vehicles, electricity consumption, natural gas combustion, and water consumption for visitors and employees of the Park. However, due to the large size of the Park and low number of employees hired to maintain the Park, the service population threshold, which evaluates GHG emissions per resident and employee, may not be the most appropriate method to evaluate the project. In other words, the operational GHG emissions associated with visitor consumption and comfort are not directly attributable or proportional to the number of employees on site. As part of the General Plan implementation, each specific future project will require more detailed analysis to determine the GHG and climate change impacts.

The new state CEQA Guidelines require that projects evaluate their GHG impacts to climate change by considering whether the project:

- a) Generates GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- b) Conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGS.

Greenhouse Gas Emissions

Implementation of the General Plan would generate GHG emissions associated with heavy-duty construction equipment, material delivery trucks, on-site generators, and construction worker vehicles. At the time of this writing, no state or regional air quality regulatory agency has adopted a quantitative threshold of significance for construction-related GHG emissions. However, the Governor's Office of Planning and Research (OPR) and BAAQMD have recommended that projects attempt to quantify and disclose their construction-related GHG emissions. Due to the uncertainty of the construction schedule for the Park facility development, it is difficult, if not impossible to accurately quantify the GHG emissions associated with visitor facility construction. However, as discussed above, each General Plan component would require project-level environmental review that would quantify and disclose the construction-related GHG emissions.

Following build-out of the General Plan, daily operational emissions would be generated from direct GHG sources such as motor vehicles, natural gas combustion for water and space heating, and Park maintenance equipment and vehicles. Indirect GHG sources would include electricity and water consumption, on-site waste disposal, and wastewater treatment for Park buildings. As discussed above, each component of the General Plan will undergo environmental review, which would include quantification of its operational GHG emissions and service population efficiency. However, at the time of this analysis, the activities that would occur as a result of the General Plan are not known at a level where emissions can be accurately quantified.

Plan goals and guidelines (CLIM 1-4) have been developed to reduce GHG and climate change impacts. These provide for reducing vehicle emissions, providing for use of public transportation and cycling, reducing energy through green building practices and recycling and reuse of materials.

Consistency with Applicable GHG Reduction Plan

Another criterion to evaluate a project's GHG impact with respect to climate change is to consider its consistency with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG

emissions. California State Parks has implemented a Climate Change Initiative (“Cool Parks”) that responds to the challenges of climate change through a three-pronged strategy focusing on adaptation, mitigation and education. In addition, California State Parks is also a member of the Climate Action Team that is “central to the success of AB 32, which requires an unprecedented level of cooperation and coordination across State government.” The AB 32 Scoping Plan was developed to achieve the GHG reduction goals of AB 32, discusses the importance of providing recreational areas, preserving our natural resources, and conserving biodiversity. As stated in the AB 32 Scoping Plan, state agencies and departments should be bringing climate change considerations into its policies, planning, and analysis. Current actions by California State Parks, including this proposed Park project, are accounting for the goals and requirements of AB 32. Thus, implementation of the proposed project would preserve natural resources, conserve biodiversity, provide recreational areas, and be consistent with the goals of the AB 32 Scoping Plan.

Noise

This section analyzes impacts related to noise that could result from implementation of the General Plan.

Impacts

With implementation of the General Plan, impacts on noise would be less than significant.

Environmental Evaluation

This General Plan proposes development of new facilities which will result in increased visitor use. An increase in visitor use would be accompanied by an increase in vehicle- and visitor-related noise in the Park, when compared to what occurs there presently, although not at a level that would exceed local ambient noise levels associated with adjacent roadways and nearby mixed use development activity. Implementation of the General Plan would introduce new sources of noise into the Park; however these would primarily be increased vehicle- and visitor-related noise and would occur primarily within the VF and OP zones, where higher ambient noise levels exist already due to the location of these zones near adjacent roadways. Large, expansive, interior areas of the Park where visitors would utilize trails and seek interpretive and educational experiences would not have increased noise as a result of plan implementation. The implementation of the General Plan would not result in any long term or permanent source of noise that would exceed acceptable ambient noise levels. Noise related to increased visitor use and park operations would be temporary and of short duration and therefore would not result in significant impacts.

Implementation of the General Plan would also result in construction-related noise during construction activities. Impacts associated with construction-related noise would be minimized through the implementation of standard noise abatement measures, such as the development of a construction schedule that minimizes impacts on Park visitors and residents; use of best-available noise control techniques wherever feasible, including techniques to control noise from vehicles and construction equipment; use of hydraulically or electrically powered impact tools when feasible; and location of stationary noise sources as far from sensitive uses as possible. As a result, any noise would be temporary and localized.

Biological Resources

This section analyzes impacts related to vegetation and wildlife that could result from implementation of the General Plan.

Vegetation

Impacts

With implementation of the General Plan, impacts on vegetation would be avoided through sensitive design and siting of facilities and other land uses in non-sensitive areas. In addition, goals and guidelines would be in effect to avoid any potential impacts or limit them to less than significant levels.

Environmental Evaluation

A variety of vegetation types are present in the Park, the most common of which are grassland, oak woodland, wetlands and mixed riparian forest. All of these plant communities provide important habitat for native plant and wildlife species. The Park also provides habitat for several special-status plant species. Construction and maintenance of Park facilities would be done in such a way to avoid loss, permanent alteration, and/or temporary disturbance of vegetation, including sensitive habitats and special-status plant species. Construction and post construction impacts on vegetation could also include the introduction of invasive plant species; however, best management practices would be employed to avoid the introduction or spread of invasive species. Actions with the potential for direct impacts on vegetation, including the development of trails and campgrounds, realignment of the entrance road, and construction of new structures and facilities for visitor or staff use, would be designed and constructed pursuant to specific design criteria and goals and guidelines defined in the Plan that would avoid significant impacts to vegetation. Impacts of these actions would be limited primarily to the VF and OM Zones leaving large areas of the Park undisturbed, including approximately 2500 acres or 68% of the Park. Potential impacts in the NR Zone would be limited to those resulting from construction of hike-in camps and new trails, and other projects that would require only minor soil disturbance; however these would also be constructed to avoid disturbance or removal of sensitive habitat or special-status plants. None of the proposed facilities would require large scale grading. Impacts on sensitive habitats (including wetland and riparian habitats subject to the regulatory authority of USACE, under §404 of the Clean Water Act, and DFG, under §1600 of the California Fish and Game Code) would also be considered potentially significant; however significant impacts to sensitive habitats are not anticipated with the Plan goals and guidelines in place.

Several special-status plant species are known to occur or have the potential to occur in the Park. While most of the special-status surveys were conducted in the Park over a decade ago, the current distribution and abundance of these species is not fully known. However, ongoing field reconnaissance will occur at the Park to further document locations of special-status plants. Prior to any construction, surveys would be conducted to ensure disturbance avoidance of special-status plants and associated soils.

Indirect impacts on vegetation are expected to be associated mostly with the anticipated increase in visitor use. As with direct impacts, secondary impacts are expected to be concentrated in the VF and OM Zones. Construction of hike-in campgrounds and development of trails would result in greater visitor use of the NR Zones, and thus some potential for impacts on existing vegetation. The degree of impact on vegetation would be determined largely by the proximity of campsites and trails to habitats susceptible to degradation from recreational use (e.g., wetlands) and to populations of special-status species. The design and location of campsites and trails will avoid special-status plants and sensitive habitats through best management practices, surveys and documentation during the design phase and implementation of goals and guidelines provided in the plan.

The General Plan contains a set of goals and guidelines for vegetation management (VEG 1 through 4). In addition, the General Plan contains guidance on the proper siting and management of future park facilities. These goals and guidelines focus on the inventory and management of sensitive resources, restoration, prevention and control of invasive weeds, and the use of monitors and state of the art vegetation management techniques. With implementation of the goals and guidelines contained in the General Plan, proposed facilities would be sited and constructed in a way that would not result in substantial impacts on existing vegetation. Most facilities could be developed without loss or disturbance of trees, sensitive habitat, or special-status plants. Thus, implementation of the General Plan would prevent impacts on vegetation or maintain them at less than significant levels. No mitigation is required.

Wildlife

Impacts

With implementation of the General Plan, impacts on wildlife would be avoided through sensitive design and siting of future facilities and other land uses that may affect habitat. In addition, goals and guidelines would be in effect to avoid any potential impacts or limit them to less than significant levels.

Environmental Evaluation

The Park supports an impressive diversity of wildlife that can be attributed to the varied terrain and habitat types, and the relatively undisturbed conditions found throughout much of the area. Most of the animals present are regionally common, but at least 15 special-status wildlife species have been recorded in the Park or its vicinity. Construction and maintenance of Park facilities and anticipated public use of new and existing facilities could result in loss and/or disturbance of wildlife habitat and could reduce the number of individuals of some species. These impacts are not expected to substantially affect the distribution or abundance of any common wildlife species.

Impacts on most wildlife species found in the Park would be less-than-significant because construction of the proposed facilities would require a relatively small amount of ground disturbance. The proposed zones designated for visitor facilities were laid out to avoid existing known habitats for special-status species and important plant communities and wildlife habitat. Additionally, development would be designed to avoid additional habitats that may not be mapped or known at this time. None of the proposed facilities would remove large tracts of wildlife habitat and none would substantially reduce opportunities for wildlife movement. It is assumed that impacts on most special-status wildlife species can be minimized or avoided by restricting development of facilities in areas known to support, or with the potential to support, special-status species.

The California tiger salamander and red-legged frog are species considered to be at risk of significant impacts. These species are listed as “Threatened” under the federal Endangered Species Act and could be adversely affected by removal and maintenance of stock ponds and adjacent earthen dams if this was deemed necessary, based on an engineering analysis of these features. California red-legged frog tadpoles have been documented in one stock pond in the Park in 2007 and it could be found elsewhere where there is seasonal and permanent surface water. California tiger salamander larvae were captured in two ponds in the Park in 2007. It is likely that earlier surveys done at the ponds are more representative of the extent of these species since 2007 was not a typical breeding year due to low rainfall. Based on further analysis, if maintenance and restoration of the ponds is deemed appropriate, it could have long-term benefits for these species, but the potential short-term impacts, including direct mortality of adults and larvae, is considered

potentially significant. However, implementation of goals and guidelines and compliance with state and federal laws and regulations would ensure that these impacts would be maintained at less than significant levels.

Implementation of the General Plan would not have substantial adverse effects on wildlife movement because the large majority of land in the Park would remain undeveloped. However, preserving and enhancing movement opportunities through the Park for the San Joaquin kit fox should be considered in all future development at the Park. General Plan implementation would not conflict with the East Contra Costa County Habitat Conservation Plan, which was approved in 2007, and is currently in its second year of implementation. Implementation of future projects will require project-level CEQA analysis and permitting. As with direct impacts, indirect impacts on most wildlife species would be minor. Potentially significant impacts would be limited to impacts on a few special-status species inhabiting areas sensitive to disturbance, including stock ponds, riparian areas, vernal pools, and native grassland.

Stock ponds that provide habitat for the California red-legged frog and tiger salamander could be affected by visitors, horses, and cattle. Several of the proposed trails could bring visitors in proximity to ponds occupied by these species. Visitors on horses using the ponds to drink could degrade the shoreline environment and the water quality. The degree of impact would be generally proportional to the increase in visitors. Cattle using the ponds could also substantially modify habitat for red-legged frog and tiger salamander.

Implementation of the General Plan could result in potential impacts on other special-status wildlife species including the Longhorn fairy shrimp, vernal pool tadpole shrimp, and vernal pool tadpole shrimp associated with vernal pool habitat. More surveys and mapping of known occurrences need to be conducted to confirm the presence of these species in the Park, as called for in guidelines under goal WLIFE 1. The Park is also part of the historical range for the San Joaquin kit fox, although recent sightings are not documented. The Park provides habitat for this species, and large areas of undisturbed wildlife corridors are designated in the General Plan; therefore, potential impacts to this species are considered less than significant. There are a host of special-status bird species including burrowing owl, Swainson's hawk and Northern harrier that could also be impacted from additional visitor use, trail development and increased access. Disturbance or declines in ground squirrels, which provide prey for these species, or their burrows, which are used for aestivation habitat for California tiger salamanders and California red-legged frog and provide denning sites for San Joaquin kit fox, as well as nesting and sheltering habitat for burrowing owls could adversely affect local populations. Impacts to wildlife will be directly associated with the potential loss of habitat. However, the General Plan intends to minimize encroachment to the larger, unfragmented blocks of habitat and contains goals and guidelines that aim to prevent adverse effects on wildlife.

The General Plan contains a set of goals and guidelines focused on the protection and conservation of common and sensitive wildlife species and the preservation of wildlife habitat. Elements directed at protecting and enhancing wildlife resources in the Park to minimize potential significant impacts are specifically outlined in goals WLIFE 1 and the associated guidelines found in Chapter 3. Implementation of these goals and guidelines are expected to maintain impacts to wildlife at less than significant levels. Restoration of sensitive riparian and grassland habitats, including stock ponds and vernal pools called for in the General Plan could enhance and improve habitat for special-status species known to occur at the Park. Further mapping and inventory will allow for more accurate siting of future facilities to avoid high quality habitat. Clustering of visitor and maintenance facilities near disturbed areas and existing roads and infrastructure will help to minimize reduction of additional potential habitat. Performing site specific surveys and analysis at the time of Plan implementation will ensure that up to date data is informing the site design process.

Cultural Resources

This section analyzes impacts related to cultural resources that could result from implementation of the General Plan.

Impacts

With implementation of the General Plan, impacts on cultural resources would be avoided or minimized through implementation of the Plan goals and guidelines, sensitive design, and siting of facilities and other land uses. In addition, goals and guidelines would be in effect to avoid any potential impacts or limit them to a less-than-significant level.

Environmental Evaluation

A total of 26 pre-historic and historic cultural resources have been formally recorded within the Park, with another 19 sites present within one mile of the Park boundary. Approximately half of the known sites are related to the ranching operations that have occurred within the Park since the middle of the 19th century. These include the John Marsh House, the John Marsh Historic District (cultural landscape), isolated ranch structures, fences, corrals and irrigation features. It is presumed that the as-yet unidentified remains of John Marsh's 1830s adobe are also present in the Park. Pre-historic sites include bedrock mortars, village, and cemetery sites, the most significant being CCO-18/548H. Archaeological testing of CCO-18/548 began in the 1940s and has continued on and off to the present day. Archaeologists identified rich, deeply stratified deposits associated with the Windmill cultural complex in the vicinity of the John Marsh House. Similar deposits were identified at The Vineyards at Marsh Creek development north of the Park, as well as to the northeast on a parcel of land intended for a new community college. The areas of CCO-18/548H that have yielded important information and the continuity of Windmill-type artifacts and burials at each of these locations is a powerful argument for defining CCO-18/548 as a significant pre-historic occupation area that is eligible for listing on the CRHR or NRHP.

The most significant historic-era resource in the project site is the John Marsh House, built in 1856. The house was placed on the NRHP in 1971 because the house is an important property of the rancho culture that dominated much of California after the secularization of the mission lands during the 1830s. The house is historically significant for its associations with a prominent, early Californian, John Marsh, and for its associations with several important historical themes in the development of the state, including frontier settlement, cattle ranching during the American period and river commerce on the Sacramento and San Joaquin rivers. The John Marsh House is also architecturally significant as an excellent example of the Gothic Villa style of residential architecture. The Gothic Villa style was popular during the middle of the 19th century with most examples found in the east and Midwest. The John Marsh House represents one of its west coast manifestations.

The John Marsh Historic District, found eligible for the National Register of Historic Places, consists of the house, the ranching complex, and the surrounding cultural landscape features. The district is also significant for its association with John Marsh and his family, with a period of significance from 1838 when Marsh moved to the rancho to 1871 when his family no longer owned the property.

The construction of park facilities has the potential to adversely affect cultural resources. The historic resources are highly visible and easily avoided but will be affected visually by the construction of modern facilities. The pre-historic resources are less easily identified and could be impacted by any ground-disturbing

activities, particularly those within 100 meters of the west and south sides of the John Marsh House or any points north and east of the House within the Park boundary. In addition, bringing people into the park and identifying the nature of the pre-historic cultural resources, particularly those in the Primary Historic Zone, may lead to looting and cumulative impacts at the site.

Public use of the Park facilities could also affect presently undocumented cultural resources. Due to poor ground visibility, it is likely that not all archaeological resources have been identified. As can be seen from previous investigations, numerous significant pre-historic and historic sites, features, and artifacts could be found throughout the Park. Should visitor use increase and continue at elevated levels over time, there could be greater impacts on undocumented resources. This possibility stresses the need for continued surveys of the Park's cultural resources, to enable better documentation and management of the numerous sites that likely exist but have yet to be encountered and recorded. Additionally, without the full extent of a cultural landscape designation documented, Plan implementation has the ability to impact potential contributing landscape elements that may affect the integrity of a potential future designation of a cultural landscape beyond what is currently documented.

The General Plan incorporates various actions designed to mitigate potentially adverse impacts on cultural resources resulting from the proposed construction, maintenance, and use of recreational facilities. Goals CUL 1-CUL 7 and associated guidelines found in Chapter 3 serve to mitigate impacts on cultural resources reducing potential impacts to less than significant levels.

Additionally, the cultural resources provisions of CEQA will guide the standards of pre-historic and historic resource studies conducted within the Park. A cultural resources investigation will be conducted for any site-specific project undertaken within the Park during General Plan implementation that would involve ground-disturbing activities. As part of the CEQA review for these future projects, qualified archaeologists will identify and record pre-historic or historic archaeological sites, features, and artifacts that could be adversely affected by implementation of individual projects. In addition to the findings of any CEQA-compliant studies, archaeologists will monitor any ground-disturbing activities to ensure that undocumented surface or subsurface cultural manifestations are not adversely affected. If previously unknown resources are encountered during project implementation, the potential significance of the resource must be determined, and the archaeologists will develop treatment options in consultation with Park managers.

Transportation and Traffic

This section analyzes impacts related to transportation and traffic that could result from implementation of the General Plan.

Impacts

With implementation of the General Plan, impacts on transportation and traffic would be minimized, as goals and guidelines would be in effect to avoid any potential impacts or limit them to a less-than-significant level.

Environmental Evaluation

Implementation of the General Plan has the potential to increase visitor use of and associated traffic at Marsh Creek State Park by providing for additional Park facilities, uses, and programs and by increasing signage along Marsh Creek Road and in other areas outside of the Park. In addition, Park visitation is expected to increase as a result of population growth in the region and the increasing popularity of outdoor

recreation (DPR 1998, California Department of Finance 2001). Increased visitor use and accommodation of visitors within the Park would result in additional vehicle trips both to and within the Park. As a result, overall traffic levels and the existing congestion on Marsh Creek Road would increase. Most additional vehicle trips would occur during peak season weekends or during special events when visitor facilities would be most utilized. Proposed parking and staging areas currently do not exist so these facilities may experience shortages during special events or in the short term until all future parking is built out.

The preferred alternative to implement the General Plan calls for development of up to 158 parking spaces, as well as vehicle parking associated with up to 210 campsites and three group camps for up to 75 people for a total of 443 parking spaces not including staff and maintenance parking. Making the conservative assumption that each parking space is used by one vehicle during the course of the day, the Park would generate a minimum of 443 trips to and from the Park during peak use months. This could represent an increase in vehicle trips on Marsh Creek Road, Walnut Boulevard, and other roads and intersections adjacent to the proposed access points. The Vineyards at Marsh Creek development EIR studied various intersections in and around the Park location and analyzed impacts associated with the new mixed use development being constructed adjacent to the Park. The EIR found that even with the proposed development including the Park, LOS at key intersections including Marsh Creek Road and Sellers Avenue and Balfour Road and Deer Valley Road would not experience reduced level of service (LOS) such that significant impacts would result. Due to the dispersed locations for the staging areas at the Park and their locations immediately adjacent to existing roadways as well as the minimal amount of new traffic generated at each predominantly during off-peak times, the actions proposed in this General Plan do not have the potential to substantially lower the LOS on Marsh Creek Road and surrounding roadways, resulting in no significant impacts on circulation and traffic both within the Park and in its vicinity.

The General Plan contains a set of goals and guidelines aimed at managing access to and circulation within the Park. Goals ACCESS 1 through 5 call for safe and well-signed ingress and egress to the Park, emergency access, and visitor management. Although the General Plan would result in slight impacts on traffic and circulation, proposed improvements to Park roads and parking areas and the encouragement of improvements to area roads and highways, particularly Marsh Creek Road, Walnut Boulevard, and the Highway 4 Bypass, would reduce traffic and congestion impacts. Realignment and surface improvements of the Park entrance road would improve Park access and overall circulation to accommodate the anticipated increase in visitation, development, and associated traffic. Furthermore, although improving signage along Marsh Creek Road, Walnut Boulevard and at the Park entrances would attract additional visitors to the Park, it would also improve traffic flow by improving directions to the Park entrances. Efficient circulation and parking design would be incorporated into the design and operation of campgrounds, facilities, special events, and other projects under this General Plan to minimize traffic and congestion within the Park. Implementation of these components of the General Plan would address and offset the anticipated circulation and traffic concerns, reducing potential impacts to less than significant.

Utilities and Public Services

This section analyzes impacts related to utilities and public services that could result from implementation of the General Plan.

Impacts

With implementation of the General Plan, impacts on utilities and public services would be minimized, as goals and guidelines would be in effect to avoid any potential impacts or limit them to a less-than-significant level.

Environmental Evaluation

The General Plan proposes a number of actions that have the potential to both directly and indirectly affect utilities and public services in the Park and the surrounding vicinity. Proposed developments would create visitor demand for these utilities where none currently exists. The Park's current water supply is currently limited to one well near the John Marsh house used only for the ranching operation and residence and the Park's wastewater treatment is limited to an on-site septic system also in this area. Another well exists in this vicinity but is currently not operational. As part of the adjacent Vineyards development project, connections for all utilities will be provided at the northern border of the Park where it is adjacent to the Vineyards at Marsh Creek development property line. These connections will provide utilities to serve the immediate area within the Primary Historic Zone. In addition, the development and improvement of recreational facilities and uses under the proposed General Plan has the potential to increase visitor use and associated utility demand. The proposed facilities (campsites, horse camp, staff housing, ranger station and Park maintenance building, all-weather shelter for group gatherings, interpretive and storage facility, and Park concessions) would require associated water supply, sanitary facilities, and electrical connections. Implementation of the proposed General Plan may therefore require construction of additional wells for water supply in other areas of the Park where new visitor facilities are proposed. Vault toilets would most likely be constructed in some areas where there are no connections to sanitary sewers. Water supply connections within the Eastern Operations and Visitor Facility Zones would feed off of the public distribution system that exists in that area as well as public sanitary connections. Development under the proposed General Plan therefore has the potential to affect existing utility infrastructure and demand. However the demand would be very limited and would not have the potential to significantly adversely affect utilities.

Development of additional staff housing could result in decreased response time by Park staff, currently the primary providers of law enforcement and Park security. Furthermore, the proposed improvement of Park roads and facilities has the potential to reduce response times by CAL FIRE, volunteer search and rescue teams, and other State and local emergency response agencies. Therefore, while the proposed General Plan has the potential to increase demand for law enforcement and fire and emergency services within the Park, new facilities and services would not be planned without the appropriate staff to manage such resources. Lastly, although visitor use is anticipated to increase with the development of facilities proposed under this General Plan, this increase is not expected to accelerate the physical deterioration of existing or proposed facilities or decrease the quality of facilities or users' experience.

The General Plan contains goals and guidelines aimed at managing utilities and public services in the Park. Goal UTIL1 and associated guidelines, as well as other General Plan goals, are provided to prevent impacts on utilities and public services. In addition, project-level CEQA review of proposed developments will include further analysis of potential impacts on public services and utilities associated with demand, supply, and infrastructure and will identify any additional measures needed to address any potentially significant impacts, if necessary.

Aesthetics

This section analyzes impacts related to aesthetics that could result from implementation of the General Plan.

Impacts

With implementation of the General Plan, impacts on aesthetics would be minimized, as goals and guidelines would be in effect to avoid any potential impacts or maintain them at less than significant levels.

Environmental Evaluation

The proposed General Plan includes the development of additional day- and overnight use, parking, maintenance, and staff housing facilities in the Park. The development of currently undeveloped areas has the potential to significantly adversely affect the Park's existing scenic quality and character by intruding on its scenic vistas and open landscape character. In addition, new facilities have the potential to create new sources of light or glare, which could affect day or nighttime views in the area. The proposed General Plan therefore has the potential to adversely affect aesthetics within the Park.

The General Plan contains specific goals (SCENIC 1 through 4) and guidelines aimed at preserving the aesthetic qualities of the Park. Goal SCENIC 1 and associated guidelines specify that intrusion on aesthetics is to be minimized by limiting development within scenic viewsheds. Moreover, the majority of the development in the Park would be in areas of current development or disturbance or near roadways, reducing encroachment into undeveloped scenic areas. Furthermore, the proposed General Plan calls for maintenance of historic and unique buildings within the Park under goal CUL 3 and associated guidelines. Implementation of the proposed scenic viewshed protection and the design of proposed facilities to incorporate styles, features, materials, and architectural mass appropriate to the Park's scenic character would reduce the potential for impacts on aesthetics and visual resources.

4.6 CEQA-REQUIRED ANALYSIS

As required by CEQA, this section presents discussions related to environmental effects found not to be significant, unavoidable significant effects on the environment, significant irreversible environmental effects, growth-inducing impacts, and cumulative impacts associated with the proposed General Plan.

Environmental Effects Found Not to Be Significant

As a first tier of planning and environmental analysis, some topical issues were found not to be significant and were not evaluated further in this EIR. These topical issues are identified and briefly discussed in this section. If the General Plan is amended in the future or conditions as presented herein change, these effects will have to be re-evaluated to ensure that they are still deemed not to be significant.

Geology and Soils

While the area around the Park is geologically significant and active, the General Plan does not permit development of permanent facilities in known risk areas and requires geologic studies before development. It also requires site-specific geotechnical investigations for siting and design of permanent structures, campgrounds, roads, and trails to mitigate potential damage from unstable soil, landslides, and earthquakes.

The risk related to a seismic event would not increase from current conditions as a result of the implementation of the General Plan.

Hazards and Hazardous Materials

Implementation of the General Plan would not result in the release of hazardous substances, create a health hazard, expose people to any existing sources of health hazards, or increase a fire hazard. Implementation of the General Plan would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, as no unusual use of hazardous materials is anticipated. Use of hazardous materials, as defined by and regulated through the California Code of Regulations, is expected to be limited to the periodic use of pesticides and herbicides in conjunction with maintenance of the landscaping and control of invasive plants, and use of motor oils, gas, etc., for employee vehicles and maintenance equipment. Application and storage of these substances in accordance with the manufacturers' specifications would not pose any significant hazards. This use would not cause a significant hazard to the public, or result in a foreseeable upset or accident condition. Phase I assessments should be conducted when any areas of the Park are suspected of potential contamination, and before future acquisitions or securing of easements. Future projects would be subject to further, more detailed review. Should any hazardous substances or other health hazards be identified, appropriate warning and protective methods would be developed and implemented.

Land Use and Planning

The General Plan provides guidelines for future land use and development and although not required, is consistent with the Contra Costa County and City of Brentwood General Plans. The General Plan would not physically divide an established community or conflict with any HCP or NCCP; therefore, it would not cause an adverse change in the environment related to land use and planning.

Energy and Mineral Resources

The General Plan policies encourage resource conservation and recreational uses for the Park. The potential development and improvements recommended in the General Plan would require minimal amounts of energy, would not require additional energy facilities to serve the Park, and would not adversely affect peak- and base-period demands for electricity.

The General Plan includes the protection of large expanses of undeveloped land. Furthermore, California State Parks regulations would not permit the development of any mineral resources in the Park. Therefore, the proposed General Plan would not have an adverse impact on the environment related to mineral resources.

Population, Employment, and Housing

Implementation of the General Plan would not result in impacts related to population, employment, or housing. The General Plan would not induce substantial population growth in the area, as it does not propose any substantial new housing or businesses nor does it require the extension of community roads or infrastructure outside the boundaries of the Park. The General Plan would not displace any people or housing, necessitating the construction of housing elsewhere. Implementation of the General Plan could result in an increased need for staff, but it is unlikely that the number of new jobs generated would be significant or exceed the projected job growth in the area.

Unavoidable Significant Effects on the Environment

The proposed General Plan would not result in any unavoidable significant effects, as discussed in Section 4.5, Environmental Impacts of this EIR. Evaluation at the specificity of this first-tier review indicates that the potential effects of projects proposed in this General Plan can be maintained at a less-than-significant levels with the implementation of resource management programs and the goals and guidelines regarding the management of Park resources.

Until the uses, location, and scope of facilities or management plans are specific, the actual level of impact, whether individual or cumulative, cannot be determined. However, all future projects will be developed within the framework of the approved General Plan and its goals and guidelines and will also be required to comply with local, State, and federal permitting and regulatory requirements. Furthermore, future projects will be subject to subsequent-tier CEQA review and project-specific mitigation, if necessary.

Significant Irreversible Environmental Effects

No significant irreversible changes to the natural environment are anticipated from the adoption and implementation of this General Plan. While any facilities development, including structures, roads, and trails, may be considered a long-term commitment of resources, impacts can be reversed through removal of facilities and discontinued use. If necessary, California State Parks could remove, replace, or realign facilities, such as trails and campsites, or close areas on a seasonal or temporary basis until conditions can improve where impacts have become unacceptable either from excessive use or from a change in environmental conditions.

The construction and operation of facilities may require the use of non-renewable resources. This impact would be minor due to the limited number and extent of facilities planned for development and consideration of sustainable practices in site design, construction, maintenance, and operations as proposed in the General Plan. Sustainable principals used in design and management emphasize environmental sensitivity in construction, the use of non-toxic materials and renewable resources, resource conservation, ecological restoration, recycling, and energy efficiency. Many cultural resources in the Park are considered unique and nonrenewable. Destruction of any significant cultural resource may be considered a significant irreversible effect. To avoid this impact, proposed development sites will be surveyed for cultural resources, all site and facilities designs will incorporate methods for protecting and preserving significant cultural resources, and human activities will be monitored to protect cultural resources, where necessary.

Growth Inducing Impacts

An EIR must discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment (State CEQA Guidelines §15126.2(d)). Projects that would remove obstacles to population growth are also considered when discussing growth inducement. Increases in population may also tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects.

Implementation of the General Plan would likely result in an increase in visitation to the Park. The General Plan recommends new visitor facilities, thereby increasing its capacity to serve visitors. Increasing awareness of the Park through improved signage and other infrastructure improvements will attract more visitors to the Park. Improving trail connections between the Park and adjacent and nearby public lands, may

contribute to the potential for increased overnight use in areas of the Park that currently lack these opportunities.

The increased capacity may result in the need for an increased number of permanent and seasonal staff. The General Plan also recommends consideration of additional staff housing and improvements to existing staff housing. These proposals would result in a very minimal direct population growth impact on the area. Improvements to the Park's utilities including the addition of a potable water supply and future sanitary systems will be self-contained for Park-use only, therefore would not encourage population growth in the surrounding area.

Increased visitation to the Park may create additional tourism and the need for tourist services in the adjacent communities and surrounding region. The General Plan could potentially foster economic growth in the region by encouraging an increase in supporting recreation and tourist services, such as recreation equipment, supplies, food, and related facilities. However, in the context of the larger region's projected growth, these impacts would be minimal.

The protection of the Marsh Creek State Park land for resource conservation and visitor experience prevents extensive, smaller lot residential development on this 3,700 acre tract. The build-out of this parcel, had it not been protected and designated as a State Historic Park, would greatly contribute to growth inducing impacts in the region far beyond impacts that will result from increased visitor use to this Park. Additionally, although population growth in the state and region will continue to create an increased use and demand for recreational opportunities at the Park, these will not have permanent, irreversible impacts in the region.

Cumulative Impacts

“Cumulative impacts” refers to two or more individual effects that are considerable when considered together, or that compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact of several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines §15355).

Contra Costa County is experiencing tremendous population growth albeit significantly less since late 2008 when the economic market shifted and the demand for single family housing plummeted. New development is planned in the City of Brentwood and on many of the surrounding ranch properties near the Park. This development includes residential subdivisions and commercial uses, as well as the expansion of government buildings and learning institutions significantly reducing large tracts of existing farmland that are characteristic of the area. As per the latest status report of active residential projects within the City of Brentwood (September 2009), there are a total of 4,153 single and multi-family units approved, however without building permits issued, 119 under construction and 260 proposed but not yet approved (Nolthenius, pers. comm. 2010). The largest development project in proximity to the Park is the Vineyards at Marsh Creek to the north just less than 500 acres. Construction is underway for this multi-use development project. The State Route 4 Bypass which bisects the Park was constructed to alleviate reduced levels of service and anticipated long term congestion along State Route 4. The proposed 30 acre community college site adjacent to the Park in the north between Marsh Creek Road and the State Route 4 Bypass may be built out as a college campus or redeveloped according to City zoning with a proposed business park (Nolthenius, pers. comm. 2010). To the extent that the loss of biological, cultural, and visual resources is occurring in the

region, any loss, disturbance, or degradation of these resources would contribute to cumulative impacts. The General Plan proposes a number of goals and guidelines aimed at resource conservation and sustainable park management to avoid or minimize impacts on these resources. In addition, the protection of large expanses of unfragmented open space (approximately 75% of the total Park acreage) and protection of wildlife habitat and corridors will further reduce the cumulative effects that the General Plan would contribute to the region.

This page intentionally left blank.



References

5. References

5.1 LITERATURE CITED

- Architectural Resources Group. 2002. John Marsh House Historic Structure Report. Brentwood, California.
- Association of Bay Area Governments. How Did We Choose Which Faults to Use as Earthquake Sources?. Located <<http://www.abag.ca.gov/bayarea/eqmaps/doc/faults.html>>. Paged updated 10/15/03.
- Association of Bay Area Governments. ABAG Landslide Hazard Maps and Information (data originated from USGS). Located <<http://www.abag.ca.gov/bayarea/eqmaps/landslide/>>. Page updated 6/13/05.
- Association of Bay Area Governments. *Projections 2005, 2005*.
- ARB. See California Air Resources Board.
- Bartolome J.W., W.E. Frost, N.K. McDougald and J.M. Connor. 2002. California Guidelines for Residual Dry Matter (RDM) Management on Coastal and Foothill Annual Rangelands. Rangeland Monitoring Series, University of California Ag and Nat Res Pub 8092. Oakland, CA. 8 p.
- Baumhoff, M. A. 1963. *Ecological Determinants of Aboriginal California Populations*. University of California Publications in American Archaeology and Ethnology 49(2):155–236.
- Beardsley, R.K. 1954. *Temporal and Areal Relationships in Central California Archaeology*. Berkeley: University of California Archaeological Survey Reports 24, 25.
- Beck, W. A., and Y. D. Haase. 1974. *Historical Atlas of California*. University of Oklahoma Press.
- Bell, H.M. 1992. San Joaquin kit fox survey and management options for East Bay Regional Park District's Black Diamond Mines Regional Preserve and Round Valley Regional Park. East Bay Regional Park District, Oakland, CA, 26 pp.
- Bell, H.M. 1994. Analysis of habitat characteristics of the San Joaquin kit fox in its northern range. M.A. thesis, California State Univ., Hayward, 90 pp.
- Bell, H.M., J.A. Alvarez, L.L. Eberhardt, and K. Ralls. 1994. Distribution and abundance of San Joaquin kit fox. California Dept. Fish and Game, Sacramento, Nongame Bird and Mammal Sec., Unpubl. Rep.
- Bennyhoff, J. A. 1968. *A Delta Intrusion to the Bay in the late Middle Period in Central California*. San Diego: Paper presented at the Annual Meeting of the Society for California Archaeology and the Southwestern Anthropological Association.
- Bennyhoff, J. A. 1977. *Ethnogeography of the Plains Miwok*. University of California, Center for Archaeological Research at Davis, Publications 5.
- Bennyhoff, J. A. 1982. *Central California Augustine: Implications for Northern California Archaeology*. Contributions of the University of California Archaeological Research Facility, Berkeley 52:65–74.

- Bennyhoff, J. A., and D. A. Fredrickson. 1969. *A Proposed Integrative Taxonomic System for Central California Archaeology*. Contributions of the University of California Archaeological Research Facility, Berkeley 52:15–24.
- Bradley, D. and Hill, W. 2007. *Historic Period Properties Survey and Evaluation Report*, John Marsh Historic District. Report prepared for Shea Homes, Inc. Trilogy at the Vineyards, 1881 Concord Avenue, Brentwood, CA 94513.
- California Air Resources Board. 2008 (December). *Climate Change Scoping Plan*. Sacramento, CA. Available: <<http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>>. Last updated December 2008. Accessed May 18, 2009.
- California Air Resources Board. 2009. *Greenhouse Gas Emissions Inventory Summary for Years 2000-2006*. Available: < http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_2009-03-13.pdf>. Accessed September 22, 2009.
- California Department of Finance. Demographic Projections, 2006.
- California Department of Fish and Game. 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California. Sacramento, CA.
- California Department of Fish and Game. 1995. Staff Report on Burrowing Owl Mitigation. Sacramento, CA.
- California Department of Fish and Game (DFG). 2003 (September). List of California Terrestrial Natural Communities Recognized by The California Natural Diversity Database. Wildlife and Habitat Data Analysis Branch, Sacramento.
- California Department of Parks and Recreation, Office of Historic Preservation. 2001. *Comprehensive Statewide Historic Preservation Plan for California 2000-2005*. May 2001.
- California Department of Parks and Recreation. 2002. *California Recreational Trails Plan (Phase I)*. June 2002.
- California Department of Parks and Recreation. 2007. *Draft Planning Handbook*.
- California Native Plant Society. 2001. *Inventory of Rare and Endangered Plants of California* (sixth edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society. Sacramento, CA.
- California Native Plant Society (CNPS). 2006. *California Native Plant Society's Electronic Inventory of Rare and Endangered Vascular Plants (v7-06a)*. Sacramento, CA.
- California Natural Diversity Database (CNDDB). 2006. Electronic version. Query of Antioch South, Brentwood, Byron Hot Springs, and Tassajara quadrangles. Natural Heritage Division, California Department of Fish and Game. Sacramento, CA.
- CalPIF. See California Partners in Flight.

- California Partners in Flight. 2002. Version 2.0. The oak woodland bird conservation plan: a strategy for protecting and managing oak woodland habitats and associated birds in California (S. Zack, lead author). Point Reyes Bird Observatory, Stinson Beach, CA. <http://www.prbo.org/calpif/plans.html>.
- California Regional Water Quality Control Board Central Valley Region. 2004. *The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board, Central Valley Region, Fourth Edition*. September 2004
- California State Park and Recreation Commission. 1994. Statements of Policy: Including Policies adopted/amended May 1994, September 1998, and September 2005.
- California State Parks. 1989. *Mount Diablo State Park General Plan*. Sacramento, CA. May 1990.
- California State Parks. 2005. *Accessibility Guidelines*. January 2005.
- CCCWP and EOA, Inc. 2004b (July 1, 2004). *Pollutants of Concern Assessment Report*. Prepared for the SFBRWQCB.
- City of Brentwood. 2001. *City of Brentwood General Plan, 2001-2021*. Adopted June 8, 1993.
- City of Brentwood. *Parks, Trails and Recreation Master Plan: Annual Report 2003-2004*. October 2004.
- Clark, Jr., H. O., D. A. Smith, B. L. Cypher, and P. A. Kelly. 2003. Detection dog surveys for San Joaquin kit foxes in the northern range. Prepared for Pacific Gas & Electric Company Technical and Ecological Services, San Ramon, CA.
- Contra Costa Clean Water Program (CCCWP) and Eisenberg, Olivieri and Associates (EOA), Inc. 2004a (March 31, 2004). *Contra Costa Creeks Inventory and Watershed Characterization Report*. Prepared for the SFBRWQCB.
- Contra Costa County Transportation Authority. 2003. *The Contra Costa Countywide Bicycle and Pedestrian Plan*. December 17, 2003. (added to library 3/15/2006).
- Contra Costa County Transportation Authority. 2004. *2004 Update to the Contra Costa Countywide Comprehensive Transportation Plan*. Final Plan adopted May 2004.
- Contra Costa County. *Contra Costa County General Plan 2005-2020*. January 18, 2005.
- Contra Costa Water District (CCWD). 2006. *EIR Notice of Preparation, Los Vaqueros Reservoir Expansion Project*. January 2006.
- Cook, S. F. 1955. *The Aboriginal Population of the San Joaquin Valley, California*. Anthropological Records 16:2. University of California Press. Berkeley, California.
- Cook, S. F. 1960. *Colonial Expeditions to the Interior of California: Central Valley, 1800-1820*. University of California Anthropological Records 16(6):239-292.
- Cressey & Associates and EOA. (EOA), Inc. August 18, 2005. *Contra Costa Monitoring and Assessment Plan (CCCMAP) 2004 Rapid Bioassessment Project Report*. Prepared for Contra Costa Clean Water Program.

- Cutler, J. 2001. *Opportunities and Constraints for the Cowell Ranch Acquisition Area, Working Paper*. Prepared for the Trust for Public Land. May 24, 2001. (added to library 2/14/2006)
- Department of Water Resources (DWR). October 2003. *California's Groundwater Bulletin 118 – Update 2003*.
- East Bay Regional Park District. 1996. *Master Plan 1997*. Adopted December 17, 1996.
- East Contra County Habitat Plan Association. *Final East Contra County Habitat Conservation Plan and Natural Community Conservation Plan*. prepared by Jones & Stokes. October 2006. San Jose, CA.
- Egoscue, H.J. 1956. Preliminary studies of the kit fox in Utah. *J. Mammal.* 37:351-357.
- Entomological Consulting Services, Ltd. 1998. *1998 Report for 2nd Vernal Pool Crustacean Wet Season Survey, Cowell Ranch near Brentwood, CA*. July 15, 1998.
- Farris, G.J., K.E. Davis, J. McAleer, P. Hines, K. Gobalet, D.D. Simons. 1988. The John Marsh Stone House Archaeological Project.
- Fredrickson, D.A. 1973. *Early Cultures of the North Coast Ranges, California*. Unpublished Ph.D. Dissertation. Department of Anthropology, University of California, Davis.
- Fredrickson, D.A. 1974. Cultural Diversity in Early Central California: A View from the North Coast Ranges. *Journal of California Anthropology* 1(1):41-53.
- General Land Office. 1862. Map for Township 1 North, Range 2 East Mount Diablo Meridian.
- George, M. R., W. E. Frost, N. K. McDougald, J. M. Connor, J. W. Bartolome, R. B. Standiford, J. Maas, and R. Timm. 1996. Livestock and grazing management. In: Standiford, R. B. (tech. coord.), *Guidelines for managing California's hardwood rangelands*. University of California Division of Agriculture and Natural Resources, Publication 3368: 51-67.
- Goodman, Daniel and Sojda, Richard S. *Applying Advanced Technologies for Adaptive Management and Decision Support in Natural Resources*. Montana State University. Located <http://www.esg.montana.edu/esg/adaptive_mgmt_1.html>. Page accessed 10/30/2007.
- Grinnell, J., J. S. Dixon, and J. M. Linsdale. 1937. *Fur-Bearing Mammals of California*. Univ. California Press, Berkeley.
- H.T. Harvey & Associates. 1997. *Distribution of the San Joaquin Kit Fox in the North Part of its Range*. Prepared for Ted Fairfield. March 13, 1997.
- Hall, F.A. 1983. Status of the San Joaquin kit fox, *Vulpes macrotis mutica*, at the Bethany wind turbine generating site, Alameda County, California. Unpubl. Rep., California Dept. Fish and Game, Sacramento, 34 pp.
- Harrington, L. 1995. *Archaeological Site Testing and Burial Recovery at Site CA-CCO-548, Cowell Ranch Contra Costa County, California*. Report on file, Northwest Information Center, Rohnert Park, Ca.

- Heizer, R. F. 1949. *The Archaeology of Central California I: The Early Horizon*. University of California Anthropological Records 12 (1).
- Heizer, R. F. 1978. ed. *Handbook of North American Indians*, Vol. 8. Smithsonian Institution, Washington, D.C.
- Holland, D.C. 1992. A Synopsis of the Distribution and Current Status of the Western Pond Turtle (*Clemmys marmorata*) in Oregon. Report prepared for Non-game Division, Oregon Department of Fish and Wildlife.
- Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program. Sacramento, CA.
- Hoover, M.B., H.E. Rensch, E.G. Rensch, and W.N. Abeloe. 1990. *Historic Spots in California*. Stanford University Press. Stanford, CA.
- Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the IPCC. Geneva, Switzerland. Available: <<http://www.ipcc.ch/ipccreports/ar4-wg1.htm>>.
- Jennings, M. R., and M. P. Hayes. 1994. *Amphibians and Reptile Species of Special Concern in California*. Final report to the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, CA, under Contract 8023.
- Jensen, C.C. 1972. San Joaquin kit fox distribution. U.S. Fish and Wildlife Service, Sacramento, CA, Unpubl. Rep., 18 pp.
- Kroeber, A. L. 1925. *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78.
- Kroeber, A. L. 1959. *Ethnographic Interpretations: 9. Recent Ethnic Spreads*. University of California Publications in American Archaeology and Ethnology 47(3).
- Kuchler, A.W. 1977. Map of the Natural Vegetation of California. In M.G. Barbour and J. Major, eds., *Terrestrial Vegetation of California*. Wiley: New York.
- Levy, R. 1978. Costanoan. In *Handbook of North American Indians*, Vol. 8. Smithsonian Institution, Washington, D.C.
- Lillard, J. B., R. F. Heizer, and F. Fenenga. 1939. *An Introduction to the Archaeology of Central California*. Sacramento: Sacramento Junior College, Department of Anthropology Bulletin 2.
- LSA Associates, Inc. 1993. *Biological Resources, Cowell Ranch, Contra Costa County*. Prepared for The Cowell Ranch Project. November 1, 1993.
- LSA Associates, Inc. 1994a. *Supplemental Rare Plant Survey*. Prepared for the S.H. Cowell Foundation. July 12, 1994.
- LSA Associates, Inc. 1994b. *Supplemental Rare Plant Survey No. 2*. Prepared for the S.H. Cowell Foundation. October 10, 1994.

- LSA Associates, Inc. 1996. *Draft Habitat Management Plan, Cowell Ranch*. Prepared for The S.H. Cowell Foundation. May 3, 1996.
- Mayer, K.E. and W.F. Laudenslayer (eds.). 1988. *A Guide to the Wildlife Habitats of California*. California Department of Forestry and Fire Protection. Sacramento, CA.
- McNulty, M.E. and M. Wickland. 2003. *Redesigning Marsh Creek Dam to allow Chinook salmon passage, flood protection, and mercury sedimentation*.
- Mead, Deborah L. 1993. *Survey for Hygrotus curvipes (Leech) at Cowell Ranch, Contra Costa County, California*. Prepared for LSA Associates, August 10, 1993.
- Meighan, C. W. 1955. *Archaeology of the North Coast Ranges, California*. University of California Archaeological Survey Reports 30:1–39. Berkeley, CA.
- Metropolitan Transportation Commission. 2001. 2001 Regional Bicycle Plan for the San Francisco Bay Area. Prepared By: Alta Transportation Consulting. December 2001.
- Metropolitan Transportation Commission. 2005. Transportation 2030 Plan for the San Francisco Bay Area. February 2005.
- Moratto, M. J. 1984. *California Archaeology*. Academic Press, San Francisco, CA.
- Morrell, S.H. 1975. San Joaquin kit fox distribution and abundance in 1975. California Dept. Fish and Game, Sacramento, Wildl. Manage. Branch, Admin. Rep. No. 75-3, 28 pp.
- National Park Service. 2000. National Register of Historic Places. Washington, D.C.
- Natural Resources Conservation Service, Soil Survey Staff, United States Department of Agriculture. Official Soil Series Descriptions [Online WWW]. Available URL: "<http://soils.usda.gov/technical/classification/osd/index.html>" [Accessed 10 February 2004]. USDA-NRCS, Lincoln, NE.
- Olsen, W.H., and L.A. Payen. 1969. *Archaeology of the Grayson Site, Merced County, California*. Sacramento: California Department of Parks and Recreation, Archaeological Reports 12.
- Olson, Brad L. 1994. *Status of Rare, Threatened and Endangered Vascular Plants in Alameda and Contra Costa Counties*, third edition. Prepared for the California Native Plant Society, East Bay Chapter, Rare Plant Committee. March 1, 1994.
- Orloff, S., F. Hall, and L. Spiegel. 1986. Distribution and habitat requirements of the San Joaquin kit fox in the northern extreme of their range. *Trans. West. Sect. Wildl. Soc.* 22: 60–70.
- Parkman, E. Breck. 2006a. A Windmill Pattern Burial from the John Marsh Home/Cowell Ranch, Contra Costa County, California. *Science Notes Number 10*. Petaluma: California State Parks.
- Parkman, E. Breck. 2006b. A Newly-Discovered Historic Archaeological Site at the John Marsh Home, Contra Costa County, California. *Science Notes Number 12*. Petaluma: California State Parks.

- Ragir, S.R. 1972. *The Early Horizon in Central California Prehistory*. Berkeley: Contributions of the University of California Archaeological Research Facility 15.
- Rathbun, G.B., N. Siepel, and D. Holland. 1993. Nesting behavior and movements of Western Pond Turtles (*Clemmys marmorata*). *The Southwest Naturalist*, Vol. 37, No. 3, September.
- RBF Consulting. November 2003. *The Vineyards at Marsh Creek and Annexation Sites EIR (SCH # 2003062019)*. (Prepared for the City of Brentwood).
- Robins, J.D. and J.E. Vollmar. 2001. Livestock Grazing and Vernal Pools. Pages 401-427 in J.E. Vollmar, ed., *Wildlife and Rare Plant Ecology of Eastern Merced County's Vernal Pool Grasslands*.
- Rosenthal, J., J. Meyer, J. Nelson, D. Furlong, T. Carpenter, and E. Wohlgemuth. 2006. *Results of Limited Geoarchaeological and Archaeological Study of CA-CCO-18/548, John Marsh Historic Park, Brentwood, California*. Report prepared for California Department of Parks and Recreation, Sacramento.
- Samuelson, A., W. Self, G. Mattson, and J. Allan. 1993. *Archaeological Survey and Testing Report Cowell Ranch Project Contra Costa County, California. Volume I Background, Results and Recommendations*. On file, Northwest Information Center, Rohnert Park, California.
- San Francisco Estuary Regional Monitoring Program (A.B. Jones and D.G. Slotton). September 1996. *Mercury Effects, Sources and Control Measures; RMP Contribution #20*.
- Sawyer, J.O and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society. Sacramento, CA.
- Schenck, W. E. 1926. *Historic Aboriginal Groups of the California Delta Region*. University of California Publications in American Archaeology and Ethnology. Volume 23(2) pp. 123-146. University of California Berkeley.
- Seideman, V. 2003. *Cowell Ranch Assessment Executive Summary*. California Department of Parks and Recreation, Bay Area District. Sacramento, CA. June 16, 2003.
- Seinfeld, J. H., and S. N. Pandis. 1998. *Atmospheric Chemistry and Physics*. John Wiley & Sons, Inc. New York, NY.
- State of California. 1976. *California Inventory of Historic Resources*. Office of Historic Preservation. On file, Northwest Information Center.
- State of California. 1989. *Survey of Surveys (historic and architectural resources)*. Department of Parks and Recreation, Office of Historic Preservation. On file, Northwest Information Center.
- State of California. 1992. *California Points of Historical Interest*. Department of Parks and Recreation, Office of Historic Preservation. On file, Northwest Information Center.
- State of California. 1996. *California Historical Landmarks*. Department of Parks and Recreation, Office of Historic Preservation, Sacramento.

- State of California. 2000. Directory of Properties in the Historical Resources Inventory. On file, Northwest Information Center.
- State of California. 2001. California Register of Historical Resources. On file, Northwest Information Center.
- State Water Resources Control Board. February 2003a. *Staff Report Volume 1: Revision of the Clean Water Act Section 303(d) List of Water Quality Limited Segments.*
- State Water Resources Control Board. February 2003b. *State Water Resources Control Board Resolution No. 2003-0009. Approval of the 2002 Federal Clean Water Act Section 303(d) List of Water Quality Limited Segments.*
- Swick, C.D. 1973. Determination of San Joaquin kit fox range in Contra Costa, Alameda, San Joaquin, and Tulare Counties, 1973. California Dept. Fish and Game, Sacramento, Spec. Wildl. Invest., Unpubl. Rep., 15 pp.
- Sycamore Associates LLC. 2003a. *Biological Assessment for The Vineyards at Marsh Creek Project, Brentwood, Contra Costa County, California.* Prepared for Blackhawk Services Company. March 31, 2003.
- Sycamore Associates LLC. 2003b. *Botanical Assessment for The Vineyards at Marsh Creek Project, Brentwood, Contra Costa County, California.* Prepared for Vineyards at Marsh Creek LLC. November 10, 2003.
- Sycamore Associates LLC. 2003c. *Burrowing Owl Habitat Assessment and Winter Focused Survey for The Vineyards at Marsh Creek Project, Brentwood, Contra Costa County, California.* Prepared for Blackhawk Services Company. March 31, 2003.
- Sycamore Associates LLC. 2003d. *Burrowing Owl Nesting Season Focused Survey for The Vineyards at Marsh Creek Project, Brentwood, Contra Costa County, California.* Prepared for Blackhawk Services Company. June 3, 2003.
- Sycamore Associates LLC. 2003e. *California Red-Legged Frog Focused Survey for The Vineyards at Marsh Creek Project, Brentwood, Contra Costa County, California.* Prepared for Blackhawk Services. June 3, 2003.
- Sycamore Associates LLC. 2003f. *California Tiger Salamander Focused Survey for The Vineyards at Marsh Creek Project, Brentwood, Contra Costa County, California.* Prepared for Blackhawk Services. June 11, 2003.
- Sycamore Associates LLC. 2003g. *Early Evaluation for the San Joaquin Kit Fox, Vineyards at Marsh Creek, Brentwood, Contra Costa County, California.* Prepared for Blackhawk Services. June 16, 2003.
- Sycamore Associates LLC. 2003h. *Site Assessment for the California Red-Legged Frog, The Vineyards at Marsh Creek Project, Brentwood, Contra Costa County, California.* Prepared for Blackhawk Services. March 31, 2003.
- Tanksley, K. 2003. Extended Phase I Report for CA-SJO-003. *Mossdale I-5 Widening Project, San Joaquin County, California.* Report on file, California Department of Transportation, District 10.
- U.S. Department of Agriculture Soil Conservation Service, 1997 (September). *Soil Survey of Contra Costa County, California.*

- U.S. Fish and Wildlife Service (USFWS). 2002. *Recovery Plan for the California Red-legged Frog (Rana Aurora Draytonii)*. Region 1. Portland, OR.
- U.S. Fish and Wildlife Service and California Department of Fish and Game. 2003 (October). Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander. USFWS California/Nevada Operations Office and CDFG Office of the Director.
- U.S. Fish and Wildlife Service. 2006 (February 10). Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants; Final Rule. Federal Register 71: 7118-7318.
- Wagner, D.L., E.J. Bortugno, and R.D. McJunkin. 1991. Geologic Map of the San Francisco-San Jose Quadrangle, California, 1:250,000. California Department of Conservation Division of Mines and Geology.
- Wallace, W. J. 1978. Northern Valley Yokuts. In *Handbook of North American Indians*, Vol. 8. Smithsonian Institution, Washington, D.C.
- Wiberg, R.S., and M.R. Clark. 2005. *Archaeological Properties Treatment Plan: Vineyards at Marsh Creek Project, City of Brentwood, Contra Costa County, California*. Report prepared for Vineyards at Marsh Creek LLC 3820 Blackhawk Road Danville, CA 94526.
- Willey, G.R., and P. Phillips. 1958. *Method and Theory in American Archaeology*. Chicago: University of Chicago Press.

5.2 WEBSITES ACCESSED

- California State Parks. 2006. <http://www.parks.ca.gov/>. Website accessed January-June 2006.
- Contra Costa Water District (CCWD); Los Vaqueros Reservoir. 2006. <http://www.ccwater.com/losvaqueros/>. Website accessed January-June 2006.
- East Bay Regional Park District. 2006. <http://www.ebparks.org/>. Website accessed January-June 2006.
- Mokelumne Coast to Crest Trail Council. 2006. <http://www.mc2ct.org/>. Website accessed January-June 2006.
- National Park Service. 2006. <http://www.nps.gov/>. Website accessed January-June 2006.
- USFWS. 1998. www.fws.gov/sacramento/es/animal_spp_acct/sj_kit_fox.htm

5.3 PERSONAL COMMUNICATIONS

- Alvarez, Jeff. Personal communication with Cyndy Shafer. August 2007.
- Detjens, Paul. Engineer, Contra Costa County Flood Control and Water Conservation District, Martinez CA. June 14, 2010 – personal communication via email with Donna Plunkett of AECOM.

Nolthenius, Erik. Principal Planner, City of Brentwood, Brentwood, CA. June 15, 2010 – personal communication via email with Donna Plunkett of AECOM.

Tong, Larry. Interagency Planning Manager, East Bay Regional Park District, Oakland, CA. June 10, 2010 – personal communication via email with Steve Bachman of California State Parks.



Glossary

6. Glossary of Terms and Acronyms

6.1 TERMS

Aesthetics: The visual, audible, and other sensory factors within the park setting and its surrounding landscapes that, taken together, establish character or sense of place.

Active fault: A fault that has moved recently and which is likely to move again. For planning purposes, an “active fault” is usually defined as one that shows movement within the last 11,000 years and can be expected to move within the next 100 years.

Ambient noise level: The composite of noise from all sources near and far.

Archaeological: Pertaining to the material remains of past human life, culture, or activities.

Best Available Control Technology (BACT): The most stringent emission limit or control technique that has been achieved in practice that is applicable to a particular emission source.

Best Management Practices (BMP): The most current methods, treatments, or actions in regard to environmental mitigation responses.

Biodiversity: Biological diversity in an environment as indicated by numbers of different species of plants and animals, as well as the relative abundance of all the species within a given area.

Buffer: Land that protects natural and/or cultural values of a resource or park from adverse effects arising outside the buffer.

California State Park and Recreation Commission: A commission established in 1927 to advise the Director of the California Department of Parks and Recreation on the recreational needs of the people of California. In 1928 it gathered support for the first State Park bond issue. The commission schedules public hearings to consider classification or reclassification and the approval of the Department’s general plan (and amendments) for each park.

California Environmental Quality Act (CEQA): A state law (PRC Section 21000 et seq.) requiring state and local agencies to take actions on projects with consideration for environmental protection. If a proposed activity may result in a significant adverse effect on the environment, an EIR must be prepared. General plans require a “program EIR” and park development projects require a project environmental document.

Character-defining: The sum of all visual aspects, features, materials, and species associated with a structure or cultural landscape’s history, i.e., the original configuration together with losses and later changes. Those features of a property that convey its significance and must be preserved to maintain the property’s historical integrity.

Clean Water Act: A law enacted in 1972 to create a basic framework for current programs to control water pollution; provides statutory authority for the National Pollutant Discharge Elimination System (NPDES).

Concession: A contract with persons, corporations, partnerships, or associations for the provision of products, facilities, programs, and management and visitor services that will provide for the enhancement of park visitor use, enjoyment, safety, and convenience. Concession developments, programs, and services must be compatible with a park's classification and general plan provisions.

Conservation easement: Acquisition of rights and interests to a property to protect identified conservation or resource values using a reserved interest deed. Easements may apply to entire parcels of land or to specific parts of the property. Most are permanent, although term easements pose restrictions for a limited number of years. Land protected by a conservation easement remains on the tax rolls and is privately owned and managed; landowners who donate conservation easements are generally entitled to tax benefits.

Cultural landscape: A geographic area (including both the cultural and natural resources) associated with a historic event, activity, or person or exhibiting cultural or aesthetic values. This type is a landscape that evolved through use by people whose activities or occupancy shaped it.

Cultural resource: A resource that exists because of human activities. Cultural resources can be pre-historic (dating from before European settlement) or historic (post-European contact). For the definition of historical resources please see CEQA Guidelines 15064.5.

Cumulative impact: As defined by the state CEQA Guidelines (Section 15355), two or more individual effects that are considerable when considered together, or that compound or increase other environmental impacts.

Degradation: The reduction of environmental quality in an area through a lessening of diversity, the creation of growth anomalies, or the supplanting of native species by non-native plant and animal species.

Demographic: Having to do with a particular characteristic of a segment of the public at large; may be connected to the group's age, the region where the group resides, a particular recreational interest, economic status, etc.

Effect/impact: An environmental change; as defined by state CEQA Guidelines Section 15358: (1) Direct or primary effects are caused by the project and occur at the same time and place; (2) Indirect or secondary effects that are caused by the project and are late in time or farther removed in distance, but still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water quality and other natural systems, including ecosystems.

Endangered species: A species of animal or plant whose prospects for survival and reproduction are in immediate jeopardy from one or more causes. The U.S. Fish and Wildlife Service and/or the California Department of Fish and Game make this designation.

Environment: As defined in state CEQA Guidelines Section 15360, "the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, mineral, flora, fauna, noise, and objects of historical and aesthetic significance."

Environmental Impact Report (EIR): A report required by CEQA that assesses all the environmental characteristics of an area and determines what environmental impacts will result if the area is altered or disturbed by a proposed action. If a proposed activity may result in a significant adverse effect on the environment, an EIR must be prepared. General plans require the preparation of a “program” EIR appropriate to its level of specificity.

Environmentally sensitive: An area in which plant or animal life or their habitats are either rare or especially valuable because of their role in an ecosystem. Such areas can be easily disturbed or degraded by human activities and developments.

Exotic species: A species occurring in an area outside of its historically known natural range that has been intentionally introduced to or has inadvertently infiltrated into the system. Also known as non-native, ornamental, or introduced species. Exotic animals prey upon native species and compete with them for food and habitat. Exotic plant species can convert native ecosystems into a non-native dominated system that provides little benefit to other species in the ecosystem.

Floodplain: A lowland or relatively flat area adjoining inland or coastal waters that is subject to a one or greater chance of flooding in any given year (i.e., 100-year flood).

Geology: The scientific study of the origin, history, and structure of the earth.

General Plan: A legal planning document that provides guidelines for the development, management, and operation of a unit of the State Park System. A general plan evaluates and defines land uses, resource management, facilities, interpretation, concessions, and operations of a park and addresses environmental impacts in a programmatic manner. A park must have an approved general plan before any major development project is implemented.

Grade: The degree of rise or descent of a sloping surface.

Habitat: The physical location or type of environment, in which an organism or biological population lives or occurs. It involves an environment of a particular kind, defined by characteristics such as climate, terrain, elevation, soil type, and vegetation. Habitat typically includes shelter and/or sustenance.

Hazardous material: Any substance that, because of its quantity, concentration, physical or chemical characteristics, poses a significant presence or potential hazard to human health and safety or to the environment. Lead-based paint is an example of a hazardous material.

Hydrology: Pertaining to the study of water on the surface of the land, in the soil and underlying geology, and in the air.

Impervious surface: Any material that reduces or prevents absorption of water into land.

Infrastructure: Public services and facilities, such as sewage-disposal systems, water supply systems, other utility systems, and road and site access systems.

Interpretation: A mission based communication process that forges emotional and intellectual connections between the interests of the audience and the meanings inherent in the resource.

Kilowatt: A measure of the rate of electrical flow equal to 1,000 watts.

Kilowatt-hour: A measure of quantity of electrical consumption equal to the power of 1 kilowatt acting for 1 hour.

Landform: Configuration of land surface (topography).

Mean sea level: The average altitude of sea surface for all tidal stages.

Mitigation measure: A measure proposed that would eliminate, avoid, rectify, compensate for, or reduce significant environmental effects (see state CEQA Guidelines Section 15370).

National Register of Historic Places (NRHP): The official federal list of buildings, structures, objects, sites, and districts worthy of historic preservation. The register recognizes resources of local, state, and national significance. The register lists only those properties that have retained enough historical integrity to accurately convey their appearance during their period of significance.

Native species: A plant or animal that is historically indigenous to a specific site area.

Open space: An area with few or no paved surfaces or buildings, which may be primarily in its natural state or improved for use as a park.

Public Resources Code (PRC): California code addressing natural, cultural, aesthetic, and recreation resources of the state.

Riparian habitat: The vegetative and wildlife areas that are adjacent to perennial and intermittent streams and are delineated by the existence of plant species normally found near fresh water.

Runoff: That portion of rainfall or surplus water that does not percolate into the ground and flows overland and is discharged into surface drainages or bodies of water.

Septic system: An on-site sewage treatment system that includes a settling tank through which liquid sewage flows and in which solid sewage settles and is decomposed by bacteria in the absence of oxygen. Septic systems are often used where a municipal sewer system is not available.

Significant effect on the environment: As defined by state CEQA Guidelines Section 15382, a substantial or potentially substantial, adverse change on any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to physical change may be considered in determining whether the physical change is significant.

Special-status species: Plant or animal species that are typically listed (state and federal) as endangered, rare, and threatened, plus those species considered by the scientific community to be deserving of such listing.

Threatened species: An animal or plant species that is considered likely to become endangered throughout a significant portion of its range within the foreseeable future because its prospects for

survival and reproduction are in jeopardy from one or more causes. The U.S. Fish and Wildlife Service and/or the California Department of Fish and Game make this designation.

Topography: Graphic representation of the surface features of a place or region on a map, indicating their relative positions and elevations.

Trailhead: The beginning of a trail, usually marked by information signs.

Viewshed: The area that can be seen from a specified location.

Watershed: The total area above a given point on a watercourse that contributes water to the flow of the watercourse; entire region drained by a watercourse.

Wetland: The environment of subtidal, mudflats, tidal salt marsh, periodically inundated or brackish marsh, diked marshland, associated upland, and freshwater marsh.

6.2 ACRONYMS

ABAG	Association of Bay Area Governments
ADA	Americans with Disabilities Act
af	acre-feet
af/y	acre feet per year
ARB	California Air Resources Board
AUM	animal unit month
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
Basin Plan	Central Valley RWQCB Water Quality Control Plan
BMI	benthic macroinvertebrate
BP	before present
BRM	bedrock mortar
CALFED	CALFED Bay-Delta Program
Caltrans	California Department of Transportation
CCCD	Contra Costa Community College District
CCCFC	Contra Costa County Flood Control District
CCCFCWCD	Contra Costa County Flood Control and Water Conservation District
CCMAP	Contra Costa Monitoring and Assessment Plan
CCTS	Central California Taxonomic System
CCWD	Contra Costa Water District
CCWP	Contra Costa Water Program
CDC	California Department of Conservation
CAL FIRE	California Department of Forestry and Fire Protection
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CHRIS	California Historical Resources Information System

City	City of Brentwood
CLR	cultural landscape report
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CRHR	California Register of Historical Resources
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel scale
DFG	State of California, Department of Fish and Game
California State Parks	California Department of Parks and Recreation
DWR	State of California, Department of Water Resources
EBRPD	East Bay Regional Park District
ECCCHCP	East Contra Costa County Habitat Conservation Plan/Natural Communities Conservation Plan
ECCCHCPA	East Contra Costa County Habitat Conservation Plan/Natural Communities Conservation Plan Association
ECCID	East Contra Costa County Irrigation District
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	federal Endangered Species Act
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
GHG	Greenhouse Gas
gpm	gallons per minute
HCP	Habitat Conservation Plan
I-	Interstate
IRRS	Interregional Road System
kg/L	kilograms per liter
km	kilometer
kWh	Kilowatt-Hour
LAC	Limits of Acceptable Change
LAFCO	Local Agency Formation Commission
lbs	pounds
Leq	Equivalent Sound Level
Ldn	Day/Night Average Sound Level
LOS	Level of Service

MCE	Maximum Credible Earthquake
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mgd	million gallons per day
MPE	Maximum Probable Earthquake
mph	miles per hour
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
msl	mean sea level
MTC	Metropolitan Transportation Commission
NAHC	Native American Heritage Commission
NCCP	Natural Communities Conservation Program
ng/L	nanograms per liter
NO _x	oxides of nitrogen
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
Park	Marsh Creek State Park
PG&E	Pacific Gas and Electric Company
PM ₁₀	particulate matter with a diameter of 10 micrometers or less
PRC	Public Resources Code
RDM	residual dry matter
ROG	reactive organic gases
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency
RWQCB	Regional Water Quality Control Board
SCS	U.S. Soil Conservation Service
sf	square feet
SFBAAB	San Francisco Bay Air Basin
SHPO	State Historic Preservation Officer
SJVAB	San Joaquin Valley Air Basin
SJVUAPCD	San Joaquin Valley Unified Air Pollution Control District
SOI	Sphere of Influence
SOP	standard operating procedures
SO _x	oxides of sulfur
SHP	State Historic Park
SR	State Route
SR 4 Bypass	State Route 4 Bypass

SWRCB	State Water Resources Control Board
TCR	Transportation Concept Report
TMDL	Total Maximum Daily Load
ULL	Urban Limit Line
USACE	U.S. Army Corps of Engineers
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTC	Ultimate Transportation Corridor
UWMP	Urban Water Management Plan
VERP	Visitor Experience and Resource Protection
Vineyards	Vineyards at Marsh Creek development
WQLS	Water Quality Limited Segments



Report Contributors

7. Report Contributors

CALIFORNIA STATE PARKS

1416 9th Street
Sacramento, CA 95814

Planning Division

Dan Ray..... Planning Division Chief
Dave Keck..... (Retired) Senior Landscape Architect
Ellie Wagner Associate Landscape Architect

Archaeology, History and Museums Division

Richard Fitzgerald Associate State Archaeologist

Diablo Vista District

845 Casa Grande Road
Petaluma, CA 94954

Stephen Bachman Senior Park and Recreation Specialist
Karen Barrett Regional Interpretive Specialist
Marla Hastings..... Senior Environmental Scientist
Marianne Hurley..... Architectural Historian/State Historian II
Brian Hickey (Retired) Project Manager
Craig Mattson(Retired) Sector Superintendent
Donald Monahan(Retired) District Superintendent
E. Breck Parkman Senior State Archeologist
Cyndy Shafer..... Environmental Scientist
Lorrie Thomas-Dossett..... District Maintenance Chief

CITY OF BRENTWOOD

Department of Parks and Recreation

730 Third Street
Brentwood, CA 94513

Craig Bronzan Director
Ken De Silva..... Park Services Manager
Felix Errico Park Planner
Linda Stadlbauer Park Planning Technician

CONSULTANTS

AECOM (formerly EDAW)

150 Chestnut Street
San Francisco, CA 94111
Tel: (415) 955-2800

2022 J Street
Sacramento, CA 95811
Tel: (916) 414-5800

Charlie Battaglia Biologist
Susan Baumgartner Landscape Designer
David Blau, FASLA Principal-in-Charge
Rudy Calderon Environmental Planner
Anne Ferguson Recreation Planner
Charlane Gross Senior Archeologist
Sarah Heard Environmental Planner
Jill Johnson Architectural Historian
Peter Jonas Geographical Information Systems (GIS)
Don Lee Graphic Designer
Linda Leeman Senior Biologist
Yanna McLaughlin Public Outreach Specialist
Donna Plunkett, ASLA Project Manager
Petra Unger Senior Botanist
Brian Vahey Word Processor