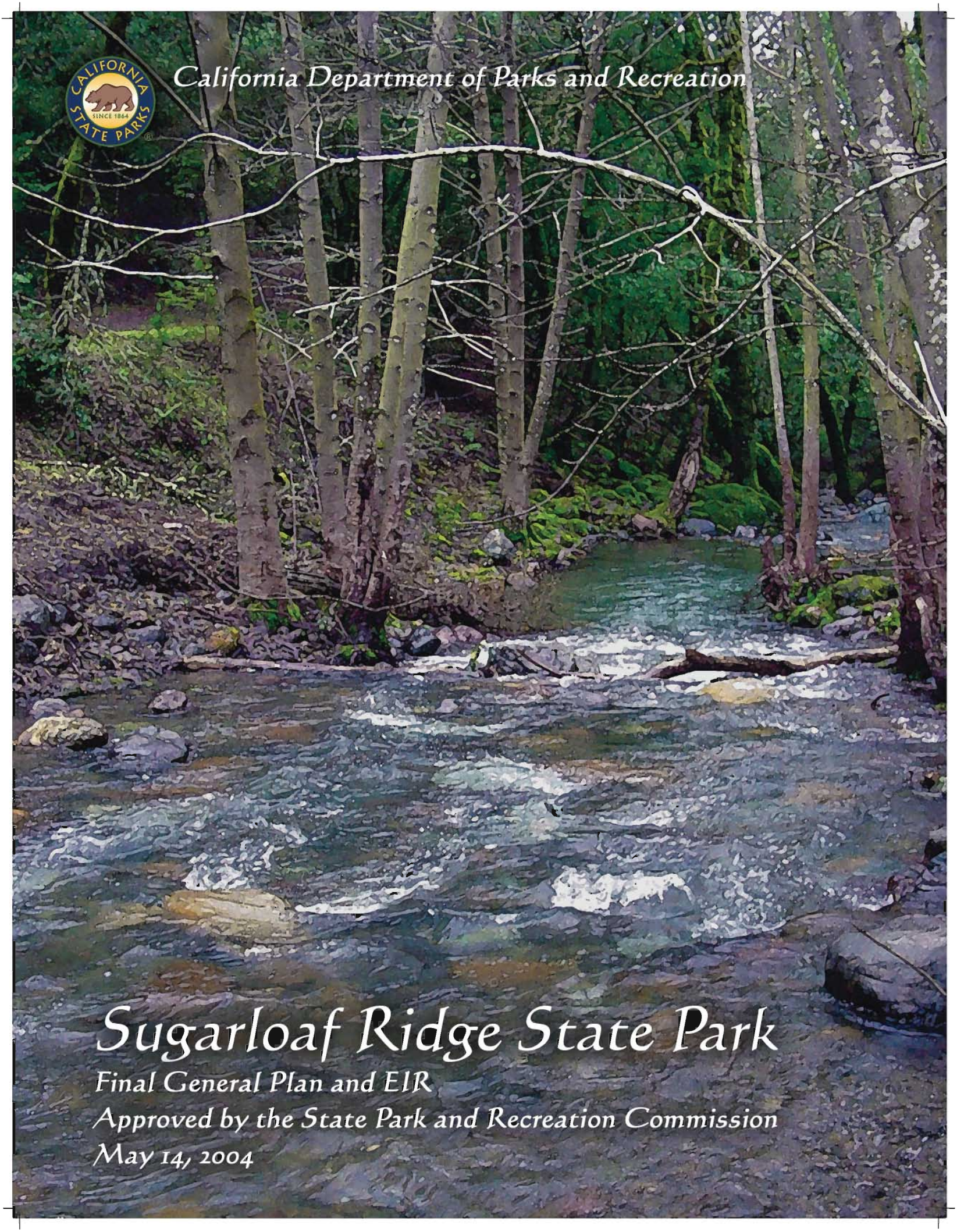
California Department of Parks and Recreation

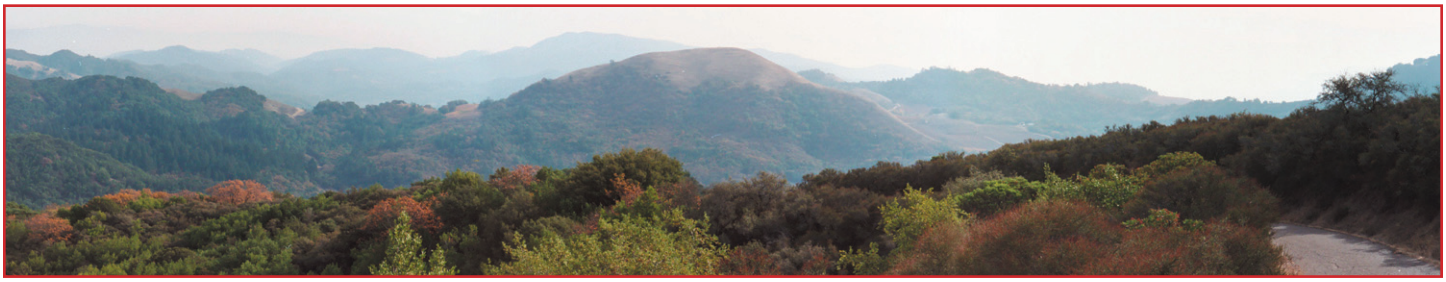


# Sugarloaf Ridge State Park

## Final General Plan and EIR

Approved by the State Park and Recreation Commission

May 14, 2004



# SUGARLOAF RIDGE STATE PARK

## *Final General Plan and Environmental Impact Report*

SCH No. 2003012051

**Arnold Schwarzenegger**
*Governor*

**Michael Chrisman**
*Secretary for Resources*

**Ruth Coleman**
*Director of Parks and Recreation*

**California Department of Parks and Recreation**
P.O. Box 942896
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NOVEMBER 2004

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Resolution 2004-13
adopted by the
CALIFORNIA STATE PARK AND RECREATION COMMISSION
at its regular meeting in Santa Rosa
May 14, 2004

# Sugarloaf Ridge State Park
# General Plan and Environmental Impact Report

WHEREAS, the Director of the Department of Parks and Recreation has presented to this Commission for approval the proposed General Plan and Environmental Impact Report ("Plan") for Sugarloaf Ridge State Park; and

WHEREAS, the Plan provides conceptual parameters and guidelines for the long-term management, development and operation of Sugarloaf Ridge State Park to provide for the future public use and enjoyment of the unit as well as the protection of its quality, resources, and diversity; and

WHEREAS, this Commission is responsible for the approval of the Plan pursuant to California Public Resources Code (PRC) Section 5002.2; and

WHEREAS, the Plan, including related future implementation actions, is subject to the California Environmental Quality Act (CEQA) and that an Environmental Impact Report (EIR) is necessary; and

WHEREAS, pursuant to Public Resources Code Section 5002.2, the Plan includes the EIR as a part of a General Plan, pursuant to the California Code of Regulations (CCR) 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 functions as a "tiered EIR" pursuant to PRC 21093, covering general goals and objectives of the Plan, followed by narrower, site-specific CEQA compliance;

NOW, THEREFORE, BE IT RESOLVED

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 two:*

*Continued from page one:*

Resolution 2004-13 adopted by the
California State Park and Recreation Commission
at its regular meeting in Santa Rosa on May 14, 2004

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: in connection with its review of the Plan prior to approval of the Plan, this Commission finds the mitigation measures incorporated in the Environmental Analysis Section of the Plan, together with the resource protection policy guidelines in the Plan, to be feasible and appropriate mitigation of the potential environmental impacts identified in the Plan and adopts them as part of its approval of the Plan consistent with PRC Section 21081.6(b); 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

RESOLVED: The California State Park and Recreation Commission hereby approves the Department of Parks and Recreation's Sugarloaf Ridge State Park General Plan and Environmental Impact Report, dated December 2003; and be it

FURTHER RESOLVED; that a Notice of Determination 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 May 14, 2004, at its duly noticed public meeting at Santa Rosa, California.

By: _____ Date: 5.14.04

Louis Nastro
Assistant to the Commission
For Ruth Coleman, Director
California Department of Parks and Recreation
Secretary to the Commission

# *Spirit of Place*

Sugarloaf Ridge State Park is an anchor for wildland and ecological protection in the Sonoma/Napa area. In surprising contrast to the agricultural valleys and increasingly urban developed areas of these two counties, Sugarloaf Ridge stands apart as a wild, rugged enclave. Simply winding up the park entrance road to Adobe Canyon, most people experience a sense of moving into a different realm, leaving behind the familiarity of urban life and shifting into a more rural and challenging setting. It is this experience of personally engaging with a wildland landscape, a place that has remained relatively unchanged in its natural and cultural character over hundreds of years, that continues to draw recreationists to Sugarloaf Ridge.

For the first-time visitor, the area reveals itself gradually. Much of the landscape turns in on itself, as trails move past oaks dotted across grassy rolling hills, through steep canyons of chaparral, or along lush forested streams – with little visual intrusion from modern developments. Once people hike or ride into the park, the broad diversity of habitats and scenery creates an impression of a much larger area than the actual acreage suggests. Traces of the area's human history, such as Native American artifacts, old ranch structures, and hunting cabins, add texture and depth to an intimate relationship between people and the environment. The high peaks of the Mayacamas Ridge that today's visitors enjoy once formed the intersection of three tribes, the Miwok, Pomo, and Wappo; similarly, clear waterways attracted both Native American villages and early homesteaders, who established several ranches and the first vineyards in Sonoma Valley.

The park's wildlands foster scientific exploration and an understanding of the environment. Sugarloaf Ridge encompasses the headwaters of two major watersheds, Sonoma and Santa Rosa Creeks, so that small-scale changes in ecological conditions in the park could degrade water quality downstream. In addition, these headwaters provide critical spawning habitat for chinook salmon and steelhead, whose lifecycles take them far beyond the local landscape, returning to their natal streams from across the Pacific. Protected ridgelines form the backbone of wildlife corridors, providing large-scale habitat for indicator species such as mountain lions, and connections to nearby parks and other wildland portions of their historic range. These same ridges screen out excess

light from urban areas, making astronomical observations from the Robert Ferguson Observatory clearer and more far-reaching. The rare public access to a working observatory provides visitors with a scientific perspective on the cosmos that adds to their personal recreation experiences.

The rugged, wild, primitive character of Sugarloaf Ridge State Park creates a distinct spirit of place, complimented by the adjacent Hood Mountain Regional Park. While other nearby state parks are more urban in setting and use, such as Annadel and Jack London State Parks, Sugarloaf Ridge represents a quiet escape from the pace and structure of urban life. It is geographically close to enormous populations yet feels remote, set apart, and somewhat walled off – like stepping into a separate realm.

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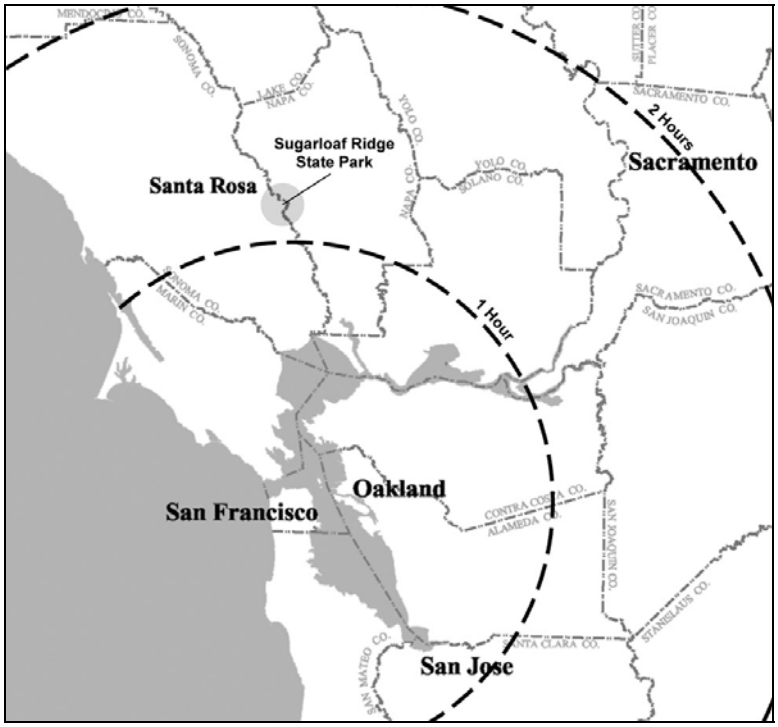
# SUGARLOAF RIDGE STATE PARK

## *Executive Summary*

# *Executive Summary*

Sugarloaf Ridge State Park is 5,100 acres of preserved land along the highest points of the Mayacamas Ridge between the productive and expanding wine producing regions of the Sonoma and Napa Valleys. It is a wildland park, approximately an hour away from San Francisco, as shown on the Regional Map, Figure ES-1. The Park is managed by the California Department of Parks and Recreation (the Department) for quality outdoor recreation experiences and for its long-term ecological health, as it sits atop three watersheds and supports critical wildlife habitat in the Mayacamas Ridge.

**Figure ES-1: Regional Map**




The park has almost doubled in size in the last five years due to acquisitions and transfers of land from the Sonoma County Agricultural Protection and Open Space District[1] (SCAPOSD). This evolving context for park planning and operations has redefined park boundaries and created an opportunity to reconsider the future vision of the park. The most recent addition of Nunns Canyon, an entirely new

[1] Sonoma County Agricultural Preservation and Open Space District uses dedicated funding from sales tax revenue to conserve lands in Sonoma County.

area encompassing the Calabasas Creek watershed to the south (but disconnected from the park), was completed only in the final days of preparation of the *Preliminary General Plan*. In 1996, the acquisition of the Santa Rosa Creek headwaters to the north added dramatic ecological diversity to the park and the opportunity for a second point of access. Also, to the west is the Hood Mountain Regional Park, operated by the Sonoma County Regional Parks Department. This plan focuses on Sugarloaf Ridge State Park and evaluates its role in providing recreational resources and protected habitat in the combined parklands and surrounding area. In all, the study area for this General Plan is approximately 10,000 acres. Map 1 shows the general geophysical features of the study area and the current park boundaries. During the general planning process, Hood Mountain Regional Park also benefited from a SCAPOSD acquisition of a property just outside the study area that could enable a new fourth entrance to the combined parklands.

Within the expanded boundaries, the purpose for Sugarloaf Ridge State Park continues to be the protection of large and diverse habitat areas as well as the provision of high-quality outdoor recreational experiences. The vision has been expanded, however, to consider the reality of enlarged park boundaries, current thinking about the importance of connected wildlife corridors, and the scientific, interpretative, and recreational opportunities presented by such a large wildland area near large urban populations. The General Plan considers the proximity and expansion of the user base, and the appropriate carrying capacity of the park to both protect its resources and to provide high-quality visitor experiences. It emphasizes the importance of long-term sustainability, the use of environmental indicators, and adaptive management practices. This *Final General Plan* provides the goals and guidelines that will direct short- and long-term management decisions and environmental stewardship in park for the next 20 years. It is acknowledged that achieving the stated vision in this General Plan would be made incrementally, as funding becomes available, and would be reached over time through daily operational actions taken by Department staff.

## Map 1. Geophysical Features

## APPROACH TO THE FINAL GENERAL PLAN

A thorough analysis of existing conditions was undertaken as a part of the general planning process. The District and other interested agencies, along with individuals and nonprofit groups all provided information about the conditions at Sugarloaf Ridge State Park. A geographic information system (GIS) compiles much of the information collected about the natural and cultural systems of the park and was used to help make informed decisions regarding environmental constraints to development.[2] In studying the conditions at Sugarloaf Ridge State Park, a series of the most important issues emerged.

Existing conditions and preliminary issues analysis were presented at a public workshop held in February 2002 to inform the public about the general planning process and to explore ideas for park enhancements and different visions for the park's future. Public and agency scoping efforts also revealed existing issues to be resolved, conflicts between existing recreational uses, and areas where resources have been degraded and are in need of restoration.

The Department developed three alternatives to be considered for the park's General Plan. Each presented different options for resolving existing resource management and visitor use issues for the park and vary in terms of the number and location of new or expanded visitor facilities. The alternatives were presented to the public and resource agencies in May 2003 for their review and feedback.

The Preferred Alternative reflects statewide interests, agencies' relevant rules and regulations, the park's purpose and vision, and environmental constraints and resources. Input from the local community and resource agencies were also important considerations during the alternative selection process. The Preferred Alternative has been refined into the goals and guidelines presented in this *Final General Plan.*

[2] The GIS developed for this General Plan is available and recommended for continued District use.

## SUMMARY OF THE PLAN

This *Final General Plan* responds to the issues affecting the park and seeks to balance the need for recreational facilities, the desire for a positive visitor experience supported by the park's facilities and aesthetics, and protection of the park's natural and cultural resources.

The goals and guidelines presented in Chapter 3, Park Plan, create a management framework that would protect existing natural and cultural resources while establishing needed visitor support facilities and an active program for enhancing and interpreting the park's resource values. This plan also proposes measures to correct existing patterns of use that are degrading park resources, suggests programs to restore resources, and provides generalized recommendations for siting new facilities so that they minimize potential impacts to the environment.

One of the key concepts of this plan is to provide trail connections between the broader areas of the park to bring the park together as a unified whole. The extended trail loops into the wildland areas of the park would enhance the visitor's experience, allowing for longer hikes and horse rides than are currently available. The trail connections would also be wide enough to be used for wildland emergency vehicles, closing current gaps in the emergency access network.

The preservation of large expanses of wildland areas, as proposed in this General Plan, would have many benefits to the ecological health of the region. Sugarloaf Ridge State Park protects important biocorridors for species, including the mountain lion, whose presence is used as an indicator of the overall health of the ecosystem. This plan also includes guidelines for the protection and restoration of sensitive habitats that contribute to wildlife diversity.

Sugarloaf Ridge State Park contains the headwaters of four creeks, and maintaining water quality is a priority. This Plan includes guidelines for restoration and protection of the resources and riparian vegetation along the creeks and for managing park activities to reduce the potential for water quality degradation. New trails would be constructed and existing trails reconstructed using best management practices for reducing erosion and sedimentation in the creeks.

Managing the quality of the recreational experience with increasing park use is another key component of this plan. Demographic trends indicate that demand for outdoor recreation will continue to increase in the future, especially at parks like Sugarloaf Ridge State Park that are located near urban areas. This *Final General Plan* provides guidelines for improving the visitor experience within Adobe Canyon, the hub of visitor facilities within the park. The establishment of design guidelines for the park would improve the visual character of park facilities, which in the past have been built as temporary facilities, due to the lack of a General Plan. This plan also includes guidelines for enhancing interpretive programs within the park and establishing themes for interpretation that better connect the visitor with the natural and cultural history of the park.

Relocating the large group camp away from the observatory would resolve existing light conflicts between the two uses that currently limit the use of the large group camp to nights when the observatory is not being used. Corrals for public use would be installed near the group campsite to bring equestrian camping back to the park, and the expansion of the family campground, visitor center, picnic facilities, and the observatory would meet some of the expected increase in visitor demand.

Although the hub of visitor-serving facilities would remain in Adobe Canyon, this General Plan also recommends the construction of trails and a public parking lot in Nunns Canyon to allow visitors to experience the natural beauty of this newest addition to the park. Limited-access campsites, located in more remote areas of the park, would bring a wildland camping experience to the Mayacamas Mountain Range.

## STRUCTURE OF THE PLAN

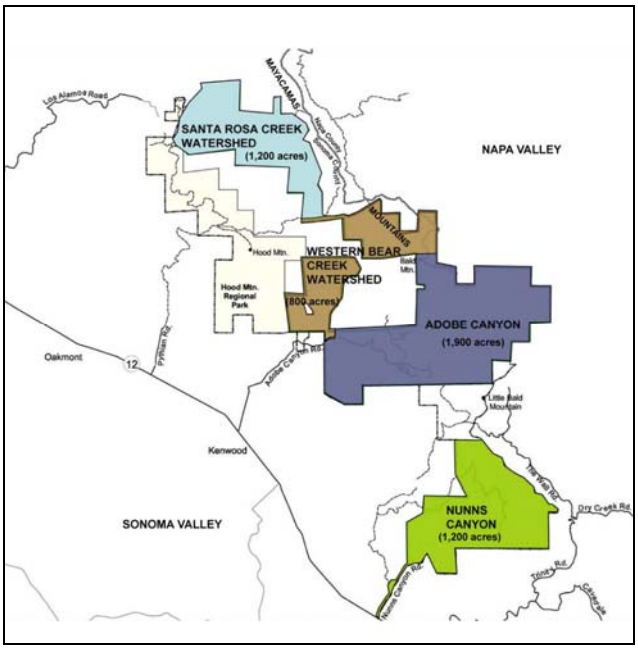
This *Final General Plan* presents parkwide goals and guidelines that apply to all geographic areas of the park: resource management, protection, and enhancement; trail connections, recreation, and visitor experience; circulation and parking; maintenance and operations; aesthetic resources; and interpretation. The plan also includes guidelines for implementation of area-specific projects to protect sensitive resources during facility siting and construction.

The goals and guidelines are segmented into various environmental topic areas to facilitate an understanding of the individual resource characteristics and sensitivity zones. Some guidelines include measures to address resource agency and California Environmental Quality Act (CEQA) environmental review requirements for protection of resources during area-specific project planning and implementation. Others include recommended programs and day-to-day operations to protect and restore specific environmental resource values within the park.

Four broad management zones have been established for Sugarloaf Ridge State Park, defined by the four watersheds within the park (Figure ES-2):

- Adobe Canyon Management Zone (Sonoma Creek watershed)
- Bear Creek Watershed Management Zone
- Santa Rosa Creek Watershed Management Zone
- Nunns Canyon Management Zone (Calabazas Creek watershed)

**Figure ES-2: Management Zones**



Management zones represent portions of the park that share the common characteristics of each watershed and would be managed as identifiable subareas of the park. The goal in each watershed is to maintain or improve water quality and to use water quality as an indicator of overall health of the park. This *Final General Plan* provides operational guidelines and recommendations for projects specific to each management zone.

Natural habitat values would be protected and restored throughout each zone by adjusting the recreation intensity to be compatible with and dependent on those values. For each management zone, visitor/operational uses are located in previously disturbed areas that can accommodate more intensive human use. Restoration activities are proposed to correct for existing degradation and enhance the park's resources. The presence of mountain lions would be the indicator of overall health of the habitat.

Diagrammatic maps depicting the general locations recommended for new or expanded facilities are presented for the park as a whole. The "bubbles" indicating the locations of facilities, use areas, and trail connections are conceptual in nature. Please see Map 2 for a diagram of the Preferred Alternative.

The conceptual locations for future facilities and recreational uses seek to avoid or minimize disturbance of sensitive environmental resources. In most cases, these areas have been previously developed, are characterized as having limited habitat value, and are able to accommodate parking, utilities, and infrastructure needed to support the prescribed use.

Precise facility locations would be determined when each facility is evaluated at a project level. Implementation of any proposed project or facility development would also trigger managerial consideration of funding sources for the project and the corresponding personnel and equipment augmentation that may be needed.

Table 1 provides a summary of key facility recommendations for each management zone. The numbers presented in this table are preliminary estimates only. In some cases, assumptions are made for environmental review purposes. This document also includes an Environmental Impact Report (EIR) that identifies the potential environmental effects

of the General Plan, consistent with the requirements of CEQA. The plan establishes resource-specific management guidelines to become a “self-mitigating” plan, designed to avoid, reduce, or minimize environmental impacts of proposed recreational facilities to a less-than-significant level.

The opportunity for public review of the *Preliminary General Plan/Draft EIR* was also provided during the CEQA process. The CEQA environmental review process and the opportunity provided for written comment are described in Section 4.1 of this document.

## Map 2. General Plan Key Concepts

## Table ES-1: Existing and Proposed Facilities

| AREA | EXISTING | NEW PLAN |
|---|---|---|
| SANTA ROSA CREEK WATERSHED MANAGEMENT ZONE | | |
| ▪ Construct new bridge(s) over Santa Rosa Creek | No | Yes |
| ▪ Additional visitor use and operational facilities | No | Yes |
| ▪ Primitive campsites (8 people per site) | 0 | 2 |
| ▪ Los Alamos Road trailhead and parking (by County) | 30 | 30 |
| ADOBE CANYON MANAGEMENT ZONE | | |
| Camping Facilities | | |
| ▪ Family campsites (8 people per site) | 50 | 70 |
| ▪ Large group campsite (50 people) | 1 | 1 – |
| ▪ Move corrals for Small equestrian Group Camp | 1 | relocated |
| ▪ Limited-access small group campsites (15 people per site) | 0 | 1 |
| ▪ Limited-access family campsites (8 people per site) | 0 | 4 |
| ▪ New restroom facility with showers at family campground | No | 4 |
| Observatory | | Yes |
| Horse Barn | Yes | Expand |
| ▪ Horse concession | | |
| ▪ Maintenance | Yes | Yes |
| ▪ Interpretive center | Yes | No |
| ▪ Picnic areas | No | Yes |
| Visitor Center | No | Yes |
| Picnic Areas | Yes | Expand |
| Maintenance and Operations | 5 | Up to 20 |
| ▪ Construct new bridge to family campground | | |
| ▪ Consolidate maintenance shop and equipment storage | No | Yes |
| NUNNS CANYON MANAGEMENT ZONE | No | Yes |
| ▪ Quarry area restoration and trailhead | | |
| ▪ Parking spaces | 0 | 40 |
| ▪ Interpretive displays | No | Yes |
| ▪ Picnic areas | No | Yes |
| ▪ Primitive campsites (8 people per site) | 0 | 2 |
| WESTERN BEAR CREEK WATERSHED | | |
| Red Barn Area | | |
| ▪ Primitive campsites (8 people per site) | 0 | 2 |
| ▪ Picnic area | No | campsites |
| ▪ Interpretive displays | No | Yes |
| | | Yes |
| Harr Ranch Area | | |
| ▪ Employee residence | Yes – vacant | Yes |

| | | |
|---|---|---|
| **Total Parking Spaces** | **311** | **508** |
| **Estimated Maximum People in Park at One Time[a]** | **950** | **1,600** |

| HOOD MOUNTAIN REGIONAL PARK (by County, under separate action – for reference only) | | |
|---|---|---|
| Pythian Road trailhead & parking | No | County |
| Primitive campsites (Azalea Camp) | No | County |

*a Visitor estimates and parking assumptions table are provided in Appendix D.*

## ENVIRONMENTAL ANALYSIS

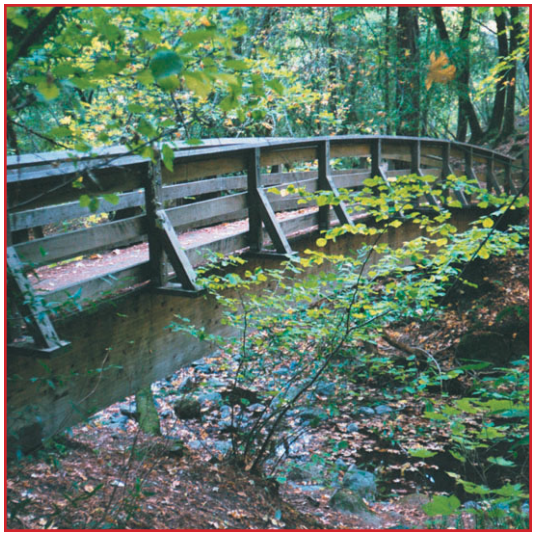
The *Final General Plan* for Sugarloaf Ridge State Park reflects the Department's dual mandates as the steward of sensitive resources and the provider of recreation opportunities. The protection and restoration of natural and cultural resources are key components of the General Plan. The plan leaves large expanses of the park as near-wilderness, which supports wildlife biocorridors; allows for greater biological diversity, watershed recharge, and water quality protection; preserves scenic and cultural landscapes; and contributes to protecting the dark night sky. The plan also identifies conceptual sites for proposed new and expanded park facilities. Facilities would be located in the least environmentally constrained areas of the park.

Chapter 3, Park Plan, identifies goals and guidelines for protection of the natural environment; resource restoration; and the siting, design, and construction of area-specific projects to avoid potential adverse environmental effects. The goals and guidelines of this *Final General Plan* seek to avoid potentially significant effects on the environment.

An evaluation of the potential for significant environmental effects to visual resources, biological resources, cultural resources, water quality, transportation/traffic, air quality, and noise is provided in Section 4.3. The specific guidelines that, when implemented, would maintain potential environmental impacts at a less-than-significant level are identified for each environmental resource area.

The environmental analysis prepared for the *Final General Plan* is programmatic in scope and does not contain project-

specific analysis for the facilities recommended in the plan. However, the plan also includes guidelines that govern project-level environmental review of area-specific projects to avoid or minimize any potential adverse site-specific effects to some resources during construction or operations of the facilities. Specific projects would undergo subsequent CEQA review in the future as appropriate.



# SUGARLOAF RIDGE STATE PARK

## 1. Introduction

*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.*

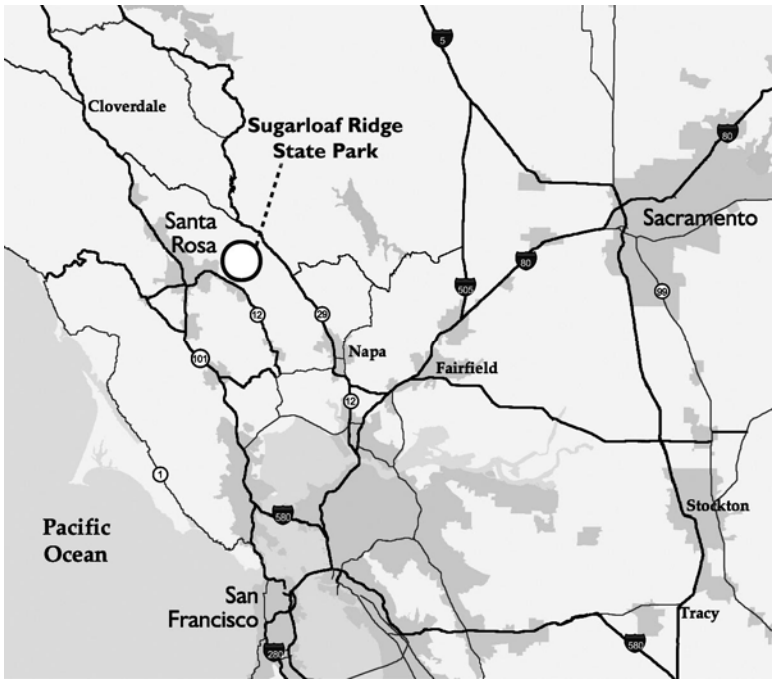
# 1. Introduction

## 1.1 INTRODUCTION TO THE PARK

### 1.1.1 Location and Setting of Sugarloaf Ridge State Park

Sugarloaf Ridge State Park is 5,100 acres of preserved land on the eastern edge of the beautiful and growing Sonoma Valley, a one- to two-hour drive from the densely populated San Francisco Bay and Sacramento metropolitan areas (Figure 1-1). The "Valley of the Moon," as it is often called, is a scenic agricultural valley that extends from Santa Rosa southeastward to the city of Sonoma and beyond to the marshlands of San Pablo Bay. The valley is enclosed by Sonoma Mountain and its supporting ridges to the west and the Mayacamas Ridge to the east. There are three state parks in the upper portion of the Sonoma Valley, including Sugarloaf Ridge State Park, Annadel State Park, and Jack London State Historic Park.

**Figure 1-1: Regional Location Map**




The expanding population of the San Francisco Bay Area has reached the Sonoma Valley. Cities and towns on the valley floor are growing rapidly. New high-density urban

developments are being built near Santa Rosa, and a new inn and other commercial developments are being planned and constructed in nearby Kenwood. This population growth brings new issues for the park, including increased traffic on State Route 12 and increased recreational demands.

Meanwhile, the reputation and popularity of Sonoma Valley wines is increasing, and vineyards are increasing in the area. Because of their ability to grow and thrive on hillsides, vineyards are expanding into the mountain ranges, which are typically considered unsuitable for other forms of agriculture. Urban population growth and expanding vineyards have begun encroaching upon the once plentiful wildlands in the hillsides of the valley, fragmenting important wildlife habitat and scenic corridors in the process.

The Sugarloaf Ridge State Park lands are mostly steep, rocky hillsides leading to the ridgetops, with some intervening rolling hills. The headwaters of Sonoma and Santa Rosa Creeks are contained within the park, and the ridges within the park form the dividing line between the two watersheds. Elevations within the park range from 600 feet at the entrance to 2,729 feet at the top of Bald Mountain, which overlooks the Napa Valley, with views to Mount St. Helena to the north. On clear days the view includes portions of the San Francisco Bay Area and even a glimpse of Pyramid Peak in the Sierra Nevada mountains (CDPR 2002d). The park provides areas of high scenic quality, significant cultural resources, and diverse biological habitat, supporting a rich variety of plants and wildlife. The state park lands also offer a range of passive recreational resources, including hiking, wildlife viewing, photography, camping, mountain biking, equestrian use, picnicking, and astronomical viewing at the Robert Ferguson Observatory.

The boundaries of Sugarloaf Ridge State Park are being redefined. In the past few years, the Sonoma County Agricultural Preservation and Open Space District (SCAPOSD) has been actively identifying and acquiring important undeveloped lands in the Mayacamas Ridge in support of Sugarloaf Ridge State Park and nearby Hood Mountain Regional Park. In 1996, SCAPOSD acquired and transferred ownership of a 1,200-acre portion of the McCormick property to the California Department of Parks and Recreation (the Department) for inclusion as part of Sugarloaf Ridge State

Park. This property encompasses a large portion of the headwaters of Santa Rosa Creek and has been identified as the Santa Rosa Creek Watershed Management Zone in this *Final General Plan.* Access to this management zone is primarily on trails from Hood Mountain Regional Park, operated by the Sonoma County Regional Parks Department. SCAPOSD is currently in negotiations with nearby landowners for acquisition and transfer of additional lands to the Department and the Sonoma County Regional Parks Department.

## 1.2 PURPOSE OF GENERAL PLANS

### 1.2.1 General Plan and the State Park Planning Process

General Plans are broad-based policy documents that provide a framework for implementing diverse missions of resource stewardship, interpretation, and visitor use and services. By legal mandate, every state park in California must develop a General Plan. The plan defines the purpose, vision, and long-term goals and guidelines for the management of the park. A General Plan is not a project-specific document and does typically not define specific objectives, methodologies, or designs on how to accomplish its goals.

General planning provides opportunities to assess the park's resource stewardship, facility development and management, and interpretation to the public. It provides guidelines for future land use management and designation, including land acquisition and the development of facilities required to accommodate expected increases in visitation.

The General Plan provides a comprehensive framework that guides the park's development, ongoing management, and public use for the next 20 years or more. Because it is in effect for so long, the plan must remain consistent in its vision for the park's future, general in its scope, and flexible in its proposed approaches for solving future management problems.

### 1.2.2 Subsequent Planning Actions

Major programs and projects to be implemented during the lifespan of the General Plan will require additional planning. Future planning efforts may include the

preparation of specific resource management plans to protect sensitive resources or the development of site-specific development plans for new facilities to determine how they will relate to their surroundings.

Future planning efforts also include the preparation of project-specific environmental compliance documents for implementation of management plans and subsequent development projects. These documents should tier off and be consistent with the General Plan's Program Environmental Impact Report (EIR). Securing any permits required for future implementation projects would also be part of subsequent planning actions.

Finally, the General Plan may need to be amended if significant new acquisitions are added to the existing park or if any other circumstances render parts of the enclosed plan inapplicable.

### 1.2.3 Public Involvement

Public input is an important component of the general planning process and is sought at the beginning and throughout the planning process. State parks are managed for resource protection and recreational use by the people of California. Constituency building is needed to ensure the public's support for their local parks. A variety of methods, such as public meetings, newsletter updates, surveys, and meetings with state, regional, and local agencies and organizations, were used to identify stakeholder needs and concerns for the future of the park.

Two public meetings were held to update individuals about the progress of the General Plan and to seek their input regarding the appropriate level of facilities development and resource protection that should occur in the park over the next 20 years. The first meeting was held in February 2003 and served as a scoping meeting for the General Plan/EIR. The Department presented a summary of existing conditions within the park and listened as members of the public described their vision for the park. At the second meeting, held in May 2003, the Department presented the General Plan alternatives under consideration and sought feedback on the specific components of the alternatives.
A newsletter was distributed to over 400 people prior to the public meetings that provided an update on the progress of the plan and identified the time and location of the

upcoming meetings. A mail-in survey was included in the first newsletter asking what people liked most about the park and what changes, if any, they would like to see in the future. The responses to this survey were used to guide development of the park alternatives. A third newsletter describing the selected Preferred Alternative was distributed following the last meeting.

In selecting a Preferred Alternative, the Department considered the local community's input received at the public meetings, as well as the written comment letters received before and after the meetings. Department representatives also met with various state, regional, and local agencies and organizations to seek feedback on the alternatives. Participants in these meetings included the Sonoma County Regional Parks Department, SCAPOSD, LandPaths, Bay Area Ridge Trail Council, Sonoma County Land Trust, Regional Water Quality Control Boards, California Department of Forestry and Fire Protection, and the Kenwood Fire Protection District. Also considered during the selection process were statewide interests, agencies' relevant rules and regulations, the park's purpose and vision, and environmental constraints and resources.

The opportunity for public review of the *Preliminary General Plan/Draft EIR* was a part of the California Environmental Quality Act (CEQA) process. A Notice of Availability was sent to the General Plan mailing list at the start of the public review period.

## 1.3 CONTENTS OF THE GENERAL PLAN/EIR

This document serves as the *Final General Plan and EIR* for Sugarloaf Ridge State Park. The purpose of this Program EIR is to analyze and disclose any significant and potentially significant effects that may result from the implementation of this *Final General Plan*. 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 CEQA Guidelines.

Because the Final EIR prepared for this *Final General Plan* is programmatic in scope, it does not contain project-specific analysis for any of the projects recommended in the plan. Specific projects will undergo subsequent CEQA

review in the future as described above under subsection 1.2.2, Subsequent Planning Actions.

Because the *Final General Plan and EIR* are combined under one document, some chapters of this document serve both purposes. For example, Chapter 2, Existing Conditions and Issues, provides background information regarding existing conditions for the General Plan and also serves as the environmental setting for the EIR, as required by CEQA. Similarly, Chapter 3, Park Plan, serves as the project description for the EIR.

After this Executive Summary this *Final General Plan and EIR* is organized into the following chapters:

**Chapter 1: Introduction** gives background information on Sugarloaf Ridge State Park and the Department's general planning process, and describes the organization of this document.

**Chapter 2: Existing Conditions and Issues** describes the current physical and social conditions of the park, including information on land use; significant physical, biotic, cultural, aesthetics, and recreation values; and existing facilities. The existing conditions section also lists systemwide and regional planning influences affecting the park, describes its demographic resident and visitor profile, and identifies issues to be addressed in the General Plan. This chapter serves as the environmental setting for the Program EIR.

**Chapter 3: Park Plan** identifies the goals and guidelines that will direct future management and operation of Sugarloaf Ridge State Park. This chapter includes the park's purpose and vision and provides parkwide and management-zone-specific goals and guidelines. This chapter also provides an analysis of existing carrying-capacity methodology for periodic assessment as General Plan recommendations are implemented.

**Chapter 4: Environmental Analysis** contains the environmental impact analysis for the General Plan's Program EIR, pursuant to CEQA Guidelines. This chapter includes the following sections:

- Section 4.1: Introduction to the Environmental Analysis

- Section 4.2: Environmental Analysis Summary
- Section 4.3: Environmental Setting
- Section 4.4: Environmental Impacts
- Section 4.5: CEQA-required Analysis
- Section 4.6: Alternatives to the Proposed Plan

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

**Chapter 6: Acronyms** identifies the full name or phrase represented by abbreviations.

**Chapter 7: Glossary of Terms** defines terms used in this document.

**Chapter 8: Report Preparers** identifies the preparers of this *Final General Plan and EIR.*

**Appendices** are provided at the end of this document.

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# SUGARLOAF RIDGE STATE PARK

## *2. Existing Conditions*

# 2. Existing Conditions and Issues

This chapter summarizes the surrounding context and existing conditions at Sugarloaf Ridge State Park. Local planning influences and the roles of various agencies and local nonprofit organizations are characterized, as are the significant natural and cultural resources, existing land uses, recreational facilities, aesthetic resources, and approaches to interpretation at Sugarloaf Ridge State Park. The information provides the baseline data for the General Plan's goals and guidelines and serves as the setting for environmental review. A geographic information systems (GIS) data file of existing resources has been created in conjunction with this General Plan. Existing conditions maps included in this chapter were generated from the GIS database.

## 2.1 PLANNING INFLUENCES

### 2.1.1 SYSTEMWIDE PLANNING

Planning for the Department must consider wide-ranging issues that cross regional, local community, and park boundaries. Federal, state, county, and community agencies are responsible for providing oversight and review of various planning-related laws and policies, such as the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), Americans with Disabilities Act (ADA), as well as Regional Water Quality Control Board and Air Quality Management District regulations. Additionally, numerous Department resource management directives guide the planning process, including the following resources:

- California Department of Parks and Recreation Mission Statement
- California Department of Parks and Recreation Operations Manual
- California Department of Parks and Recreation Administrative Manual
- California Recreation Trails Plan
- California State Parks Access to Parks Guidelines

- California State Parks Systems Plan
- Employee Housing Policies
- System wide Park Operations and Concessions Policies
- California Heritage Task Force
- Vegetation Management Guidelines for Trails and Roads in the Units of the State Park System
- Public Resources Code

### 2.1.2 REGIONAL PLANNING INFLUENCES

The following local and regional plans and community organizations will have an influence on the management, operations, and visitor experiences at Sugarloaf Ridge State Park:

- Internal Draft Hood Mountain Regional Park Resource Management Plan
- Hood Mountain Regional Park Vegetation Management Plan
- Draft Sonoma County Outdoor Recreation Plan
- Bay Area Ridge Trail Plan
- Local and Regional Organizations Dedicated to Open Space Protection
- Local and Regional Organizations Dedicated to Watershed Protection
- Sonoma County General Plan

#### Internal Draft Hood Mountain Regional Park Resource Management Plan

SCRP is developing a resource management plan for Hood Mountain Regional Park. The resource management plan is intended to be a multipurpose user manual for Sonoma County park rangers, maintenance staff, planners, and visitors. The plan will establish short- and long-term goals, operating policies, and baseline information about park resources.

The draft goals for Hood Mountain Regional Park are classified as general goals, specific goals, dedication agreement goals, public use goals, resource protection goals, management goals, and operation goals. The overall

goal of Hood Mountain Regional Park is to increase public use while protecting the natural resources. From a management perspective, the goal is to provide the user-friendliness of a small county park with the integrity of a well-managed wild land.

The plan identifies constraints to managing the park, including deed restrictions, SCRP rules and regulations, and the naturally occurring constraints of the locations. The plan also provides a description of existing conditions and recommended management actions for the following issue areas:

- Geophysiology
- Cultural Resources
- Hydrology
- Vegetation
- Fire
- Wildlife
- Public Use
- Infrastructure
- Trails
- Erosion
- Property
- Operations
- Emergency Procedures

### Hood Mountain Regional Park Vegetation Management Plan

The *Hood Mountain Regional Park Vegetation Management Plan* was developed to identify a fire management strategy for the park. The principle management objectives for the plan are to minimize fire hazard, maintain and enhance rare and endangered species, maintain the vegetation structure, protect environmentally sensitive sites, and enhance opportunities for environmental education.

The fire danger at Hood Mountain is dictated by a combination of the risk of ignition, hazards associated with fuel conditions, and the weather. There is often a close correlation between the vegetation type and fire hazard. The *Vegetation Management Plan* determines the current fire hazard posed by each vegetation type and recommends management procedures to reduce the risk of fire. The plan recommends prescribed burns to reduce fuel loads and describes the expected impacts from the prescribed burns on invasive and rare and endangered species within Hood Mountain Regional Park. The only fires that have occurred in or near the park since 1930 were due

to transmission line failures. Therefore, the plan encourages PG&E and relevant property owners to institute a program of vegetation management beneath these power lines (McBride, J.R. and S.J. Barnhart, Undated).

### Sonoma County Draft Outdoor Recreation Plan

Sonoma County Regional Parks Department is preparing an environmental impact report for the *Draft Outdoor Recreation Plan*, a guide to parkland planning, acquisition, improvements, and management to meet the needs of Sonoma County through the year 2010. It also establishes a framework for agency coordination to meet parkland and recreation needs on a countywide basis. The *Draft Outdoor Recreation Plan* identifies existing and future parkland and recreation needs, recommends specific projects that could address these needs, and identifies policies and financing options to assist with implementation of the recommended projects.

Within Sonoma County there are 12 park management bodies that provide a variety of parklands for county residents as well as for visitors from outside the county: two state park districts, the U.S. Army Corps of Engineers Lake Sonoma Recreation Area, the county regional park system, five city parks and recreation departments, and three special park districts. Sonoma County Regional Parks Department provides five campgrounds in Sonoma County with 265 campsites. A 1994 survey found that there were 14 private campgrounds with 1,034 campsites in the Russian River between Jenner and Cloverdale (County of Sonoma 2000).

Sugarloaf Ridge State Park is located within the Santa Rosa Plain planning area designated in the *Draft Outdoor Recreation Plan*. The recommended projects identified in the *Draft Outdoor Recreation Plan* that apply to the Sugarloaf Ridge State Park general planning process are listed below. (The preceding numbers correspond to the numbers in the recommended project list for the Santa Rosa Plain area in the *Draft Outdoor Recreation Plan*.)

- <u>#26. Hood Mountain Regional Park Expansion.</u> This expansion would include approximately 450 acres of land between Hood Mountain Regional Park and Sugarloaf Ridge State Park. This expansion would allow for extensive trail system development and the

possibility of multi-night trips between Hood Mountain and Sugarloaf Ridge parks. This need has been identified through the Outdoor Recreation Plan workshops and park acreage/population analysis.

- #29. Hood Mountain – Annadel Trail. The proposed trail would link Hood Mountain Regional Park to Annadel State Park.
- #32. Mayacamas Ridge Trail North. This proposed trail would begin at Bothe-Napa Valley State Park and terminate at the U.S. Bureau of Land Management (BLM) parcel adjacent to the northern boundary of Sugarloaf Ridge State Park.
- #34. Hood Mountain Trail North. The proposed trail would link Hood Mountain Regional Park to a 240-acre BLM holding to the east at the Sonoma/Napa county line. This project was recommended at the public workshops.
- #45. Sugarloaf Ridge State Park Expansion. The expansion of Sugarloaf Ridge State Park is intended to increase resource protection and management in the area. The area would be available for passive recreational use. (Figure 11 of the *Draft Outdoor Recreation Plan* refers to an area to the south of Sugarloaf Ridge State Park. The plan notes that this recommendation is assumed to be implemented by other federal, state, or local agencies. It is included in the *Draft Outdoor Recreation Plan* because it is intended to protect habitat and/or contribute to public recreation in Sonoma County.)

### Bay Area Ridge Trail Plan

The Bay Area Ridge Trail is a 400-mile multiple-use trail connecting parks and preserved open spaces along the ridgelines surrounding the San Francisco Bay. More than half of the trail is complete, open to the public, and in use. Diverse public agencies and community groups are working together on the Bay Area Ridge Trail project (Bay Area Ridge Trail Council 2002).

The Pony Gate Trail, Stern Trail, and Bald Mountain Trail within Sugarloaf Ridge State Park are designated as part of the Bay Area Ridge Trail. These trail segments are isolated and do not connect with other segments of the Bay Area Ridge Trail. Other segments of the trail in Sonoma

County include trails in Helen Putnam Regional Park, McNear Park, Spring Lake Regional Park, Petaluma Adobe State Historic Park, Jack London State Historic Park, and Annadel State Park.

### Local and Regional Organizations Dedicated to Open Space Protection

Several agencies and nonprofit organizations are devoted to the acquisition and conservation of open space in the Mayacamas Ridge and Sonoma Valley surrounding Sugarloaf Ridge State Park.

The ***Sonoma County Agricultural Protection and Open Space District (SCAPOSD) Acquisition Plan 2000*** directs the land conservation efforts of SCAPOSD and assists in carrying out the 1990 voter-approved measures for preserving agricultural and open space lands in Sonoma County. *Acquisition Plan 2000* used GIS to provide a science-based analysis of agricultural, natural resource, greenbelt, and recreational lands. SCAPOSD relies on this analysis to set land acquisition priorities and evaluate properties.

Part of the SCAPOSD's implementation strategy to meet its goal of doubling the extent of SCAPOSD-protected lands from 27,000 to 54,000 acres within the next five years is to establish key conservation partnerships with public agencies and private organizations to complete significant land acquisitions.

Examples of favorable factors that would lead SCAPOSD to pursue a potential acquisition include the following:

- Adjacency to protected lands
- Ecological value (unique site, beneficial habitat, species diversity, protection of species, etc.)
- Strong landowner commitment to protecting conservation values
- High risk of loss without SCAPOSD participation

SCAPOSD, independent nonprofit organizations (LandPaths), and the Department have worked together in the past to protect important resources (for example, the Santa Rosa Creek Watershed Management Zone, formerly a portion of the McCormick Ranch). SCAPOSD was also the sole funder and

lead agency in the acquisition of the Nunns[1] Canyon Management Zone (formerly a portion of the Beltane Ranch) and holds conservation easements, in perpetuity, on the properties. The Department is obligated under the terms of the easement to provide access to SCAPOSD for annual stewardship monitoring of the properties and to communicate, in advance, their strategies for maintenance and management. SCAPOSD continues to identify important undeveloped lands in the Mayacamas Ridge for acquisition in support of Sugarloaf Ridge State Park and nearby Hood Mountain Regional Park.

The mission of the ***Sonoma Land Trust*** is to provide permanent protection of Sonoma County land, including its natural beauty and biotic resources, and to offer stewardship, education, and guidance for the preservation and enhancement of agricultural, natural, scenic, and open space lands.

***Land Partners Through Stewardship (LandPaths)*** is a nonprofit organization that assists landowners in defining and implementing practices that maximize resource conservation, ensuring protection for ecologically fragile areas while promoting managed public access. Landpaths also undertakes watershed restoration activities as well as promotes and conducts on-site environmental education programs to involve the community in preserving the diverse natural communities of the region.

The ***Land Trust of Napa County*** works to protect the natural diversity, scenic open space, and agricultural vitality of Napa County by preserving lands with significant conservation values for present and future generations and by fostering an appreciation and understanding of the natural environment. The Napa County Land Trust holds conservation easements protecting approximately 3,000 acres directly east of Sugarloaf Ridge State Park.

### Local and Regional Organizations Dedicated to Watershed Protection

Sugarloaf Ridge State Park is located in the Sonoma Creek and Santa Rosa Creek watersheds. The Sonoma Creek watershed includes both Bear Creek and Calabazas[2] Creek,

[1] The spelling of “Nunns Canyon” is consistent with US Geological Survey maps. There is however, common usage of the spelling “Nuns Canyon” as referenced by Thomas Brothers Maps and street signs

[2] The spelling of “Calabazas” is consistent with USGS maps.

which also flow through the park. The Department's Silverado District has been involved in many watershed restoration activities within Sugarloaf Ridge State Park. Several nonprofit organizations are also dedicated to restoring these watershed systems, particularly to reduce sediment loads so that anadromous fish as well as other wildlife and plants are sustained. Several watershed restoration plans and enhancement plans have been developed to guide specific actions to benefit the watershed. A list of some of the organizations involved in protecting the watersheds is provided below.

The ***Sonoma Ecology Center*** is a nonprofit organization dedicated to pursuing sustainable ecological health in the Sonoma Valley through research, restoration, education, and preservation (Sonoma Ecology Center 2002a). Sonoma Ecology Center has provided GIS data and expertise to the Department for management and long-term planning, including this general planning process.

The Sonoma Ecology Center has a number of programs to implement watershed restoration goals. The ***Sonoma Valley Watershed Council*** is a division of the Sonoma Ecology Center that encourages education and active stewardship of the watershed by the community. The ***Sonoma Valley Watershed Station,*** located on Sonoma Creek, is an education research center established in 1998 to further understanding of the natural systems of the Sonoma Valley.

The ***Sonoma Valley Watershed Council Creek Restoration Program*** was established by the Sonoma Ecology Center in 1994 through a creek restoration grant from the Urban Streams Restoration Program of the Department of Water Resources. The program's goal is to protect and enhance the Sonoma Creek watershed's riparian ecosystems with the following activities:

- Control invasive pest plants, including giant reed (*Arundo donax*) in the Sonoma Creek channel and its tributaries and waterways
- Reintroduce native plant species where needed for habitat and erosion control
- Integrate other Sonoma Watershed Council programs, such as Adopt-A-Watershed and Sonoma Valley GIS

- Raise public awareness regarding stewardship of Sonoma Valley's stream resources

The mission of the ***Southern Sonoma County Resource Conservation District (RCD)*** is to improve resource management while supporting sustainable agriculture and urban communities. The RCD provides technical assistance, education, and funding sources for conservation projects. The RCD empowers landowners to improve water quality, prevent soil erosion, and improve natural habitat. RCDs are nonregulatory, community-based special districts established by Division 9 of the California Public Resources Code. RCDs also offer education and outreach through landowner workshops, watershed newsletters, and school education and service learning programs. Watershed-wide planning and local land stewardship are integral to RCD's management of current conservation issues (Southern Sonoma County RCD 2002).

### Sonoma County General Plan

The broad purpose of the Sonoma County General Plan is to outline policies to guide decisions on future growth and development. Specific plans, area plans, zonings, subdivisions, public agency projects, and other land use decisions must be consistent with the General Plan. While the County's General Plan does not directly affect state-controlled properties such as Sugarloaf Ridge State Park, it does directly affect the surrounding land use and thereby the context of the park. The General Plan includes elements that guide various facets of growth and development within the county. The elements most applicable to the state park planning process include the Land Use, Open Space, Resource Conservation, and Circulation and Transit elements.

The Land Use element describes where different types of land uses may be established in the unincorporated areas of Sonoma County. The Open Space element designates portions of the county in several open space classifications. The limitations on types and intensities of permissible uses and special development and permit review requirements are expressed in the text for each open space classification. The Resource Conservation element provides policies for managed production and conservation of various resources, including soils, water, forests and timber, vegetation and wildlife, fisheries and harbors, geothermal, mineral and

energy, atmospheric resources, and air quality. The Circulation and Transit element describes the plans for the county's future highway and transit systems. (County of Sonoma 1989).

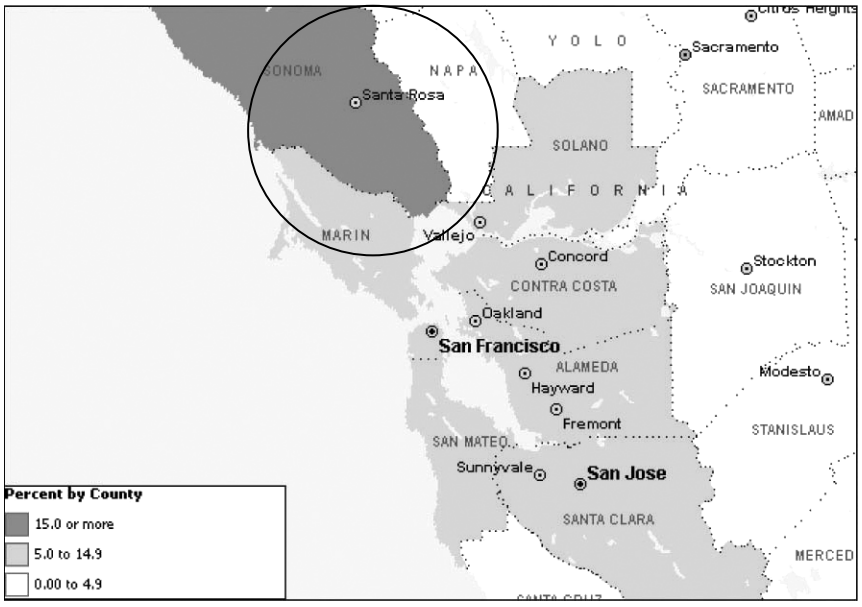
### 2.1.3 SURROUNDING CONTEXT

#### Population Trends and Projections

Recreation demand and use, over time, are affected by the changing demographic patterns of the areas served. A number of key factors will affect the future use patterns and facilities within Sugarloaf Ridge State Park.

42% of Day-Use Visitors to Sonoma County originate in the Bay Area.
The largest single county contribution to day use comes from within Sonoma County, accounting for at least 15% of the day-use visitation. Each of the greater Bay Area counties contributes from 5 to 14.9% of the total Sonoma County visitation (Figure 2-1). For Sugarloaf Ridge State Park, these statistics indicate that distance to population centers is an important factor affecting day use. The nearest population centers served by the park include the entire Sonoma Valley as well as Santa Rosa. Within easy traveling distance are the growing communities of Petaluma, Rohnert Park, Winsor, Napa, and Vallejo.

**Figure 2-1: Source of Day-Trip Visitors to Sonoma County**




*Source: MCG, 1999*

***Overall population in the Bay Area is projected to increase by 20% by the year 2025.*** The Association of Bay Area Governments (ABAG) projects that growth in the region will accelerate, adding another 1.4 million residents by 2025, an increase of more than 20%. The growth in this area of Sonoma County is expected to be slightly slower than the Bay Area average, but nearby Napa County is projected to grow by 30% - one of the fastest growth rates in the nine-county region (Association of Bay Area Governments 2001). This regional growth is likely to contribute to increased visitation at Sugarloaf Ridge State Park.

***The Hispanic population is increasing proportionally faster than other populations.*** The relatively large Hispanic populations located in the Sonoma Valley and the Bay Area, combined with changing ethnicity patterns in California, will directly affect the pool of potential users at Sugarloaf Ridge State Park. According to the 1990 U.S. Census, there were about 6 million Hispanic people out of the total statewide population of 29.8 million (20%). By the year 2000, this figure had increased to about 11 million out of 34 million people (32.4%). This 12% increase in 10 years suggests that the mix of user groups and the corresponding facility needs at the park may be changing. For example, there is a correlation between Hispanic people recreating in large (often family-based) groups and a high demand for developed recreation sites, particularly those with picnic tables, barbeque grills, parking lots, etc. Group picnics also tend to be longer in duration than for some other ethnic groups, as many food items are prepared on site from scratch.

***Affluence and education of residents and visitors suggests stronger-than-normal demand for wildland recreation.*** People with higher income and education levels tend to prefer undeveloped/wildland-type recreation. An evaluation of income and education levels of the park's user populations suggests a stronger-than-normal demand for wildland recreation.

Visitors to Sonoma County are generally well educated and affluent - 61% of visitors to Sonoma County are college graduates or have attended graduate school, and 58% make $75,000 per year or more (Menlo Consulting Group 1999). These visitors contribute to a high demand for undeveloped natural areas and wildland-type recreation. Sonoma Valley

offers attractive, high-end destinations and many forms of lodging and entertainment to attract visitors. First-time visitors are generally drawn to the Sonoma Valley to visit a winery or spa, but repeat visitors explore more of the county (MCG 1999). More than two-thirds (68%) of visitors to Sonoma County are repeat travelers. According to a Sonoma County Tourism Program on-line visitor survey, after food and wine, the primary reasons for visiting include sightseeing (22%), nature/wildland (8%), and activity/adventure sports (6%). Sugarloaf offers these activities and is in a prime position to capture the interest of the repeat visitor to Sonoma County.

***Strong latent demand for outdoor recreation in Sonoma County.***
Studies conducted from 1988 and 1996 by SCRP indicate that visitor use for all types of outdoor recreation has increased much faster than the increase in county population during the same period. Total visitor use at county-owned and operated outdoor recreation facilities increased 66%, while the county population increased 10.3%. Simultaneously, Sonoma County Regional Parks' recreation acreage increased 49%. This increase in available acreage combined with an increase in use suggests a stronger-than-normal latent demand for outdoor recreation facilities (County of Sonoma 2000).

***Increasing age of the populace.*** The average age of county residents is increasing; the combined age groups of 45 to 65 and 65+ represented 31.3% of the total population in 1990, but are expected to constitute 42.2% of the total in 2010 (*ABAG Projections 2000*). (The 65+ category alone represents 12.6% of the county population, according to the U.S. Census 2000.) Based on this shift, facility improvements may be needed to meet the needs of an aging yet active population. For Sugarloaf Ridge State Park, this shift suggests the need for improved interpretation and classroom activities, such as those currently available at the observatory and the visitor center. Level or more easily accessible trails and camping opportunities for disabled visitors would also help to satisfy this changing demographic pattern.

### Contributing Properties

Contributing properties are those in the vicinity of Sugarloaf Ridge State Park. Their open space and proximity

to the park support the park-like character and wildlife resource values.

Sugarloaf Ridge State Park and Hood Mountain Regional Park represent 6,550 acres of protected wildland habitat in the Mayacamas Ridge. The protected land provides part of the wildlife corridor extending from Napa Valley over the ridge to Sonoma County. The Department, Sonoma County Regional Parks Department, SCAPOSD, and other land trust organizations have put forth the idea of protecting the wildlife corridor and establishing a trail connection between the three Sonoma Valley state parks, including Annadel State Park near Santa Rosa and Jack London State Historic Park near Glen Ellen. The trail system would add to the recreational resources in the area and provide a corridor connecting all three state parks.

Other contributing properties located near Sugarloaf Ridge State Park will have an influence on the future management of the park. Several properties are inholdings, located either within Sugarloaf Ridge State Park itself, or between the park and Hood Mountain Regional Park. The only access to the inholding properties is through one of the parks. The future use of the currently undeveloped or rurally developed inholdings will affect the character of the parks and their combined habitat value. Other surrounding properties will also have an influence due to their proximity to the parks, access requirements or barriers, location within the viewshed of the park, or their function as an important component of the wildlife corridor.

A description of nearby Hood Mountain Regional Park, other state parks in the area, and other significant contributing properties that will have an influence on the future management of Sugarloaf Ridge State Park is provided below.

### Hood Mountain Regional Park

Hood Mountain Regional Park is a 1,450-acre holding established incrementally from 1968 to 1974 and administered by SCRP. The park is located approximately five miles from State Route 12 and is visually prominent at the headwaters of Santa Rosa Creek. It is accessed from the north via the winding ascent of Los Alamos Road. The two parks share parking and portable restroom facilities at the top of Los Alamos Road. From the south, Adobe Canyon Road leads to Sugarloaf Ridge State Park, where the

Goodspeed Trail provides access to the southern portion of Hood Mountain.

Hood Mountain Regional Park ranges in elevation from approximately 900 feet to 2,730 feet at the top of Hood Mountain. The park is drained by Santa Rosa Creek and its tributaries (e.g., Azalea Creek) north of Hood Mountain and by various ephemeral drainages that feed into Sonoma Creek south of Hood Mountain. Hood Mountain Regional Park includes an excellent sample of the major vegetation types of eastern Sonoma County as well as a few unique types and species, including a large stand of dwarf cypress. Mixed evergreen forest is the dominant vegetation type at the park entrance on Los Alamos Road up to Azalea Campground (McBride, J.R. and S.J. Barnhart, Undated). The Azalea Campground has been proposed to be reinstated as a backcountry equestrian campground with six small group campsites, accessible from Los Alamos Road.

Since 1986, the park has been open to the public on an intermittent basis, primarily on weekends when fire risk is low. This policy is based on the perceived high fire danger within the park, low visitor use, and lower funding priority within SCRP. Renewed interest in reopening Hood Mountain Regional Park to the public has been expressed during the public involvement process for the *Draft Outdoor Recreation Plan*. Hiking and limited horseback riding and mountain biking are the principle park activities.

### Annadel State Park

Annadel State Park (Annadel) is located on the eastern edge of Santa Rosa, about 10 miles west of Sugarloaf Ridge State Park. Annadel offers miles of trails for hiking, mountain biking, and horseback riding. Like Sugarloaf Ridge State Park, Annadel offers a great variety of wildflowers from early spring until early summer. Fishing for black bass and bluegill is popular in Lake Ilsanjo (CDPR 2002b). Camping is not allowed in the park; the closest campsites are available at the county campground at Spring Lake and at Sugarloaf Ridge State Park.

Because of its proximity to Santa Rosa, Annadel is heavily used as a retreat from that city. The trails and facilities are often crowded, and the trails were eroded from heavy use. A direct connection between Annadel and Sugarloaf Ridge State Park via Hood Mountain was suggested in the *Draft Outdoor Recreation Plan* (County of Sonoma

2000). If this connection were made between the two parks use levels could be evened out

### Jack London State Historic Park

Jack London State Historic Park is a memorial to writer Jack London, who made his home at the site from 1905 until his death in 1916. The historic park is located on London Ranch Road in Glen Ellen, about 20 minutes north of Sonoma and approximately 10 minutes southwest of the entrance to Sugarloaf Ridge State Park on the northeast flank of Sonoma Mountain.

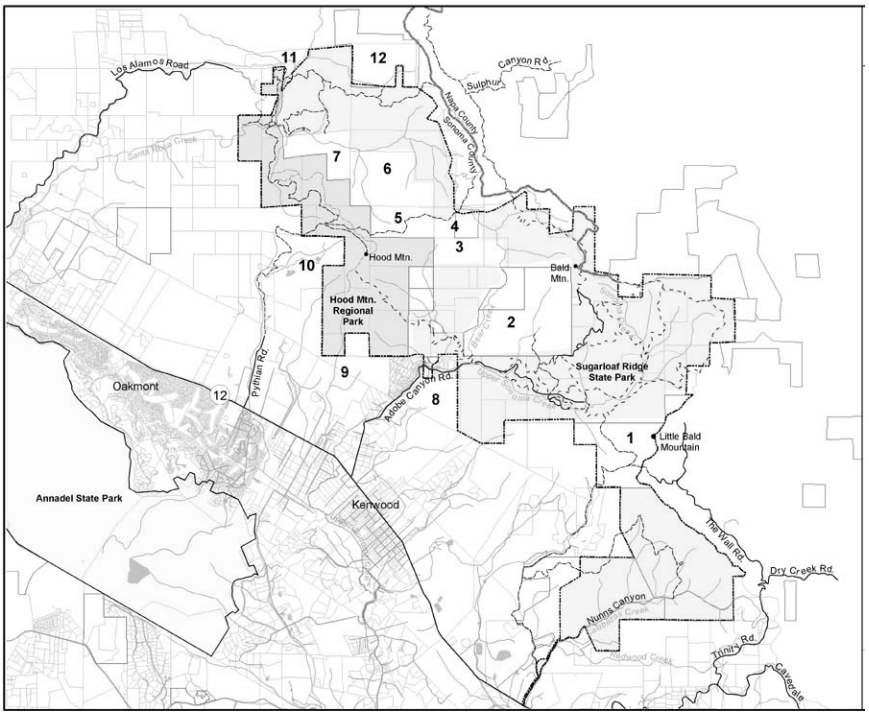
The 800-acre park nearly doubled in size with an acquisition funded by SCAPOSD for an open space portion of the Sonoma Developmental Center, located immediately adjacent to the park. The historic part of the park contains the cottage residence where Jack London wrote and oversaw various agricultural enterprises within his 1,500-acre Beauty Ranch and a museum in "The House of Happy Walls" in a redwood grove. A three-quarter-mile walk takes visitors to a dam, lake, and bathhouse built by London. Other hikes lead up through fir and oak woodlands to the top of Sonoma Mountain, where there are views of the Valley of the Moon and Petaluma to the west. Another trail leads to Jack London's grave and to "Wolf House," London's dream house, which was destroyed by fire in 1913 (CDPR 2002c).

Visitors come to the park primarily for historical interest. Camping is not allowed in the park; the closest campsites are at Sugarloaf Ridge State Park. Bicycling and horseback riding are permitted on some trails, and a summer horseback riding concession is available in the park.

### Significant Adjacent Private Properties

Figure 2-2 identifies the location of significant contributing private properties described in this section. These properties are described for their value as they contribute to the goals of the park. Acquisition of these properties is not intended by their inclusion here. The Department policy is to consider acquisition from *willing* sellers only.

**Figure 2-2: Contributing Properties**




*Parcel 1*

Parcel 1 is located on the southern boundary of the Adobe Canyon Management Zone, separating it from the Nunns Canyon Management Zone. The property includes wildland, vineyards, and a residence. The owners have expressed a willingness to discuss a trail easement connecting the visitor-serving facilities in Adobe Canyon with Nunns Canyon. If developed, the trail could form a section of the Bay Area Ridge Trail.

*Parcel 2*

Parcel 2 is a 630-acre, privately owned inholding in the middle of Sugarloaf Ridge State Park, situated in the headwaters of Bear Creek between Red Mountain and Hood Mountain. The only active access to the property is a trail starting in Sugarloaf Ridge State Park, which connects with Adobe Canyon Road, just past the park's entrance station. There is also an inactive road alignment to the headwaters of Bear Creek that was built in the early 1900s. Four residences on the property, including a three-story house, are located in the center of the property off of the access road. A swimming pool, a barn used as a large garage, and other ranching equipment and facilities are located on site. The ranch development is located on a relatively flat area near a seasonal creek that runs through the middle of the property.

Two other small inholdings are located within Sugarloaf Ridge State Park. Both are private residential properties near the western portion of the park. One property is approximately 10 acres and the other is 86 acres. The inholdings are accessed by Pierson Road, which intersects with Adobe Canyon Road approximately one-eighth of a mile from the entrance to the park.

*Inholdings between Sugarloaf Ridge State Park and Hood Mountain Regional Park*

Seven parcels are located between Sugarloaf Ridge State Park and Hood Mountain Regional Park:

- Parcel 3 – One parcel, recently available for sale directly adjacent to Sugarloaf Ridge State Park, to the south of the BLM land and near the narrow land connection between the Santa Rosa Creek Watershed Management Zone and the rest of the Park.
- Parcel 4 (BLM-owned) – One parcel was offered as excess property in the mid-1990s and could aid in creating a trail connection between the Santa Rosa Creek Watershed Management Zone and the rest of Sugarloaf Ridge State Park.
- Parcel 5 – The Pythian Road connection emergency access from Hood Mountain Regional Park to the Red Barn at the end of the High Ridge Trail in Sugarloaf Ridge State Park passes through this property.
- Parcel 6 – Recently subdivided into three lots, reportedly in anticipation of sale; some reported loss of sensitive habitat in Sargent Cypress stands due to recent excavations (Sonoma County Regional Parks Department 2002).
- Parcel 7 – Located to the south of the Hood Mountain Regional Park/Santa Rosa Creek Watershed Management Zone entrance (northernmost inholding), this property has a conservation easement held by Sonoma Land Trust.

Access to all properties is by Pythian Road, through Hood Mountain Regional Park. The BLM property is adjacent to the land connection between the Santa Rosa Creek Watershed Management Zone and the rest of Sugarloaf Ridge State Park and could aid, though not complete, a trail connection between the two areas. BLM offered it as a surplus

property in the mid-1990s, but it was not acquired by the State of California or the County. All of the other inholdings are privately owned and do not provide public access connections between the two parks.

*Parcel 8 Golden Bear Lodge*

The site of the former Golden Bear Lodge is on Adobe Canyon Road near the intersection with Pierson Road, 200 feet below the Goodspeed Trailhead. The lodge burned down in spring 2003. Pierson Road leads to the western portion of Sugarloaf Ridge State Park, including the former Harr Ranch residence. Because of its proximity to both the western and eastern portions of the park, the Department has acknowledged that the site could have been a good location for a visitor center for Sugarloaf Ridge State Park and possibly Hood Mountain Regional Park.

Negotiations in summer 2002 between the Golden Bear Lodge owners, SCAPOSD, and the Department to purchase the lodge (prior to burning) for use in Sugarloaf Ridge State Park were unsuccessful. The parcel is still for sale and is currently unoccupied.

*Parcel 9*

The developer of this property is in the process of donating a trail easement to SCRP between Annadel State Park and Sugarloaf Ridge State Park, via Hood Mountain Regional Park. This easement is intended to provide pedestrian access from State Route 12, near the intersection of Lawndale Road, to the southern edge of Hood Mountain Regional Park. The trail easement could connect with the Goodspeed Trail just south of Gunsight Rock.

*Parcel 10*

Parcel 10 is adjacent and to the west of Hood Mountain, between Hood Mountain Regional Park and State Route 12 along Pythian Road. SCAPOSD recently acquired the 300-acre parcel with the intention of transferring ownership to Sonoma County Regional Parks Department for inclusion in Hood Mountain Regional Park. The property is intended to provide a multi-use trailhead into Hood Mountain Regional Park from Pythian Road. Some access issues are still unresolved but Sonoma County Regional Parks is pursuing their resolution. This acquisition also enhances the possibility of a connection between Annadel State Park and Sugarloaf Ridge State Park.

*Parcel 11*

Parcel 11 includes 300 acres adjacent to the northern entrance to Hood Mountain Regional Park and the Santa Rosa Creek Watershed Management Zone. A small edge portion of the parcel forms a sharp triangle separating the northern Hood Mountain Regional Park/Santa Rosa Creek Watershed Management Zone entrance parking lot that could serve as a second access into this area.

*Parcel 12*

Parcel 12, formerly owned by BLM, is a 60-acre portion of a larger parcel to the north of the Santa Rosa Creek Watershed Management Zone. The owner recently acquired the property from BLM and is transferring ownership to the Department. At this time, it is not clear which portion of the larger BLM parcel is being transferred.

*Properties on the Eastern Side of the Mayacamas Ridge in Napa County*

Several ranches and other large properties on the eastern side of the ridge from Sugarloaf Ridge State Park have been preserved through conservation easements. Most of the conservation easements do not allow public access to the property, but they do preserve the land in perpetuity. These lands contribute to the protection of a biological corridor from Napa Valley over the ridge to Sonoma County. The properties along Heath and Bear Creeks include old-growth madrone forests, large waterfalls, and large rock outcrops.

## Recent Acquisitions

In 1996, SCAPOSD purchased the Santa Rosa Creek Watershed Management Zone (formerly a portion of the McCormick Ranch), and fee title was given to the Department. Despite its desire to protect the property, fiscal constraints prevented the Department from assuming management of the property at the time of purchase. LandPaths managed the property for the Department for a number of years. There are no buildings on the property, and access is available through Hood Mountain Regional Park.

Specific conditions that transfer with the SCAPOSD conservation easement on the property raise issues for long-term management.

- The property is protected under a "forever wild" easement, to be managed by SCAPOSD in perpetuity for its value as a landscape of diverse and integrated habitat types representative of plant communities once widespread in Sonoma County. Coordination of the Department's maintenance and management strategies in conjunction with SCAPOSD's stewardship responsibilities under the conservation easement will be an ongoing requirement of management.
- An easement along the eastern ridge of the property is visible from the preserved areas of the park below, as well as by visitors in their first view of the park at the crest of the ridge atop Los Alamos Road, just before the parking area. Protection of the watershed below the easement will be valuable for steelhead trout as well as baseline characterizations of the water quality further downstream.
- The narrow connection between the Santa Rosa Creek Watershed Management Zone and the rest of Sugarloaf Ridge State Park is not suitable for development of a trail link between the two areas, according to trail designers and surveyors who evaluated the property in 2000 and 2001. The topography is too steep, and the connection is too narrow to allow for an appropriate trail alignment.

### Nunns Canyon Management Zone

The Nunns Canyon Management Zone has been privately owned and is located to the south of Sugarloaf Ridge State Park, separated by an intermediate property, also privately owned. SCAPOSD has an agreement with the owner of the property to acquire fee title, which would be transferred to the Department for management. The draft conservation easement, as it is currently written, would allow development of campgrounds, parking areas, restrooms, trails, access roads, interpretive kiosks, and residences for Department staff on the property (SCAPOSD 2002b). Although the formal acquisition of the property and transfer of land to the Department was still underway at the time this General Plan was written, an agreement has been reached among all parties. For this reason, the property is included in this General Plan as the Nunns Canyon Management Zone.

The property extends northeasterly from State Route 12 to the ridgeline separating Sonoma and Napa Counties. The property forms a narrow corridor along Nunns Canyon Road for about a mile then fans out as the land steepens. The land varies from the gently sloping valley floor to rolling hills, with some rocky hillsides along the northern boundary. Calabazas Creek forms the easterly boundary of the property for approximately 1.5 miles from State Route 12 and enters the park boundaries for approximately 1.75 miles to its source. There are several open meadows dotted with oaks, on one of which is a historical homestead site complete with mature apple trees. Areas along Calabazas Creek are heavily wooded with Douglas-fir and redwood, and most of the hillsides are heavily wooded and brushy. Nunns Canyon is considered part of the wildlife corridor extending to Jack London State Park.

An inactive quarry on Nunns Canyon Road near State Route 12 has been suggested by the Department as a potential location for a trailhead and parking lot for the southern entrance into Sugarloaf Ridge State Park. Existing debris on site would need to be cleaned up and drainage from the site corrected before public use of the site would be allowed.

Public access to the Nunns Canyon Management Zone would be through Nunns Canyon Road. Several other properties are accessed by Nunns Canyon Road, so any new park gates placed near the quarry would need to allow private access to the other properties. Nunns Canyon Road and Nelligan Road form a loop through the property. SCAPOSD is negotiating a road easement for fire access through the portions of Beltane Ranch that would be retained by the owner.

### Future Land Acquisitions

The Department considers all land acquisitions from *willing* sellers that would further increase its stated priorities to increase access to recreational lands and important cultural resources, or that offer connections to wildlife habitat and other natural resources to help achieve resource management objectives (CDPR 2002a). Acquisitions are evaluated based on specific factors, including whether the land protects and preserves unique resources, reduces potential threats to property adjacent to Department property, and helps “round out” existing state park boundaries. Acquisition priorities by the Department are

made on a statewide basis with recommendations from local state park superintendents (County of Sonoma 2000).

As described, SCAPOSD, the Sonoma Land Trust, and other land trust organizations in the region help the state acquire lands. In some cases, the Department uses this mechanism to receive fee title and/or conservation easements for public access to additional lands of statewide importance for potential integration into the State Parks system. The acquisition of a portion of the McCormick Ranch is one example of how the SCAPOSD, local land trusts, and the Department have worked together to preserve land. The acquisition of a portion of the Beltane Ranch is another example of how three entities and willing private land owners are working together to build a stronger park and a biologically viable open space system in the area.

Because SCAPOSD is actively pursuing fee title acquisition and conservation easements on properties in the Mayacamas Ridge, the Sugarloaf Ridge State Park General Plan identifies general criteria for evaluating potential acquisition properties for integration into the park, although it does not identify or recommend that specific properties be acquired.

## 2.2 SUMMARY OF PARK CONDITIONS AND RESOURCES

This section is the existing setting for environmental review of the General Plan. A detailed description of existing land uses, natural and cultural resources, recreational activities, facilities, and utilities in Sugarloaf Ridge State Park is provided in the sections that follow.

### 2.2.1 EXISTING LAND USES

#### Parkwide Land Uses

Sugarloaf Ridge State Park offers recreation areas with both day and overnight visitors; the Robert Ferguson Observatory; park administrative, maintenance, operations, and staff housing areas; and over 25 miles of hiking, mountain biking, and horse trails winding through the wildlands. Although various visitor-serving land uses are provided at Sugarloaf Ridge State Park, the facilities are

primarily concentrated in the lower valley of Adobe Canyon, near Sonoma Creek. The trails leading up to the ridges offer expansive views of the wildlands in the Mayacamas Ridge and other mountaintops near and far as well as glimpses of cities and towns in the distance. Although not far from Kenwood and smaller towns on State Route 12, and only a few miles from the city of Santa Rosa, Sugarloaf Ridge State Park offers a wildlands-type experience for visitors.

### Classification

Sugarloaf Ridge is classified as a state park. This classification is described in Public Resources Code, Section 5019.53 as follows:

> 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. The purpose of state parks shall be to preserve outstanding natural, scenic, and cultural values, indigenous aquatic and terrestrial fauna and flora, and the most significant examples of ecological regions of California, such as the Sierra Nevada, northeast volcanic, great valley, coastal strip, Klamath-Siskiyou Mountains, southwest mountains and valleys, redwoods, foothills and low coastal mountains, and desert and desert mountains.
>
> Each state park shall be managed as a composite whole in order to restore, protect, and maintain its native environmental complexes to the extent compatible with the primary purpose for which the park was established.
>
> Improvements undertaken within state parks shall be for the purpose of making the areas available for public enjoyment and education in a manner consistent with the preservation of natural, scenic, cultural, and ecological values for present and future generations. Improvements may be undertaken to provide for recreational activities including, but not limited to, camping, picnicking, sightseeing, nature study, hiking, and horseback riding, so long as those

improvements involve no major modification of lands, forests, or waters. Improvements that do not directly enhance the public's enjoyment of the natural, scenic, cultural, or ecological values of the resource, which are attractions in themselves, or which are otherwise available to the public within a reasonable distance outside the park, shall not be undertaken within state parks.

### Surrounding Land Uses

Sugarloaf Ridge State Park is surrounded by parcels of both private and public land that are primarily wildlands or in rural agricultural use. Map 3 identifies Sonoma County General Plan designations in the area of Sugarloaf Ridge State Park. Overlayed on the General Plan designations are conserved lands that are protected by conservation easements in both Sonoma and Napa Counties. Sugarloaf Ridge State Park and Hood Mountain Regional Park are identified as ***Park/Public Property***, which is open for public recreational use.

As shown on Map 3, the areas immediately adjacent to Sugarloaf Ridge State Park are designated either as Resources and Rural Development or as Land Intensive Agriculture. Lands designated as ***Resources and Rural Development*** are intended to protect natural resource lands; protect against intensive development of lands constrained by geologic hazards, steep slopes, poor soils, and other constraints; protect lands needed for agricultural production; and protect county residents from proliferation of growth into areas with inadequate public services and infrastructure. The inholdings between Sugarloaf Ridge State Park and Hood Mountain Regional Park, as well as lands south of the parks, are designated as Resources and Rural Development. Single-family dwellings, resource management and enhancement activities, recreational uses, livestock farming, crop production, schools, and churches are permitted in these areas.

The ***Land Intensive Agriculture*** designation refers to land capable of and generally used for agricultural production. The soil type and climate support relatively high production per acre of land. Vineyards currently occupy a portion of the land to the south of Sugarloaf Ridge State Park and on the property to the west of the park and south

of Adobe Canyon Road. Farm worker and farm family housing is permitted at densities between 20 and 100 acres per residential unit.

The Santa Rosa Creek Watershed Management Zone (formerly a portion of McCormick Ranch) was previously identified as ***Land Extensive Agriculture***, which is intended to protect lands capable of and generally used for agricultural production; however, the designation needs to be updated to reflect the acquisition by the Department. A portion of the property along the northeastern ridge was retained by the previous owners and will remain designated as Land Extensive Agriculture.

## Map 3: General Plan Land Use Designations

The designation allows farm worker and farm family housing at densities between 60 and 320 acres per unit. Houses, other structures, or any kind of development built within these allowed envelopes would be seen by visitors within the park and would alter the visitor's wildland experience.

***Urban and Residential Development*** occurs exclusively along the State Route 12 corridor in the flatlands of the valley. As described previously, the urban population in the Sonoma Valley is increasing as the Bay Area population expands.

### 2.2.2 SIGNIFICANT RESOURCE VALUES

This section describes the natural resources in the General Plan study area and summarizes their resource values. This information, along with the GIS supporting it, is available in the Park Unit Data File.

#### Physical Resources

Meteorology

The climate at Sugarloaf Ridge State Park and in the surrounding area is mild year-round, often described as a Mediterranean-type climate. The close proximity of the Pacific Ocean and San Pablo Bay controls the temperature range, resulting in moderate seasonal and daily variations. Summers are dry and warm, with high temperatures often in the 90s, but it usually cools in the evening to the 40s. Fog is common in the mornings, particularly during summer, with an average of 20 days of dense fog per year. Winter temperatures drop into the 30s at night, with daytime highs in the 50s and 60s. Light snow falls occasionally, although temperatures below freezing are uncommon. Winds are generally from the south.

Annual precipitation averages 40 inches, most of which falls between November and April. Bald Mountain and Hood Mountain, within the General Plan study area, receive some of the most significant rain in the Mayacamas Ridge and thus contribute to flows of the headwaters of the Sonoma Creek, Santa Rosa Creek, Bear Creek, and Calabazas watersheds. Sonoma Creek, adjacent to Adobe Canyon Road, the primary Sugarloaf Ridge State Park entrance road, occasionally floods the entrance during winter storms.

### Topography

The General Plan study area is characterized by the rugged topography of the western slopes of the Mayacamas Ridge. The parklands are mostly steep rocky hillsides leading to the ridgetops, with some intervening rolling hills. Within the study area, four main drainages separated by high ridges are accessible only by fire roads or trails. Santa Rosa Creek flows to the west and drains the northern Santa Rosa Creek Watershed Management Zone; Sonoma Creek, the upper reaches of which are known as Adobe Canyon, drains the central and main portion of Sugarloaf Ridge State Park (this drainage is the alignment of the main entrance road, Adobe Canyon Road); Bear Creek drains the Bear Creek Management Zone; and Calabazas Creek drains the Nunns Canyon Management Zone. Calabazas Creek flows into Sonoma Creek shortly after leaving the park. The only gentle slopes within these three valleys are in the lower reaches.

The main valley floor in Sugarloaf Ridge State Park is that of Adobe Canyon, with base elevations of 1,200 feet above sea level. Views up the valley are dominated by Little Bald Mountain to the south, which rises to an elevation of 2,275 feet. To the north, Red Mountain (elevation 2,548 feet) is also visible next to Bald Mountain (2,729 feet). Bald Mountain provides commanding views of the surrounding area and Hood Mountain (elevation 2,730 feet), both of which are the highest peaks in the immediate area.

Most of the General Plan study area is near wildlands, with the exception of some fire roads, a few trails, and occasional homestead remnants. The visitor-serving facilities are concentrated in one of the more level areas of lower Adobe Canyon in the Sonoma Creek watershed. The steep hillsides and canyons slow cross-country travel and, as such, segregate the area into four subsections. The natural breaks in topography define the study area and separate the management zones of the park.

While the watersheds are separated by steep ridges, it is the mountainous topography and the remoteness of the wildlands that binds these high places together, despite being located only a few miles from the world-famous wine country of Sonoma Valley, and only a few miles from the city of Santa Rosa.

## Geology

Sugarloaf Ridge State Park lies within the Mayacamas Ridge, one of the North Coast Ranges which trend north-south from the Oregon border to the San Francisco Bay (DeLorme 1998). Sugarloaf Ridge is contained within an uplifted fault block whose northern margin is Adobe Canyon. The geology within the park boundaries can be divided along Adobe Canyon into the northern and southern sections.

The northern area of the park is predominantly Franciscan Complex deposited during Jurassic time, approximately 200 million years ago. The Franciscan Complex contains chert, serpentine, hydrothermal-altered serpentine, conglomerate, and sandstones known as Great Valley Sequence rocks. The southern area of the park is predominantly Sonoma Volcanics, which erupted approximately 2.5 to 9 million years ago. They consist of basalt, andesite, and rhyolite lava flow beds interbedded with ash flows and ash tuffs. The ridges and summits of the park are outcrops, while the rolling hills and flat topography are made of alluvium.

One major fault, the St. John Mountain Thrust Fault, is found in the park in the northeastern section. It borders the contact between the Franciscan Complex rocks and the Great Valley Sequence sandstones. The Healdsburg–Rodgers Creek Fault is located approximately 14 to 16 miles west of the park, and the Mayacamas Fault, another potentially active major fault, is located approximately 30 miles northwest.

On Hood Mountain, sedimentary rock is located near Santa Rosa Creek; exposed metamorphic, serpentine outcrops are located two-thirds of the way to the summit; and igneous bedrock is found throughout the park. Younger basalt flows have intruded the sedimentary rock. As in Sugarloaf Ridge State Park, the Sonoma Volcanics consist of basalt, andesite, and rhyolite with local deposits of tuff. Folding and faulting is visible near Santa Rosa Creek, where the chert, part of the Franciscan Complex, is folded and exposed. The sedimentary rock is Mesozoic, formed over 60 million years ago. The rock varies from several hundred to several thousand feet thick and consists mostly of sandstone and radiolarian cherts, formed beneath an ancient sea and uplifted.

A preliminary assessment of paleontological resources and limited field surveys has been conducted within Sugarloaf

Ridge State Park (Naidu 1994). These surveys focused on road and trail cuts and stream edges and collected samples for macro and micro analysis.

Great Valley Sequence rocks in the southwest corner of the park include shale and sandstone with carbonaceous plant remains. Macroinvertebrate remains have been recovered just to the south of the park. Knoxville formation beds have been recognized in and near the park and may represent near-shore, shallow water, or deltaic environments, indicating a potential for significant finds of reptiles, birds, or early mammals. Several intersecting formations, including Knoxville formation rock, in the northern portion of the park also potentially contain fossil materials.

### Soils

Diverse soils are present within the Sugarloaf Ridge State Park boundary, as shown on Map 4: Also, an evaluation of the soil's erosivity, calculated as a measure of a soil's likelihood to detach due to water movement., is shown on Map 5. Some of the most important properties considered to evaluate erosivity are texture, organic matter content, size and stability of structural aggregates in the exposed layer, permeability of the subsoil, and depth to a slowly permeable layer. The erosion potential of most of the park's soil types is high to very high and the runoff is fast for most soil types. Consequently, some of the park roads have been affected by erosion, particularly where they cross steep slopes with high erosion potential. The soils series present within the Park include the following:

- Laughlin Loam (LgE and LgF): The Laughlin series consists of well-drained soils on uplands, made up primarily of fine, loamy, mixed soils typically formed in material weathered from sandstone, hard shale, and greywacke. Slopes range from strongly sloping to very steep, and elevations typically range from 800 to 3,500 feet. Vegetation associated with the Laughlin series includes annual grasses, perennial grasses, open stands of oak trees, and small amounts of brush.
- Montara Cobbly Clay Loam (MoG and MoE): The Montara series consists of well-drained soils on uplands, made up primarily of clay loam soils typically formed in material weathered from serpentine. Slopes range from 5 to 50%, and elevations typically

range from 500 to 1,500 feet. Vegetation associated with the Montara series consists mainly of annual grasses and some digger pine.

## Map 4: Sonoma Valley Watershed Soils

## Map 5: Soil Erosivity

- Clear Lake Clay Loam (Cc): The Clear Lake series consists of poorly drained soils on old alluvial fans and basins, made up primarily of clayey soils typically formed in alluvium derived from sedimentary rock. Slopes range from 0 to 2%, and elevations typically range from 30 to 250 feet. Vegetation associated with the Clear Lake series includes annual grasses, forbs, and scattered oaks.
- Spreckels Loam (Sk): The Spreckels series consists of well-drained soils in lowlands, made up primarily of mixed loamy, gravelly, and clayey soils typically formed in weathered alluvial materials. Slopes range from 2 to 15%, and elevations typically range from 100 to 800 feet. Vegetation associated with the Spreckels series includes oaks, madrone, manzanita, poison oak, and grasses.
- Maymen–Los Gatos Complex (MiG): The Maymen series consists of heavily drained soils on uplands, made up primarily of gravelly loam soils typically formed in material weathered from sandstone and shale; and the Los Gatos series consists of well-drained soils on uplands, made up primarily of loam and loamy clay soils typically formed in material weathered from sandstone. The Maymen–Los Gatos complex consists of approximately 60% Maymen soils, 25% Los Gatos soils, 15% Lodo and Millsholm soils, and areas of rock outcrop, all of which are so intermingled that it is not practical to separate them for mapping. Slopes typically range from 50 to 75%. Vegetation associated with the Maymen and Los Gatos series include chamise, manzanita, shrubs, scrub oak, small trees, and grasses.
- Sobrante Loam (ShE): The Sobrante series consists of well-drained soils on uplands, made up primarily of loamy soils typically formed in material weathered from sandstone. Slopes range 5 to 50%, and elevations typically range from 400 to 2,000 feet. Vegetation associated with the Sobrante series includes annual grasses, scattered oaks, and a few digger pines.
- Laniger Loam (LaE): The Laniger series consists of excessively drained soils on uplands, made up primarily of fine sandy loam. Slopes range from gently to steeply sloping hills, and elevations typically range from 500 to 2,000 feet. Vegetation

associated with the Laniger series includes blue oaks, live oaks, manzanita, ceanothus, poison oak, brush, and grasses.

- Goulding Clay Loam, Goulding Cobbly Loam (GgD, GIE): The Goulding series consists of somewhat excessively drained soils, made up primarily of loamy soils formed in material weathered from metavolcanic or metasedimentary rocks. Slopes range from 5 to 75%, and elevations typically range from 1,500 to 5,000 feet. Vegetation associated with the Goulding series includes scattered oak, digger pine, brush, grasses, and forbs.
- Henneke Gravelly Loam (HgE and HgG2): The Henneke series consists of excessively drained gravelly loams, with very gravelly clay subsoil. The two types of this series present in the park include Henneke gravelly loam 5 to 30% (HgE) and 30 to 75% slopes eroded (HgG2). Serpentinitic soils and sargent cypress vegetation are associated with the Henneke soils.

The following soil series are found within the Hood Mountain Regional Park boundary:

- The Boomer series contains well-drained loams with clay loam subsoil. The two soil types of this series are Boomer Loam 15 to 30% (BoE) and Boomer Loam 30 to 50% (BoF).
- The Goulding series consists of well-drained clay loams, with two types present in the park – the Goulding cobbly loams 15 to 30% and 30 to 50% (GIE).
- The Henneke series consists of excessively drained gravelly loams, with very gravelly clay subsoil. The two types of this series present in the park include Henneke gravelly loam 5 to 30% (HgE) and 30 to 75% slopes eroded (HgG2). Serpentinitic soils and sargent cypress vegetation are associated with the Henneke soils.
- The Kidd series consists of excessively drained gravelly loams – the Kidd very rocky loam 30 to 75% (KkG) is located in the southern portions of the park.

- On the steeper face of Hood Mountain, the Toomes rocky loam (ToG) is found on slopes from 30 to 75%, and rock outcrops (RoG).

### Geologic Hazards

Slopes within the General Plan study area are generally quite steep – ranging from 30% to areas with nearly vertical cliffs. In addition to the hazard such slopes pose for landslides, they contribute to increased velocity of runoff into creeks.

A number of active and dormant landslides have been identified in Hood Mountain Regional Park, some of which are directly affecting infrastructure (roads, culverts, parking lots, etc.) (Sonoma County Regional Parks Department 2002a).

## Water Resources

This section summarizes the existing water resources within the General Plan study area. As previously discussed, the area falls within two minor watersheds: Santa Rosa Creek watershed in the northern portion, which is a subunit of the Russian River watershed, and the Sonoma Creek watershed in the southern portion, which drains to San Pablo Bay. Bear Creek and Calabazas Creek flow into Sonoma Creek.

Significant water resources in the General Plan study area were determined through a review of existing documentation and consultation with the Sonoma Ecology Center and Department employees. Analysis and assessment from two documents in particular were used—the McCormick Sanctuary Natural Resource Analysis and Enhancement Plan, prepared by Circuit Rider Productions, Inc. (1999) and the Summary Report, 1998 S.B. 271 Watershed Assessment within Santa Rosa Creek prepared by Pacific Watershed Associates (1998). The former document provided an assessment of erosion problems due to roads, culverts, and gullies. The latter document assessed upland sediment sources and large stream channels and developed an implementation plan for controlling erosion and sediment yield from all lands within Santa Rosa Creek Watershed.

### Santa Rosa Creek Watershed

The Santa Rosa Creek watershed encompasses an area of approximately 50,300 acres and includes the headwaters of Santa Rosa Creek, which flows into the Russian River. The northernmost portion of Sugarloaf Ridge State Park and the

northernmost portion of Hood Mountain Regional Park lie in the northeastern corner of the Santa Rosa Creek Watershed.

*Surface Water*

Santa Rosa Creek flows 22 channel miles from its headwaters in Sugarloaf Ridge State Park and Hood Mountain Regional Park to the Laguna de Santa Rosa, then onto the Russian River, which empties into the Pacific Ocean. In addition, a number of intermittent tributaries within the Santa Rosa Creek watershed flow through these areas into Santa Rosa Creek.

Surface water features in Hood Mountain Regional Park include intermittent and perennial streams, seeps, and springs. In the northern portion of the park, these drain into Azalea Creek, North Fork Santa Rosa Creek, South Fork Santa Rosa Creek, and other seasonal drainages. The Main Fork of the Santa Rosa Creek is consistently perennial, while the North Fork of Santa Rosa Creek and Azalea Creek dry up in drought years.

Hood Mountain Regional Park contains approximately one-half miles of the North Fork and 0.6 miles of the Main Fork of Santa Rosa Creek. Mature riparian woodland borders the creek through the park. As described in the biological resources section, steelhead trout have been observed in the headwaters of Santa Rosa Creek since 1844 and, despite urbanization and human disturbance, adult steelhead are still seen. The Sonoma County Water Agency (Fisheries Division) conducted a series of Fisheries Enhancement Projects (FEP) on Santa Rosa Creek. Two landslide repair projects are designed to reduce sediment flowing into upper Santa Rosa Creek. Improvements to the road crossing, which provides access into the northern portion of Sugarloaf Ridge State Park and Hood Mountain Regional Park, will eliminate a concrete drop structure that limits fish passage3.

In 1997, representatives of the California Department of Fish and Game and the National Marine Fisheries Service inspected the North Fork and observed both good riffle pool development and pools deep enough to provide rearing habitat for salmonids in low-flow summer months. However, the North Fork also exhibited a layer of fine sediments

[3] Sonoma County Water Agency, Fisheries Enhancement Program Annual Reports 1997-2001.

(fines) covering the gravels, cobbles, and boulders such that salmonid eggs would have little chance of survival. The fines may originate from several sources, including degrading road cuts that parallel a third of the length of the North Fork (Circuit Rider Productions 1999, pg. 12).

#### *Hydrology Modifications*

Road development for powerlines and fire control, in addition to ranching and logging roads, has caused the greatest modification to the natural hydrology. New drainages have inadvertently been created parallel to existing drainages, causing severe erosion problems. Road re-engineering work conducted in 2001 and 2002 remediated these conditions on several miles of degraded roadbeds within the Sugarloaf Ridge State Park. During these efforts, culverts were increased in size and properly placed to avoid off-road impacts and accelerated sedimentation. The roadbeds were also outsloped to prevent water from being carried down the roadbeds, which also causes hydrologic modifications. Several additional miles of degraded road have been identified for future repair work (Circuit Rider Productions 1999; Pacific Watershed Associates 1998).

#### *Flood-prone Areas*

Federal Emergency Management Agency (FEMA) data do not indicated the presence of flood-prone areas in the Santa Rosa Creek watershed or areas within the 100-year flood zone in the vicinity of the study area. Some degree of flooding can be expected in low-lying areas and perennial and seasonal creeks during periods of heavy rainfall and runoff, but is not considered substantial.

### Sonoma Creek Watershed

The Sonoma Creek watershed drains an area of approximately 160,000 acres and encompasses the Adobe Canyon, Bear Creek watershed, and Nunns Canyon Management Zone within Sugarloaf Ridge State Park and the adjacent Thatcher property (private property between Adobe Canyon and Nunns Canyon). The Sonoma and Mayacamas Ridge and the basin contain diverse ecological communities, including redwoods, chaparral, grasslands, forest, and tidal estuary.

#### *Surface Water*

Sonoma Creek flows 28 channel miles from its headwaters in Sugarloaf Ridge State Park to San Pablo Bay. In addition,

several creeks (including Upper Sonoma Creek, Bear Creek, Calabazas Creek, Redwood Creek and many unnamed intermittent tributaries, all of which ultimately drain into San Pablo Bay) are located within the General Plan study area.

The U.S. Geological Survey (USGS) maintained a streamflow gauging station in Sonoma Creek from 1955 to 1981. It was located at the southeast corner of the Boyes Boulevard bridge from 1955 to 1967 and then relocated to the Agua Caliente Road bridge over Sonoma Creek until its discontinuation in 1981. The USGS has since reinstalled the gage on Sonoma Creek, at the Agua Caliente Road crossing.

Data were collected on daily streamflow and peak flood flows and used to calculate the total annual discharge of the creek, creek runoff in response to precipitation, flood flows on the creek, and low flows on the creek, as shown in Table 2-1.

*Flood-prone Areas*

FEMA data do not indicate the presence of flood-prone areas in the Sonoma Creek watershed or areas within the 100-year flood zone in the vicinity of the study area. Some degree of flooding can be expected in low-lying areas and perennial and seasonal creeks during periods of heavy rainfall and runoff, but is not considered substantial.

**Table 2-1: Sonoma Creek Stream Flow Data**

| | LOW | HIGH |
|---|---|---|
| Total annual discharge | 1,000 af (1977) | 114,000 af (1956) |
| Creek runoff in response to precipitation | 15 inches (1977) | 70 inches (1967) |
| Flood magnitude | | 8,800 cfs (December 1955) |
| Low flow | < 3 cfs (May – September) | |

*Sources: Sonoma Ecology Center and USGS*

*Note: Creek flows respond dramatically to precipitation. In general, more rain produces more runoff, but a higher percentage of precipitation becomes runoff in wet years than in dry years. In 1956, an estimated 58% (34 inches) of rainfall became runoff. In 1977, only 2% (0.3 inch) of rainfall became runoff. Thus, the amount of runoff in any given year is very sensitive to the amount of rainfall in that year. Streamflow is the water left over after precipitation has supplied the demands of evaporation from vegetation, soil, and water bodies. In a dry year, most and sometimes nearly all rainfall goes to meet evaporation and transpiration demands, and thus there would be very little streamflow. For example, in 1977, the*

*driest year of the record, no flow was recorded at the gauge in most of June and all of July, August, and September (David Leland for the Sonoma Ecology Center, 2003).*

*af = acre-feet*

*cfs = cubic feet per second*

## Biological Resources

Significant biotic resources in the General Plan study area were determined through a review of existing documentation; consultation with biologists familiar with the local biological resources; and consultation with Department employees. Sources of information reviewed by biologists for this General Plan also include the California Natural Diversity Database and a number of documents on file with the Department, as listed in the References chapter of this report. Also included is the *McCormick Sanctuary Natural Resource Analysis and Enhancement Plan*, prepared by Circuit Rider Productions, Inc. (California Rider Productions 1999), which provides baseline information about the natural resources of the Santa Rosa Creek Watershed Management Zone. The plan assesses the existing natural features, identifies sensitive habitat and areas where trail and public access should be limited, outlines opportunities for restoration, and lists potential wildlife associations based upon habitat types/geographic area.

### Regulatory Background

Many biological resources in California are protected and/or regulated by laws, regulations, and policies. Key regulatory compliance issues that may need to be addressed prior to implementation of the General Plan are listed below. A description of each is provided in Appendix B.

- Federal Endangered Species Act
- Clean Water Act
- California Endangered Species Act
- Section 1600 of the California Fish and Game Code
- Section 3503.5 of the California Fish and Game Code

### Plant Life

#### *Vegetation Types*

A variety of vegetation types occurs within the General Plan study area. These types include the following:

- Non-native grassland
- Native grassland
- Chamise chaparral
- Mixed chaparral
- White alder riparian woodland
- Various types of oak woodland
- California bay, big-leaf maple
- Mixed evergreen forest
- Douglas-fir
- Coast redwood forest

Existing vegetation in the General Plan study area is shown in Map 6.[4] A plant list compiled from previous botanical studies in the General Plan study area is provided in Appendix C.

All of these vegetation types are considered to represent important resource values. The mixed evergreen forest and oak woodland types are the most common vegetation types in the General Plan study area. The riparian woodland, mesic herbaceous, chaparral, and other types are important for habitat diversity. They do not cover as much area as the mixed evergreen forest and oak woodland types, but provide habitat for many of the park's species that would not otherwise occur in the park. In addition, areas within the riparian woodland and the mesic herbaceous vegetation could be considered jurisdictional wetlands and therefore fall under the jurisdiction of regulatory agencies.

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[4] The vegetation map incorporates different methodologies by different researchers to map the vegetation. The LandSat methodology provides the most general mapping over Hood Mountain Regional Park and the southern portion of the General Plan study area, including the Nuns Canyon Management Zone. For the Santa Rosa Creek Watershed Management Zone (formerly a portion of the McCormick Ranch), Circuit Riders prepared a resource management plan in which it converted vegetation coverages from computer-aided design format. For the rest of Sugarloaf Ridge State Park, Sonoma State University prepared vegetation coverages in association with the state's sudden oak death syndrome research. Consequently, different names apply to the same vegetation types, and in some cases different vegetation types were grouped into a single category, depending on the ability to distinguish different types from aerial photographs. Where possible, the different methodologies were reconciled or the different types were grouped together. In some cases it is not possible to reconcile the different methodologies, such as those for evergreen forest and mixed forest. These two types are likely a mixture of Douglas-fir forest, different types of oak woodland, and mixed evergreen forest.

The vegetation designations follow as closely as possible to the naming system developed in Sawyer and Keeler-Wolf (1995). In some cases, the vegetation types were grouped because they cannot be readily distinguished and mapped in the field. Mesic herbaceous and mixed chaparral are examples of aggregating vegetation types.

**Mesic Herbaceous.** Mesic herbaceous vegetation occurs in areas that are seasonally or permanently wet. It grows in marshy areas, seeps, and along the edges of watercourses and ponds. Sedge (*Carex* spp.) and rush (*Juncus* spp.) commonly occur in this vegetation type. Other species include nut sedge (*Cyperus eragrostis*), rabbit's foot grass (*Polypogon monspeliensis*), and spike rush (*Eleocharis* sp.).

**Non-native Grassland.** Non-native annual grasses and forbs from Europe dominate most of the grasslands in the General Plan study area. These grasslands occur in patches, and cover of these grassland approaches 100%. The dominant species include slender oats (*Avena barbata*), wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), and soft chess (*Bromus hordeaceus*). Yellow-star thistle (*Centaurea solstitialis*) is often a dominant of the grassland. Common associates include air grass (*Aira caryophyllea*), little rattlesnake grass (*Briza minor*), Italian ryegrass (*Lolium multifiorum* and *L. perenne*), medusa head (*Taeniatherum caput-medusae*), sweet-pea (*Lathyrus cicera*), vetch (*Vicia villosa*), and various species of clover (*Trifolium* spp.). A special-status plant species, narrow-anthered California brodiaea (*Brodiaea californica* ssp. *leptandra*) occurs in grasslands on Sugarloaf Ridge SP. Livestock grazing of park grasslands between 1942 and 1964, and possibly earlier (California Department of Parks and Recreation 1992) probably helped to favor non-natives over native species. Occasional native species within the annual grasslands include yellow mariposa lily (*Calochortus luteus*) and miniature lupine (*Lupinus bicolor*). Blue wildrye (*Elymus glaucus*), a native perennial grass, often occurs where the grasslands border with oak woodland.

**Native Grassland.** Most of the native grasslands occur on serpentine substrates at the interface between annual grassland and serpentine chaparral. The native grasslands are dominated by various species of needlegrass (*Nassella* spp), California oatgrass (*Danthonia californica*), and/or blue wildrye (*Elymus glaucus*). Native wildflower diversity

is higher in this plant community than in the non-native grassland. Representative wildflowers include California buttercup (*Ranunculus californicus*), blue dicks (*Dichelostemma capitatum*), and blue-eyed grass (*Sisyrinchium bellum*). Percent cover of vegetation is lower than that of the non-native grassland.

**Coyote Brush Scrub.** Coyote brush scrub is dominated by coyote brush (*Baccharis pilularis*). Poison oak (*Toxicodendron diversilobum*) and sticky monkey flower (*Diplacus aurantiacus*) are associates of the coyote brush scrub. This vegetation appears to grow in relatively small patches at the edge of meadows. Stands range from sparse to dense, and the plants may grow taller than 8 feet.

## Map 6: Vegetation

**Chamise Chaparral.** Chamise chaparral occurs primarily on south-facing slopes. Species diversity is relatively low, with chamise (*Adenostoma fasciculatum*) forming a closed shrub canopy. Occasional shrub associates include common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*), toyon (*Heteromeles arbutifolia*), and scrub oak (*Quercus berberidifolia*). The sparse understory is made up primarily of nodding needlegrass (*Nassella cernua*). During the first few years after burns and other forms of disturbance, herbaceous species diversity increases. Post-fire associates include various species of herbs, including *Apiastrum angustifolium* and *Emmenanthe penduliflora*. Napa hog-fennel (*Lomatium repostum*), an uncommon species which is on the California Native Plant Society watch list (List 4), occurs in this community in Sugarloaf Ridge SP and the region.

**Mixed Chaparral.** Mixed chaparral consists of different phases, including a Jepson musk-brush phase and a manzanita phase, both of which are included as mixed chaparral and scrub and chaparral on the vegetation map. Four special-status plant species are known to occur in this vegetation type on Sugarloaf Ridge SP: Sonoma ceanothus (*Ceanothus sonomensis*), Rincon Ridge ceanothus (*C. confusus*), Calistoga ceanothus (*C. divergens*), and narrow-anthered California brodiaea.

- **Jepson Musk-Brush Chaparral.** A type of chaparral dominated by Jepson musk-brush (*Ceanothus jepsonii* var. *jepsonii*) and leather oak (*Quercus durata*) occurs on serpentine-derived soils. Torrey's melic grass (*Melica torreyana*) frequently dominates the sparse understory. Other understory associates includes the following forbs: *Galium porrigens* var. *tenue, Lessingia ramulosa*, and *Malacothrix floccifera*. A healthy population of Sonoma ceanothus occurs along Goodspeed Trail, on the south-facing slope west of Bear Creek. This species is limited in distribution to the Hood Mountain Range in Sonoma and Napa Counties and is considered rare statewide by the California Native Plant Society (California Native Plant Society 2001).
- **Manzanita Chaparral.** Manzanita chaparral is dominated by various combinations of Eastwood manzanita (*Arctostaphylos glandulosa*), white-leafed manzanita (*Arctostaphylos viscida*), Sonoma manzanita

(*Arctostaphylos stanfordiana*), and leather oak. In addition, locally important shrubs include chamise, wavyleaf ceanothus (*Ceanothus foliosus*), Sonoma ceanothus, Calistoga ceanothus (*Cenothus divergens*), buckbrush (*Ceanothus cuneatus*), California scrub oak (*Quercus beriberidifolia*), and poison oak. The understory is limited to seasonal herbs and several species of native grasses.

**Gray Pine Woodland.** The gray pine woodland consists of sparse to dense stands of gray pine (*Pinus sabiniana*) growing within a chaparral and California fescue (*Festuca californica*) understory. This vegetation appears to be restricted to serpentine substrates.

**Sargent Cypress Woodland.** The sargent cypress woodland is recognized by the dominance of sargent cypress (*Cupessus sargentii*). The type occurs on serpentine and other ultramafic rocks, primarily on the north-facing slope of Hood Mountain. The structure and composition of the sargent cypress woodland varies with soil depth. Sargent cypress woodland is found on the deeper and more fertile soils. This woodland forms a closed canopy with trees reaching to heights of 30 feet. A pygmy phase of the sargent cypress woodland occurs on the shallower and less fertile soil, where dwarf trees, generally 6 to 8 feet tall, form a scrub-like vegetation.

Both the woodland and pygmy phases of the sargent cypress type share a number of common associated species. These include star lily (*Zigadenus fremontii*), leather oak, Indian warrior (*Pedicularis densiforus*), green monardella (*Monardella viridis*), climbing bedstraw (*Galium porrigens*), scarlet fritillary (*Fritillaria recurva*), yellow globe lily (*Calochortus amabilis*), and white-leafed manzanita. The higher site quality of the sargent cypress woodland permits a richer flora. The better site conditions of the sargent cypress woodland are indicated by the presence of such species as poison oak, California coffeeberry (*Rhamnus californica*), toyon (*Heteromeles arbutifolia*), California fescue, and spice bush (*Calycanthus occidentalis*) (McBride and Barnhart, Undated).

**Knobcone Pine Woodland.** Several stands of knobcone pine woodland occur on both the north- and south-facing slopes of Hood Mountain. These sites are characterized by low nutrient status and low moisture availability, but are not

as limited as those sites occupied by the pygmy sargent cypress or chaparral types.

Knobcone pine woodland is dominated by knobcone pine (*Pinus attenuata*), which forms a partially closed canopy. Occasionally, sargent cypress, canyon live oak (*Quercus chrysolepis*), and interior live oak (*Quercus wislizenii*) occur as associated tree species. The understory of the knobcone pine woodland supports a relatively small number of shrub and herb species. Common among these are the manzanitas, chaparral pea (*Pickeringia montana*), leather oak, and poison oak. Herbaceous species such as star lily, pine violet (*Viola lobata*), Fernald's iris (*Iris fernaldii*), and green monardella occur as understory species, but the general impression of the woodland floor is its carpet of pine needles and the presence of larger woody debris.

**White Alder Riparian Woodland.** White alder riparian woodland occurs along the larger watercourses of the General Plan study area. It consists of a multi-layered type and includes tall trees, shorter trees, shrubs, vines, and herbs. White alder (*Alnus rhombifolia*) dominates the upper tree layer, while the lower layer consists of big-leaf maple (*Acer macrophyllum*), Oregon ash (*Fraxinus latifolia*), and California bay (*Umbellularia californica*). The shrub layer consists primarily of woodland rose (*Rosa gymnocarpa*), snowberry (*Symphoricarpos* sp.), spice bush (*Calycanthus occidentalis*), hazelnut (*Corylus cornuta*), California blackberry (*Rubus ursinus*), and several fern species. Prominent vine species include California grape (*Vitus californica*), California pipe-vine (*Aristilochia californica*), honeysuckle (*Lonicera* sp.), and poison oak. Herbaceous species include mugwort (*Artemisia douglasiana*), nettle (*Urtica dioica* ssp. *holosericea*), sedge, and rush species. A non-native herb (*Rhagadiolus stellatus*) not been reported from elsewhere in Sonoma County has become established in several locations within the riparian corridor (Best et al. 1996). In the lower stretches of the Sonoma Creek, white alder riparian woodland intergrades with coast redwood forest.

**Coast Live Oak Woodland.** Oak woodlands within the park are highly variable. Coast live oak (*Quercus agrifolia*) dominates a majority of the oak woodlands in the park. This woodland is often dominated by large coast live oak trees with a diameter at breast height (dbh) of more than

20 inches, interspersed with numerous multiple-stemmed coast live oak and California bay trees that range between 6 and 10 inches dbh. Occasional California buckeye (*Aesculus occidentalis*), valley oak (*Quercus lobata*), and Oregon oak (*Quercus garryana*) also occur in the coast live oak woodland. The understory is generally sparse, except in tree gaps where a variety of herbs grows, including a native sweet-pea (*Lathyrus vestitus*), deerbrush (*Lotus scoparius*), and woodland madia (*Madia gracilis*). Shade-tolerant species in this community include woodland sanicle (*Sanicula crassicaulis*), toyon (*Heteromeles arbutifolia*), woodland rose, snowberry (*Symphoriocarpos* sp.), and poison oak. Saplings of Douglas-fir (*Pseudotsuga menziesii*) also occur in this type. A special-status plant species, Napa false indigo (*Amorpha californica* var. *napensis*) is known to occur in openings of woodlands in Sugarloaf Ridge SP.

**California Bay Woodland.** California bay woodland is dominated by California bay, with cover of bay approaching 100%. The understory consists mostly of leaves, with a few wood ferns.

**Canyon Live Oak Woodland.** Canyon live oak is the dominant tree of canyon live oak woodland. This woodland normally occurs toward the upper slopes of ridges of the General Plan study area. Other trees that occur in the canyon live oak woodland are Oregon oak, coast live oak, big-leaf maple, black oak (*Quercus kelloggii*), madrone (*Arbutus menziesii*), and California bay. Shrubs include toyon, common manzanita, and poison oak.

**Black Oak Woodland.** Stands of black oak occur in scattered locations within the General Plan study area, frequently with a dense understory of California fescue. This type occurs on gentle slopes.

**Oregon Oak Woodland.** Oregon oak woodland consists of a fairly dense stand of mostly multi-stemmed Oregon oak, 6 to 10 inches dbh, over an herbaceous understory dominated by various grasses, including California fescue. Coast live oak and California bay occasionally occur as subdominant species in the Oregon oak woodland. Some encroachment of Douglas-fir seedlings and saplings is evident.

**Valley Oak Woodland.** The valley oak woodland is similar to the Oregon oak woodland, with the exception that it is dominated by valley oak. Other species include a few

individuals of other oak species. The understory consists of grass and a few species of forbs; woody species are largely absent from the understory.

**Big-leaf Maple Woodland.** Big-leaf maple is the dominant tree of big-leaf maple woodland. This woodland often occurs in the bottoms of canyons or on relatively moist, north-facing slopes. A common associate of this woodland is black oak.

**Mixed Evergreen Forest.** The mixed evergreen forest is one of the most extensive vegetation types in the General Plan study area. It is located throughout the study area from the lowest to the highest elevations, primarily on the better-developed and deeper soils. However, due to differences in soil moisture, topography, and geology, there are several rather distinct associations or phases within this type in which different tree species assume dominance. Along a soil moisture gradient from wet to dry, these phases include: California bay, Douglas-fir/hardwood, Douglas-fir, madrone, and canyon live oak.

The mixed evergreen forest is recognized primarily by the presence of Douglas-fir as a major or subdominant component. Other dominant tree species are broad-leaf, evergreen species such as California bay, madrone, tan oak (*Lithocarpus densiflorus*), and canyon live oak. Other broad-leaf trees such as big-leaf maple, Oregon oak, black oak, coast live oak, and interior live oak may be locally important throughout this type. The forest structure is typically dense, resulting in a very shaded understory environment. Throughout much of the mixed evergreen forest, there is very little development of an understory because of the high density of the overstory. The following species occur in areas where the overstory thins: creeping snowberry (*Symphoricarpos mollis*), wood fern (*Dryopteris arguta*), onion grass (*Melica* spp.), hedge nettle (*Stachys ajugoides* var. *rigida*), woodland sanicle, poison oak, and starflower (*Trientalis latifolia*).

**Douglas-Fir Forest.** Douglas-fir forest consists of nearly pure stands of Douglas-fir. The fir grows at almost 100% cover and is virtually the sole species of tree in the overstory. If a substantial component of other tree species were to occur, the vegetation would be classified as mixed evergreen forest. A few big-leaf maple, tan oak,

madrone, black oak, and California bay can occur in this vegetation type.

**Coast Redwood Forest.** Coast redwood forest is restricted to the more mesic portions of Adobe Canyon, along Sonoma Creek, at lower elevations where the creek has deeply incised the canyon. This stand of coast redwood (*Sequoia sempervirens*) represents one of the easternmost in the state (another stand occurs near the small town of Angwin approximately 9 miles to the north-northeast in Napa County). Coast redwood forest is part of a riparian community in the General Plan study area. On average, the percent cover of coast redwood is 75%. Based on seven tree cores, the age of the older coast redwood trees is roughly 120 years, thus it is presumed that the trees were logged circa 1875 (Bowcutt 1999). Evidence of stump sprouting from trees cut during this time is common. Tan oak is a frequent tree associate, although percent cover is low, at approximately 5%. The herbaceous cover is sparse with low species richness. Herb and fern associates include trail plant (*Adenocaulon bicolor*), wood fern, redwood sorrel (*Oxalis oregana*), and sword fern (*Polystichum munitum*).

### *Plant Succession*

In general (with the exception of the coast redwood and white alder riparian), plant succession moves toward a Douglas-fir-dominated plant community. Douglas-fir seedlings and saplings have been observed in most of the vegetation types in the General Plan study area.

The different types of chaparral, sargent cypress woodland, and knobcone pine woodland are dependent on fire. Without fire, the cones of the sargent cypress and knobcone pine will not open and drop their seed. The chaparral species either crown-sprout from the base of the plants after a fire, or the seeds require the heat of fire to germinate. Without fire, this vegetation becomes invaded by other species, such as coast live oak, California bay, or Douglas-fir.

### *Sensitive Habitats*

Sensitive habitats are those that have experienced a precipitous decline since the arrival of early Americans to California, due to conversion of the land to agricultural, commercial, or residential uses. In some cases, poor management and the influx of invasive species have also reduced the value of sensitive habitats.

The sensitive habitats that occur in the General Plan study area are the mesic herbaceous, native grasslands, white alder riparian woodland, rock outcrops, and serpentine habitats. All of these types have been discussed in the section on vegetation, with the exception of rock outcrops and serpentine areas, which are discussed below.

**Rock Outcrops.** Rock outcrops are important for both plant and animal diversity. The shallow soils of the rock outcrops provide areas where some native species can compete successfully with the non-native grass species. The rocks also provide protection from herbivores and allow seedlings to become established before they are eaten by rodents or large herbivores. As wildlife habitat, the rock outcrops are used for denning and as sentinel areas.

**Serpentine Areas.** Serpentine is a substrate that supports a high proportion of native plant species because of its unique chemistry. Certain native species have become adapted to grow on serpentine substrates, while most non-native species have not. Because much of California's ecosystems, especially in the lower elevational areas, have been invaded by non-native species, areas supporting a high proportion of native herbaceous species are considered special. In addition, serpentine soils support a number of special-status plant species, such as the Sonoma ceanothus found in the General Plan study area.

*Invasive Non-native Species*

Non-native (exotic, alien, nonindigenous) species are those that have not evolved in a particular area but have been introduced through human activities, either incidentally or deliberately. Most non-native species are not invasive and do not cause adverse effects on natural plant and animal communities. Nevertheless, some non-native species have resulted in the conversion of native habitats to a non-native vegetation type, with a corresponding reduction of native plants and degradation of wildlife habitat.

Species in the General Plan study area with the potential to convert native habitats to areas of non-native vegetation are Himalaya blackberry (*Rubus discolor*), yellow-star thistle, and medusa head. These species are all on the Most Invasive Wildland Pest Plant list developed by the California Exotic Pest Plant Council.

Non-native plants that occur in the General Plan study area and are classified as Wildland Plants of Lesser Importance by the California Exotic Pest Plant Council are bull thistle (*Cirsium vulgare*), tall fescue (*Festuca arundinacea*), poison hemlock (*Conium maculatum*), Italian thistle (*Carduus pycnocephalus*), periwinkle (*Vinca major*), Malta star-thistle (*Centaurea melitensis*), and eucalyptus and harding grass (*Phalaris aquatica*)

Barbed goatgrass (*Aegaelops triuncialis*) is on a list that indicates more information is needed regarding its invasiveness and potential threat to ecosystems. Milk thistle (*Silybum marianum*), an invasive non-native species, is not considered a threat to native ecosystems by the California Exotic Pest Plant Council. Nevertheless, this species tends to dominate grassland areas about one-quarter acre in size.

Two of the species listed above, yellow-star thistle and Italian thistle, are on the California Department of Food and Agriculture's list of noxious weeds. Efforts by the Department to reduce the occupation of yellow-star thistle began in l984 and have continued aggressively using a combination of prescribed burning and herbicide application. In 1993, a project was initiated to study the use of fire as a yellow-star thistle control method. Results to date have been encouraging, with a 99.5% reduction of the yellow-star thistle seed bank at sites within the park following three annual consecutive prescribed burns. In 1993, the California Department of Food and Agriculture also established a multiyear biocontrol program to release insects that attack only yellow-star thistle seed heads and destroy their developing seeds. Establishment of these natural enemies in the park has resulted in a decrease in yellow-star thistle seed production.

### Aquatic Habitat Values

The main watercourses that flow within the General Plan study area are Sonoma Creek, Santa Rosa Creek, and Calabazas Creek. These watercourses support relatively pristine stands of native vegetation and spawning habitat for steelhead (*Oncorhynchus mykiss*). Steelhead have been observed in Sonoma Creek within Sugarloaf Ridge State Park. Chinook salmon (*Oncorhynchus tshawytscha*) occur in Sonoma Creek in Adobe Canyon about one-half mile below the boundary of the park. Adult salmon have been observed in

this area for two years, and juveniles were observed last year. The Sonoma County Water Agency has been conducting fisheries enhancement projects in the upper Santa Rosa Creek Watershed (see section on water resources).

For spawning, steelhead and chinook salmon require relatively cold water and gravels that are located in riffles. These areas provide the oxygen concentration necessary for successful development of the eggs. The spawning areas are especially susceptible to the deposition of sediment. Sediment prevents oxygen from reaching the eggs and can destroy a spawning area. Erosion is occurring along a portion of the headwaters of Sonoma Creek and may affect spawning habitat. Maintenance of summer stream flows is especially important in maintaining summer rearing habitat for salmonid species.

## Wildlife Values

### *Wildlife Use*

The diversity of habitat types in the General Plan study area supports a diversity of wildlife species. These habitat types include grassland, mesic herbaceous–marshy areas, scrub and chaparral, oak woodlands, mixed evergreen forest, coniferous woodlands, redwood forest, and riparian woodlands.

**Mesic Herbaceous–Marshy Areas.** The mesic herbaceous marshy areas that occur in the General Plan study area mainly consist of sedges and rushes. These areas are particularly important as habitats for amphibians, such as western toad (*Bufo boreas*) and Pacific treefrog (*Hyla regilla*), where they can remain moist. Predators such as garter snakes (*Thamnophis* spp.), ring neck snakes (*Diadophis punctatus*), and shrews (*Sorex* spp.) hunt for prey in these areas.

**Grassland.** The grassland type provides important habitat for a number of ground nesting birds such as the western meadowlark (*Sturnella neglecta*), lark sparrow (*Chondestes grammacus*), and Savannah sparrow (*Passerculus sandwichensis*). Other common species include meadow voles (*Microtus californicus*), ground squirrels (*Spermophyllus beecheyi*), and Botta pocket gophers (*Thomomys bottae*). A number of predators, from amphibians to mammals, depend heavily upon grasslands for their prey. Western toad and Pacific treefrog will forage in grasslands. Western fence lizards (*Sceloporus occidentalis*), alligator lizards (*Elgaria* spp.), western skink (*Eumeces skiltoneanus*),

gopher snake (*Pitouphis melanoleucus*), and racer (*Coluber constrictor*) also forage in grassland areas. Several avian predators, such as the red-tailed hawk (*Buteo jamaicensis*), great-horned owl (*Bubo virginianus*), and loggerhead shrike (*Lanius ludovicianus*) all forage in grassland areas.

Grassland areas are very important for mammalian predators, including long-tailed weasel (*Mustela frenata*), gray fox (*Urocyon cinereoargenteus*), and coyote (*Canus latrans*). Black bear (*Ursus americanus*) and mountain lion (*Felis concolor*) are occasionally observed in Sugarloaf Ridge State Park. They would be expected to forage throughout the different habitats in the park, including the edge of grassy areas. Mountain lions typically require a substantial amount of cover to screen them from their prey and would be expected in rocky outcrops and at the edge of forested or brushy areas. Bears would be expected to forage in forested areas, areas that produce a large amount of berries such as manzanita chaparral, and along watercourses.

**Scrub and Chaparral.** A number of species are largely restricted to scrub and chaparral areas, while other species use these areas for cover and forage in adjacent grassland. Scrub and chaparral areas support many of the same species as grassland. In addition, western rattlesnakes (*Crotalis viridis*) are probably more common in shrub habitats than in grassland and forest. Birds that occur in chaparral areas include California thrasher (*Toxostoma redivivum*) and wrentit (*Chamaea fasciata*). Deer mice (*Peromyscus maniculatus*) and brush rabbits (*Sylvilagis bachmanii*) also occur in scrub and chaparral habitats.

**Coniferous Woodland.** The knobcone pine forest is an important habitat for the dusky-footed wood rat (*Neotoma fuscipes*), which builds houses of sticks on the ground. Migratory song birds that over-winter in Mexico and Central America depend upon the chain of knobcone pine woodland stands for resting cover as they migrate north through the California Coast Ranges each spring. Examples of these species are the ash-throated flycatcher (*Myiarchus cinerascens*), western flycatcher (*Emipodonax difficilis*), and orange-crowned warbler (*Vermivora celara*).

The wildlife habitat value of the sargent cypress woodland is somewhat similar to that of knobcone pine woodland, while the pygmy phase of the type is similar in habitat

value to the chaparral. One species of butterfly, Muir's hairstreak (*Mitoura nelsoni muiri*), lays its eggs only on sargent cypress, and its larvae feed only on the sargent cypress.

**Oak Woodland and Big-leaf Maple Woodland.** Oak woodlands have high wildlife value. Over 350 vertebrate species and 5,000 insect species are found in California's oak woodland types. A combination of varied food, cover, nest sites, and other factors make the maintenance of these types particularly important for the preservation of wildlife. A number of species nest or use the oaks as cover and then forage in adjacent plant communities. These species include red-tailed hawk and great-horned owl. The characteristic bird fauna of oak woodlands includes chestnut-backed chickadee (*Parus rufescens*), oak titmouse (*Parus inoratus*), and bushtit (*Psaltriparus minimus*). Other species of birds commonly occur in the oak woodland and include hairy, Downey, Nuttall's, and acorn woodpeckers; Hutton's vireos; and orange-crowned warblers.

Western gray squirrel (*Scirus griseus*) also occurs in oak woodlands, where they construct stick nests in the branches of the trees or use cavities for their nests. Deer (*Odocoileus hemionus*) seek cover in the oak woodland and browse the vegetation in the woodland as well as graze in grasslands. Other mammals, such as bobcat (*Lynx rufus*), coyote, and gray fox, also hide in oak woodland. Foraging by these species occurs among the oaks or in other habitat types.

**Douglas-Fir, Coast Redwood, and Mixed Evergreen Forest.** The California black-tailed deer utilize the cover of these forest types and may bed down in these habitat areas at night, but tend to feed in adjacent types offering more browse (e.g., chaparral and oak woodland). Raptors often nest in the tall trees of this type when close to grassland areas where they feed. Northern spotted owls, a federally threatened species, will use mature stands of Douglas-fir and coast redwood for nesting. Foraging by this species occurs within the forest.

**Riparian Woodland.** Riparian woodlands are critical wildlife habitats for several reasons, including their importance as a summer water resource, the variety of plants available for cover and food, and the

disproportionate loss of this vegetation type throughout this region.

The multi-layered canopy of the white alder riparian woodland provides a diversity of habitats for songbirds. Different species use the emergent canopy of the white alder as compared to the understory species.

### *Pest Species of Wildlife*

Wild pigs (*Sus scrofa*) and wild turkeys have been observed in both Sugarloaf Ridge State Park and Hood Mountain Regional Park. Both of these species turn over the ground while rooting for food, which leaves the surface of the ground bare and can be a source of sediment during the winter. In addition, wild pigs and wild turkeys generate sediment when they wallow in streams and ponds. Wild pigs and wild turkeys also compete with native wildlife species for food and are likely to reduce the number of acorns available as food for native species, while also exposing the soil to invasive plants such as yellow-star thistle.

### *Special-status Species*

The General Plan study area supports a number of special-status species, including plant species in serpentine habitats, steelhead in the watercourses, and other species on land. Map 7 depicts the California Natural Diversity Database (CNDDB) species results for the area.

Special-status species include plants and animals in the following categories:

- Species listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA)
- Species considered as candidates for listing as threatened or endangered under FESA or CESA
- Wildlife species identified by the California Department of Fish and Game (CDFG) as species of special concern (an administrative designation used to prevent these animals from becoming threatened or endangered by addressing issues of concern early enough to secure long-term viability of the species)
- Animals fully protected under the California Fish and Game Code

- Plants on the California Native Plant Society's (CNPS) List 1B (plants rare, threatened, or endangered in California and elsewhere) or List 2 (plants rare, threatened, or endangered in California but more common elsewhere)
- Also consider plants of local significance.

Table 2-2 lists the potentially occurring special-status species in the General Plan study area.

## Map 7: California Natural Diversity Database

## Table 2-2: Special-Status Species in the Sugarloaf Ridge State Park General Plan Study Area

| SPECIES | HABITAT | POTENTIAL FOR OCCURRENCE | CNPS | CDFG | USFWS |
|---|---|---|---|---|---|
| **PLANTS** | | | | | |
| FRANCISCAN ONION *Allium peninsulare var. franciscanum* | Rocky areas | May occur in rocky areas on site | 1B | -- | -- |
| SONOMA ALOPECURIS *Alopecuris aequalis* var. *sonomensis* | Seasonally wet or ponded areas | Potentially present within wet or ponded areas | 1B | -- | FE |
| NAPA FALSE INDIGO *Amorpha californica* var. *napensis* | Woodland | Recorded from the Nunns Canyon area; potentially present in woodland and scrub vegetation of other areas | 1B | -- | -- |
| SONOMA MANZANITA *Arctostaphylos canescens* ssp. *sonomensis* | Thin soils, chaparral, sometimes serpentine | Potentially present on thin soils and in chaparral | 1B | -- | -- |
| RINCON MANZANITA *Arctostaphylos stanfordiana* ssp. *decumbens* | Thin soils, chaparral | Occurs nearby; potentially present on thin soils in chaparral | 1B | -- | -- |
| CLARA HUNT'S MILK-VETCH *Astragalus clarianus* | Open woodland | Potentially present in grassy areas of open oak woodlands | 1B | CT | FE |
| BIG-SCALE BALSAMROOT *Balsamorhiza macrolepis var. macrolepis* | Thin soils in grassland, scrub, or chaparral, often on serpentine | Potentially present in areas of shallow soils | 1B | -- | -- |
| NARROW-ANTHERED CALIFORNIA BRODIAEA *Brodiaea californica* ssp. *leptandra* | Grassland and chaparral areas | Recorded from Sugarloaf Ridge State Park | 1B | -- | -- |
| WHITE SEDGE *Carex albida* | Wet and marhsy areas | Potentially present in wet areas | 1B | SE | FE |

**Table 2-2: Special-Status Species in the Sugarloaf Ridge State Park General Plan Study Area**

| SPECIES | HABITAT | POTENTIAL FOR OCCURRENCE | CNPS | CDFG | USFWS |
|---|---|---|---|---|---|
| RINCON RIDGE CEANOTHUS *Ceanothus confusus* | Chaparral areas | Occurs in Sugarloaf Ridge SP and in Hood Mountain Regional Park | 1B | -- | -- |
| CALISTOGA CEANOTHUS *Ceanothus divergens* | Chaparral areas | Occurs in Sugarloaf Ridge State Park | 1B | -- | -- |
| SONOMA CEANOTHUS *Ceanothus sonomensis* | Chaparral areas | Occurs in Sugarloaf Ridge State Park | 1B | -- | -- |
| DWARF DOWNINGIA *Downingia pusilla* | Seasonally ponded areas, vernal pools | Potentially occurs in seasonally ponded areas | 2 | -- | -- |
| NARROW-LEAVED DAISY *Erigeron angustatus* | Dry rocky areas, shallow soil | Potentially occurs in areas of shallow soils and rocky areas | 1B | -- | -- |
| FRAGRANT FRITILLARY *Fritillaria liliacea* | Relatively deep and moist soils, often serpentine | Potentially occurs in suitable habitat | 1B | -- | -- |
| TWO-CARPELLATE WESTERN FLAX *Hesperolinon bicarpellatum* | Serpentine chaparral | Potentially present in suitable habitat | 1B | -- | -- |
| NAPA WESTERN FLAX *Hesperolinon* sp nov. | Chaparral, especially serpentine | Potentially present in chaparral | 1B | -- | -- |
| COLUSA LAYIA *Layia septentrionalis* | Sandy or serpentine soils, grassland | Potentially present in suitable habitat | 1B | -- | -- |
| LEGENERE *Legenere limosa* | Seasonally ponded areas | Potentially present in seasonally ponded areas | 1B | -- | -- |
| JEPSON'S LINANTHUS *Linanthus jepsonii* | Chaparral, woodland | Potentially present in suitable areas | 1B | | |
| COBB MOUNTAIN LUPINE *Lupinus sericatus* | Gravelly soils, sometimes serpentine | Potentially present in suitable habitat | 1B | -- | -- |

**Table 2-2: Special-Status Species in the Sugarloaf Ridge State Park General Plan Study Area**

| SPECIES | HABITAT | POTENTIAL FOR OCCURRENCE | CNPS | CDFG | USFWS |
|---|---|---|---|---|---|
| MARIN COUNTY NAVARRETIA *Navarretia rosulata* | Dry rocky areas | Potentially present in suitable areas | 1B | -- | -- |
| SONOMA BEARDTONGUE *Penstemon newberryi* var. *sonomensis* | Crevices in rock outcrops | Occurs on Hood Mountain Regional Park | 1B | -- | -- |
| NORTH COAST SEMAPHORE GRASS *Pleuropogon hooverianus* | Seasonally ponded areas | Potentially present in seasonally ponded areas | 1B | SC | -- |
| MARIN CHECKERBLOOM *Sidalcea hickmanii* ssp. *viridis* | Serpentine chaparral | Habitat present, occurrence possible although not observed | 1B | -- | -- |
| MARSH CHECKERBLOOM *Sidalcea oregana* ssp. *hydrophila* | Seasonally wet areas, marsh | Potentially present in suitable habitat | 1B | -- | -- |
| KENWOOD MARSH CHECKERBLOOM *Sidalcea oregana* ssp. *valida* | Seasonally wet areas, marsh | Occurs adjacent to the General Plan study area; potentially present in suitable habitat | 1B | SE | FE |
| SHOWY INDIAN CLOVER *Trifolium amoenum* | Grassland | Occurred adjacent to the General Plan study area; potentially present in deeper soils of grassland areas | 1B | -- | -- |
| **INVERTEBRATES** | | | | | |
| RICKSECKER'S WATER SCAVENGER BEETLE *Hydrochara ricksecker*i | Ponded water | Potentially occurs in seasonal or permanent ponds | | | |
| CALIFORNIA FRESHWATER SHRIMP *Syncaris pacifica* | Clear, flowing, perennial streams | Status unknown, but potentially present because known from Sonoma Creek | -- | CSC | FT |
| **FISHES** | | | | | |
| STEELHEAD *Oncorhynchus mykiss irideus* | Cold, well-aerated streams with gravel | Occurs in Santa Rosa and Sonoma Creeks on site | -- | -- | FT |

**Table 2-2: Special-Status Species in the Sugarloaf Ridge State Park General Plan Study Area**

| SPECIES | HABITAT | POTENTIAL FOR OCCURRENCE | CNPS | CDFG | USFWS |
|---|---|---|---|---|---|
| | spawning substrate | | | | |
| NAVARRO ROACH *Lavinia symmetricus navarroensis* | Warm intermittent and cold aerated streams | Occurs in Mark West Creek; potentially present in the parks | -- | CSC | -- |
| **AMPHIBIANS AND REPTILES** | | | | | |
| CALIFORNIA RED-LEGGED FROG *Rana aurora draytonii* | Ponds or streams, often with dense vegetation | Potentially present in suitable habitat | -- | CSC | FT |
| FOOTHILL YELLOW-LEGGED FROG *Rana boylei* | Generally restricted to shallow, flowing streams with some cobble-sized substrate | Potentially present in suitable habitat | -- | CSC | -- |
| WESTERN POND TURTLE *Clemmys marmorata* | Ponds, marshes, streams, and irrigation ditches | Observed in Sonoma Creek in Sugarloaf Ridge State Park | -- | CSC | -- |
| **BIRDS** | | | | | |
| SHARP-SHINNED HAWK *Accipiter striatus* | Woodlands, riparian areas | Potentially present in suitable habitat | -- | CSC | -- |
| COOPER'S HAWK *Accipiter cooperi* | Woodlands | Potentially present in suitable habitat | -- | CSC | -- |
| WESTERN YELLOW-BILLED CUCKOO *Coccyzus americanus occidentalis* | Extensive stands of mature and dense riparian woodlands | Not likely, although a pair was observed nearby in 1975 | -- | CSC | -- |
| PEREGRINE FALCON *Falco peregrinus* | Cliffs for nesting, woodlands, grasslands, and wetlands | Suitable rocky areas onsite may be nesting habitat; not known from the General Plan study area, but known from a nearby area | -- | CSC | -- |

**Table 2-2: Special-Status Species in the Sugarloaf Ridge State Park General Plan Study Area**

| SPECIES | HABITAT | POTENTIAL FOR OCCURRENCE | CNPS | CDFG | USFWS |
|---|---|---|---|---|---|
| LOGGERHEAD SHRIKE *Lanius ludovicianus* | Grasslands | Potentially present in suitable habitat | -- | CSC | -- |
| NORTHERN SPOTTED OWL *Strix occidentalis caurina* | Old-growth Douglas-fir, mixed evergreen forest, oak woodlands | Occurs nearby and is potentially present | -- | CSC | FT |
| **MAMMALS** | | | | | |
| PALLID BAT *Antrozous pallidus* | Caves, old buildings | Potentially occurs in suitable habitat | -- | CSC | -- |
| TOWNSEND'S WESTERN BIG-EARED BAT *Corynorhinus townsendii townsendii* | Caves, old buildings | Potentially occurs in suitable habitat | -- | CSC | -- |

*Notes: California Native Plant Society (CNPS)*
*1B – Plants rare, threatened, or endangered in California and elsewhere*
*2 – Plants rare, threatened, or endangered in California but more common elsewhere*
*California Department of Fish and Game (CDFG) CE – State–listed, Endangered*
*CSC – California Species of Special Concern CT – State–listed, Threatened*
*SC – Candidate species*
*U.S. Fish and Wildlife Service (USFWS) FE – Federal Endangered FC – Federal Candidate*
*FT – Federal Threatened PT – Proposed for listing as Threatened*
*Sources: CNDDB 2002; EDAW 2002, site visit*

## Cultural Resources

### Ethnographic Setting

The study area lies near the intersection of lands that were controlled by three separate ethnographic groups at the time of European contact, the Wappo, Southern Pomo, and Coast Miwok. Each group may have shared some access to the region; however, the Sugarloaf Ridge State Park lies within the Wappo sphere of influence (Beard 1997).

The Wappo language included five dialects (Sawyer 1978), distributed across two major territorial divisions. The smaller territory encompassed lands on the southern edge of

Clear Lake; the larger ranged from just north of Napa and Sonoma up to Cloverdale and Middletown. The Wappo were known to readily adopt words from other languages spoken in their vicinity and, interestingly, gave at least one village a name which is still in use, cho*nóma, meaning "abandoned camp" (Sawyer 1978). Another triblet, Wilikos, was described by Barret (1908) as being located at the head of Sonoma Creek.

The Wappo were generally considered to be a relatively peaceful group, culturally influenced by the groups surrounding them. The Wappo also struggled against the Spanish. Some were drafted for labor; others went to the Sonoma Mission between 1823 and 1834. By 1850, it was estimated that no more than 500 were left in the Napa Valley (Yount 1966). In the 1910 census of the area, 73 individuals claimed Wappo membership (Kroeber 1925).

The Wappo lived in villages usually located on a creek or other water source. Villages included one or two sweathouses as well as houses of varying size. Village chiefs might be elected or appointed based on the organization of the individual village. Some villages even had multiple chiefs, each with different spheres of influence (Sawyer 1978). Seasonal travel to Clear Lake, the Russian River, the Pacific coast, and Napa Glass Mountain was common.

### Background Research

For purposes of cultural resources, the various properties (i.e., Sugarloaf Ridge State Park, Thatcher property, Stern property, Freeman property, BLM property, and Hood Mountain Regional Park) were examined as a whole and are referenced as the General Plan study area. District archaeologist Breck Parkman provided an overview of Sugarloaf Ridge State Park archaeology, historic documentation, and copies of District site record forms for most of the resources within the Park. Parkman also noted that surveys had been conducted by non-Department archaeologists, and records from those efforts might be in private hands. Cultural resources within Sugarloaf Ridge State Park have been documented since the 1920s, by both professional and educational archaeologists, and in varying formats as methods changed within the archaeological framework.

An information request was submitted to the Northwest Information Center (NWIC) for the project area as a whole.

The purpose of the NWIC search was to determine whether there were previously recorded historic resources or if archaeological surveys had been performed within or in the vicinity of the project area. The NWIC had records of nine archaeological surveys that had been conducted within the project area, in addition to those completed by Sugarloaf Ridge State Park staff. These survey areas have included much of Sugarloaf Ridge State Park and Hood Mountain Regional Park. A map depicting previous archaeological survey coverage is shown as Map 8.

Also on file at the NWIC were site record forms pertaining to resources identified during those surveys, as well as several records for sites within Sugarloaf Ridge State Park. The NWIC search included examination of historic resources such as:

- State Historic Preservation Office 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)
- Thompson and West Historical Atlas (1878)
- U.S. Geological Survey Santa Rosa Quadrangle (1916)
- Illustrated Atlas of Sonoma County, California (1898)
- General Land Office Plat Map, Township 7 North Range 6 West (1889)
- General Land Office Plat Map, Township 7 North Range 6 West (1870)
- General Land Office Plat Map, Township 6 North Range 6 West (1871)
- A.B. Bowers Map of Sonoma County, California (1867)

## Map 8: Previous Archeological Survey Coverage

- Thomas H. Thompson and Company Historical Atlas Map of Sonoma County, California (1877)

The historic maps and records cited above depict a number of roads and buildings, and the names of many of the early property owners. These sources also provide a list of extant historic structures within the survey area that have been listed with the State Historic Preservation Office.

Based on conversations with the Department archaeologist and the NWIC, it was clear that other records of surveys might be in the hands of private individuals who had conducted archaeological surveys within Sugarloaf Ridge State Park, either as volunteers or for academic research. Site record forms and background research were also collected from these sources. During the course of information gathering, it became apparent that 10 to 20 cultural resource sites identified within the project area have not been mapped, and hence their locations remain unknown. As new sites are found, an effort should be made to match them with these unmapped loci, where appropriate.

### Archaeology of the Project Area

Over 75 cultural resources have been identified within the General Plan study area, including homesteads, mining-associated sites, hunting cabins, charcoal production areas, roads, vineyards, prehistoric lithic scatters, prehistoric village sites, and isolated artifacts. In Appendix H, held under separate cover for confidentiality, Table H-1 identifies the cultural resources, and Map H-1 depicts their locations. Historic use of the project area appears to be well understood. Oral histories from some of the pioneering families detail living conditions within the study area and provide information regarding construction dates, periods of settlement, and abandonment and land usage. Historic maps and deeds further round out the historic picture. One site, SR 15, appears to represent the remnants of a 1850s vineyard, one of the earliest in the area. The site is also notable for use of vertical plowing up the hillside, rather than contour plowing, which was a later innovation designed to control soil erosion. The vertical furrows are clearly visible today.

Based on the density of sites along waterways, lower-lying landforms, and even ridgetops and hillsides, the area was fairly heavily utilized during prehistoric periods.

Heaviest use and major sites appear concentrated along level ground near waterways, particularly Sonoma Creek and its tributaries. Nearby springs provided other incentives for site location. Conditions within the project area vary from more open valley floors to steep, dense, brushy slopes and ridges. Sites have been noted in every terrain condition, which indicates that by clearing the more impenetrable areas, even areas that have been previously surveyed could yield additional cultural resources.

Cultural resources within Sugarloaf Ridge State Park have been subjected to a number of impacts that have caused damage or destruction. Chiefly, erosion along Sonoma Creek and its tributaries has washed away site components and apparently caused the total destruction of CA-SON-1113. Other factors, such as wild pig rooting, foot and equestrian traffic, looting, and construction or maintenance of park facilities have caused cumulative damage to some sites. Ongoing damage has led to the formation of an archaeological evaluation program that includes many of the larger sites in the Sonoma Creek drainage. This program has involved intensive surveys, auger probes, unit excavations, and artifact collection. Obsidian hydration has been performed on flakes and tools from a number of these sites, resulting in known periods of occupation.

The general geographic location of the project area, between the Napa Glass Mountain and Annadel obsidian sources, may have played a part in its utilization. In fact, the proportions of obsidian types on sites and their relative dates may demonstrate waxing or waning tribal spheres of influence along Wappo/Pomo/Miwok boundaries. The ethnographic village of Wilikos, reportedly located near the headwaters of Sonoma Creek, may be one of the sites that has been identified. In spite of the imposing terrain of the study area, it clearly has been the focus of significant prehistoric and historic development. The potential for retrieving important data from known and as-yet-undiscovered resources is significant.

### Prehistoric Setting

In the early 1970s, Fredrickson (1973; 1974) proposed a sequence of cultural manifestations or patterns for the central districts of the North Coast Range, placing them within a framework of cultural periods he believed were applicable to California as a whole. A summary of

Fredrickson's (1973; 1974) temporal periods with descriptions of the associated cultural patterns identified for the region is provided in Appendix G. The summaries incorporate recent and interpretive revisions that are summarized from the recent work of White and Frederickson (1992).

## Historic Setting

### *Sugarloaf Ridge State Park*

The region in and around Sugarloaf Ridge was sparsely populated and little-used historically due to steep hills, narrow canyons, and difficulty of access (Lortie 1979). The ridge itself was never included in any of the Mexican land grants, but rather separated George C. Yount's Camus Rancho and Juan Wilson's Rancho Los Guilicos (Jones 1977). American and immigrant settlement in the area began in the mid-19th century, with some homestead patents or claims being filed in the 1870s. Other historic uses of the area included marginal agriculture, charcoal production and, in later years, recreation.

The Luttrell family settled in the area in the 1860s, building a residence and outbuildings near the current ranger residence. None of the structures stand today. The Luttrells ran a small family farm, raising stock and growing walnuts, subsistence crops, and grapes. Evidence of the Luttrells vineyard can still be seen as vertical furrows on a slope northwest of the ranger's residence (Jones 1977). The Luttrells lost the property in 1893. It then passed to Henry Schwartz, who sold it to John Warboys in 1910, who in turn sold it to W.D. Reynolds. Reynolds built a ranch complex and the road through Adobe Canyon. Only a barn from the Reynolds complex remains today. In 1920, the property was sold to the Sonoma State Home, a state-run mental hospital (Lortie 1979). Inmates of the hospital may have been employed in constructing a dam to divert water from Sonoma Creek to Glen Ellen. Boy Scouts also used the property, and a fireplace, building foundation, patio area, and pond remain. After World War II, the property was leased to a dairy farmer. The property was sold again in the 1960s, and in 1971 was sold to the State of California.

Charcoal production dominated use of the area around the turn of the century. Wood was cut on the ridges and hillsides and hauled by horse and wagon to flats near the creek, where it was carefully stacked and slowly burned.

The resulting charcoal would then be loaded into wagons and taken to rail stations for transport to markets, primarily in San Francisco (Jones 1977).

The Warboys acquired a parcel to the east, near the county line. They built a hunting cabin on the property ca. 1910 which the state demolished in the 1970s. The Bear Creek Ranch property, which straddled the Sonoma/Napa county line near the northeast corner of the park, was also used for small-scale farming and ranching as well as for hunting activities. A butchering shed with a 1942 date still stands. The ranch house burned in 1967 though fireplace and foundation remains still exist (Lortie 1979).

Ray and Bertha Hurd and their 10 children homesteaded 160 acres near the headwaters of Bear Creek between 1914 and 1930. The Hurds built two cabins, a house, a woodshed, a barn, and a schoolhouse, all located on their ranch in the area that is now the end of the High Ridge Trail. During that period, there were other families living up in the high country – probably a total of 35 to 40 people. The red barn and a few remnants of the house foundation are all that are left of the former Hurd homestead.

#### *Nunns Canyon*

Nunns Canyon likewise was settled relatively early. It was part of the Rancho Los Guilicos, a Mexican land grant given to John and Ramona Wilson in 1837. It changed hands in 1850, and again in 1878 when it was purchased by John Drummond for the production of wine and brandy. Other portions of the property were owned by homesteaders, including the Johnson and Nun families. The various landowners practiced small-scale agriculture or raised animals, including sheep, cattle, and turkeys.

### Aesthetic Resources

#### Visual Setting

Sugarloaf Ridge State Park sits atop the Mayacamas Ridge between Sonoma and Napa Counties. Bald Mountain and nearby Hood Mountain are the highest points along this portion of the ridge, and it is their steep rocky slopes that form the eastern boundary of the picturesque Sonoma Valley, or the "Valley of the Moon." These peaks and the mountains within Sugarloaf Ridge State Park also form the division between the Sonoma Creek and Santa Rosa Creek watersheds and are the focal point of the two valleys. To the west, in the

upper reaches of Santa Rosa Creek, vineyards in the valley floor lead up to the nearby suburban interface of the Oakmont subdivision, the easternmost portion of the city of Santa Rosa. One can see the peaks in Sugarloaf Ridge State Park and Hood Mountain Regional Park from Santa Rosa and as far west as Sebastopol.

To the south lies the Sonoma Valley, full of vineyards and oak chaparral landscapes. The wooded hills and landscape cover the Mayacamas Ridge and form the backdrop to the vineyards in the valley floor. On the other side of the valley are the rounded, tree-covered hills of Annadel State Park; Jack London State Park is located just below the broad, rounded ridge of Sonoma Mountain. State Route 12 in this area is a designated scenic highway, where visitors travel to see the wine country. The vineyards form most of the foreground views. The dark and olive greens of the native vegetation in Sugarloaf ridge and the surrounding Mayacamas Ridge form the backdrop to one side of the valley's famous vineyards. In this backdrop setting, past the first rise of Sugarloaf ridge and into the hills of the Mayacamas Ridge, lies Sugarloaf Ridge State Park. Within steeply vegetated hills and narrow canyons, it is a visually wild place and scenically quite different from the cultivated landscape of Sonoma Valley. This wild scenery forms the backdrop to agriculture and growing urbanization, which makes Sugarloaf Ridge State Park such an important place.

### Views from the Park

Most visitors to the park now drive up Adobe Canyon Road, the most direct access to the park facilities. The vineyards quickly fade into the background as the valley narrows. Rows of mailboxes and driveways to rural residences peal off in either direction. The road narrows, the tree canopy of redwoods and big-leaf maples closes overhead, and the entrance sign reveals itself around an unassuming curve. As mailboxes and houses cease, the road begins its winding ascent up from the redwoods into the main portion of the park. Along the way, dirt pullouts and small trail markers suggest trails. Knowledgeable people talk about past hikes to the mountain tops where they could see everything from Pyramid Peak, 100 miles to the east in the Sierras to the city of San Francisco 60 miles to the south. Towards the end of the drive, the road levels out and the vegetation opens into oak chaparral where deer can be seen grazing. The developed portion of the park is set

in this chaparral landscape, with visitor facilities generally in amongst the oak trees. For many, this is the destination, a place to camp or perhaps ride a horse, or a chance to look through a telescope to the stars. For others, it is the beginning, a place to leave the car and begin a hike. For those individuals, the visitor facilities fade away and views of wildlands take over. On the way up to Bald Mountain or the Bushy Peaks Ridgeline Trail, hikers pass through open meadows and climb up to see panoramic views of distant ridges. Only one small portion of the view to the south currently contains a vineyard. Otherwise, the views are of wild and rugged land, diverse vegetation, scenic vistas, lots of wildlife for the observant, and not many people.

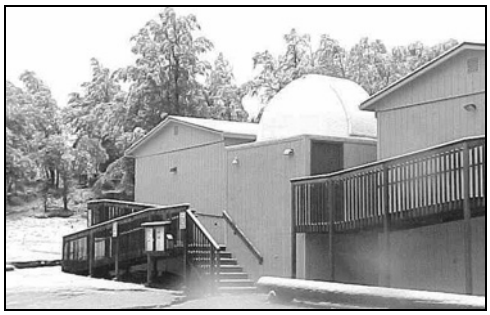
### Views of the Stars

The high peaks that surround the observatory, located in upper Adobe Canyon, shield the ambient nighttime light from nearby Santa Rosa. The dark nighttime sky in Sugarloaf Ridge State Park is an important quality for stargazing. On a clear night, the Milky Way galaxy appears to be within arm's reach at Sugarloaf Ridge State Park.

### Aesthetics of the Visitor-Serving Facilities

Upon entering the park, there is a beautiful redwood grove and an understated dirt parking pullout and trailhead for the Goodspeed Trail up to Hood Mountain. Further into the visitor-serving portion of the park, the facilities have the look of temporary structures that have become permanent. At the entry kiosk, where the visitor pays to enter, there are metal cargo containers full of wood. These containers have roll-up style garage doors and are tucked in among the trees. The visitor center is the nicest building in the park, small and set into the woods, but is fronted with a bright aqua-colored portable restroom surrounded by parking restriction signs. The day-use parking lot, visible from the visitor center, sits in the center of a meadow, built high on a pad without landscaping to screen the view. Further up the road is a modest ranger residence. At the foot of the driveway, and at the entrance to the stable parking area, is a storage area for heavy equipment. At the stable parking area, an extraordinary view of the upper meadow is interrupted by an 8-foot "no parking" sign. Around the corner, partially behind a nice stand of oaks, is the observatory. Because of sensitive resources in the area and because the observatory was originally constructed as a temporary

building, there have been no grading or landscaping to make it fit into the setting. Most of the facilities within the park are not in keeping with the extraordinary visual character of the natural setting.



*The Robert Ferguson Observatory after a snowstorm December 2002*

*Restrooms and dumpsters in the family campground*

## Recreational Resources

### Local Recreation Destinations Near the Study Area

The Sonoma Valley is a recreation destination among wine enthusiasts worldwide. People come to sample the Sonoma Valley wines nearly as often as they visit the nearby Napa Valley. While the wine tasters that come for the day may not get out of their cars except to visit wineries, some wine country visitors stay overnight in hotels or bed-and-breakfast establishments. Of the overnight visitors, some are interested in outdoor recreation and the sights offered by the parks in Sonoma Valley. Many of these outdoor recreation destinations are not well publicized and only the knowledgeable venture beyond the valley floors.

Across the Sonoma Valley from Sugarloaf Ridge State Park are Annadel State Park and Jack London State Historic Park. Annadel abuts the city limits of Santa Rosa and provides a newly updated trail system for hikers, bikers, and equestrians. Also adjacent to Annadel and the city of Santa Rosa is Spring Lake Regional Park, which provides camping, swimming, and a variety of children's activities, including a train ride. The trails are particularly heavily used by nearby residents and regional visitors, to the point that some of the resources are being impacted by overuse. A trail connection was proposed in the *Draft Outdoor Recreation Plan* and has been supported by rangers and others. The connection proposed between Annadel and Sugarloaf Ridge State Parks would be via a regional trail on or along the alignment of Lawndale Road.

Jack London State Historic Park specializes in historic interpretation of its famous one-time resident and author. The park has recently been enlarged through partial acquisition of the state-owned Developmental Center. This enlargement places additional habitat under the protection of the Department to help support a biological corridor spanning the Sonoma Valley.

### Recreation Destinations Within the Study Area

Within the General Plan study area, public recreation is available at both Sugarloaf Ridge State Park, operated by the Department, and Hood Mountain Regional Park, operated by SCRP. These entities cooperate at different levels in an effort to provide recreation in the collective Mayacamas parklands. Activities within the parklands include hiking, camping, mountain biking, rock climbing, equestrian use, picnicking, wildlife, wildflower observation, and astronomical viewing at the Robert Ferguson Observatory.

Visitors to Sugarloaf Ridge State Park enjoy hiking, mountain biking, and horseback riding on the miles of trails that wind through the hillside wildlands. After the winter rains, there is a picturesque waterfall along Sonoma Creek below the campground. Many visitors come to the park in the spring and early summer to view the colorful wildflowers that grow in abundance in the meadows. Wildlife and bird watching is also a popular pastime. Coyotes, deer, gray foxes, and the occasional bobcat can be seen within the park boundaries.

Fifty family campsites and one group camp are provided in the Sonoma Creek valley in the Adobe Canyon Management Zone of Sugarloaf Ridge State Park. The group camp, which can accommodate up to 50 people and includes a small corral for horses, provides one of the only equestrian camps in the region. Horseback riding is a major recreation activity, and visitors to Sugarloaf Ridge State Park have access to guided horseback riding activities offered by a private concessionaire.

Sugarloaf Ridge State Park also houses one of the largest public viewing telescopes in the region, a 40-inch telescope at the Robert Ferguson Observatory that can be rented, along with the group campground, for private parties, through the Valley of the Moon Observatory Association.

Rock climbing has become popular in Sugarloaf Ridge State Park over the past few years. Climbers practice on boulders located to the south of the campground area. Because of the sport's popularity, climbers are causing some erosion problems at the rock outcroppings. Climbers have also been discovered trespassing on private property to the south of the park.

### Recreational Trails

Over 25 miles of trails traverse through the wildlands of Sugarloaf Ridge State Park. An additional 10 miles of trails are provided in nearby Hood Mountain Regional Park. The trails lead to easily accessible ridgelines, with countless sweeping views that look over and beyond the Napa and Sonoma Valleys.

The locations of existing trails, within Adobe Canyon are shown on Map 9 ( included as part of the following discussion on Facilities), and trail characteristics are identified in Table 2-3. GIS trail information was not made available for the Santa Rosa Creek Watershed Management Zone and Hood Mountain Regional Park trails, and thus the table provides limited information for these trails.

Most of the state park trails generally radiate out from the main camp area accessed from Adobe Canyon Road and include both single-track trails and fire roads used as multipurpose trails. Several multipurpose trails are also located in the northern portion of the Santa Rosa Creek Watershed Management Zone. However, there is not a direct trail connection between this area and the other Sugarloaf Ridge State Park trails in Adobe Canyon. There are few fire roads or trails in the southern half of the Santa Rosa Creek Watershed Management Zone. Although it was originally meant to be included in the acquisition, the narrow land connecting the Santa Rosa Creek Watershed Management Zone and the Adobe Canyon Management Zone cannot accommodate a trail link between the two areas due to the steep slopes. Additional lands would need to be acquired, either through a trail easement or fee ownership, to allow a trail connection between the two areas.

Hood Mountain Regional Park provides trail connections to the Adobe Canyon Management Zone of Sugarloaf Ridge State

Park, but its historically frequent closures have often restricted movement between the parks. Additionally, there are some issues with the roadways as trail connections between Hood Mountain and the Santa Rosa Creek Watershed Management Zone. The Los Alamos Road extension passes through a narrow sliver of private property (the Rasmussen Property) between the two parks, which restricts a public access connection on this fairly steep roadway. As a result, the only way for the public to access the Santa Rosa Creek Watershed Management Zone is to start at the northern entrance parking lot, hike south on the Santa Rosa Creek Trail within Hood Mountain Regional Park, and then cross Santa Rosa Creek into Sugarloaf Ridge State Park following the fire road. The Santa Rosa Creek crossing does not have a bridge and so access into the Santa Rosa Creek Watershed Management Zone is also restricted during periods of high water.

In general, the fire roads in Sugarloaf Ridge State Park may be used for hiking, biking, and horseback riding year-round. Mountain bikes and horses are restricted on some of the single-track trails. Further restrictions and seasonal closures may also occur during wet weather to reduce impacts on the trails. As trails are restored, rehabilitated, re-engineered and/or re-routed to more proper alignments to reduce environmental impacts, trail use designations may change. These trails use designation changes may be necessary to link Sugarloaf Ridge State Park with adjacent landbases where shared use trails are allowed. Trails designed and constructed on proper alignments are far more sustainable than the current single-use designation trails that are poorly constructed and overly steep. It is anticipated that shared use trails would include all types of typical park users which are mountain bikes, equestrians and hikers.

Both the fire roads and single-track trails at Sugarloaf Ridge State Park are generally in poor condition due to lack of maintenance and less-reliable construction techniques when built. Some of the steeper sections of the trails have erosion problems, resulting in stream sedimentation. The newest trail in the park, the Brushy Peaks Trail constructed in 1992, is in only fair condition.

**Table 2-3: Park Trails in the Sugarloaf Ridge State Park General Plan Study Area**

| TRAIL NAME | TYPE | SURFACE TYPE | TOTAL DISTANCE (MILES) | GRADIENT |
|---|---|---|---|---|
| Bald Mountain Trail | Fire Road | Gravel | 2.30 | 16-30% |
| Brushy Peaks Trail | Single Track | Rocky & Dirt | 3.10 | 0-15% and 16-30% |
| Canyon Trail | Single Track | Rocky & Dirt | 0.60 | 0-15% |
| Creekside Nature Trail | Single Track | Gravel, Rocky & Dirt | 0.75 | 0-15% |
| Goodspeed Trail | Single Track | Rocky & Dirt | 2.10 [a] | Mostly 16-30% |
| Gray Pine Trail | Fire Road | Dirt & Gravel | 2.65 | Ranges from 0-45% |
| Headwaters Trail | Single Track | Rocky | 0.50 | 16-30% |
| High Ridge Trail | Fire Road | Gravel | 1.60 | 16-30% |
| Hillside Trail | Fire Road | Gravel | 1.10 | 0-15% and 16-30% |
| Lower Bald Mountain Trail | Single Track | Dirt | 1.00 | 0-15%, 16-30% |
| Meadow Trail | Fire Road | Gravel | 0.80 | 0-15% |
| Pony Gate Trail | Single Track | Rocky & Dirt | 0.90 | 0-15% |
| Red Mountain Trail | Single Track | Dirt | 1.05 | 0-15% and 16-30% |
| Stern Trail | Service Road | Gravel | 0.50 | unknown |
| Vista Trail | Single Track | Dirt | 1.50 | 0-15% |
| SANTA ROSA CREEK WATERSHED MANAGEMENT ZONE | | | | |
| Headwaters Trail | Fire Road | NA | 1.30 | NA |
| Grandmother Oak Trail | Single Track | NA | 0.30 | NA |
| Maple Glen Trail | Fire Road | NA | 2.00 | NA |
| Pygmy Owl Trail | Fire Road | NA | NA | NA |
| Quercus Trail | Fire Road | NA | 0.70 | NA |
| Santa Rosa Creek Trail | Fire Road | NA | 0.70 [b] | NA |
| Wildcat Creek Trail | Fire Road | NA | 0.50 | NA |
| HOOD MOUNTAIN REGIONAL PARK | | | | |
| Alder Glen Trail | Single Track | NA | 0.20 | NA |
| Cypress Trail | Single Track | NA | 0.30 | NA |
| Gunsight Rock Trail | Single Track | NA | 0.40 | NA |
| Hood Mountain Trail | Fire Road | NA | 4.90 | NA |
| Nattkemper-Goodspeed Trail | Single Track | NA | 1.20 [c] | NA |
| Santa Rosa Creek Trail | Fire Road | NA | 0.40 [d] | NA |

**Table 2-3: Park Trails in the Sugarloaf Ridge State Park General Plan Study Area**

| TRAIL NAME | TYPE | SURFACE TYPE | TOTAL DISTANCE (MILES) | GRADIENT |
|---|---|---|---|---|
| Summit Trail | Single Track | NA | 2.50 | NA |

*Notes:*
*NA = not available from General Plan GIS database*
*[a] Length of trail within Sugarloaf Ridge State Park only. Total length of the Nattkemper-Goodspeed Trail is 3.3 miles.*
*[b] Length of trail in Sugarloaf Ridge State Park only. Total length of the Santa Rosa Creek Trail is 1.1 miles.*
*[c] Length of trail within Hood Mountain Regional Park only. Total length of the Nattkemper-Goodspeed Trail is 3.3 miles.*
*[d] Length of trail within Hood Mountain Regional Park only. Total length of the Santa Rosa Creek Trail is 1.1 miles.*

Both the Hillside and Meadow Trails were re-engineered in 2001 to reduce water concentrations and the resulting siltation in Sonoma Creek. This work fundamentally changes the hydrology of the trail or roadbed by sheeting water across the road surface instead of allowing it to travel down the roadbed. Other improvement have been completed to create sustainable road surfaces.

Some of the fire roads were previously maintained by the California Department of Forestry and Fire (CDF) and Pacific Gas and Electric Company (PG&E). CDF maintained the High Ridge Trail and PG&E maintained Grey Pine, Brushy Peaks, and part of Hillside Trail, where an access easement is in place. Both CDF and PG&E ceased maintaining the roads in approximately 1996, because their methods for maintaining the roads did not meet state park standards and the District's obligation to reduce sedimentation into the creeks. An alternative plan for maintaining these roads and trails has been to topographically re-engineer the roads for both increased sustainability and improvements to water quality. These improvements, although initially expensive to implement, should result in a substantial decrease in ongoing maintenance costs.

### Interpretive and Educational Resources

A variety of interpretive resources are provided within Sugarloaf Ridge State Park. The interpretive materials include brochures, interpretive signs, nature walks, campfire programs, and special nighttime viewing sessions in the observatory. Topics include the natural resources

of the park, the settlement history in the park area, views from Bald Mountain, and astronomical topics, primarily associated with activities in the observatory. No specific theme is identified or carried out through the various interpretive displays and programs.

The ***park brochure*** distributed to visitors at the entrance kiosk for one dollar offers a brief introduction to the park. The brochure provides a trail map and general information about the recreational resources of the park, including camping and picnicking, and the Robert Ferguson Observatory. The brochure also provides information about some of the vegetation, natural topography, views from the ridgetops, and a summary of the settlement history of the area, from the Wappo Indian village to early American settlers.

The ***Visitor Center*** sells additional guidebooks about the natural and cultural history of the park. Displays inside the building provide information about plant communities and wildlife in the park, including an interactive display describing the food chain. A small diorama of the Mayacamas Ridge gives visitor's a sense of the extent of the park and surrounding topography. Valley of the Moon Natural History Association volunteers staff the visitor center, and rangers and volunteer docents are often available to answer visitor's questions. ***Information boards*** outside of the visitor center and at the parking lot near the Goodspeed Trail provide maps of the park and a monthly notice of park activities, including scheduled nature walks and observatory events.

The ***Creekside Nature Trail*** provides an opportunity for visitors to see and learn about the park's plants and animals on a self-guided walk. Numbered posts along the trail correspond to vegetation and cultural resource information provided in an insert in the park brochure. The trail is a three-quarter-mile walk from the picnic area near the day-use parking lot, and ends at the family campground.

Local nonprofit and volunteer organizations, including Acorn Soupe, LandPaths, and the Sierra Club, have conducted ***guided ecological tours and hikes*** within Sugarloaf Ridge State Park. Acorn Soupe organizes an educational program and nature walk for 4$^{th}$ and 5$^{th}$ grade classes approximately 12 times per year. Guided walks tailored for people

interested in restoration work, including creek cleanup, are also sponsored by Acorn Soupe. The guided walks and volunteer restoration work occurs approximately six times per year.

District Ecological Resource specialists are occasionally asked to sponsor tours of Sugarloaf Ridge State Park and discuss ecological issues for interested college classes. Valley of the Moon Natural History Association volunteers also take groups on hikes through the park. Last year, special moonlight hikes and a 4th of July hike to see the fireworks from the ridgetop were especially popular, generating 100 to 200 participants each.

The District sponsors ***volunteer trail days*** from May through September, when maintenance staff train, provide tools, and work with volunteers to repair and clear trails. Some volunteer groups or organizations "adopt" sections of trails.

Junior ranger programs are offered during the summer at the campfire center. ***Campfire program*** topics vary according to the specialties and interests of the staff presenting them. Many are traditional slide shows that interpret local natural or cultural history. The campfire programs also coordinate with observatory viewing programs, and observatory volunteers may provide an early introduction to what will later be visible in the night sky. Fewer interpretive programs are offered during the off-season.

***Junior ranger programs*** for children 7 to 12 years old during the summer. The Junior Ranger Program is a statewide program that takes place over several days, with different topics presented at each hour-long session. Geology, Ecology, history, safety, plants, and wildlife are among the subjects likely to be explored. Awards such as pins, certificates, and patches are given to participants as they progress through the program. A child may begin at one park and then continue at a later date in some other location. The Junior Ranger Program is offered free of charge to visitors who have already paid park entrance or camping fees. Sugarloaf Ridge State Park did not offer the Junior Ranger program activities in 2001 due to a staffing shortage; however, it has participated in past years.

***Bat houses*** sit atop tall poles at the campfire center. Although there are no signs describing the characteristics

of the bats that live there, rangers inform visitors of their existence and use.

***Interpretive signs*** identifying specific viewpoints are located on Bald Mountain, the highest point in the park. Bald Mountain provides commanding views of the surrounding area, where visitors can overlook Napa Valley, see portions of the San Francisco Bay Area, and even glimpse the Sierra Nevada mountains on a clear day.

The ***Robert Ferguson Observatory*** is a unique educational resource within Sugarloaf Ridge State Park. The observatory houses a telescope with a 40-inch-diameter mirror, a smaller telescope with a digital camera, and various portable telescopes set up near the observatory structure. The telescopes and facilities at the observatory are operated and maintained by the astronomical concessionaire, the Valley of the Moon Observatory Association. The association hosts lectures and public viewings during celestial events, where docents are available to answer questions and discuss astronomy, telescopes, cosmology, and other topics.

In an innovative way of linking the observatory with the other recreational resources at Sugarloaf Ridge State Park, the Valley of the Moon Observatory Association created ***PlanetWalk***, a scale model of the solar system designed to fit within the boundaries of the park. Although most people know that the planets orbit the sun, it is difficult to visualize just how small the planets are, compared to the immensity of the sun, and it is equally difficult to imagine the vast empty spaces between the planets. PlanetWalk is designed to give a firsthand experience of these spatial relationships.

PlanetWalk begins at the group camp near the observatory with a large sign representing the sun and follows Meadow Trail to Brushy Peaks Trail for a 4.5-mile round-trip journey to the orbit of Pluto. Along the way, hikers pass nine trail signs representing each of the nine planets in the solar system. Each sign is placed at a distance from the PlanetWalk sun proportional to the actual distance from the sun of the planet it represents. Each planet sign has a representation of the planet itself, drawn to the PlanetWalk scale.

### 2.2.3 EXISTING FACILITIES

This section describes the existing buildings and recreation facilities in Sugarloaf Ridge State Park. A discussion of the park's utilities and circulation is provided following this section.

#### Buildings

Visitor and operations facilities in Sugarloaf Ridge State Park are primarily concentrated in the low-lying land along Sonoma Creek in the Adobe Canyon Management Zone and are accessed from Adobe Canyon Road (Map 9 and Table 2-4). Within the main visitor area, the facilities are distributed in four subareas: the visitor center/entrance area, the campground/day-use area, the equestrian center/service area, and the observatory/group camp area. Other visitor facilities outside of the main campground area include Camp Butler, a former Boy Scout camp now used as an overlook and picnic site, and benches and interpretive sites on top of Bald Mountain. Currently, there are no buildings in the Santa

***Rosa Creek Watershed or Nunns Canyon Management Zones.*** Hikers use the Hood Mountain Regional Park parking lot and restroom facilities at the northern entrance on Los Alamos Road.

The remnants of two previous homesteads can be found in the Bear Creek Watershed Management Zone of Sugarloaf Ridge State Park, although the facilities are currently in poor condition and are not used for recreational purposes. Harr Ranch is a dilapidated

**Table 2-4: Visitor and Operations Facilities in Sugarloaf Ridge State Park**

| MAP LOCATION NUMBER | DESCRIPTION | NUMBER OF ITEMS | YEAR CONSTRUCTED | CONDITION |
|---|---|---|---|---|
| **VISITOR CENTER/ENTRANCE STATION AREA** | | | | |
| 1 | Entrance Station/Kiosk | 1 | 1977 | Good |
| 2 | Visitor Center | 1 | 1987 | Fair |
| 3 | Visitor Center Parking | 6 spaces | 1969 | Good |
| 4 | Water Pump Substation | 1 | 1989 | Fair |
| 5 | Water Well | 1 | 1989 | Good |
| 6 | Footbridge | 1 | 1988 | Fair |
| **CAMPGROUND/DAY-USE AREA** | | | | |
| 7 | Family Campground (50 campsites) | 50 | 1968 | Fair |
| 8 | Camp Host Site | 1 | 1996 | Fair |
| 9 | Campfire Center | 1 | 1977 | Good |
| 10 | Day-Use Areas | 3 | 1977 – | Good |

## Table 2-4: Visitor and Operations Facilities in Sugarloaf Ridge State Park

| MAP LOCATION NUMBER | DESCRIPTION | NUMBER OF ITEMS | YEAR CONSTRUCTED | CONDITION |
|---|---|---|---|---|
| | | | 1995 | |
| 11 | Day-Use Parking | 34 spaces | 1992 | Good |
| 12 | Outdoor Toilets | 8 | 1967 – 1982 | Fair |
| 13 | Low Water Bridge | 1 | 1969 | Fair |
| 14 | Footbridge (crosses creek) | 1 | 1988 | Good |
| **GROUP CAMP/OBSERVATORY AREA** | | | | |
| 15 | Group Campsite | 1 | 1970 | Fair |
| 16 | Observatory | 1 | 1997 | Good |
| 17 | Horse Corral | 1 | 1994 | Fair |
| 18 | Group Camp Parking Lot | 1 | 1970 | Fair |
| 19 | Outdoor Toilets | 2 | 1982 | Poor |
| **SERVICE AREA/HORSE BARN** | | | | |
| 20 | Horse Concession Barn | 1 | 1930s | Fair |
| 21 | Horse Corral | 1 | 1975 | Fair |
| 22 | Office Building/Maintenance Shop | 1 | 1988 | Fair |
| 23 | Mobile Home (Employee Housing) | 1 | 1977 | Fair |
| 24 | Mobile Home Site (pad only) | 1 | 1978 | NA |
| 25 | Greenhouse (not yet constructed) | | 2003 | NA |
| 26 | Parking Lot/Service Area | 1 | 1968 | Fair |
| 27 | Outdoor Toilet | 1 | 1982 | Fair |
| 28 | Outdoor Fire Hose Cabinets | 1 | 1963 & 1975 | Poor |
| **HARR RANCH** | | | | |
| N/A | Harr Ranch Residence | 1 | 1956 | Poor |
| N/A | Harr Ranch Garage | 1 | 1956 | Poor |
| N/A | Greenhouse | 1 | 1956 | Poor |
| **END OF HIGH RIDGE TRAIL** | | | | |
| N/A | Red Barn | | 1914 – 1930 | Poor |
| **CAMP BUTLER** | | | | |
| 29 | Camp Butler Overlook & Picnic Area | 1 | NA | NA |
| **OTHER AREAS WITHIN SUGARLOAF RIDGE STATE PARK** | | | | |
| 30 | Footbridge | 1 | 1999 | Good |
| 31 | Water Tank #1 | 1 | 1986 | Fair |
| 32 | Water Tank #2 | 1 | 1977 | Poor |
| 33 | Water Tank #3 | 1 | 1977 | Poor |
| 34 | Electricity Transformer Pole | 1 | Unknown | Good |

*Notes:*

*[a] Condition assessment derived from head ranger and maintenance staff observations, October 2002.*

*NA = Not applicable*

## Map 9: Existing Facilities

homestead near the Hood Mountain Regional Park boundary; and a barn from another previous homestead is located at the northern end of High Ridge Trail. Although the sites may have historical and cultural resource value, they also have characteristics as flat areas in this otherwise hilly terrain that make them appealing for potentially siting facilities.

### Visitor Center/Entrance Station Area

The park's entrance station (#1 on Map 9) and visitor center (#2) are located approximately 1.25 miles into the park from the entrance sign and gate on Adobe Canyon Road at the park's western boundary. Rangers collect entrance fees at the small entrance kiosk, and an iron ranger is available for visitors to self-register after hours. A rain gauge and thermostat are located next to the flagpole by the kiosk.

The visitor center is located along Sonoma Creek near the entrance to the campground, where visitors can find general information, interpretive displays, and guides to the natural and cultural history of the park. The 720-square-foot structure was built as a temporary facility in 1987 on pier blocks. While the building does not meet all ADA standards, it does include a ramp up to the building and is generally barrier-free. The building is in fair condition; however, it does not have a foundation and occasionally leaks during heavy rains. The building was built on piers to avoid flooding during creek overflow conditions.

An ADA accessible portable toilet is located in the parking lot (#3) and serves both the entrance station and visitor center. Rangers have indicated a desire for a permanent restroom facility within the building, but septic tank and leachfield space requirements cannot be met due to proximity to the creek. A wooden footbridge (#6) traverses a drainage area and provides a pedestrian path between the kiosk and the visitor center.

A four-chamber metal storage unit for firewood is located to the south of the entrance station kiosk, before the visitor center. Although it is in a convenient location for campers to purchase firewood from the rangers on duty at the entrance kiosk or at the visitor center, the unattractive metal storage unit is one of the first things visitors see as they enter the park. The water well (#5) and pump station (#4), which supply all of the main camp

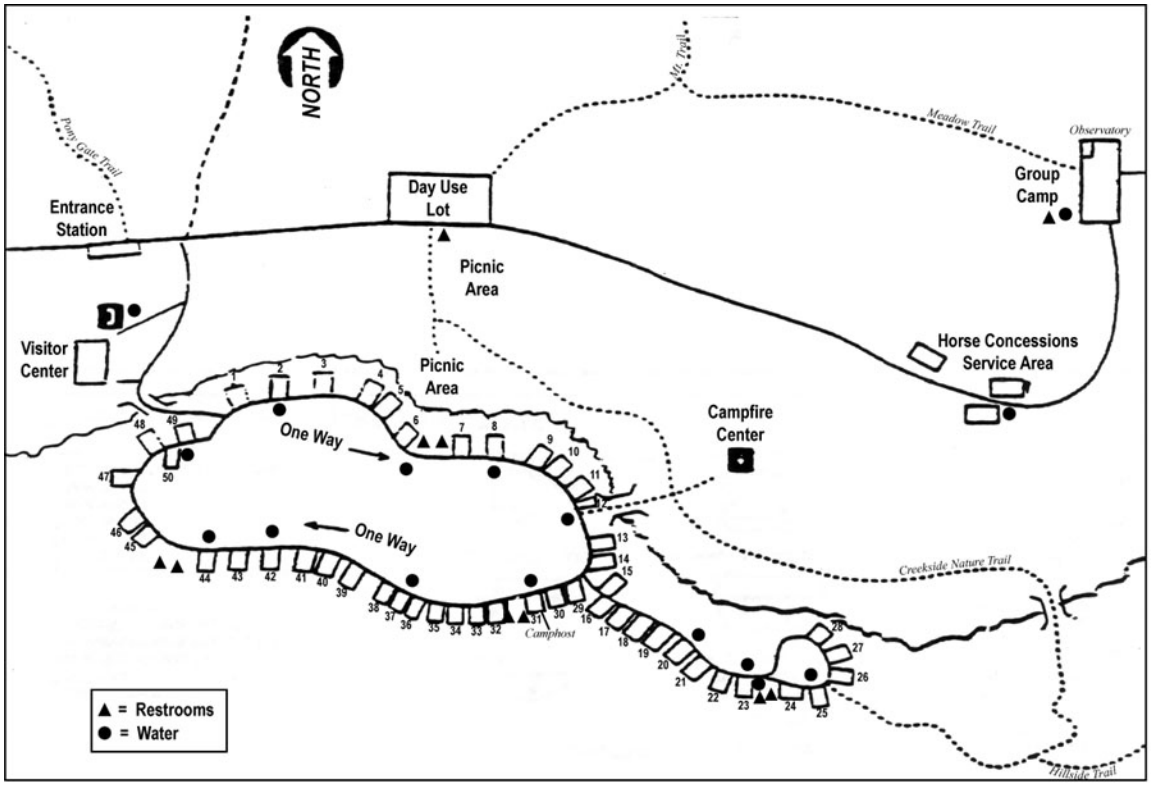
area, are located behind the visitor center. A more detailed description of the water system within the park is provided in the utilities section of this report.

Campground/Day Use Area

Fifty family campsites (#7) including one camp host site (#8) are located in the flat land between Sonoma Creek and a rock face to the south. This is the only family campground in the park and has a capacity of 400 people, 8 people per campsite. Reservations for the family campsites may be made between March 15th and October 31st each year. The campsites are filled on a first-come, first-served basis the rest of the year. Not all the sites are on the Reservation System because of having to close specific sites due to SOD infestation, makes some sites hazardous.

The campsites are arranged around the campground access road in a partial figure eight within two open fields: 17 campsites are located at the edge of Sonoma Creek, 19 campsites along the rock wall on the south side of the first loop, and 14 campsites on the second partial loop, primarily along the south side (see Figure 2-3). The open meadows are frequently used by campers for sport and play. Each campsite includes a picnic table and a fire ring. Two campsites and two toilets are ADA accessible. The camp host site is the same as the rest of the sites. Rangers have identified the need for telephone service at the camp host site.

**Figure 2-3: Sugarloaf Ridge State Park Family Campground**




Eight toilets, in sets of two (#12), and 14 potable water faucets are located around the campground. The restrooms are wooden-framed buildings with flush toilets, but do not have sinks or electricity. Each set of two toilets is hooked up to a separate septic tank and leachfield. No showers are provided.

The campsites along the south side of both loops are very close together, and there is little vegetation to separate one campsite from another. The acoustics in the

campground, particularly near the south wall, allow a person on one side the campground to easily hear a person speaking in conversational tones on the other side of the campground. The combination of these factors creates a noisy and crowded camping experience.

About one-third of the campsites are located along the edge of Sonoma Creek. People wading and playing in the creek near the campsites exacerbate erosion and sedimentation problems within the creek. A discussion of water resources is provided in subsection 2.2.2.

To access the campground, vehicles must cross a single-lane, low-water concrete bridge (#13) over Sonoma Creek. People camping overnight are encouraged to park their vehicles within the campsite in order to save the limited parking space in the park for day-use visitors. Recreational vehicles (RVs) are allowed in the campground; however, there are no hookups, and RVs and trailers longer than 24 feet are not able to cross the low-water bridge. During heavy rains and when creek levels are high, water flows over the bridge, rendering the campground inaccessible by vehicle. In addition, the campsites along the southern part of the first loop are closed during the rainy season in late fall and winter due to wet and boggy conditions below the rock face. Approximately 30 campsites are open during the winter.

There are two pedestrian access points to the campground across Sonoma Creek. Pedestrians share the low-water bridge with vehicles on the west side of the campground, although the bridge is not wide enough for both at one time. A metal footbridge (#14) on the north side of the campground, near the center of the figure eight connects the campground to the campfire center on the north side. The steel footbridge was constructed in 1988 and is in good condition. The footbridge is lighted at night.

The campfire center (#9) is a small amphitheater with 16 benches and a fire ring. Rangers and volunteer groups use the outdoor screen and projector to give nature talks and other presentations to visitors. The campfire center has electricity, water, and is ADA accessible. The campfire center is an adequate size for the existing campground.

Three day-use picnic areas (#10) are located under the canopy of trees north of the campground and south of Adobe

Canyon Road. Fourteen picnic tables and belsen stoves (upright grills) are distributed within the three picnic areas. A gravel parking lot (#11) for picnickers and day-use hikers is located north of the picnic area, across the main road. The day-use parking lot can accommodate up to 34 cars and is filled most weekends from late spring to early fall.

### Observatory/Group Camp Area

The group campsite (#15) and observatory (#16) are located at the end of the public access portion of Adobe Canyon Road, to the northeast of the serve area and the main campground. The group camp accommodates up to 50 people and is one of the only horse camps in the region. A small corral (#17) for up to four horses is located behind the observatory. Horses are not allowed in the family campground.

The Robert Ferguson Observatory is located in a temporary building adjacent to the group campsite. A small dirt/gravel parking lot (#18) is shared by both the group camp and observatory. There is one wooden outhouse toilet (#19) and one portable toilet for the observatory and group campsite. The wooden outhouse was built in 1982 and is in poor condition. The building is not ADA accessible. The portable toilet was installed in 2000 and is ADA accessible. A second wooden outhouse toilet with a pit holding tank has been boarded up and is no longer in use.

There are ongoing conflicts between the observatory and the group campsite. Because the illumination from the group campsite interferes with night viewing, and the activity in the observatory and movement of cars in and out of the parking lot can disturb the group camp, the group campsite must now be rented in conjunction with the observatory. The observatory put the group camp on hold for approximately 120 nights in 2002 through special event permits. Because this is the only group campsite in the park, this requirement has severely limited the number of weekends the group camp is available to people not connected with the observatory. Reservations for the group campsite and observatory may be made year-round.

### Service Area/Horse Barn

This area includes a barn (#20) and horse corral (#21) that can accommodate 10 to12 horses, located to the east of the family campground area along Adobe Canyon Road. Water is

available within the horse barn. These corrals and part of the barn is for the exclusive use of the Horse Concessionaire. A horse concession offers guided horseback riding tours. A portable ADA accessible toilet is located in the parking lot near the horse barn. A wooden outhouse (#27) built in 1982 is located nearby, but is not in use.

The park maintenance service area is also located in this area. This area includes an office and maintenance shop building (#22), a mobile home (#23), and a gravel service area/parking lot (#26). The mobile home is the only employee housing within the park. A building pad (#24) for another mobile home, and electricity, water, and septic connections are located nearby. As described earlier, a greenhouse (#25) will be constructed next to the maintenance building in 2003. The greenhouse will be used for vegetation restoration projects and educational programs.

### Harr Ranch

The former Harr Ranch homestead is located near the northern end of Pierson Road, upstream from the former Golden Bear Lodge near the boundary between Hood Mountain Regional Park and Sugarloaf Ridge State Park and next to the Freeman inholding.

The single-family house, garage, and greenhouse were built in 1956 and are currently in need of repair. The area around the buildings is relatively flat, with wet meadows and a perennial pond nearby. A water well and a septic tank serving the residence is present, but the depth, water quality of the well, and general condition of both facilities are unknown. Because of the state of the buildings, visitors are not allowed to enter. No-trespassing signs are posted.

### Camp Butler

Camp Butler (#29) is an overlook off of Hillside Trail near the southern boundary of Sugarloaf Ridge State Park. The overlook is located in a hanging valley and has expansive views across the main campground area, Sonoma Creek, and over to Bald and Red Mountains. The area was formerly used as a Boy Scout camp in the 1920s and 1930s and included dormitories and a kitchen. Only remnants of the building’s foundation remain. The overlook includes one picnic table and a drinking fountain.

### Red Barn

An old red barn, a trough, and the foundation of the former Hurd Ranch residence are located at the northern end of the High Ridge Trail, near the border with the Santa Rosa Creek Watershed Management Zone. The barn is crumbling, and visitors are not allowed to enter . Relics from the former residence are strewn about the area. Although a spring provides a water source, there is no electricity or septic service in this area. A flat area approximately 100 by 100 feet is located beside the barn.

## Utilities and Services

Table 2-5 identifies the utilities available in each of the facility areas within the park. Water, septic treatment, electricity, propane gas, and telephone service are provided in Sugarloaf Ridge State Park, primarily in the main campground area. All water and sewage treatment facilities for the park are contained on site. Electricity service is provided by PG&E and telephone service by SBC. Two propane gas tanks are located within the park and are refilled as needed. No utility connections are provided in the Santa Rosa Creek Watershed Management Zone, although there are two PG&E transmission lines (115 kilovolt [kV] and 60 kV) that run through the northern section of the site. A description of each of the utility systems is provided below.

### Water Source and Water Treatment Facilities

All water used in park facilities comes from a single 350-foot-deep well located behind the visitor center. The well was built in 1989 and has never run dry; water flows at a rate of 22 to 25 gallons per minute. A submersible pump and control near the well draws water and pumps it up hill to water tanks 1 and 2, located in the southeastern part of the park, near the southern park boundary. The water then flows by gravity feed to the service area/equestrian center and to water tank 3. Water tank 3 serves the visitor center and family campground.

The well water has high levels iron and manganese. Water filters in tanks 1 and 2 cannot reduce the concentrations of these chemicals below state secondary standards; however, the concentrations are not high enough to present a health risk. Tanks 1 and 2 also have an electrical

chlorine and ozone dispenser. Tank 3 does not have electricity, so chlorine is dispensed manually.

All three tanks are in need of maintenance. Tank 1 is a wood tank built in 1986 and can hold 10,000 gallons. The tank itself is in good condition, but the roof needs repair. Tanks 2 and 3 are wooden tanks, built in 1977. Tank 2 can hold 15,000 gallons, and tank 3 can hold 10,000 gallons. Rangers note that tank 3 has enough carrying capacity for the existing camp and reserve for fire suppression. However, after a busy weekend such as the 4th of July, the tank needs to be refilled. Control wires and valves that regulate the distribution of water between the pump, water tanks, and the destination faucets are in poor condition and need to be replaced.

**Table 2-5: Utilities Provided in Sugarloaf Ridge State Park**

| AREA | ELECTRICITY | PROPANE GAS | WATER | SEPTIC TANK & LEACHFIELDS | TELEPHONE |
|---|---|---|---|---|---|
| Visitor Center | Yes | Yes | No | No | Yes |
| Campground/Day Use Area | Campfire Center & Camp Host Site Only | No | Yes | Yes | No |
| Equestrian Center/Service Area | | | | | |
| Mobile Home & Pad | Yes | Yes | Yes | Yes | Yes |
| Office/Maintenance Shop | Yes | No | Yes | No | Yes |
| Horse Concession | Yes | No | Yes | No | Yes |
| Group Camp | No | No | Yes | No | No |
| Observatory | Yes | Yes | Yes | No | Yes |
| Harr Ranch [a] | Yes | No | Yes | Yes | Yes |
| End of High Ridge Trail | No | No | No facilities, natural spring only | No | No |
| Camp Butler | No | No | Yes | No | No |
| Santa Rosa Creek Watershed Management Zone | No [b] | No | No | No | No |

*Notes:*

*[a] Utility connections are provided at the former residence; however, the park does not use any utilities at that site.*

*[b] The PG&E transmission lines that run through the northern section of the park carry electricity from substation to substation. The voltage is too high for the park to draw electricity from the transmission lines directly; distribution lines would need to be provided from the local substation to the park.*

Water is distributed to water faucets, drinking fountains, and restrooms with flush toilets within the park. No public showers are provided within the park. Water faucets can be found throughout the family campground, the group camp, the service area/horse barn, and by the visitor center. Below each faucet is a rock sump that acts as a small leachfield. The number and location of faucets is adequate to serve demand from the existing facilities. Five drinking fountains are provided in the park: two at the group camp, one near the equestrian center/service area, one at the visitor center, and one at Camp Butler.

The waterlines that service the campground from the water tanks are buried very superficially. In some locations, they are located only 8 inches underground. This was discovered during the road re-engineering project that was conducted in 2002, when the waterline placement interfered with road recontouring work.

Several fire hose cabinets are provided in the park: three near the service area/horse barn, and one near the campfire center. The cabinets and hoses are in disrepair, and the water lines leading to the fire hose cabinets are standard household pressure and are not suitable for fire suppression. The hoses may be used to refill fire truck tanks in the event of a fire.

In addition to the well and associated distribution system, Sugarloaf Ridge State Park has three additional sources of water outside of the main campground area: a water well at the former Harr Ranch residence and two natural springs, one at the northern end of the High Ridge Trail, and the other near the southern park boundary. The condition of the water and size of the well at the Harr Ranch site is unknown. The spring at the end of High Ridge Trail has not been developed with any water wells, water filters, or other treatment facilities. Although not currently in use, both of these water sources may become important if backcountry camping or equestrian camping are allowed in these areas in the future.

The spring near the southern boundary is located approximately 100 feet uphill from water tank 3. Prior to the construction of the well in 1989, this spring was used as the water source for the campground and other park facilities. The well is capable of pumping 22.5 gallons a minute. The well was constructed because the spring had low flow during the late summer and could not be relied on to supply the park's demands.

The capability of either the well or the spring, or a combination of both, to sustain additional water demand (such as public showers in the campground) is unknown. The water well has never run dry and has met existing water demand. If the spring system were in working order, it may be able to supply the existing facilities in the park, but would not be able to sustain additional water demand, such as showers.

### Wastewater Treatment

The toilets in the park are served by septic tanks or were built as pit toilets. There is no central wastewater treatment facility. Eight flush toilets in wooden outhouses are placed in sets of two around the family campground area. The restrooms were built in 1967, and each pair is connected to a 1,200-gallon septic tank and leachfield. No sinks are provided in the wooden outhouse toilets. The mobile home and mobile home pad are also connected to a 1,200-gallon septic tank and leachfield.

Two wooden outhouse toilets are located near the group camp and observatory. These toilets were built as pit toilets and are in poor condition. One toilet has a cement vault that is thought to be leaking. The outhouse is boarded up and not in use. The other toilet has a plastic tank to contain the waste. No septic tanks are located at the group camp. A seasonal creek runs along the east side of the group camp parking lot, which may limit the potential for construction of a septic tank and leachfield in this area in the future.

Five portable toilets are under contract for additional public services and to provide ADA accessible restrooms. The portable toilets are located near the observatory, the visitor center, the horse concession parking area, the day-use parking lot, and near the ADA accessible campsites.

The portable toilets are pumped weekly or more often, as needed, during peak times.

Another septic tank exists in the Harr Ranch area, originally installed to serve the residence. A pump station pumps the septic waste to a leachfield above the homestead area, because the topography does not allow for an adequate-sized leachfield near the residence. The toilet, septic tank, and pump have not been used since the Harr Ranch came under Department ownership. The size and condition of the septic tank and pump are unknown.

Overall, the number and location of toilets are sufficient to meet current park demand. However, most permanent toilets are only in fair or poor condition and do not meet ADA accessibility standards. In addition, there are no toilets in any of the buildings within the park, with the exception of the mobile home. Rangers have indicated a desire for a restroom in the visitor center for volunteer and ranger use; however, there is not adequate room for a septic tank and leachfield in the immediate area.

### Electricity/Gas

PG&E provides electricity to Sugarloaf Ridge State Park. Three sets of PG&E transmission lines run through the park: 60-kV transmission lines run along the southeastern edge of the park, and 115-kV and 60-kV transmission lines run through the northern end of the Santa Rosa Creek Watershed Management Zone. PG&E owns easements under the transmission lines and along roads to access the lines. PG&E is responsible for clearing vegetation away from the transmission lines to minimize fire hazard.

An electrical transformer pole located near water tanks 1 and 2 brings electricity from the PG&E transmission lines to the service area, where cables span out to the facilities in the main campground area. Electricity is provided to the visitor center, camp host site, campfire center, horse barn, the office/shop and mobile home in the service area, and the observatory. All electricity cables from the transformer pole to the facilities are underground. Electricity cables and phonelines run under the main road where practical.

A buried 12-kV dropline crosses Hillside Trail just upslope of Camp Butler. Previous to severing it during road reconstruction in 2002, it did not appear on PG&E's maps.

The only other area in the park with electricity service is the former residence at Harr Ranch. The transmission lines connect to the lines on Adobe Canyon Road, near the park entrance and Golden Bear Lodge. The electricity at this location comes from a different circuit than electricity for other park facilities.

Although PG&E high-tension powerlines run through the northern portion of the Santa Rosa Creek Watershed Management Zone, no electrical connections are provided to the property. The voltage in the transmission lines is too large to draw electricity for local use within the park.

Five-hundred-gallon propane tanks are located at the mobile home and visitor center. The propane is used for cooking and heating the buildings, and the tanks are refilled as needed.

#### Telephone

Telephone lines and service are provided by SBC to the entrance station, visitor center, observatory, horse barn, and to the office/shop and mobile home in the service area. All telephone cables are located underground in the park. The main telephone connection to outside of the park is located under Adobe Canyon Road. A need for telephone service at the camp host site has been identified. The camp host relies on a portable telephone that gets reception from the visitor center. In order to receive phone service to the camp host, a new trench for the telephone line must cross Sonoma Creek.

An SBC microwave station rises above Red Mountain. The station is enclosed by chain-link fencing. The Department and the California Highway Patrol (CHP) each have repeaters on the station. SBC is responsible for maintaining the station and owns an access easement on the road leading up to it.

### Emergency Services

#### Park Security

Park rangers provide security for Sugarloaf Ridge State Park and are the first to coordinate fire and medical emergencies. Rangers have law enforcement authority and each carries a gun and a badge. Although not far from the city of Santa Rosa, there is not a high incidence of urban crime within the park. Rangers in the Silverado District

work together to support the multiple state parks in the district. Sugarloaf Ridge, Annadel, and Jack London State Parks are combined into one subunit, which is overseen by a supervising ranger. Six rangers manage the three parks. Radio communications between the three parks allows rangers to mobilize staff in case of an emergency.

### Fire Protection

The General Plan study area, like most wildlands in the area, is particularly vulnerable to fire; with the exception of the creekbeds and some perennial springs, the area typically dries out in the summer, and grass and brush areas are highly flammable.

The ***California Department of Forestry and Fire (CDF)*** is the jurisdictional agency responsible for responding to wildland vegetation fires. CDF does not have service boundaries for each fire station, but responds to a wildland fire by using equipment from the nearest fire stations. The closest CDF fire station is in Glen Ellen, approximately 12 miles from the northern Hood Mountain Regional Park/Santa Rosa Creek Watershed Management Zone entrance, 8 miles from the main campground area of Sugarloaf Ridge State Park, and 1.5 miles from the intersection of Nunns Canyon Road and State Route 12. The Glen Ellen CDF fire station has two Type III fire engines and one Type III bulldozer. Type III equipment includes all-terrain vehicles capable of responding to fires in rugged terrain.

In addition to the equipment from the Glen Ellen station, CDF would be able to draw on equipment from CDF fire stations in St. Helena, Santa Rosa, and Hilton to respond to a fire in Sugarloaf Ridge State Park. CDF would have access to five fire engines, two bulldozers, two air tankers, and two hand crews. Typically, at least one inmate crew is assigned to a project in Sonoma County at any given time. The crews include 17 people and 1 supervisor.

The study area is also within four different fire district service area boundaries: the Kenwood, Rincon Valley, Glen Ellen, and Mayacamas Fire Protection Districts. These fire districts support CDF in case of a wildland fire. The fire districts may be the first to respond to a fire or medical emergency, due to the proximity of local fire stations to

the park. The fire districts provide first-response medical care in addition to fire protection services.

The ***Kenwood Fire Protection District #31 (KFPD)*** service area includes the existing boundaries of Sugarloaf Ridge State Park. A local KFPD volunteer rescue unit would likely be the first to respond to a fire in Sugarloaf Ridge State Park. The KFPD fire station is approximately 4 miles from the main campground area of Sugarloaf Ridge State Park. KFPD equipment includes two Type I fire engines, one Type III (all-terrain) fire engine, a 3,000-gallon water tender, a medical squad vehicle, and rope rescue equipment. The average response time overall is 5 minutes, although the typical response time to the campground area within Sugarloaf Ridge State Park is 10 minutes.

The ***Rincon Valley Fire Protection District #75 (RVFPD)*** would serve the Santa Rosa Creek Watershed Management Zone and Hood Mountain Regional Park. RVFPD has a contract with Sonoma County to serve county lands within its service boundary. The closest Rincon Valley Fire Protection District station is the Middle Rincon Road station in Santa Rosa, approximately 5 miles from the Los Alamos Road entrance. Equipment at the fire station includes one Type I and one Type III fire engine and a water tender. RVFPD average response time is 5 minutes; however, the typical response time to the Santa Rosa Creek Watershed Management Zone and Hood Mountain would be 20 to 30 minutes, because roads are not well marked and are in generally poor condition.

The ***Glen Ellen Fire Protection District*** station is located on State Route 12 and Arnold Drive, approximately 1.5 miles from Nunns Canyon Road. The station includes two Type I, one Type II, and two Type III engines, one rescue medical squad, and one 2,000-gallon water tender. The station would likely be the first to respond to a fire in the Nunns Canyon Management Zone. The average response time to the Nunns Canyon Management Zone entrance is 5 minutes.

The ***Mayacamas Fire Protection District #32 (MFPD)*** would serve the east side of the Mayacamas Ridge up to the ridgeline in Sugarloaf Ridge State Park that separates Sonoma and Napa Counties, outside of the General Plan study area. The MFPD would assist CDF and the other fire protection districts in the event of a fire near the ridgeline. The MFPD is a volunteer fire protection

district and could not be reached for equipment and response-time information.

***Department rangers*** are not trained in fire suppression but would notify the dispatcher at CDF and the appropriate fire protection districts and direct traffic in an emergency situation. Approximately one-half of each water tank within the park (17,500 gallons) is reserved for use in fire suppression. However, as noted previously, the fire hoses in the park have household water pressure and thus could only be used for refilling the water tenders and fire engines from CDF and the fire protection districts.

### Medical Aid

***American Medical Response Ambulance Company (AMR)*** contracts with Sonoma County to respond to medical emergency calls in the General Plan study area. The County requires AMR to meet response-time requirements assigned to zones within the county. The General Plan study area is within the Semi-rural, Rural, and Rural Best Effort zones. The respective response-time requirements for these zones are 14 minutes, 29 minutes, and as soon as possible for emergency calls. The average response time to the main campground area in Sugarloaf Ridge State Park is 15 minutes.

The closest station to the park is on Los Gulicos Road near State Route 12. The station includes Type II ambulances and four-wheel drive “quick response vehicles.” The four-wheel drive vehicles are used in areas where ambulances cannot travel to bring paramedics to the patient and return them to the ambulance. In addition, AMR has two helicopters available 24 hours a day for response to accidents in remote areas. The helicopters are stationed at the Santa Rosa/Sonoma County airport and have an average 20-minute response time to the General Plan study area. The Sonoma County Sheriff’s Department helicopter and paramedics provide long-line emergency rescue and secondary support for all emergency calls requiring a helicopter.

Rangers are trained in emergency-responder medical aid. Medical equipment on site includes oxygen, trauma kits, including bandages, etc., and equipment to assess the extent of injuries, such as blood pressure gauges and stethoscopes. The fire protection district medical squads are generally the first to respond to a medical emergency

call in the study area and are able to provide first-responder care until the ambulance arrives.

### Emergency Access/Egress

The study area includes a number of fire roads that provide access to remote areas of the park (see the Recreational Trails section of this chapter, above). Map 10 identifies emergency access and egress routes, based on GIS roads and trails data and Department staff observations. Often the fire roads are single-lane roads in fair to poor condition. It is therefore important for emergency vehicles to have connecting access and egress routes through the wildlands. The following gaps in emergency access circulation patterns in the General Plan study area are shown on Map 10:

- An improved connection is needed between Los Alamos Road and the Santa Rosa Creek Trail in Hood Mountain Regional Park and the northern fire roads (Wildcat Creek Trail/Maple Glen Trail) in Sugarloaf Ridge State Park in order to provide an emergency access route to the Santa Rosa Creek Watershed Management Zone from the Sonoma County side of the Mayacamas Ridge. The Los Alamos Road extension is too steep and narrow for emergency vehicles, and the road from Hood Mountain Regional Park through the Spaulding property to the Santa Rosa Creek Watershed Management Zone is closed due to a landslide. District staff indicate that the Quercus Trail is substandard and requires road upgrades to provide fire access.

## Map 10: Emergency Access and Egress

- On the east side of Hood Mountain Regional Park, a gap exists between the fire road extending from Pythian Road and the extension of Pierson Road that runs from Adobe Canyon Road through the Bear Creek Watershed Management Zone of Sugarloaf Ridge State Park past the Harr Ranch area.
- A connection is needed across the Mayacamas Ridge from the fire roads that pass through the Santa Rosa Creek Watershed Management Zone to the fire roads in Napa County.

Roads identified as 8 feet wide or greater in the GIS database are shown on Map 10 as emergency access and egress routes. The GIS information was supplemented with Department staff knowledge of the area; additional routes known to be accessible for emergency vehicles, but not shown as 8 feet wide or greater in the GIS database, are also identified on Map 10. Similarly, Department staff identified the Quercus Trail fire road in the Santa Rosa Creek Watershed Management Zone as inaccessible, since some of the raidii are too tight and some crossings are not wide enough for fire trucks. Some of the dirt roads are in poor condition, with improper drainage and deep ruts that could restrict vehicle movement. The GIS database emergency access/egress information needs to be field-verified and updated with road conditions to provide an accurate assessment of the capability of emergency vehicles to pass on the emergency access routes. The Circulation section, below, provides a description of access points to the subunits within the study area.

## Circulation

### Access

Regional access to the vicinity of Sugarloaf Ridge State Park and Hood Mountain Regional Park is provided by State Route 12. State Route 12 extends northwest from the General Plan study area to the city of Santa Rosa and provides a connection with U.S. Highway 101, as well as southeast from the study area to the cities of Sonoma and Napa. Highway 101 connects to other regional routes that provide access to the main population centers of the San Francisco Bay Area. State Route 12 has two travel lanes through the majority of the study area and speed limits range from 45 to 65 miles per hour. The roadway widens to four lanes in Santa Rosa.

Direct access to Sugarloaf Ridge State Park is provided by Adobe Canyon Road, which intersects State Route 12 just north of the community of Kenwood and about five miles southeast of Santa Rosa. Adobe Canyon Road has two travel lanes and extends east from State Route 12 about 2.25 miles before entering the park. Centerline striping is in place, but only minimal shoulder areas are provided. There are frequent curves the last 1.5 miles or so before the park entrance.

Within the park, the roadway narrows (while still allowing two-way traffic flow), has no centerline stripe, and begins a west-to-east uphill grade. There are frequent sharp curves in the 1.25 miles between the park entrance and the park entrance station, where fees are paid. The entrance road is climbs out of a steep canyon, requiring extensive use of gabion baskets to support the roadbed. This road is subject to closure during heavy rainfall and in some cases with snow. Along this section of the road are intermittent dirt shoulder areas for limited off-road parking as well as two no-fee dirt parking areas at trailheads.

Adobe Canyon Road is stop-sign-controlled at State Route 12, and a left-turn lane is provided on the southbound State Route 12 intersection approach. A sign is in place at the intersection directing drivers to Adobe Canyon Road to access Sugarloaf Ridge State Park. There are about 90 residences along Adobe Canyon Road between State Route 12 and the state park entrance, along with a wine tasting room.

Direct access to the northern entrance of Sugarloaf Ridge State Park and Hood Mountain Regional Park is provided by Los Alamos Road, which intersects State Route 12 in the city of Santa Rosa about five miles north of the Adobe Canyon Road intersection. State Route 12 is four lanes wide at Los Alamos Road, and the intersection is signalized. Los Alamos Road has two travel lanes and centerline striping for about 3.5 to 4 miles as it extends east and uphill from State Route 12. The two-lane section ends and the road narrows significantly for roughly a mile before entering Hood Mountain Regional Park. There are many sections of this narrowed roadway where only one-directional flow is possible. Although there are no steep grades on the narrowed section, there are frequent curves, many with limited sight lines due to topography, trees, and

brush. This narrow road segment has been posted with a 10-mile-per-hour speed limit. Los Alamos Road has minimal shoulder areas along its entire length. Given the long downhill grade (east to west) out of the park, some vehicles may experience overheated brakes and not have a place to pull off the road. This situation could cause a significant problem for vehicles towing horse trailers.

Direct access to the Nunns Canyon Management Zone is provided by Nunns Canyon Road. Nunns Canyon Road is a one-lane, poorly paved roadway extending east from State Route 12. It is stop-sign-controlled on its approach to State Route 12, and a left-turn lane has been provided on the southbound State Route 12 intersection approach. This portion of Nunn's Canyon Road is the sole feeder and access to Nelligan Road, also a one-way road of varying width. Nelligan Road traverses approximately 2.5 miles up to the top of the Mayacamas Ridge. Land use is primarily agriculturally influenced, with traffic patterns varying depending on the rhythm of the seasons. Nunn's Canyon is the sole access for emergency services required on Nelligan Road.

In the future, direct access to Hood Mountain Regional Park may be provided by Pythian Road, through the recently acquired Johnson property. Pythian Road extends both east and west from its signalized intersection with State Route 12. Its easterly leg, which would serve the park, extends for less than a mile as a well-paved, two-lane road with centerline striping and serves a winery, a wine tasting room, county juvenile facilities (Los Guilicos Juvenile Facility), and a few residential units. Beyond this point, the roadway narrows for less than a quarter mile (although still allowing two-way flow), and then narrows to a single-lane, poorly paved roadway.

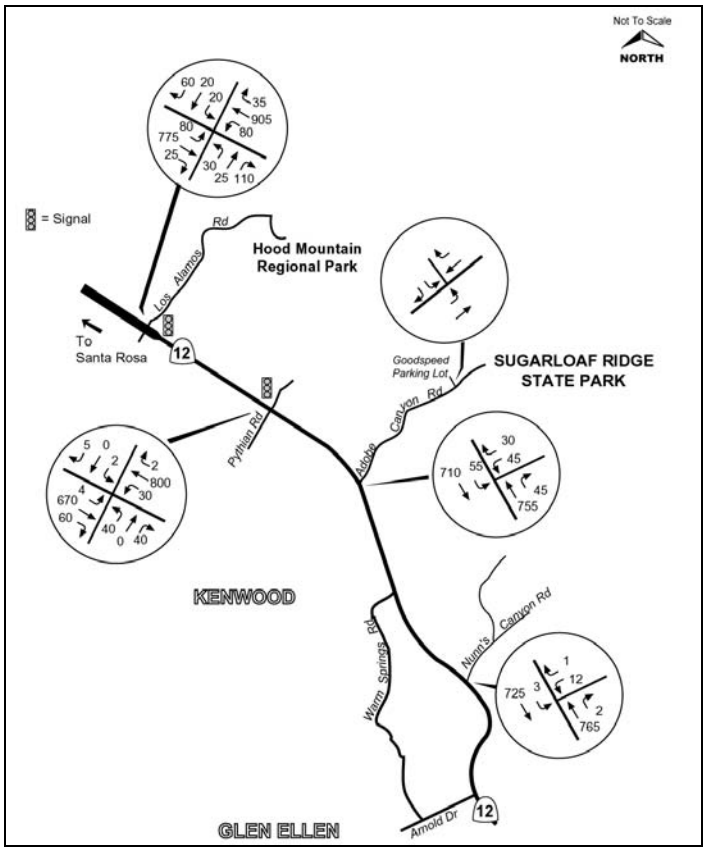
### Volumes

Most traffic exits the park on Sunday afternoons, when campers are going home and hikers are finishing up the day's activities. This time also coincides with a weekend peak traffic volume on State Route 12, typically between 2:00 and 5:00 p.m., the peak period in winter months. In summer months, the peak period is likely between 5:00 and 8:00 p.m.

Crane Transportation Group conducted traffic counts on Sunday afternoon (2:00 to 5:00 p.m.), November 17, 2002, at

the State Route 12 intersections with Los Alamos Road, Adobe Canyon Road, and Nunns Canyon Road, as well as along Adobe Canyon Road at the entrance to Sugarloaf Ridge State Park. Traffic count results are presented in Appendix D. The late-fall counts were then seasonally adjusted to reflect peak summertime traffic conditions along State Route 12 and along Adobe Canyon Road at the park entrance. Seasonal adjustments for State Route 12 were based upon extensive previous traffic count surveys by Crane Transportation Group, while the summertime park volumes were developed by state park staff. Existing summer Sunday afternoon peak-hour traffic volumes (for 3:30 to 4:30 p.m.) are presented in Figure 2-4.

**Figure 2-4: Sunday P.M. Peak-Hour Volumes Existing Summertime Peak Hour**




*Source: Crane Transportation Group, 2002.*

Intersection Operation (Level of Service)

Intersections are usually the capacity-controlling locations of any circulation system. Operating conditions are presented based on a "level of service" (LOS) scale, which ranges from LOS A, indicating uncongested conditions,

to LOS F, indicating extended delay. The methodology is explained in Appendix D. The LOS designation for a signalized intersection pertains to the entire intersection (such as at the State Route 12 intersections with Los Alamos Road and Pythian Road), whereas at a stop-sign-controlled intersection, the critical LOS designation pertains only to the delay experienced by the side-street traffic that is stop-sign-controlled (such as at the State Route 12 intersections with Adobe Canyon Road and Nunns Canyon Road). Sonoma County uses LOS C as the poorest acceptable operation at signalized intersections, and LOS D as the poorest acceptable operation on stop-sign-controlled side-street approaches.

Table 2-6 shows that the signalized State Route 12 intersections with Los Alamos Road and Pythian Road are operating at acceptable levels of service during the peak traffic hour on a summer Sunday afternoon. However, the stop-sign-controlled Adobe Canyon Road approach to State Route 12 is operating unacceptably at LOS F, while the stop-sign-controlled Nunns Canyon Road intersection approach is also operating unacceptably at LOS E.

**Table 2-6: Intersection Level of Service**
**Summer Sunday Afternoon Peak Hour**

| INTERSECTION | SIGNALIZATION | LOS | AVERAGE CONTROL DELAY (SECONDS) |
|---|---|---|---|
| State Route 12 / Los Alamos Road | Signalized | A | 9.1 |
| State Route 12 / Pythian Road | Signalized | A | 5.5 |
| State Route 12 / Adobe Canyon Road | Unsignalized | F (unsignalized) | 92.7[a] |
| State Route 12 / Nunns Canyon Road | Unsignalized | E (unsignalized) | 41.2[b] |

*Source: Crane Transportation Group, Year 2000 Highway Capacity Manual Analysis*
*Notes:*
*[a] Control delay in stop sign controlled Adobe Canyon Road left turn.*
*[b] Control delay in stop sign controlled Nunns Canyon Road approach.*

### Intersection Signal Needs

The need for traffic signals is determined using criteria called "signal warrants," which have been developed by the California Department of Transportation (Caltrans) and which are explained in Appendix D. Currently, the State

Route 12 intersection with Adobe Canyon Road has Sunday p.m. peak-hour volumes approaching peak-hour signal warrant criteria levels, while peak-hour volumes at the State Route 12/Nunns Canyon Road intersection are well below peak-hour signal warrant criteria levels.

### Transit Service

The Sonoma County Transit Agency bus #30 runs from Kenwood, located four miles from the main campground area at Sugarloaf Ridge State Park, eastbound to Santa Rosa and westbound to Sonoma. The price of a ticket to Santa Rosa is $1.45, and the price to Sonoma is $1.75. Times between buses range from a half hour to 2½ hours on weekdays and 3½ to 4 hours on weekends. Sonoma County commuter bus #34 also runs between Santa Rosa and Sonoma, stopping in Kenwood, during the weekday peak hours. It runs southbound in the morning and northbound in the evening.

### Parking

Table 2-7 identifies the existing parking lot capacity and estimated overflow parking available within Sugarloaf Ridge State Park and Hood Mountain Regional Park. Parking for the Adobe Canyon and Bear Creek Management Zones is provided within the main campground area and at trailheads and pullouts along Adobe Canyon Road between the entrance sign at the park boundary and the entrance station. Within the main campground area, parking is provided at each of the use areas described in Section 2.2, Existing Facilities, above. Parking for the Santa Rosa Creek Watershed Management Zone is provided at the northern entrance to Hood Mountain Regional Park off of Los Alamos Road. No public parking is currently provided for the Nunns Canyon Management Zone.

**Table 2-7: Parking Lot Capacity and Overflow Parking**

| AREA | PRIMARY VISITOR USE | PARKING LOT CAPACITY | OVERFLOW PARKING |
|---|---|---|---|
| ADOBE CANYON | | | |
| Visitor Center/Entrance Station | Visitor check-in<br>Interpretive exhibits | 9 | 0 |
| Campground/Day-Use Area<br>Family Campground<br>Day-Use Lot | Camping<br>Hiking | 100<br>34 | 25<br>0 |
| Service Area/Horse Barn | Horseback riding<br>Hiking | 32[a] | 0 |

| | | | |
|---|---|---|---|
| Observatory/Group Camp Area | Observatory Camping/hiking | 25 | 0 |
| Goodspeed Trailhead | Hiking | 10 | 8 [b] |
| Waterfall Shoulder Pullouts | Hiking | 10 | 2 [b] |
| Ponygate Trailhead | Hiking | 10 | 0 |
| Adobe Canyon Road Overflow | Hiking | NA | 20 [b] |
| SANTA ROSA CREEK WATERSHED MGMT ZONE / HOOD MOUNTAIN REGIONAL PARK | | | |
| Los Alamos Road Entrance Parking Lot | Hiking | 30 | 10 [b] |
| **TOTAL** | | **210** | **117** |

*Notes:*

*[a] The Service Area/Horse Barn lot is not striped and could accommodate 5 horse trailers. Typically, horse trailers occupy the equivalent of 2.5 standard parking spaces per horse trailer. If 5 horse trailers are parked in the lot, then 20 standard parking spaces would be available.*

*[b] Illegal Parking*

*NA = Not applicable*

### *Visitor Center/Entrance Station Area*

A small paved parking lot (six vehicles) is located in front of the visitor center, and a small short-term parking lot (four vehicles) is located next to the entrance station. The visitor center lot also has one space designated for disabled persons and one space designated for park employee use. There is room available to the north to expand the visitor center parking lot, although the space is adequate for current visitor center parking demand.

### *Campground/Day Use Area*

Each family campsite includes an unpaved parking spur for one vehicle. Campers are encouraged to park extra vehicles in their campsite rather than in the nearby day-use lot. . This parking overflow situation in the campsites affects the camping experience.

A gravel parking lot for picnickers and day-use hikers is located north of the picnic areas and family campground, across Adobe Canyon Road. The day-use parking lot can accommodate up to 34 cars and is filled most weekends from late spring to early fall.

### *Equestrian Center/Service Area*

The gravel equestrian center/service area parking lot is the only area within the park that is large enough to allow a truck with a horse trailer to turn around. The lot can accommodate up to 33 cars; however, typically 6 horse

trailers park in this area during the day, allowing space for only 15 to 18 additional cars. Rangers often patrol the area to make sure that day-use visitors, looking for limited parking spots, do not park in this area and block the trailer turn-around. This lot can be used to its full capacity as overflow parking for the observatory during night viewings.

*Observatory/Group Camp Area*

A 25-space dirt/gravel parking lot is shared by both the group camp and observatory. The parking lot is often too small for the number of visitors to the observatory during night viewing, and the service area/horse barn and day-use parking lots are used for overflow parking.

*Other Areas within Sugarloaf Ridge State Park*

Several small parking lots and pullouts are located on Adobe Canyon Road between the entrance sign near the park boundary and the entrance station in the campground area. A small gravel parking lot is located by the Goodspeed trailhead on the north side of Adobe Canyon Road. The parking lot can accommodate 10 cars and is used by both Sugarloaf Ridge State Park and Hood Mountain Regional Park visitors. Another small parking lot (10 cars) is located near the Ponygate trailhead. People often park in pullouts along the road to visit scenic overlooks and to hike to the waterfall. The spontaneous trails through the vegetation leading from the pullouts to the waterfall are causing erosion problems.

When all lots are full, visitors park illegally on the grass on the sides of Adobe Canyon Road. There have been as many as 20 cars along the side of the road near Goodspeed and Ponygate trailheads. During special events, such as nighttime viewings of meteor showers or comets, there have been on occasion 100 cars parked in the road between the entrance station and the observatory. These events occur rarely, but rangers are concerned with people parking illegally and blocking emergency access routes. On these rare occasions, volunteers and park rangers ask people to park down one side of the road to allow access for emergency vehicles. Rangers will sometimes turn visitors around and ask them to come back at a later time.

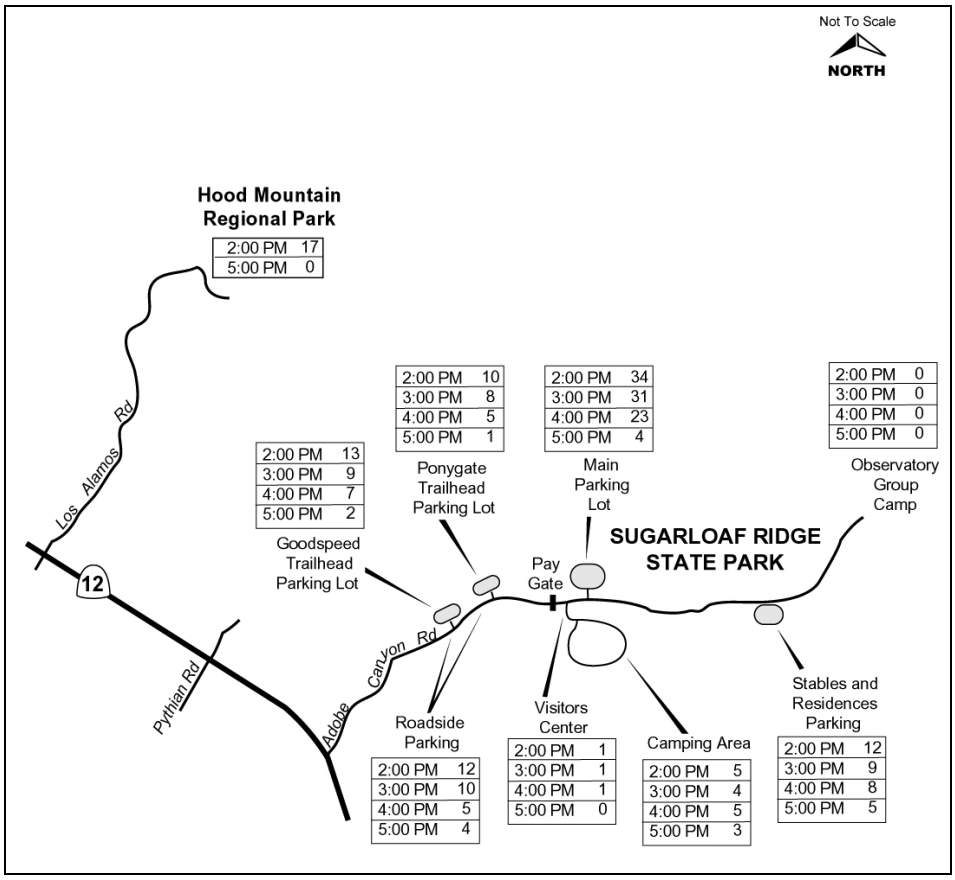
*Los Alamos Road Entrance (Hood Mountain Regional Park)*

A parking lot for Hood Mountain Regional Park is provided at the northern entrance on Los Alamos Road. The parking lot can accommodate 30 vehicles and is also shared by visitors accessing the Santa Rosa Creek Watershed Management Zone of Sugarloaf Ridge State Park.

Parking Demand

Crane Transportation Group conducted parking surveys on a November 2002 Sunday afternoon in both Sugarloaf Ridge State Park and Hood Mountain Regional Park. Results are presented in Figure 2-5 and Table 2-8. At Sugarloaf Ridge State Park, almost all the free trailhead parking outside the pay station gate was occupied in the middle of the afternoon, while more than half the available day-use parking was occupied within the park (east of the pay station). Only 10% of the campground spaces were used. At Hood Mountain Regional Park, 17 out of 30 parking spaces were occupied at 2:00 p.m., with all spaces empty by 5:00 p.m.

**Figure 2-5: Sunday P.M. Peak Period Parking Demand November 17, 2002 (2:00-5:00 P.M.)**




*Source: Crane Transportation Group, 2002.*

## Table 2-8: Sunday Afternoon Parking Demand at Sugarloaf Ridge State Park

| LOT ASSUMED DAY-USE OCCUPANCY | CAPA CITY | OVER FLOW | 2:00 P.M. | | 3:00 P.M. | | 4:00 P.M. | | 5:00 P.M. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | JUNE 100% | NOV. | JUNE 100% | NOV. | JUNE 80% | NOV. | JUNE 60% | NOV. |
| ADOBE CANYON | | | | | | | | | | |
| Visitor Center/Entrance Station | 9 | 0 | 9 | 1 | 9 | 1 | 7 | 1 | 5 | 0 |
| Campground/Day-Use Area | | | | | | | | | | |
| Family Campground [a] | 100 | 25 | 43 | 5 | 43 | 4 | 43 | 5 | 43 | 3 |
| Day-Use Lot | 34 | 0 | 34 | 34 | 34 | 31 | 27 | 23 | 20 | 4 |
| Service Area/Horse Barn | 32[b] | 0 | 18 | 12 | 18 | 9 | 14 | 8 | 11 | 5 |
| Observatory/Group Camp | 25 | 0 | 25 | 0 | 25 | 0 | 20 | 0 | 15 | 0 |
| Goodspeed Trailhead | 10 | 8 [c] | 18 | 13 | 18 | 9 | 14 | 7 | 11 | 2 |
| Waterfall Shoulder Pullouts | 10 | 2 [c] | 12 | 12 | 12 | 10 | 10 | 5 | 7 | 4 |
| Ponygate Trailhead | 10 | 0 | 10 | 10 | 10 | 8 | 8 | 5 | 6 | 1 |
| Adobe Canyon Road | NA | 20 [c] | 20 | 0 | 20 | 0 | 16 | 0 | 12 | 0 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Overflow | | | | | | | | | | |
| *Subtotal (Parking accessed by Adobe Canyon Road)* | | | *189* | *87* | *189* | *72* | *159* | *54* | *130* | *19* |
| SANTA ROSA CREEK WATERSHED MANAGEMENT ZONE / HOOD MOUNTAIN REGIONAL PARK | | | | | | | | | | |
| Los Alamos Road Entrance | 30 | 10* | 40 | 17 | 40 | [d] | 32 | [d] | 24 | 0 |
| **TOTAL** | | | **229** | **104** | **229** | **72** | **191** | **54** | **154** | **19** |

*Sources: November 17, 2002 counts: Crane Transportation Group*
*June estimates: Sugarloaf Ridge State Park Head Ranger observations*

*Notes:*

*[a] The family campground has 50 campsites. Check-out time is noon, and most peak weekend campground users have left by the afternoon hours. Assumes 35% campground occupancy Sunday night.*

*[b] The service area/horse barn lot is not striped and could accommodate 5 horse trailers. Typically, horse trailers occupy the equivalent of 2.5 standard parking spaces per horse trailer. If 5 horse trailers are parked in the lot, then 20 standard parking spaces would be available.*

*[c] Illegal Parking*

*[d] Traffic count data were not available for 3:00 p.m. and 4:00 p.m. on November 17, 2002.*

*NA = Not applicable*

Peak summertime Sunday afternoon parking use was projected by Department staff and is shown in Table 2-8. Ranger observations indicate that most parking lots and overflow parking are at full capacity early on Sunday afternoons in June, during good weather. The exceptions are the service area/horse barn parking lot and the family campground. As noted previously, horse trailers are not able to turn around in the horse barn parking lot if it is filled to capacity with cars. Rangers generally regulate parking in this area, limiting parking to a maximum of 18 cars, so that the trailers are able to turn around.

The estimated average occupancy of the family campground on peak summer Sunday nights is 35%, based on State Parks Form DPR 449 visitation use patterns (occupancy rates range from 20% to 60% on Monday following peak weekends). It is not known how many visitors are new to the campground on Sunday and how many are remaining from the weekend. The family campground check-out time is noon, so many campers leave the park between 11:00 a.m. and 1:00 p.m. A few campers remain for additional day-use activities and are required to park in day-use parking areas and exit the park with other day users.

Peak summer egress from the park occurs in stages. Day use in the summertime is fairly consistent in the early afternoon, but by 4:00 p.m. users are beginning to exit the

park. By 4:00 p.m. on Sunday afternoon it is estimated that 20% of the day-use visitors have left the park, and by 5:00 p.m. it is estimated that 40% of the day-use visitors have left.

## Air Quality

### Air Pollution Climatology

Sugarloaf Ridge State Park is located at the northern end of the Sonoma Valley. The Sonoma Valley is a long, narrow valley running north-south between Sonoma Mountain on the west and the taller Mayacamas Ridge to the east. Because the valley is sheltered from direct sea breezes, winds are lighter than in most parts of the San Francisco Bay Area. Winds tend to be from the south during the day and from the north during the night.

The air pollution potential of the Sonoma Valley is high. Prevailing winds can transport locally- and regionally-generated pollutants northward into the narrow valley, which often traps and concentrates the pollutants under stable conditions. The local upslope (southerly) and downslope (northerly) flows set up by the surrounding mountains may also recirculate pollutants.

### Ambient Air Quality Standards

The federal and California state ambient air quality standards are summarized in Table 2-9 for important pollutants. The federal and state ambient standards were developed independently with differing purposes and methods, although both standards attempt to

**Table 2-9: Federal and State Ambient Air Quality Standards**

| POLLUTANT | AVERAGING TIME | FEDERAL PRIMARYSTANDARD | STATE STANDARD |
|---|---|---|---|
| Ozone | 1-Hour<br>8-Hour | 0.12 ppm<br>0.08 ppm | 0.09 ppm<br>NA |
| Carbon Monoxide | 8-Hour<br>1-Hour | 9.0 ppm<br>35.0 ppm | 9.0 ppm<br>20.0 ppm |
| Nitrogen Dioxide | Annual<br>1-Hour | 0.05 ppm<br>NA | NA<br>0.25 ppm |
| Sulfur Dioxide | Annual<br>24-Hour<br>1-Hour | 0.03 ppm<br>0.14 ppm<br>NA | NA<br>0.05 ppm<br>0.5 ppm |
| $PM_{10}$ | Annual<br>24-Hour | 50 $\mu g/m^3$<br>150 $\mu g/m^3$ | 30 $\mu g/m^3$<br>50 $\mu g/m^3$ |
| $PM_{2.5}$ | Annual<br>24-Hour | 15 $\mu g/m^3$<br>65 $\mu g/m^3$ | NA<br>NA |
| Lead | 30-Day | NA | 1.5 $\mu g/m^3$ |

| | | | |
|---|---|---|---|
| | Month | 1.5 µg/m$^3$ | NA+ |

*Notes:*
*ppm = parts per Million*
*µg/m$^3$ = Micrograms per Cubic Meter*
*NA = Not applicable*

avoid health-related effects. As a result, the federal and state standards differ in some cases, and in general the California standards are more stringent. This is particularly true for ozone and $PM_{10}$ (particulate matter, 10 microns or greater in diameter).

### Air Pollutants of Concern in Sonoma County

The federal and state ambient air quality standards cover a wide variety of pollutants. Only a few of these pollutants are problems in Sonoma County, either due to the strength of the emission or the climate of the region. The closest air monitoring site to the study area is located in Santa Rosa.

Table 2-10 summarizes violations of air quality standards in Santa Rosa for the five-year period 1997-2001. Ozone and particulate matter are the two air pollutants of greatest concern in Sonoma County.

**Table 2-10: Air Quality Data Summary for Santa Rosa, 1997-2001**

| POLLUTANT | STANDARD | DAYS STANDARD EXCEEDED IN: | | | | |
|---|---|---|---|---|---|---|
| | | 1997 | 1998 | 1999 | 2000 | 2001 |
| Ozone | Federal 1-Hour | 0 | 0 | 0 | 0 | 0 |
| Ozone | State 1-Hour | 0 | 0 | 1 | 0 | 0 |
| Ozone | Federal 8-Hour | 0 | 0 | 0 | 0 | 0 |
| $PM_{10}$ | Federal 24-Hour | 0 | 0 | 0 | 0 | 0 |
| $PM_{10}$ | State 24-Hour | 2 | 1 | 1 | 0 | 2 |
| $PM_{2.5}$ | Federal 24-Hour | - - | - - | 0 | 0 | 1 |
| Carbon Monoxide | State/Federal 8-Hour | 0 | 0 | 0 | 0 | 0 |
| Nitrogen Dioxide | State 1-Hour | 0 | 0 | 0 | 0 | 0 |

*Source: Air Resources Board, Aerometric Data Analysis and Management (ADAM), 2002.*

#### *Ozone*

Ground-level ozone, often referred to as smog, is not emitted directly, but is formed in the atmosphere through complex chemical reactions between nitrogen oxides (NOx) and reactive organic gases (ROG) in the presence of sunlight. The principal sources of NOx and ROG, often termed ozone precursors, are combustion processes (including automobiles) and evaporation of solvents,

paints, and fuels. Motor vehicles are the single largest source of ozone precursor emissions in Sonoma County. Exposure to ozone can cause eye irritation, aggravate respiratory diseases, and damage lung tissue, as well as damage vegetation and reduce visibility.

*Particulate Matter ($PM_{10}$ and $PM_{2.5}$)*

Particulate matter includes as wide range of solid or liquid particles, including smoke, dust, aerosols, and metallic oxides. There are many sources of particulate matter emissions, including combustion, industrial processes, grading and construction, and motor vehicles. Of the particulate matter emissions associated with motor vehicle use, some are tailpipe and tire-wear emissions, but greater quantities are generated by resuspended road dust. Consequently, improvements in motor vehicle engines and fuels have not reduced particulate matter emissions as significantly as they have reduced emissions of other pollutants. Wood burning in fireplaces and stoves is a significant source of particulate matter, particularly during cold, stagnant wintertime episodes when levels are highest[5]. Health effects of particulate matter vary depending on a number of factors, including the type and size of the particle. Research has shown a correlation between high inhalable particulate matter ($PM_{10}$) concentrations and increased mortality rates. Elevated levels can also aggravate chronic respiratory illness such as bronchitis and asthma. Fine particulate matter ($PM_{2.5}$) is a concern because it can bypass the body's natural filtration system more easily than larger particles, and can lodge deep in the lungs.

Sensitive Receptors and Pollution Sources

Sensitive receptors are facilities where sensitive receptor population groups (children, the elderly, the acutely ill, and the chronically ill) are likely to be located. These land uses include residential areas, schools, retirement homes, convalescent homes, hospitals, and medical clinics. The closest sensitive receptors to the study area are residences along State Route 12 and Adobe Canyon Road.

[5] Campsites at Sugarloaf Ridge State Park have a very low occupancy rate, <10% during the winter months, when stagnant wintertime conditions most typically occur.

### Noise

The park and surrounding area is generally quiet, with noise sources in most areas of the park limited to park visitor's voices, aircraft, birds, insects, and leaves rustled by breezes. The steep hillsides in the park give it a remote feeling and shield it from the noise of surrounding areas, most notably automobile and truck traffic on State Route 12.

The ambient noise levels shown in Table 2-11 are similar to those usually found in quiet rural areas. For perspective, the noise levels of conversational speech are typically in the range of 55 dBA to 65 dBA, and the noise levels near busy roadways in Sonoma County often range from 60 dBA to 75 dBA or more.

**Table 2-11: Ambient Noise Levels**

| SOUND STANDARD | LEVEL (IN DBA) EXCEEDED FOR SPECIFIED CUMULATIVE DURATION OUT OF ONE HOUR | | | | |
|---|---|---|---|---|---|
| | 30-60 MINUTES | 15-30 MINUTES | 5-15 MINUTES | 1-5 MINUTES | 0-1 MINUTE |
| Typical Ambient | 39 | 41 | 43 | 45 | 48 |
| Quiet Ambient | 34 | 35 | 35 | 37 | 37 |

*Source: Sound Solutions, Sonoma Inn EIR*

An exception to the park's quiet condition occurs in the park's primary visitor-serving area in Adobe Canyon. Most park facilities are concentrated on the valley floor in Adobe Canyon, where the steep hillsides of the canyon form a bowl that reflects noise inside. As a result, noise carries easily from one activity area in the valley to another.

This is particularly a problem at night when visitors occupy three different areas within the park: the family campground, the group camp, and the observatory. Visitors trying to sleep in the family campground are usually the most bothered by the noise. The campsites on the southern loop of the family campground abut a vertical cliff that reflects noise from the valley directly into the campsites. Rangers often receive complaints about noise from the group camp carrying over to the family campground. Larger groups typically have a harder time staying quiet and are likely to stay awake later than people in the family campground. A noise curfew for the park starts at 10 p.m., which, with ranger enforcement, is generally effective at controlling

nighttime noise. However, because of the acoustics within the valley, even conversational tones can be heard at a distance. During special celestial events, the observatory may be open all night for viewings, with associated noise from the movement of cars, car doors opening and closing, and people's conversations.

During the day, noise from one person talking loudly within the valley may also reduce another's enjoyment of the outdoors and the natural setting. The sounds of birds and other wildlife may be disrupted by people's conversations.

### 2.2.4 VISITOR PROFILE

#### Visitor Origins

Visitor origins have not been officially tracked by the Department. However, ranger observations and knowledge of the local population provide a window into some visitors' origins. The easiest segment to track is the overnight campers, since they check in and pay the rangers upon entering. Campers typically travel farther than day users, with a large portion visiting from Sacramento and the Bay Area. Day users, on the other hand, are more typically Sonoma County residents, visiting the park to go hiking from nearby Sonoma and Santa Rosa. More demographic information is provided in subsection 2.1.3.

#### Visitor Activities

Trail Use

Day hikers are the primary trail users in Sugarloaf Ridge State Park. The trails are more remote than those in nearby Annadel State Park; the terrain is more difficult with steeper slopes, and there are few developed facilities in the backcountry areas. This adversity may be daunting to some, although the remote quality of the park appeals to many visitors interested in more wildland-type experiences, with rugged scenery and backcountry hiking. In the past, the park's remoteness may have limited the number of visitors to Sugarloaf Ridge State Park. According to ranger observations, an estimated 30% of the visitors go for extended hikes in the backcountry areas of the park. Roughly half of Sugarloaf Ridge State Park's trails are open to shared use, although only the heartiest of bikers are attracted to the rugged terrain. Trails at Hood Mountain Regional Park have not received heavy use by

equestrians or mountain bikers, but use may increase with better connections to the trails at Sugarloaf Ridge State Park.

The horse concessionaire at Sugarloaf Ridge State Park is a major draw for equestrian recreation. Those using the horse concession facilities do not typically bring their own horses, though parking for horse trailers is in the area. The parking lot has space for six day-use horse trailers, and most trails are open for horse riding, although some are closed during wet weather (typically winter months) to protect from erosion.

Goodspeed Trail is one of the major trails that serve both Sugarloaf Ridge State Park and Hood Mountain Regional Park and is subject to realignment / reroute as a result of a landslide in the winter of 2003. The Goodspeed trailhead is located just inside the Adobe Canyon gate. A little further up Adobe Canyon Road is the Pony Gate trailhead. For a complete listing of trails within Sugarloaf Ridge State Park, refer to Section 2.2.3, Existing Facilities, above.

Access to the Santa Rosa Creek Watershed Management Zone and Hood Mountain Regional Park northern entrance are via Los Alamos Road, a long, winding ascent up to the ridge. The trails tend to be used by organized groups such as Audubon, Sierra Club, Santa Rosa Junior College, and the Oakmont Hikers, particularly since the trails are old ranch roads that easily accommodate group hikes. These hikes typically draw 8 to 30 people per hike. The parking area is only open four days a week, Friday through Monday. The gate to both parks is closed mid-week, eliminating access from the Los Alamos parking area. On most weekends, 8 to 15 cars are parked at the 30-car parking lot, with roughly half of the visitors going to Sugarloaf Ridge State Park and the other half to Hood Mountain Regional Park. On Mondays and Fridays, the numbers drop to between one and five cars in the lots. According to ranger observations, typical car occupancy averages about three people per car.

### Camping

Sugarloaf Ridge State Park is one of only a few public camping areas in the region. The nearest camping areas are Spring Lake Park, approximately six miles away, immediately adjacent to the city of Santa Rosa; Liberty Glenn campgrounds at Lake Sonoma, approximately 40 miles to the

northwest; and Armstrong Woods near the coast along the Russian River. Overnight use at Sugarloaf Ridge State Park is popular, particularly from May to October, when the campground's 50 sites are often full. Camping visits are limited to a one-week duration and a maximum of 30 days per year (required 48-hour break between week-long stays). Eight people are allowed in each campsite and, although there is room for two cars, one is preferred. In some cases visitors are asked to leave additional cars in the overflow parking lot. Camping with mobile homes and recreational vehicles is allowed, though no service hookups are available. Primitive backcountry camping was available on weekends in Hood Mountain Regional Park at Azalea Creek from 1993 to 1995, and SCRP is considering reopening this area. Equestrian camping is also available at Sugarloaf Ridge State Park's group camp, although the corral can accommodate only three to four horses at a time and must not conflict with observatory use.

#### Astronomy

The Robert Ferguson Observatory prebooks the Group Camp for special events approximately 50% of days and weekends during spring, summer, and fall seasons (based on observatory reservations at the group campsite; see below for definitions of season times). The observatory also hosts classes through the local junior college, docent classes, volunteer training, meetings, and public viewing. A visiting group typically occupies the group camp when solar viewing is offered at the observatory (from noon to 4:00 p.m.). Summer evening viewing takes place from sundown until 11:00 p.m. or midnight, although on good nights people may stay all night.

### Visitor Attendance

According to ranger observations, visitation to Sugarloaf Ridge State Park has been increasing steadily for the past decade. The park used to be crowded only on holiday weekends; now overflow occurs every weekend during the peak season and often during the shoulder seasons. Quantification of the observed increase in visitation is difficult since the numbers are often grouped together into monthly and annual reports. The most important visitation reports are the daily counts that are recorded on State Parks Form 449. Review of these forms yielded three numbers collected daily:

- Paid Day Use – Parking fee paid to the park staff or voluntarily paid to iron ranger.
- Free Day Use – Number derived from optical car counter and ranger observations.
- Paid Overnight Use – Actual number of paying campers.

Of the three figures, the paid day use and paid overnight use are the most reliable, as they are based on revenue generated for Sugarloaf Ridge State Park. The free day-use number, typically the largest number, is less reliable. Often the optical car counter malfunctions, and visitor numbers are based on a multiple of the car count. In short, the visitation numbers need to be scrutinized closely to obtain reliable data. The official estimated annual visitation numbers for 1995 to the present, and monthly figures for fiscal year 2001/2002 are provided below in Table 2-12.

Table 2-12 shows that visitor attendance increased from 1995 to 1997, decreased from 1997 to 1999, and then began increasing again from 1999 to 2002. Estimated free day-use visitation increased significantly (roughly 50%) in 2000/20001 and 2001/2002 from the previous years. By statewide policy, day-use fees were not collected during the 2000/2001 and 2001/2002 fiscal years when the entrance station was not staffed, resulting in an increase in visitor day use.

Another method of estimating daily visitor attendance is through parking capacity. Table 2-13 shows an estimate of maximum peak-day visitation based on parking capacity within the park. The estimates are based on daytime use in peak season during good weather, when the park is expected to attract the most visitors.

**Table 2-12: Sugarloaf Ridge State Park Collected Visitation Numbers 1995-2002 by Year**

| FISCAL YEAR | PAID DAY USE | FREE DAY USE | OVERNIGHT | TOTAL ATTENDANCE |
|---|---|---|---|---|
| 1995/1996 | 26,488 | 37,763 | 19,019 | 83,270 |
| 1996/1997 | 29,616 | 36,037 | 18,684 | 84,337 |
| 1997/1998 | 30,525 | 31,593 | 20,106 | 82,224 |

| | | | | |
|---|---|---|---|---|
| 1998/1999 | 29,608 | 26,839 | 16,796 | 73,244 |
| 1999/2000 | 30,278 | 28,602 | 19,090 | 77,970 |
| 2000/2001 | 22,919 | 52,857[a] | 19,719 | 95,496 |
| 2001/2002 | 21,048 | 101,857[a] | 21,038 | 143,943 |

| MONTH | PAID DAY USE | FREE DAY USE | OVERNIGHT | TOTAL |
|---|---|---|---|---|
| July 2001 | 2,257 | 9,596 | 3,056 | 14,909 |
| August 2001 | 1,782 | 1,271 | 3,097 | 6,150 |
| September 2001 | 1,874 | 7,932 | 2,814 | 12,620 |
| October 2001 | 1,145 | 7,671 | 2,205 | 11,021 |
| November 2001 | 991 | 8,598 | 807 | 10,396 |
| December 2001 | 702 | 5,804 | 253 | 6,759 |
| January 2002 | 1,509 | 6,052 | 449 | 8,010 |
| February 2002 | 2,190 | 5,573 | 534 | 8,297 |
| March 2002 | 2,006 | 6,849 | 1,134 | 9,989 |
| April 2002 | 2,066 | 17,329 | 1,776 | 21,171 |
| May 2002 | 2,236 | 12,547 | 2,486 | 17,269 |
| June 2002 | 2,290 | 12,635 | 2,427 | 17,352 |
| | | | **Total** | **143,943** |

*Note:*
*[a] By statewide policy, day-use fees were not collected during the 2000/2001 and 2001/2002 fiscal years when the entrance station was not staffed.*
*Source: CDPR, 2002.*

The maximum peak-day visitation estimates in Table 2-13 employ the same conversion factors used by the rangers at Sugarloaf Ridge State Park to determine the number of visitors per vehicle (vehicle occupancy) in State Form DPR 449. Specifically, an average of 2.7 hikers and 3.2 campers arrive in any one car.

Table 2-13 also takes into account visitors that arrive to the park by bicycle or on foot that would otherwise not be accounted for in the estimates based on parking capacity. Rangers estimate that the number of visitors arriving by bicycle or on foot is approximately 5% of the number of visitors arriving by vehicle per day.

**Table 2-13: Parking Capacity and Maximum Peak-Day Visitation (2002)**

| | EXISTING PARKING SPACES | MAXIMUM VISITORS AT ONE TIME [A] | TYPICAL DURATION OF VISIT [B] | TYPICAL PARKING TURNOVER PER DAY | MAX VISITORS PER DAY [C] |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Adobe Canyon | | | | | |
| Visitor Center/Entrance Station | | | | | |
| Short-term parking | 9 | 0 | 15 min | 10 | - |
| Day use parking | 0 | 0 | 4 hr | 2 | 0 |
| Campground/Day Use Area | | | | | |
| Day Use Lot | 34 | 92 | 4 hr | 2 | 184 |
| Family Campsites | 100 | 314 | all day | 1 | 314 |
| Family Campsite Overflow | 25 | 80 | all day | 1 | 80 |
| Service Area/Horse Barn | | | | | |
| Parking (expansion into the former service area) | 20 | 54 | 3 hr | 3 | 162 |
| Parking for the new Group Camp [d] | 0 | 0 | all day | 1 | 0 |
| Observatory Area (no change) | 25 | 67 | 4 hr | 2 | 134 |
| Adobe Canyon Road | | | | | |
| Trailhead parking | 20 | 54 | 2-3 hr | 3 | 162 |
| Pull-outs | 10 | 27 | 1.5 hr | 5 | 135 |
| Illegal overflow (no change) | 30 | 81 | 3 hr | 3 | 243 |
| *Subtotal for Adobe Canyon:* | *273* | *769* | | | *1414* |
| Broader Areas of Sugarloaf Ridge State Park | | | | | |
| Santa Rosa Creek Management Zone (Los Alamos entrance at Hood Mountain Regional Park) | | | | | |
| Upper & Lower Parking Lots | 30 | 81 | 4 hr | 2 | 162 |
| Illegal overflow parking | 10 | 27 | 4 hr | 2 | 54 |
| Nunns Canyon Management Zone | 0 | 0 | 4 hr | 2 | 0 |
| Bear Creek Management Zone | 0 | 0 | -- | -- | 0 |
| Horse Trailer Parking | | | | | |
| Adobe Canyon (Service Area/Horse Barn) | 5 | | | | |
| Nunns Canyon (Quarry) | 0 | | | | |
| *Total Horse Trailer Parking at Sugarloaf Ridge SP* | *5* | | | | |
| *Standard Parking Space Equivalent (2.5)* | 12 | 32 | 3 hr | 3 | 96 |
| SUBTOTAL: VISITORS ARRIVING BY VEHICLE | | | | | |
| *Subtotal (based on parking capacity only)* | | *909* | | | *1,726* |
| VISITORS ARRIVING BY BICYCLE OR ON FOOT (5% of Visitors arriving by vehicle per day) | | | | | |
| Bicyclists (3.75%) | | 34 | | | 65 |
| Pedestrians (1.25%) | | 11 | | | 21 |
| | | | | | |
| **TOTAL** | | **954** | | | **1,812** |

*Notes: a Parking Spaces x Car Occupancy (2.7 hikers, 3.2 campers / car)*
*b From Ranger Observations*

*c Parking Capacity x Occupancy x Turnover* *d Large Group Camp = 50 visitors*
*NA = Not applicable*

Because Sugarloaf Ridge State Park includes both overnight campgrounds and the observatory, the park also attracts many visitors at night. Generally nighttime visitors to the observatory park in the observatory/group camp lot and overflow into the day-use lot and equestrian center lot, which are not typically used at night. However, during special celestial events, the observatory can draw visitors in excess of the overflow parking capacity. During these unique celestial events, visitor turn-over during the night can be high, and visitation numbers to the park may even exceed the figures in Table 2-13, which do not include nighttime visitors to the observatory.

Estimates for visitor use at Hood Mountain Regional Park are also difficult to ascertain, as the park has been open only intermittently since the 1970s. Annual visitation was measured at roughly 8,000 people in 1977/1978, the last time the park was open year-round until the year 2002. Recreation trends have changed dramatically since that time. According to SCRP visitation records, approximately 29,000 visitors have accessed either Hood Mountain Regional Park or Sugarloaf Ridge State Park from the joint-use parking area at the end of Los Alamos Road during the period of January 2002 through December 2002. This represents a doubling of visitation to the park as a result of opening Hood Mountain during the summer months of 2002. In addition, many people access Hood Mountain Regional Park via the Goodspeed trailhead in Sugarloaf Ridge State Park, where they are not counted by the regional park system. Prior to 2002, Hood Mountain Regional Park visitation had dropped due to such factors as seasonal closures, weekday closures, road disrepair, etc. The park is now open regularly Friday through Monday year-round, and combined with increased access into Sugarloaf Ridge State Park, the trailhead use from the Los Alamos parking area is increasing.

### Seasonal Use Fluctuations

State-collected visitation data for 2001/2002 show Sugarloaf Ridge State Park’s highest use occurred in April through July and September through October, with April the highest single month (over 21,000 visitors in 2002, mostly day users). There is a noticeable drop-off in day use

during August, probably due to high temperatures. Fluctuations in visitation are primarily driven by weather and special events, such as astronomical observations or spring wildflower blooms. Past closures of Adobe Canyon Road due to fallen trees and limbs from storms, snow, and occasional landslides from the steep cliffs along the roadway have effectively closed the park until the road could be repaired and access restored.

The ***peak season*** and ***shoulder season*** vary for day use and overnight use at Sugarloaf Ridge State Park. Day-use visitation is at peak season in the spring and fall, with the shoulder season occurring during the summer and winter. Because of the relatively mild climate, there is constant day use year-round, with no off-season. During the peak season, there may be as many as 20,000 day-use visitors per month. Day-use visitation is highly influenced by weather, and thus visitation slows in the heat of the summer and during the winter rainy season.

Peak season for overnight use is in the summer (mid-June through mid-September) when there are typically 6 to 12 cars parked in the day-use lot as overflow from the camping area on Saturday nights, in addition to the maximum 124 cars in the family campground. During this time, there may be as many as 3,000 overnight visitors per month. Shoulder season for overnight use is in the spring and early fall (mid-March through mid-June and mid-September through October), when overflow from campers still occurs, but only on holidays and sunny weekends.

A 1993/1994 visitor survey conducted at Hood Mountain Regional Park indicates that spring is the peak season within visitors coming to enjoy the wildflowers, flowing water, and mild temperatures. Hood Mountain Regional Park, as previously mentioned, has had many seasonal closures, particularly amid concern about high fire danger in the late summer, and is not usually open during the week.

Sugarloaf Ridge State Park operates beyond the carrying capacity of its facilities from May through October on weekends. The park also operates in excess of its 258-space parking capacity on a typical peak-season weekend. Approximately one-third of these cars (124) are in the campground. At these times, the group camp is often opened for day-use parking, as long as there are no observatory activities scheduled at the same time.

### Volunteer Activities/Park Support

Sugarloaf Ridge State Park is fortunate to have a number of volunteer organizations devoted to interpretation within the park.

The ***Valley of the Moon Natural History Association*** trains and coordinates volunteers to lead guided walks and staff the visitor center. Volunteers repair trails and patrol the parks on bicycles and horseback. A person may volunteer as an individual or as part of a group on short-term projects of a day or less, or on a long-term project in specialized programs. Docents undergo a five-week training session and are expected to volunteer at least four hours a month in the park. The association also sells books, pamphlets, maps and other educational aids.

The ***Valley of the Moon Observatory Association*** is responsible for the construction, maintenance, and utilization of the Robert Ferguson Observatory. It functions as a nonprofit organization under the auspices of the Department. Volunteers host regular solar and night viewings at the observatory, and docents are available to give lectures and answer questions. As described previously, the Valley of the Moon Observatory Association created PlanetWalk, a scale model of the solar system designed to fit within the boundaries of the park.

Other local nonprofit and volunteer organizations conduct guided walks and hikes within Sugarloaf Ridge State Park, including ***Acorn Soupe, LandPaths,*** and the ***Sierra Club***.

In addition to the nonprofit volunteer organizations, ***campground hosts*** play a vital role in the daily operations of the park and the visitor's experience. Their volunteer duties often include assisting visitors, collecting fees, performing light janitorial duties, conducting interpretive programs, and encouraging compliance with park rules and regulations (although they do not perform actual law enforcement duties). Hosts also perform a multitude of other duties to help the park staff. Most state parks require a minimum commitment of three months, with a maximum stay of six months per park.

## Projected Future Use

### Patterns and Levels of Recreational Demand

A statewide survey of Californians' opinions and attitudes about outdoor recreation found that the highest unmet demand and greatest public support exists for nine particular outdoor recreational activities: walking, trail hiking, camping in developed sites, camping in primitive sites, general nature study, use of open grass areas, picnicking in developed sites, visiting museums/historic sites, and visiting zoos and arboretums (CDPR 1998). Given these priorities, as well as the demographic data provided above, it is likely that recreation demands at Sugarloaf Ridge State Park and associated areas will increase, both for undeveloped natural areas that accommodate hiking and backcountry camping and for more developed facilities for picnicking and camping.

A survey conducted for the Sonoma County Outdoor Recreation Plan found that Sonoma County residents agree in their desire for more park and recreation facilities. Highest priority was given to "passive" recreation: open space, hiking, trails, nature centers, and regional trails. Generally, the residents want a balance of passive and active recreation, but the predominant preference is for passive developed parks; Sugarloaf Ridge State Park falls in this category (County of Sonoma 2000).

As the individual parcels of Sugarloaf Ridge State Park and Hood Mountain Regional Park are managed as a single unit, recreation use and demand is likely to change. In particular, the combined parcels may offer a greater opportunity for wildland-type hiking and possibly for backpacking. Only two other areas in Sonoma County currently support backpacking at Austin Creek State Park and Lake Sonoma (although at the latter, designated campsites tend to be dominated by motorized boat users). The linkages of trails to form longer loops may attract more hikers and/or equestrians interested in longer trips. As a result, visitation at Hood Mountain Regional Park may increase where equestrian and mountain bike users have had limited recreation opportunities in the past due to the lack of longer loop trails and/or equestrian camping facilities.

### Public Concerns and Comments

The primary method for the Department to receive information about public concerns and comments at Sugarloaf Ridge State Park is through written comments and visitor conversations with staff conducted on site during the visit to the park. Visitor comments collected on site are then discussed in regular staff meetings.

A visitor survey entitled "How Are We Doing" is available at the visitor center for those who seek to provide written comments. The survey is not distributed systematically to visitors as they enter the park. Rangers noted that usually visitors fill out the survey only when they have a complaint. Completed surveys are returned to Department headquarters for incorporation into a statewide database. Survey results from the years 2000 and 2001 are available for Sugarloaf Ridge State Park. Thirty-one respondents are included in the survey results. Some of the comments that were repeated and are applicable to the general planning process are listed below:

- Resource Protection: The Park's excellent cultural and natural resources and beautiful scenery should be protected.
- Public Safety: People generally felt safe in the park, with the exception of dangerous pests in the camping and day-use areas such as yellow jackets and snakes.
- Facilities: Several survey comments requested larger bathrooms with sinks and showers.
- Education/Interpretation: Some visitors thought that the educational resources on site were wonderful, particularly the observatory and campfire presentations. Others stated they would like more information sheets and books about the natural resources in the area.
- Recreation: Visitors noted that the trails were in good condition and the rangers were helpful. One commentor noted that they would be willing to pay higher fees to help maintain the park resources.
- Improvements/Suggestions: Visitor comments ranged from controlling the bees and yellow jackets to requesting quiet hours be enforced. Commentors noted that the multi-use trails do not all connect

to complete a loop, forcing bicyclists to turn around or ride on a trail in which bicycles are prohibited in order to finish the loop.

## 2.3 ISSUES AND ANALYSIS

This section summarizes key existing conditions issues identified for Sugarloaf Ridge State Park to be addressed by the goals and guidelines of the General Plan.

### 2.3.1 BROAD PLANNING ISSUES

**Key Issues:**

- Challenges of facilities planning with changing park boundaries
- Changing demographics in user populations
- Managing the quality of the recreation experience with increasing use
- Limited visitor-use data

#### Challenges of Facilities Planning with Changing Park Boundaries

The relatively recent addition of new lands and the potential for more acquisitions in the future create an evolving context for park planning. This is particularly an issue for future facilities siting and expansion. New acquisitions provide opportunities for constructing new facilities and relocating existing park facilities to the new properties. However, this opportunity results in a new set of issues for the District, including changing the circulation and use patterns in the park and potential natural and cultural impacts related to construction of the new facilities. In addition, there is the dilemma of making facility siting and expansion decisions within an evolving context, with the thought that there might be a "better" location for a particular facility on property that has yet to be acquired.

The SCAPOSD and other land trusts are actively acquiring important lands from willing sellers in the Mayacamas Ridge Mountain Range. Although in the past properties have been transferred to the Department at no cost, park staffing and financial resources are necessary to fully incorporate the

new lands into the park. The Department will evaluate future acquisition properties are of statewide significance and fit into the acquisition plan.

### Changing Demographics in User Populations

The changing demographics of the region and state and the ultimate pool of potential future visitors to the park will influence future recreational demand at Sugarloaf Ridge State Park. The District will need to respond to these recreational trends through appropriate new facilities and recreational opportunities, while balancing the need to protect sensitive natural and cultural resources within the park.

Demographic trends suggest that regional growth is likely to contribute to higher visitation at Sugarloaf Ridge State Park generally and that the demand for outdoor / wildlands recreational use is likely to increase as accessible acreage increases at Sugarloaf Ridge State Park.

The substantial increase in the Hispanic population in the state and region suggests the mix of user groups, and their subsequent facility needs at the park, may be changing. The demand for developed recreation sites, particularly those with picnic tables, barbeque grills, parking lots, etc., may increase due to this shift in ethnicity patterns.

The aging populace suggests a demand for volunteer opportunities and improved interpretation and classroom activities, such as those currently available at the observatory and the visitor center. Level or more easily accessible trails and ADA-compliant camping opportunities may also help to satisfy this changing demographic pattern.

### Managing the Quality of the Recreation Experience with Increasing Use

In responding to increased recreational demand in the park, the Department must also consider the potential effect new or expanded facilities or new recreational uses would have on visitor attendance, and in turn how an increased level of visitor use may affect the visitor experience and its potential effect on environmental resources.

### Limited Visitor-Use Data

The visitor-use data for Sugarloaf Ridge State Park was collected using various methods and is limited in scope. Information such as where visitors live, the purpose for visiting the park, or what facilities were used has not been collected regularly or systematically; therefore, for the purposes of the plan, state park ranger observations were used to supplement the available data.

## 2.3.2 CHARACTERISTICS OF THE PARK

### Expanding Park Boundaries and Management

Key Issues:

- Relationship to Hood Mountain Regional Park
- Relationship between state and regional parks in the area
- The desire to distribute increased visitor use over the broader areas of the park
- Integration of new (future) properties into the park
- Connecting the Santa Rosa Creek Watershed Management Zone entrance with the rest of Sugarloaf Ridge State Park

### Relationship to Hood Mountain Regional Park

Hood Mountain Regional Park, operated by SCRP, borders Sugarloaf Ridge State Park to the west. The two parks are closely related, sharing a few trails and the operational responsibility for opening and closing gates. Goodspeed Trail provides the only official access point to the southern portion of Hood Mountain Regional Park, although that may change soon as public access is opened through the recently acquired Johnson property.

The only public access to the Santa Rosa Creek Watershed Management Zone is through Hood Mountain Regional Park, so access to the northern portion of Sugarloaf Ridge State Park is subject to SCRP park closure policies. From 1986 to 2001, Hood Mountain Regional Park was open to the public on an intermittent basis, primarily on weekends in the spring and fall when the fire risk is lower. With the acquisition of the Santa Rosa Creek Watershed Management

Zone, SCRP has opened the gates to Hood Mountain on a more regular basis.

Sugarloaf Ridge State Park and Hood Mountain Regional Park together could offer near wildland experiences for visitors. Demand for backcountry camping is expected to increase now that the trails in Hood Mountain Regional Park are open to the public more consistently and with the reinstatement of a backcountry campground in that park (Azalea Campground).

### Relationship between state and regional parks in the area

There are several state and regional parks located within 10 miles of Sugarloaf Ridge State Park: Annadel State Park, Jack London State Historic Park, Bothe-Napa Valley State Park, Spring Lake Regional Park, and the adjacent Hood Mountain Regional Park. The idea of establishing a connection between the parks through greenways and bikeways has been suggested by a number of agencies and organizations in the region. Many of these parks include trails designated as part of the Bay Area Ridge Trail, but many of the trail segments are currently isolated from one another. A direct trail/bike lane connection between Annadel and Sugarloaf Ridge State Park, via Lawndale Road and Hood Mountain, was suggested in the *Draft Sonoma County Outdoor Recreation Plan*. SCRP is pursuing a trail easement over the private property across State Route 12 from Lawndale Road, which could facilitate another trailhead into the south side of Hood Mountain Regional Park.

The pedestrian connections between the undeveloped wildland areas of the park could also serve as wildlife corridors. See the discussion of the importance of biocorridors in subsection 2.5.2.

Some of the Annadel day users may be encouraged to visit Sugarloaf Ridge State Park. Because of its proximity to Santa Rosa, Annadel is heavily used as a retreat from the city, and the trails are often crowded. With the recent acquisition and transfer of the Johnson property to SCRP, Pythian Road may become a primary connection from State Route 12 to Hood Mountain Regional Park, and possibly to Sugarloaf Ridge State Park. Day users at Annadel will need to be informed of the recreation opportunities available at Sugarloaf Ridge State Park.

**The desire to distribute increased visitor use over the broader areas of the park**

Most visitor-serving facilities are concentrated in Adobe Canyon, and most trails radiate out from the campground area. A few trails are located in the northern portion of the park near the Los Alamos Road entrance; however, these trails do not connect with those in the rest of the park. In addition, Los Alamos Road is long and winding, which deters some visitors from taking that route to the northern portion of the park. As such, most visitor use is concentrated in Adobe Canyon, and campsites are full on weekends from May to October. The demand for parking in Adobe Canyon currently exceeds capacity during these peak months.

The recent acquisition and transfer of the Johnson property to SCRP indicates that Pythian Road could become a third entrance into Hood Mountain Regional Park. Public access easements on Pythian Road could be extended through the inholding properties to provide another public access point to Sugarloaf Ridge State Park. In addition, with the transfer of a portion of the Beltane Ranch to the Department, Nunns Canyon Road will become a southern access road into Sugarloaf Ridge State Park.

The demand for recreational facilities in Sugarloaf Ridge State Park is expected to increase in the future due to several factors: a general increase in the population base; the District's desire to direct day users from Annadel to Sugarloaf Ridge; increased operating hours for Hood Mountain Regional Park; and the expanded park boundary, which will further attract visitors to the park. Any increase in visitor-serving facilities within the park will also attract more park users. The District will need to address the expected increase in demand for recreation facilities within the park, since the park is currently operating at capacity in terms of existing visitor facilities. In addition, the broader areas of the park are underutilized due to a lack of trails or needed connections between existing trails.

The Bear Creek Management Zone and the southern half of the Santa Rosa Creek Watershed Management Zone currently receive little use. Similarly, once the Beltane acquisition is finalized, additional trails will need to be constructed within the Nunns Canyon Management Zone and through the Thatcher property to provide access to that

management area. These areas provide an opportunity to distribute visitor use to the broader areas of the park.

### Integration of new (future) properties into the park

After many years with the same park boundaries, Sugarloaf Ridge State Park extended its boundaries in 1996 with the transfer of a 1,200-acre portion of the McCormick property from SCAPOSD to Department ownership (Santa Rosa Creek Watershed Management Zone). SCAPOSD is also currently finalizing the acquisition of a portion of the Beltane Ranch (Nunns Canyon Management Zone). The acquisition of new lands for inclusion in Sugarloaf Ridge State Park brings many benefits with respect to protection of important natural and cultural resources and potential sites for new facilities. It also presents new challenges for the Department.

The integration of new properties into the park requires immediate programs to make these areas available to the public, including installing park signs on the new property, updating park maps, and expanding ranger patrol areas. Longer term issues include creating trail linkages, evaluating natural and cultural resources and potential interpretive sites, and considering expansion or relocation of facilities onto the new property, among others. Park staffing and financial resources are necessary to implement these tasks.

Trail connections between the new acquisition areas and Adobe Canyon are critical to achieve the distribution of visitors to the broader areas of the park. The Department will need to provide access to the residential properties that also use the access roads to the park.

In addition, conservation easements are held on some properties acquired by SCAPOSD and transferred to Department ownership. Specific conditions transfer with the easement that affect the long-term management of the property and require that SCAPOSD be advised of management strategies.

### Connecting the Los Alamos Road entrance with the rest of Sugarloaf Ridge State Park

Public access to the northern entrance of Sugarloaf Ridge State Park is limited by a number of factors, including the

nature of Los Alamos Road itself. This long, narrow, and winding road discourages some people from taking that route to the park. The Los Alamos Road extension also passes through a narrow sliver of private property between Hood Mountain Regional Park and Sugarloaf Ridge State Park, which may restrict direct public vehicle access to the park on this roadway.

From the north, the only way for the public to access Sugarloaf Ridge State Park is to start at the northern entrance parking lot at Hood Mountain Regional Park, hike south on the Santa Rosa Creek Trail, and then cross Santa Rosa Creek into the park following the fire road. The Santa Rosa Creek Trail crossing is inaccessible during periods of high water.

Direct access from the south is also limited. The narrow portion of the park connecting the Santa Rosa Creek Watershed Management Zone with the Bear Creek Management Zone could not accommodate a trail link between the two areas due to the steep topography. The Department may consider working with owners of the surrounding lands to allow a trail connection between the two areas. Visitors can hike from the Goodspeed Trail through Hood Mountain Regional Park to the Santa Rosa Creek Trail, crossing to access the park's Santa Rosa Creek Watershed Management Zone from Adobe Canyon. Thus, access to the Santa Rosa Creek Watershed Management Zone depends on whether Hood Mountain Regional Park is open or closed. The lack of a direct connection from the visitor services in Adobe Canyon isolates the Santa Rosa Creek Watershed Management Zone from most park visitors.

### 2.3.3 CIRCULATION AND ACCESS

A number of physical and operational characteristics combine to make circulation and access a key issue for the park. The three access roads to Sugarloaf Ridge State Park are Adobe Canyon Road, Los Alamos Road, and Nunns Canyon Road. Each of these provides access to distinct areas of the park that are not connected to the other areas. In addition, Pythian Road may become a new access road to Hood Mountain Regional Park through the recently acquired Johnson property.

**Key Issues:**

- Landslides on access roads to Sugarloaf Ridge State Park have caused park closures in the past.
- Connections and upgrades are needed for emergency access.
- The low-water bridge limits vehicle access to the family campground.
- Visitors speeding on park roads at night present a safety concern.

### Landslides on access roads to Sugarloaf Ridge State Park have caused park closures in the past

The narrow, winding access roads to Sugarloaf Ridge State Park are part of what makes it a wildland park. However, these characteristics also raise safety concerns, especially at night when visibility is reduced. RVs and trailers in particular have a difficult time climbing uphill on both Adobe Canyon and Los Alamos Roads. There are minimal shoulders and not much overhead clearance.

The narrow roads cut into the hillsides are susceptible to closure because of landslides. Landslides have caused road closures on Adobe Canyon Road in the past. Because most visitor-serving facilities are accessed from Adobe Canyon Road, and there is no other direct access to that area by road or trail, the closure of Adobe Canyon Road effectively closes the park until the roadway can be repaired. The road is maintained by Sonoma County up to the park entrance sign.

### Connections and upgrades are needed for emergency access

Fire roads provide emergency access and egress to the remote wildland areas of Sugarloaf Ridge State Park. Several gaps in emergency access circulation patterns are identified within the General Plan study area. The fire roads are often single-lane roads in fair condition, and the outer reaches of some of the dirt roads are in poor condition, with deep ruts that could restrict vehicle movement. Department staff knowledge of emergency access routes and road conditions was supplemented with GIS database information for roads and trails. The GIS database emergency access/egress information will need to be field-verified and updated with road conditions to

provide an accurate assessment of the capability of emergency vehicles to pass on the emergency access routes. Improvements to the emergency access circulation systems in the park and surrounding area should be coordinated with improvements to internal trail connections between the different management areas of the park.

#### The low-water bridge limits vehicle access to the family campground

RVs and trailers longer than 24 feet are not able to cross the low-water bridge, and some have gotten stuck in the past trying to cross. During heavy rains and when creek levels are high, water makes the campground inaccessible by vehicle. Rangers must sometimes prevent people from trying to cross during high water.

#### Visitors speeding on park roads at night present a safety concern

Some visitors speed in the section of the road leading to the observatory and group camp once they are out of site of the rangers at the entrance station. Due to the minimal lighting, speeding vehicles present safety concerns for people camping or walking around in the dark at night.

### 2.3.4 PARKING

#### Parking demand during the peak season exceeds the available parking capacity in the park

The parking lots in Sugarloaf Ridge State Park are full most weekends from mid-March through the end of October. Only about 5% of users arrive to the park by walking or biking. The parking demand during the peak season currently exceeds the available parking capacity in the park. When all parking lots are full, visitors park illegally on the sides of Adobe Canyon Road, causing safety concerns and disturbing natural and cultural resources beside the roadway. People parking illegally on the side of the road may also block access for emergency vehicles. This is a particular problem during special celestial events, when large crowds are drawn to the observatory.

Any new or expanded recreational facilities in the park would further increase the parking demand, resulting in visitor frustration and increased illegal parking on the sides of roads. While the District hopes to attract day users from Annadel State Park, the lack of sufficient

parking would tend to deter such users from visiting Sugarloaf Ridge State Park.

However, any increase in the number of parking spaces would likely result in an increase in the number of visitors to the park, because parking capacity does not meet current demand. An increase in visitor attendance may affect visitor experience and potentially affect natural and cultural resources.

### 2.3.5 TRAILS

**Key issues:**

- Trail connections between management zones
- The opportunity to develop a new trail connection near Bear Creek
- Erosion of steeper sections of trails result in increased stream sedimentation
- The need to develop trails to conform with ADA trail standards and respond to the increased number of people over 65 years old

#### Trail Connections between management zones

Most trails in Sugarloaf Ridge State Park radiate out from the existing campground area in upper Adobe Canyon. The trails in upper Adobe Canyon provide a variety of trail loops and levels of difficulty for park visitors. It is important to connect all the park management zones to the established trail network in upper Adobe Canyon.

#### The opportunity to develop a new trail connection near Bear Creek

An existing road, hand-built by the Hurd Family in the early 1900s, runs north-south to the west of Bear Creek in the western portion of Sugarloaf Ridge State Park. This road provides an opportunity to expand the trail network in the western portion of the park. The road stops north of the Goodspeed Trail. The potential for a connection with Goodspeed Trail needs to be evaluated.

The road continues outside park boundaries, through a private inholding, and then continues on park lands to the Red Barn at the end of the High Ridge Trail. Because the road passes through a private inholding, a trail easement

may be needed to provide the connection between the eastern and western portions of Sugarloaf Ridge State Park. If a trail connection were established from the Goodspeed Trail to the Hurd Road, visitors could hike to the Red Barn without going over Bald Mountain.

**Erosion of steeper sections of trails results in increased stream sedimentation**

Many of the steeper sections of trails in the park have erosion problems, resulting in stream sedimentation. The District has initiated a program to reengineer trails to reduce water concentrations and the resulting siltation in the creeks. (A more detailed discussion of this issue is provided in subsection 2.5.2.

**The need to develop trails to conform with ADA trail standards and respond to the increased number of people over 65 years old**

Demographics suggest the demand for grades not to exceed 10%, more easily accessible trails, and development of additional interpretive displays will likely increase due to the aging population in Sonoma County and California in general.[6] Sugarloaf Ridge State Park has been identified as a Level 2 park in terms of ADA accessibility. As outlined in the Transition Plan for Accessibility in California State Parks (CDPR 2001), major activities offered at Level 2 parks are to be made accessible. Facilities that support the major activities and programs such as parking, routes and restrooms should also be made accessible.

## 2.4 ACCOMMODATING VISITORS

### 2.4.1 VISITOR EXPERIENCE

**Key Issues:**

- The camping experience in the group camp is diminished by its proximity to the observatory and visa versa.
- The family campground is noisy and crowded.

[6] Some 'seniors' at the public meetings disagreed with this interpretation and stated that strenuous exercise is what keeps them young. It should be noted that ADA accessibility is not just for seniors.

- Family campsites are inaccessible during wet weather.
- Increased demand for additional interpretive resources.
- Most of the facilities are not in keeping with the visual character of the natural setting.

### The camping experience in the group camp is diminished by its proximity to the observatory and visa versa

Separating the large group camp from the observatory has been identified by park rangers as a key issue. Visitor use at the observatory is growing, and the concessionaire (the Valley of the Moon Observatory Association) wants to expand the observatory. Because the observatory is located in the valley, the surrounding mountains block the light from urban areas. For this reason, it is likely that the observatory will remain in place, and the group camp will be relocated.

The camping experience in the group camp is diminished by its proximity to the observatory and other park facilities and visa versa. The observatory restricts the availability of the group camp for camping for more than half the year. When it is available for camping, the observatory, the gravel parking lot, and parked cars are in the immediate view of campers. The group camp is located in a minor hub of activity, with the observatory, equestrian center, and service area all close by. The group camp is not situated in an outstanding natural setting, although a nice grove of trees on one side shields the mobile home and maintenance building that would otherwise be visible to campers. The observatory is in a good location for shielding ambient light, and the setting for the group camp in the activity zone is not ideal.

Moving the group camp away from the observatory could provide group camping facilities year-round, and potentially accommodate outdoor environmental education classrooms near the group camp.

### The family campground is noisy and crowded

The campsites in the family campground are very close together, and there is little vegetative understory to separate one campsite from another. The vertical cliff

along the southern side of the campground reflects noise directly into the campsites. This is a problem at night when park visitors generate noise in three different areas: the family campground, the group camp, and the observatory. However, the acoustics are a natural condition of the canyon in which these facilities are located, and little could be done to eliminate the noise, short of removing all facilities from the valley.

### Family campsites are inaccessible during wet weather

During the winter, the campsites along the southern edge are closed due to wet and boggy conditions, and the campground may become inaccessible by vehicle when creek levels are high.

### Increased demand for interpretive resources

Demographic trends suggest that the park visitor of the future will be older and more educated, which would likely increase demand for interpretation and classroom activities. Several educational displays and programs are offered at Sugarloaf Ridge State Park; however, the opportunity exists to increase interpretive programs to meet growing demand. Many visitors leave the park without getting a complete picture of Sugarloaf Ridge State Park's prehistoric and historic past, nor of its natural and recreational resources. The visitor center, which houses many interpretive displays and brochures, is only open on the weekends for limited hours. The building is small and does not provide adequate space for educational classrooms.

### Most of the facilities are not in keeping with the visual character of the natural setting

Many of the park buildings in Adobe Canyon were built as temporary facilities and appear as such. There is no consistent architectural style or use of building materials, and thus the buildings do not have the traditional appearance of park facilities. Portable restrooms, trash dumpsters, metal cargo containers for fire wood, and service equipment seem to be placed for the purpose of convenience and are not screened from view. In addition, the day-use parking lot sits high on a pad in the center of a meadow without landscaping to screen it from view. The parked cars in the day-use lot are the first thing visitors see upon leaving the entrance station. The

unattractive service facilities that lack a consistent "park-like" architectural style stand out in the beautiful natural setting of Adobe Canyon.

### 2.4.2 EXISTING DEMAND FOR NEW OR EXPANDED FACILITIES AND SERVICES

Visitors and park staff have observed the need for a number of new or expanded facilities for the park to meet increased recreational demand.

**Key Issues:**

- Need for additional restroom facilities and showers in the family campground
- Existing demand for additional group campsites
- Need to expand the visitor center
- Concessionaire desire to expand the observatory

#### Need for additional restroom facilities and showers in the family campground

The existing restroom facilities in the family campground are limited and inadequate. None of the restrooms have sinks for hand washing, and the only ADA accessible restrooms are temporary portable restrooms. Specific requests have been made for larger permanent restroom facilities with showers. All water and sewage treatment facilities for the park are contained on site. Further water and sewage capacity investigations may be necessary to determine whether existing capacity would be able to support showers.

#### Existing demand for additional group campsites

Sugarloaf Ridge State Park is one of only a few public camping areas in the region. Overnight use at the park is popular for groups, particularly from May to October. The large group camp would likely meet existing demand for such facilities, but it is available for less than half of the year due to the observatory rental of the site. Relocating the group camp away from the observatory would resolve this issue, making group camping available year-round in Sugarloaf Ridge State Park. Small groups often camp in the family campground, due to a lack of larger facilities.

Rangers have indicated a need for some small group campsites to meet this demand.

Horseback riding is popular in Sonoma and Napa Counties, and the stables concessionaire at Sugarloaf Ridge State Park draws equestrians. The group camp currently provides one of the only equestrian camps in the region. The limited availability of the group camp due to conflicts with the observatory also limits equestrian camping in the park.

#### Need to expand the visitor center

The existing visitor center facility is located near Sonoma Creek, is undersized for small groups, and lacks educational classroom facilities. Rangers have also indicated a desire for a permanent restroom facility within the building. Septic tank and leachfield requirements may preclude the siting of a restroom near the visitor center due to its proximity to Sonoma Creek.

#### Concessionaire desire to expand the observatory

Visitor use at the observatory is growing, and the concessionaire wants to expand the observatory to include additional classrooms. The Department is in the process of securing a contract with the concessionaire to provide interpretive services for the park.

The observatory concessionaire has also requested permission to construct a permanent restroom within the building; however, the observatory is located too close to a Sonoma Creek tributary to allow for a septic tank leachfield to accommodate permanent restrooms within the building. An engineered leachfield or a compostable toilet may provide a solution.

## 2.5 RESOURCE PROTECTION AND MANAGEMENT ISSUES

### 2.5.1 CULTURAL RESOURCES

**Key issues:**

- Ongoing damage to cultural resources from natural occurrences and visitor use

- Identification of cultural resources in all areas of the park

### Ongoing damage to cultural resources from natural occurrences and visitor use

Cultural resources within Sugarloaf Ridge State Park have been subjected to a number of impacts that have caused damage or destruction. Chiefly, erosion along Sonoma Creek and its tributaries has washed away site components, and apparently caused the total destruction of some sites. Other factors, such as wild pig rooting, foot and equestrian traffic, looting, and construction or maintenance of park facilities have caused cumulative damage to some sites. Ongoing damage has led the District to develop and implement an archaeological evaluation program that has included many of the larger sites in the Sonoma Creek drainage.

### Identification of cultural resources in all areas of the park

The Bear Creek Watershed Management Zone has not been extensively surveyed for cultural resources. Few facilities are located in this area and visitor use is minimal; however, visitorship may increase with the potential relocation of park facilities and trail extensions in and around this portion of the park. All new properties integrated into the park should be surveyed for cultural resources.

## 2.5.2 NATURAL RESOURCES

### Key issues:

- Minimization of impacts to plant and wildlife resources from visitor use and the location of facilities
- Invasive non-native species are disrupting the ecological balance of the park
- Degraded water quality may affect spawning habitat for steelhead and chinook salmon and other aquatic habitat
- Incomplete inventory of plants and animals in the General Plan study area

- Continued elimination of biocorridors connecting with other wildlands could reduce biodiversity
- The desire to protect the dark nighttime sky

### Minimization of impacts to plant and wildlife habitat from visitor use and the location of facilities

Some current uses and the location of existing facilities may be degrading plant and wildlife habitat in the park. For example, the Goodspeed trail is on a steep erosive slope, is in some cases poorly constructed, and cuts through areas of sensitive habitat. Where possible, existing impacts should be minimized through appropriate facility siting and design.

### Invasive non-native species are disrupting the ecological balance of the park

Non-native plant species have resulted in the conversion of native habitats to a non-native vegetation type, causing a reduction of native plants and degradation of wildlife habitat. Yellow star-thistle, Harding grass, and medusa head are invasive weeds that continue to degrade grassland meadows in Sugarloaf Ridge State Park.

Wild pigs in the park compete with native wildlife species for food and disturb biological and cultural resources by turning over the ground while rooting for food. This action can leave the ground bare, resulting in increased erosion and sedimentation. Non-native turkeys also disrupt the natural cycles by eating acorns, small reptiles, and amphibians. District resource ecologists have initiated various programs to combat invasive weeds, including introducing natural enemies and implementing burn programs.

### Degraded water quality may affect spawning habitat for steelhead and chinook salmon and other aquatic habitat

Erosion is occurring along a portion of the headwaters of Sonoma Creek and may affect water quality. Steep slopes in the park increase the velocity of runoff into the creeks. The locations of some existing facilities close to Sonoma Creek also may be affecting water quality in the creek. Campsites in the family campground are located on the bank of Sonoma Creek, and people wading and playing in the creek exacerbate erosion and sedimentation problems. The horse

barn is located about 50 feet from Sonoma Creek, resulting in potential impacts to water quality.

The District has undertaken several programs to reduce sedimentation and improve water quality in Sonoma and Santa Rosa Creeks. The District has been reengineering existing trails and roadways to reduce erosion; however, the process is initially expensive to implement, and only a few trails have been reconstructed since the program began three years ago. When complete, the trail rehabilitation should result in a substantial decrease in sedimentation into the creeks and also reduce ongoing maintenance costs. The District is coordinating with landowners surrounding the park and the Sonoma County Water Agency regarding general management and protection of the watershed.

### Incomplete inventory of plants and animals in the General Plan study area

A number of different plant and animal lists have been compiled for various areas in the General Plan study area. A complete inventory of plants and animals in Sugarloaf Ridge State Park and Hood Mountain Regional Park would aid District resource ecologists in the management, protection, and enhancement of natural resources. The inventory should include surveys for special-status species for which suitable habitat is present in the park.

### Continued elimination of biocorridors connecting with other wildlands could reduce biodiversity

The General Plan study area provides diverse biological habitat, including that for mountain lions, an indicator species of the overall health of the ecosystem. Sugarloaf Ridge State Park provides an important refuge of preserved habitat for wildlife in the Mayacamas Ridge Mountain Range. Continued elimination of biocorridors connecting with other wildlands, primarily due to encroaching residential development and vineyards around the park, could biologically isolate the park. The natural ranges of plant and animal species that depend on the park for habitat could be reduced, resulting in less biodiversity both inside and outside the park.

### The desire to protect the dark nighttime sky

The dark nighttime sky is an important resource at Sugarloaf Ridge State Park for astronomical observation.

The observatory is located in upper Adobe Canyon because the surrounding high peaks shield the ambient nighttime light from nearby Santa Rosa. Although the dark sky is important for celestial viewing at the observatory and is a contributing factor to the remote and natural setting of the park, the Department and the District do not have any policies or guidelines in place to protect this important resource.

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# SUGARLOAF RIDGE STATE PARK

## *3. Park Plan*

# 3. Park Plan

This chapter describes the long-range *purpose and vision* for the future of Sugarloaf Ridge State Park and provides goals and guidelines to guide future management decisions. This *Final General Plan* balances the need for facilities and parking at recreational opportunities with a positive visitor experience supported by the park's aesthetics, and protection of park's natural and cultural resources. This chapter also serves as the project description for environmental review and carrying capacity analyses provided in subsequent chapters.

## 3.1 PURPOSE AND VISION

The declaration of purpose describes the purpose of the park and is the broadest statement of management goals designed to fulfill the vision for the park. A declaration of purpose is required by the California Public Resources Code, Section 5002.2(b), "setting forth specific long-range management objectives for the park consistent with the park's classification…."

Sugarloaf Ridge State Park offers opportunities for camping, hiking, horseback and bicycle riding, natural resource study, star gazing, and general enjoyment of the natural setting. Some resource values, such as cultural resources and water quality, may be diminished by uninformed siting decisions made long ago, as well as ongoing use patterns. As such, the park plan's purpose and vision must be defined to balance the natural, cultural, and recreational resources to sustain them all for the people of California.

With recent and potential future acquisitions, many financed by the Sonoma County Agricultural Preservation and Open Space District (SCAPOSD), the park is expanding and redefining itself. Through the general planning process, the California Department of Parks and Recreation (the Department) and interested stakeholders have explored opportunities for resource protection and restoration, relocation and controlled expansion of facilities, acquisition of adjacent lands with significant resource and recreational values, and combined management strategies with Hood Mountain Regional Park.

The declaration of purpose, along with the Department's vision, provides a context and direction for management and planning of the park. These statements present various planning ideas and alternatives through the general planning process, and will guide future decisions related to park management and potential property acquisition.

### 3.1.1 PURPOSE STATEMENT

*Sugarloaf Ridge State Park preserves and protects a portion of the Mayacamas Ridge in Sonoma and Napa Counties for significant biological and social value to the state of California. Currently the park provides wildland areas of high scenic quality, significant cultural resources, and diverse biological habitats, including those for mountain lions, a climax species indicating the overall health of the ecosystem. The Park provides protection from encroaching development and the expanding vineyards of Sonoma Valley, maintaining the natural features and scenic backgrounds of rugged terrain, rocky outcrops, open grassland, rare vegetation, clean water, and sweeping views from easily accessible ridgelines. The public is free to access Bald Mountain, the high point of the park, where views are available of Mount Diablo, Mount Tamalpais, and nearby Hood Mountain, as well as much of the Coast Range and the distant Sierra Nevada. The park also provides camping and equestrian facilities, regional trail linkages, and is home to the Robert Ferguson Observatory. Historically the area was occupied by Native Americans and early homesteaders. It contains the headwaters of Sonoma and Santa Rosa Creeks, and is vegetated by coast redwoods, oak woodlands, cypress forests, chaparral, and open grasslands. Serpentine outcroppings provide habitat for a number of rare plants.*

*Through careful stewardship of significant resource values, Sugarloaf Ridge State Park will continue to be an important public recreational facility for residents of the San Francisco Bay Area and the Central Valley. The Department will preserve, protect, restore, interpret and manage the park's natural, cultural, and scenic resources, making them available to the public for their educational, inspirational, and recreational benefits without suffering a loss to the natural character. The park*

*will continue to provide the cornerstone of conservation in the Mayacamas Ridge to preserve and protect habitat within the biological corridors linking Sonoma and Napa Counties, ensuring that the land is publicly accessible when appropriate, and supporting a rich diversity of native habitats and wildlife. The park will provide a range of recreational opportunities for visitors to enjoy a wildland experience.*

### 3.1.2 PARK VISION

The park vision provides guiding images for the future of the park following implementation of the General Plan:

*With almost ten thousand acres of critical wildlife habitat, Sugarloaf Ridge State Park will be managed in perpetuity for its ecological health and will provide wildlands, quality outdoor recreation experiences for the expanding Bay Area population. The park will stretch from the ridgetops of the Mayacamas Ridge to the bottom of Nunns[1] Canyon. The clear waters of Santa Rosa, Sonoma, Bear, and Calabasas Creeks will run from the headwaters in the park through gorges and canyons to the meadow floor, passing through three distinct ecological systems: chaparral-covered ridges, oak/fir forests along the open meadows, and redwood forest in the canyon of Sonoma Creek.*

*Visitors will experience a variety of recreational opportunities: overnight camping options from car camping to wildland backcountry camping, picnicking, and use of a trail system that includes a portion of the Bay Area Ridge Trail. Visitors will enjoy stargazing on clear dark nights from the observatory, where the remote location protects against light intrusion. The recreational facilities will be available in specific areas to minimize human intrusion into the ecologically sensitive areas of the park. The visitor will gain a rich recreational experience and an expanded knowledge of both the natural and cultural resources of the area.*

[1] The spelling of "Nunns Canyon" is consistent with US Geological Survey maps. There is however, common usage of the spelling "Nuns Canyon" as referenced by Thomas Brothers Maps and street signs.

*Significant cultural sites and features will be preserved, protected, maintained, and interpreted.*

*Wildlife will be abundant, as restoration of natural processes and resource management will maintain an ecological balance in the park. The park will support both frequently occurring and rare species of flora and fauna. Clear, clean streams and creeks will support chinook salmon and steelhead trout. Stories of mountain lion sightings in the protected areas of the park will be told during rangers' campfire presentations, and campers and hikers will enjoy regular sightings of deer, birds, and other wildlife near the campgrounds and along the trails.*

## 3.2 GENERAL PARKWIDE MANAGEMENT GOALS AND GUIDELINES

This section presents parkwide goals and guidelines relating to resource management and visitor use and development, visitor services, interpretation, and operations. These goals and guidelines were developed in response to an evaluation of existing conditions and are intended to address existing issues and provide ongoing guidance for the incremental actions that will be taken over time to realize the long-term vision for the park.

The parkwide goals and guidelines apply to all geographic areas of the park. More detailed, area-specific guidelines for each management zone can be found in Section 3.3 of this chapter. These goals and guidelines are intended to implement the purpose and vision for Sugarloaf Ridge State Park on a parkwide basis, to the extent feasible, given the availability of adequate funding. The park's resources will be managed by balancing the need for recreation with the protection and restoration of its natural resources.

### 3.2.1 PARKWIDE RESOURCE MANAGEMENT, PROTECTION AND ENHANCEMENT

The Department's 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." Toward this end, goals and guidelines discussed below create a management framework that will

protect existing natural and cultural resources while establishing needed visitor support facilities and an active program for enhancing the park's resource values.

The goals and guidelines are segmented into various resource topical areas to understand the individual resource characteristics and sensitivity zones. Some guidelines include measures to address resource agency and California Environmental Quality Act (CEQA) environmental review requirements for protection of resources during area-specific project planning and implementation. Others include recommended programs and day-to-day operations to protect and restore specific environmental resource values within the park.

A Geographical Information System (GIS) database of park resources was created to map and better understand the patterns and interrelationship of resources within the park. While it is important to examine each resource need individually, it is equally important to understand the interrelationship of the park’s resources to form a complete ecological system. Department staff resource specialists and planners evaluated the environmental opportunities and constraints within the park as whole when developing this *Final General Plan*. As such this plan proposes measures to correct existing patterns of use that are degrading park resources, programs to restore resources, and recommendations for siting new facilities so that they minimize potential impacts to the environment.

This *Final General Plan* and the GIS database will be important tools making future management decisions and implementing area-specific projects for the protection of park resources and long-term ecological health. The GIS should be used in the planning and development of area-specific projects and updated as more information and data is developed for park resources. There is a goal under the parkwide Natural Resources section on the following page to use the GIS to evaluate natural resource relationships and there are also guidelines written under the individual resource areas for the use and maintenance of the GIS system. This is consistent with an adaptive management approach to resource protection and achieving general plan goals as area-specific projects are implemented in the future.

## Sustainability

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 *Final 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. This *Final General Plan* also encourages adaptive management techniques to monitor and adjust approaches to resource and visitor management with long-term benefits for each. 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
- Using adaptive management techniques to monitor and adjust approaches to resource and visitor management for long-term benefits to each

### Goal

- **To the extent feasible incorporate principles and practices of sustainability into the park's design, improvements, and maintenance and operations, and utilize adaptive management principles.**

### Guidelines

SUST-1: To the extent feasible, consider sustainable practices in site design, construction, maintenance, and operations. Sustainable principals used in design and management emphasize

environmental sensitivity in construction, the use of non-toxic materials and renewable resources, resource conservation, recycling, and energy efficiency.

SUST-2: Programs such as LEEDs (Leadership in Energy and Environmental Design)[2] should be consulted for development of facilities and site-related construction.

### Natural Resources

This *Final General Plan* has been designed to protect all natural resources, including but not limited to existing native vegetation and sensitive plant communities, sensitive wildlife species, and water quality, and the ecological interdependence that binds them together into one system. The following management guidelines should be implemented to protect and restore these natural resources within the park:

#### Goal

- **Identify, protect, preserve, and interpret significant natural resources within the park.**

#### Guidelines

NR-1: Utilize existing GIS system for Sugarloaf Ridge State Park to continue evaluation of relationships between different natural resource systems, to track resource management activities, and to evaluate progress towards individual resource goals.

NR-2: Maintain a cumulative list and GIS database of plant and wildlife species in the park. Update the natural resources inventory summarized in Chapter 2, Existing Conditions, and associated GIS database with plant and wildlife species observed during surveys conducted for individual improvement projects or other observations by park personnel or other qualified observers over time. To the extent feasible, conduct additional surveys to identify the biological resources in areas of the park that have not yet been surveyed, including areas

[2] LEEDs is a program of the U.S. Green Building Coalition.

acquired since the last inventory. (General plan implementation, however, is not dependent on completion of these studies.) This list should be kept on file, and used for future biological studies, proposed project impact analysis, and as a baseline for educational purposes.

## Water Quality

### Hydrology/Water Quality

Sugarloaf Ridge State Park contains the headwaters of Santa Rosa Creek and Sonoma Creek, including its tributaries of Bear Creek to the north and Calabasas Creek to the south. The ridges within the park form the dividing line between the two watersheds. These watercourses provide important aquatic habitat; support sensitive wetland and riparian vegetation along the stream banks; and provide water for a range of wildlife within the park and region. Stream flow in all creeks flowing out of Sugarloaf Ridge State Park support steelhead and Chinook salmon spawning and summer rearing habitats.

In 1996, the Bay Area Water Quality Control Board, under the guidelines of the federal Clean Water Act, Section 303(d), listed the Sonoma Creek watershed as 'Impaired.' This listing places more stringent standards on monitoring, quality, and quantity of water related to beneficial uses, including fisheries, to which the Department must adhere3.. Water quality and spawning habitat for steelhead and chinook salmon could be affected by visitor disturbance of streambeds and increased sedimentation and pollutant loads from construction of new facilities and impervious surfaces. Potential changes in the groundwater table from increases in water use could also affect stream flow. However, conscientious management can propose methods to reduce erosion, ensure adequate stream flow for salmonid spawning and protect water quality of the creeks that flow through the park.

The primary responsibility for protection of water quality in California lies with the State Water Resources Control Board and nine regional water quality control boards

[3] The Sonoma Ecology Center is currently preparing a water quality control plan for the Sonoma Creek Watershed. Discussion with Caitlin Cornwall, February 16, 2004.

(RWQCBs). In the Sugarloaf Ridge State Park area, the San Francisco Bay Area RWQCB oversees the Sonoma Creek watershed and the North Coast RWQCB oversees the Santa Rosa Creek watershed. RWQCBs are responsible for adopting and implementing the water quality control plan that sets forth the water quality standards and control measures for surface water and groundwater within their respective jurisdictions.

### Goal

- **Protect and restore the water quality in the Sonoma, Santa Rosa, Bear, and Calabazas Creek watersheds, and to the extent feasible, provide for adequate stream flow to continue to support steelhead and Chinook salmon spawning and rearing habitats.**

### Guidelines

WQ-1: As time and funding allow, identify existing sources of pollution/sedimentation in the park's creeks and take appropriate, source-specific abatement actions. Monitor and evaluate the effectiveness of the actions and make any necessary changes based on the evaluation. The Sonoma County Water Agency (Fisheries Division) measurements of water and fish levels could provide baseline data for this monitoring effort in the Santa Rosa Creek watershed.

WQ-2: Avoid or minimize to the extent practicable deposition and discharge of sediment, debris, waste, and other pollutants into surface runoff, drainage systems, surface water bodies, and groundwater.

WQ-3: To minimize potential degradation of water quality, efforts should be made to discourage park visitors from entering creeks and associated sensitive habitat areas, including wetlands, riparian areas, and streambeds. Possible options include:

- Providing a few, well-marked visitor access points to the creeks
- In intensive visitor use areas, constructing split-rail fences or using other methods to limit access and protect riparian habitat.

Include interpretive signs about the importance of riparian habitat (See Interpretive section)

- o Establishing guidelines for siting future campsites and facilities away from the creeks and their tributaries
- o Minimizing trails crossing through creeks and streams; where practicable; building bridges over the stream crossings; where crossing is not needed, developing pedestrian-only spur trails with access to the creek

WQ-4: During the planning and design of area-specific projects, where feasible incorporate a minimum setback of 50 to 100 feet from the bankfull width of the stream or creek channel to minimize the deposition and discharge of sediment and other pollutants into streams and creeks. When the setback is less than 100 feet, incorporate stormwater management measures such as planting native vegetation to slow runoff before entering the stream.

WQ-5: During the planning and design of area-specific projects, minimize native vegetation removal in riparian areas to safeguard the beneficial uses of the stream. Where vegetation must be removed, projects should incorporate appropriate mitigation, such as the replanting and vegetation enhancement elsewhere.

WQ-6: Evaluate new area-specific projects during the planning and design process to ensure they do not increase 100-year discharge peak water flows (from bankfull to full flood stages) in the creeks that would result in downstream flooding or cause localized bank erosion.

WQ-7: Use water efficiently and reduce water demand by:

- o Requiring water conserving design and equipment in new construction
- o Encouraging water conserving landscaping and other conservation measures
- o Encouraging retrofitting with water conserving devices

- o Designing wastewater systems that require minimal inflow and infiltration to the extent economically feasible
- o Limiting impervious surfaces to minimize runoff; consider the use of permeable materials during the design of new or expanded roadways and parking lots

WQ-8: Design, construct, and maintain buildings, roads, bridges, and drainage and other facilities using best management practices for erosion control and surface runoff to avoid or minimize sediment and other pollutants in storm water flows to the maximum extent practicable. Develop appropriate project-level CEQA documentation and NPDES permits, providing the environmental evaluation and mitigation measures necessary to avoid, reduce, or minimize potentially significant impacts to water quality. Principal control measures will include, but are not limited to, the following:

- o As time and funding allow, identify existing areas of concern with respect to water quality and develop plans to remediate as appropriate to fulfill the intent of guidelines WQ-1 and WQ-2
- o Remedial erosion and drainage control both during and after construction
- o Installation and maintenance of erosion and surface runoff control measures
- o Evaluate proposed alterations to existing drainage patterns so as not to result in increased erosion and sedimentation or increased flood flows
- o Controls on non-point source discharges from new facilities (i.e. impervious surface coverage)
- o Adherence to water quality protection standards and control measures available in the water quality control plan for the region
- o Factoring the needs of sensitive aquatic species into the timing and implementation of any work that results in streambed alteration or riparian disturbance to avoid adverse impacts to these species

- When feasible, avoiding construction in the rainy season

WQ-9: With development of horse-related facilities, implement measures to reduce transport of pollutants from animal waste to the creeks. These measures[4] may include, but will not be limited to, the following:

- Adhere to Guideline WQ-4 when siting new facilities
- Clean up manure on a regular basis, especially during wet weather
- After clean up, during the arid summer, water areas where horses frequently deposit manure. Watering maintains the moist environment bacteria need to decompose residual waste
- Store horse waste in an impervious surface and under cover
- Separate barnyards, corrals, and manure storage areas from streams with buffer strips of vegetation to filter sediments and absorb nutrients in runoff
- Use grassed ditches, berms, or subsurface drains to divert "clean" runoff around barns, manure storage areas, and corrals

WQ-10: Replace septic systems, as necessary with the best available technology.

WQ-11: Consider development of a wastewater treatment system if widespread septic system problems occur that are a health concern and cannot be addressed by on-site maintenance and management programs.

WQ-12: To the extent feasible, restore degraded riparian and aquatic habitat that will not recover in a reasonable time if left untreated.

WQ-13: Develop an interpretation program aimed at educating the public on ways to improve and

[4] Council of Bay Area Resource Conservation Districts (no date). Horse Owners Guide to Water Quality Protection.

maintain water quality and riparian and wetland ecosystems.

WQ-14: Control turkeys, feral pigs and other exotic animal populations to improve water quality in areas degraded by animal wallowing.

WQ-15: Stream flow in all creeks flowing out of Sugarloaf Ridge State Park should not be reduced below the amount needed to support salmonid spawning and summer rearing habitats.

- For all projects proposing to use water originating within the watersheds of Sugarloaf Ridge State Park, provide an assessment of increased water use and potential effects of changes in stream flow on aquatic habitat, especially for salmonids.

## Biological Resources

### Special-status and Native Plants

This *Final General Plan* has been designed to protect existing native vegetation and plant communities. The introduction of non-native plants can result in losses of native habitat, reduction in native species diversity, and disruption of ecological functioning. Invasive non-native plants continue to degrade grassland meadows within Sugarloaf Ridge State Park.

In general, sites subjected to disturbance are more likely to be infested with non-native invasive plants (weeds) than sites with intact soil and native vegetation. Examples of disturbed areas in the park include roadsides, trails, campgrounds, other visitor use areas, and stream banks. While these sites may be more prone to invasion, they are also more easily monitored due to the predictability of potential weed invasions, and to their relative accessibility. At greater risk, perhaps, are remote, relatively undisturbed areas that nevertheless are potential dispersal sites for non-native plant seeds. Regular monitoring for invasive species and implementation of control measures as needed would be prudent to avoid development of more severe infestations.

Goal

- **Protect and restore special-status and native plant species and communities within the park.**

Guidelines

BIO-1: Compile and map information on special-status, native, and non-native plants located in the park into the park's GIS database.

BIO-2: Continue ongoing programs to control invasive plant species to the extent possible, giving priority to the most noxious weeds. Chapter 2, Existing Conditions, provides additional information about key invasive plant species in the park. After removing invasive, non-native plant species, affected areas generally could be revegetated with locally native plant species.

BIO-3: As part of the planning and design process for area-specific projects, and prior to commencement of final siting for grading or construction related to new facilities or enhancements, the Department will develop the appropriate project-level CEQA documentation and environmental evaluation and mitigation measures necessary to avoid, reduce, or minimize potentially significant impacts to special-status plant species. These measures may include:

- A qualified botanist using appropriate protocols will identify any suitable habitat for special-status plant species that potentially could occur in the affected area, and will conduct appropriately timed surveys if such species may be disturbed by the proposed project. Data from Chapter 2, Existing Conditions, and the appropriate resource agencies, including CNPS will be consulted to identify species of concern.
- If any special-status species are found within the areas that would be affected by the proposed activities, such activities will be planned and designed to avoid or minimize potential impacts during both the construction and post-construction periods.

- In the event that some disturbance to special-status species is unavoidable, appropriate measures to offset those impacts will be identified and implemented in consultation with a qualified botanist and appropriate regulatory agencies. Such measures shall be consistent with all applicable rules and regulations relating to the protection of rare, endangered, and federally- and state-listed species, and necessary authorizations will be obtained from the U.S. Fish and Wildlife Service (USFWS) or the California Department of Fish and Game (CDFG).

BIO-4: To the extent feasible, restore damaged or compromised native plant communities, prioritizing plants identified as important for wildlife habitat restoration.

BIO-5: Explore potential for re-introduction of rare and endangered native plant species in appropriate locations and habitats.

BIO-6: Provide interpretive and educational materials on native and non-native species and related ecological and economic issues.

### Sensitive Habitats

Sensitive habitats that occur within the park include sensitive upland habitats (native grasslands, white alder riparian woodland, rock outcrops, and serpentine habitats), riparian habitat, and wetlands (mesic herbaceous). Wetlands and riparian habitats represent the most ecologically valuable habitats and are subject to additional protective regulations from CDFG and the U.S. Army Corps of Engineers (USACE) under the state Fish and Game Code and federal Clean Water Act. Wetlands and healthy stands of native riparian vegetation are important for both aquatic and terrestrial wildlife and to help stabilize stream banks to reduce sedimentation into the aquatic habitats.

The following management guidelines will be implemented to protect and restore wetlands, riparian systems, and sensitive upland habitats:

### Goal

- **Protect and restore the park's sensitive habitats that are important for plant and animal diversity.**

### Guidelines

BIO-7: To the extent feasible, identify existing sources of disturbance to sensitive habitats and take appropriate, source-specific abatement actions. Monitor and evaluate the effectiveness in achieving the desired result and make any necessary changes based on the evaluation.

BIO-8: Protect and restore existing wetlands through control of exotic species, revegetation with native wetland species and/or expansion of wetland areas.

BIO-9: Protect and restore native riparian vegetation to improve aquatic and riparian habitats and help stabilize stream banks to reduce localized sedimentation into aquatic habitats.

BIO-10: Protect significant serpentine rock outcrops from damage or destruction.

BIO-11: As part of the planning and design process for projects, and prior to commencement of any grading or construction related to new facilities or enhancements, develop the appropriate project-level CEQA documentation and environmental evaluation and mitigation measures necessary to avoid, reduce, or minimize potentially significant impacts to sensitive habitats. These measures may include:

- A wetland scientist or other qualified park personnel will identify and delineate any jurisdictional wetlands or other waters of the U.S., as defined by the USACE, that could be affected. The jurisdictional delineation will follow standard USACE methods and will be submitted to the USACE for review and verification.
- If sensitive habitats such as upland habitats, jurisdictional wetlands, or other waters of the U.S. are located within or adjacent to areas that will be affected by the proposed activities, such activities will be planned and

designed to avoid or minimize impacts to the sensitive habitat.

- In the event that some disturbance to wetlands or other waters of the U.S. is unavoidable, appropriate permits will be obtained and measures will be identified and implemented to mitigate impacts in consultation with appropriate resource agencies with monitoring to ensure long-term success. Such measures shall be consistent with all applicable rules and regulations relating to the protection of wetlands and riparian habitats and shall ensure that proposed activities will not result in a net loss of wetland acreage or habitat value. Disturbed wetland areas will be revegetated with locally native wetland plant species; disturbed riparian vegetation will be revegetated with like habitat.
- In the event that some disturbance to sensitive habitat is unavoidable, disturbed habitat will be revegetated with like habitat.

### Biocorridors

Biocorridors are habitat linkages – lands making a continuous connection between two or more larger land areas that form a corridor with vegetative cover suitable for facilitating the movement of animals. Protecting linkages within the park, as well as between the park and other wild land areas, is essential to maintaining ecosystem health. Sugarloaf Ridge State Park provides an important refuge of preserved habitat for wildlife in the Mayacamas Ridge including that for mountain lions, an indicator species of the overall health of the ecosystem[5]. Continued elimination of biocorridors connecting with other wild lands, primarily from encroaching residential development and vineyards around the park, could conceivably result in the park becoming biologically isolated. Plant and animal species that depend on the park for habitat could find their natural ranges reduced, resulting in less biodiversity both inside and outside the park.

[5] Mountain lions require a large and healthy ecosystem in which to survive. Their absence would indicate an imbalance lower on the food chain.

### Goal

- **Preserve and as feasible establish new habitat linkages between the park and other protected lands in order to maintain and increase species abundance and diversity within the Mayacamas Ridge ecosystems.**

### Guidelines

BIO-12: To the extent feasible, protect existing biocorridors and wildlife habitat within the park by preserving large wild land areas and minimizing intensive visitor facilities and use in wild land areas.

BIO-13: To the extent feasible, identify the park's wildlife population trends, habitat requirements and migration routes within the park and their linkages to surrounding areas outside the park's boundary to determine potential future habitat linkage needs.

BIO-14: Maintain working relationships with other agencies, land trusts, and landowners, such as SCAPOSD, Sonoma County Regional Parks District (SCRP), Napa Land Trust, Sonoma Land Trust, and the Bay Area Ridge Trail Council, to coordinate efforts to identify and preserve biocorridors outside the boundaries of the park that connect to the park.

BIO-15: Include biocorridor protection as a criterion to be used during evaluation of potential future acquisition or conservation easements from willing sources.

BIO-16: Develop education and interpretive displays about the value of biocorridors and the importance of their protection.

### Wildlife

Sugarloaf Ridge State Park supports a rich variety of avian, terrestrial, and aquatic wildlife native to Sonoma County. However, some non-native wildlife species such as wild pigs and turkeys in the park compete with native wildlife species for food and can disturb native vegetation. This *Final General Plan* has been designed to protect wildlife by preserving and enhancing important

habitat areas and maintaining large expanses of near wildlands. The following management measures will be implemented to protect wildlife species and restore wildlife habitats:

### Goal

- **Preserve special-status wildlife species and restore their habitat within the park.**

### Guidelines

BIO-17: Compile and map information on special-status wildlife species in the park; conduct surveys for selected special-status species for which suitable habitat is present.

BIO-18: To the extent feasible, rehabilitate degraded wildlife habitat in those areas where treatment is necessary to allow for recovery in a reasonable time.

BIO-19: To the extent feasible, control invasive wildlife species from upsetting the natural ecological balance. Develop and implement programs to reduce the impacts of wild pigs, turkeys, and other non-native wildlife species on riparian zones and other sensitive habitats. (See also WQ 1 and WQ 14)

BIO-20: Provide a program of interpretive signs and exhibits that discuss the wildlife values associated with the habitat in the Mayacamas Range and any associated special-status species (See Interpretive section).

BIO-21: As part of the planning and design process for area-specific projects, and prior to commencement of grading or construction related to new facilities or enhancements, develop the appropriate project-level CEQA documentation and environmental evaluation and mitigation measures necessary to avoid, reduce or minimize potentially significant impacts to special-status animal species. These measures may include;

- o A resource ecologist, wildlife biologist, or other qualified park professional will identify any potential habitat for special-status wildlife species that potentially occur in the

affected area, and will conduct appropriately-timed surveys if such species may be disturbed by the proposed project. Chapter 2, Existing Conditions, and appropriate resource agencies will be consulted to identify species of concern.

- If any special-status animal species are found within the areas that would be affected by the proposed activities, such activities will be planned and designed to avoid or minimize potential impacts during both the construction and post-construction periods.
- In the event that some disturbance to special-status animal species is unavoidable, appropriate measures to offset those impacts will be identified and implemented in consultation with a qualified wildlife biologist and appropriate resource agencies. Such measures shall be consistent with all applicable rules and regulations relating to the protection of rare, endangered, and federally- and state-listed species, and necessary authorizations will be obtained from the USFWS or the CDFG.

### Cultural Resources

"Cultural Resources" consist of historical, archaeological, and traditional cultural properties that are eligible or potentially eligible for listing on the National Register of Historic Places (NRHP), or California Register of Historical Resources (CRHR). These may include, but are not limited to, prehistoric archeological sites, historical archaeological sites, and historic structures.

As described in Chapter 2, Existing Conditions, Sugarloaf Ridge State Park contains significant and potentially significant cultural resources. Protecting and interpreting cultural resources is a way of preserving remnants of the area's diverse heritage and helping park visitors understand the multifaceted prehistory and history of this area.

#### Goal

- **Identify, protect, preserve, and interpret significant cultural resources identified within the park.**

### Guidelines

CULT-1: Identify and map cultural resources in the portions of Sugarloaf Ridge State Park that have not been previously surveyed, including newly acquired properties, into the park's GIS database. Facilitate information sharing with Sonoma State University and the Northwestern Information Center.

CULT-2: Continue programs protecting the significant cultural resources of the park and extend programs to other areas of the park where damage to archaeological sites is likely.

CULT-3: Establish and maintain relationships with interested local Native American groups to allow for Native American input on proposed projects.

CULT-4: Consider adaptive reuse of historic structures, as appropriate.

CULT-5: Provide interpretive and educational programs on cultural resources within the park and the history and pre-history of the area.

CULT-6: As part of the planning and design process for area-specific projects, and prior to commencement of any ground disturbance, grading, or construction related to new facilities, enhancements, or demolition, develop the appropriate project-level CEQA documentation providing the environmental evaluation and mitigation measures necessary to avoid, reduce, or minimize potentially significant impacts to cultural resources. These measures may include;

- A qualified cultural resource professional will conduct appropriate record reviews and any necessary fieldwork to determine the presence of cultural resources or culturally sensitive areas as may be required.
- If the cultural resource investigations indicate the presence of cultural resources or culturally sensitive areas within or adjacent to areas that will be affected by the proposed activities, such activities will be planned and designed to

avoid or minimize impacts to the identified resources.

- In the event that some disturbance to cultural resources is unavoidable, appropriate measures will be identified and implemented in consultation with a qualified cultural resource professional. Such measures shall be consistent with all applicable rules and regulations relating to the protection of cultural resources.

CULT-7: Alteration or removal of any historic or archaeological features will be subject to Public Resources Code Section 5024.5 review requirements. All construction, maintenance, or improvements of historic structures will be in conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* and the California Historical Building Code.

CULT-8: If in the event that human remains are encountered, during excavation or disturbance activities at the site or at any nearby area reasonably suspected to overlie adjacent human remains the department will follow appropriate rules and regulations which, under current law, include the following;

- The Sonoma County coroner will be contacted and appropriate measures implemented. These actions would be consistent with the State Health and Safety Code Section 7050.5, which prohibits disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery.
- If the county coroner determines the remains to be Native American, the coroner shall contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or

## Aesthetic Resources

Sugarloaf Ridge State Park provides visitors with a wildland experience with spectacular landscapes and views. However, most of the facilities within the park are not in keeping with the extraordinary visual character of the natural setting. Implementation of the following goals and guidelines will improve the appearance of facilities and protect viewsheds and the dark nighttime sky.

### Goal

- **Ensure manmade facilities complement and do not detract from the park's natural setting.**

### Guidelines

#### Architectural Style

VIS-1: Given the lack of a consistent character or identity for park facilities, create architectural design guidelines that can be used for facilities throughout the park. The guidelines will be developed during project-level development. The intent is to create facilities that share enough similarities in style and/or materials to have perceivable association and exhibit a "park-like" character with natural colors and materials. The guidelines should be developed as part of the planning and design process for the first area-specific project that follows approval of this approved *Final General Plan*.

#### Landscape Character

VIS-2: To the extent feasible, respond to surrounding landscape setting to provide appropriate native landscaping around the park's new and existing visitor support and service area facilities to partially screen facilities and enhance habitat values for native wildlife species.

Viewshed Protection for Wildlands

VIS-3: Buildings, structures, signage, and landscaping shall be sited to be sensitive to scenic views from and through the park.

VIS-4: Work with appropriate local jurisdictions to protect views of the surrounding ridgetops by limiting development on the ridgetops and through careful review and limitation of the visual impacts associated with agricultural production on previously undisturbed lands within the park's viewshed.

Signage/Identity

VIS-5: Design an identity and wayfinding program for Sugarloaf Ridge State Park that will establish design guidelines and standards for park signage, and provide guidelines for the location and distribution of signs throughout the park.

Lighting

VIS-6: Lighting levels (i.e., intensity/foot-candles) will generally be kept as low as possible, since the park is a dark-night setting (rather than an urban environment for which the safety standards are set[6]). Luminaries will focus the light downward and prevent the splay of ambient light to other areas. Whenever possible keep the light source close to the ground and use lower wattage lamps to reduce lighting-related disturbance.

VIS-7: Lighting systems will be controlled to minimize operating time. In consideration of wildlife, outdoor motion sensors will not be used, but rather, an appropriate combination of time scheduling and photo switching controls will be employed for outdoor lighting.

VIS-8: In order to minimize disturbance to wildlife, night lighting will generally be restricted to the more developed areas of the park (i.e., buildings, paths, parking lots) consistent with security and safety needs appropriate for a remote park.

[6] See Yosemite National Park Exterior Lighting Guidelines, Pacific Lightworks, 1997

Lighting plans will be reviewed for compatibility with habitat values prior to construction.

VIS-9: In order to minimize disturbance of night star-gazing, night lighting will not be provided within direct view of the observatory.

VIS-10: Consider all the above goals to improve a visitor's first impression of the park and to enhance their sequence of arrival to the Park.

Dark Nighttime Sky

The dark nighttime sky is an important resource at Sugarloaf Ridge State Park for celestial viewing at the observatory and is a contributing factor to the remote and natural setting of the park.

Goal

- **Maintain and protect the dark nighttime sky for celestial viewing.**

Guidelines

SKY-1: Develop educational and interpretive services about the value of the dark nighttime sky and the importance of its protection.

SKY-2: Continue to work with the observatory concessionaire and relevant stakeholders to protect the dark nighttime sky as a resource.

SKY-3: Work with the County, local entities involved with development around the Valley of the Moon and neighboring landowners to minimize adverse effects from light sources outside the boundaries of the park.

SKY-4: Follow this plan's lighting guidelines to eliminate nighttime glare from direct view of the observatory, as feasible.

### 3.2.2 PARKWIDE VISITOR USE AND DEVELOPMENT

Sugarloaf Ridge State Park's visitor facilities and services provide the means for allowing the public to enjoy the rich diversity of natural resources of the park. The facilities provide quality recreational experiences for a

wide range of visitors with respect to age, race, income, education, and physical ability.

This *Final General Plan* assumes that local and regional population increases and planned expansion of the park will result in an increase in visitation rates (see Chapter 2, Existing Conditions). This *Final General Plan* provides the management framework to direct expansion of visitor services to accommodate some of the anticipated increases in visitation to the park and also to ensure that the park will be able to accommodate the increased numbers of visitors without damaging its natural and cultural resources.

The following goals and guidelines are intended to guide the development and implementation of new visitor services within Sugarloaf Ridge State Park.

### Parkwide Facilities, Use Areas, and Visitor Experience

Sugarloaf Ridge State Park provides a wide range of recreational activities including hiking, camping, mountain biking, equestrian use, picnicking, wildlife and wildflower observation, and astronomical viewing at the Robert Ferguson Observatory. Many of the park's facilities were built as temporary buildings and need to be upgraded or relocated to provide a positive visitor experience. Facilities should be provided in newly acquired properties to accommodate the level of visitor use intended in that management zone.

#### Goal

- **Provide a range of high-quality recreational opportunities that facilitate and enhance the public's enjoyment and appreciation of the park's natural, cultural, and scenic resources.**

#### Guidelines

FACIL-1: To the extent feasible, develop limited access small groups (up to 15 people per site) and family (up to 8 people per site) campsites to provide the opportunity for a more remote camping experience that does not directly include vehicles. In Adobe Canyon, these limited-access campsites may be accessible temporarily by vehicle; however, in backcountry areas of the Park these will be

Primitive Campsites and will be accessible by trails only.

- o Do not provide electricity or potable water to these primitive campgrounds where they do not already exist.
- o Establish operational procedures for checking in campers and patrolling primitive sites
- o Provide interpretive brochures about "camping lightly"; inform campers of steps they can take to reduce their impact on natural and cultural resources when camping. Such instructions and restrictions could include prohibiting fire except in camping stoves, use of water filters, and camping a certain distance from any water source (See Interpretive section)
- o Prior to allowing equestrian use, establish provisions to control or collect horse manure to prevent runoff into water bodies and degradation of the visitor experience

FACIL-2: To the extent feasible, develop additional visitor facilities (trails, campgrounds, day use parking lots, etc.) in the broader areas of the park and new properties that may be acquired through SCAPOSD or other sources.

FACIL-3: Where feasible, develop facilities and recreational and operational use areas in those areas already developed or of low resource value to minimize disturbance to existing habitat and other natural resources.

FACIL-4: Larger visitor-serving facilities shall generally be located in areas that have convenient access.

FACIL-5: Consider possibilities for private concessions to provide recreational activities that are not offered by the Department, including development of additional equestrian and observatory facilities.

## Circulation and Parking

### Visitor Access

Adobe Canyon Road, Los Alamos Road, and Nunns Canyon Road provide vehicular access into Sugarloaf Ridge State Park. Each of these roads provides access to different management

zones of the park which are currently not connected to the other areas. This *Final General Plan* proposes trail connections between the various management zones of the park and Hood Mountain Regional Park, but until that is achieved, the three access points will remain tied to the level and intensity of visitor use in each management zone. The roads are relatively narrow, steep, and winding, potentially creating safety concerns with increased traffic and visitor use.

### Goal

- **Provide a circulation system that facilitates safe visitor access to, and movement between, the different management zones in Sugarloaf Ridge State Park.**

### Guidelines

CIRC-1: Provide direct and permanent vehicular access to the Adobe Canyon, Santa Rosa Creek watershed, and Nunns Canyon Management Zones from State Route 12 via Adobe Canyon Road, Los Alamos Road, and Nunns Canyon Road, respectively.

CIRC-2: Improve and maintain primary visitor access roads to avoid or minimize adverse effects on the environment and safely accommodate expected visitor use, with special attention to use by vehicles pulling horse trailers.

- o Identify areas for potential improvements along existing roads for erosion control, stabilization, and reduction of sediment-causing conditions.

- Identify areas for stabilization, widening (particularly through curves) and construction of turnouts along Los Alamos Road and Nunns Canyon Road.[7] Work with the Sonoma County Public Works Department for the maintenance and repair of Adobe Canyon Road, Los Alamos Road, and Nunns Canyon Road.
- Consider providing and maintaining signs along all roads providing access to park equestrian staging areas alerting drivers in advance share the road with bicyclists and to provide information on roadway conditions such as steep grades, sharp curves, absence of pullouts or frequency of pullouts, and any other condition that might influence a driver's decision to use the roadway.
- Consider traffic-calming and speed reduction measures for park access roads, including those that pass through residential neighborhoods.

CIRC-3: Encourage Sonoma County Public Works Department to widen Adobe Canyon Road near the intersection with State Route 12, stripe to improve and clearly separate the two westbound approach lanes to State Route 12, and signalize the State Route 12 / Adobe Canyon Road intersection when warranted. As part of the planning and design process for area-specific projects, the Department will review areas of potential impacts in accordance with CEQA prior to site-specific development. During the project-level environmental review, the Department should assess the potential increase in trips generated by the project and propose appropriate mitigation measures at that time. The Department does not have funding to annually monitor traffic to and from the park.

CIRC-4: Encourage SCRP to develop a new, two-lane vehicular access point to Hood Mountain Regional Park via Pythian Road.

[7] Refer to AASHTO standards for Special Purpose Roadways (AASHTO 2001) to determine recommended roadway widths and turn path requirements for all vehicles using the roadways. Specific attention should be given to providing adequate lane and shoulder widths as well as pullout length, frequency and turn path requirements of vehicles towing horse trailers.

CIRC-5: In order to minimize the increase in traffic and the demand for parking, encourage and support alternate modes of transportation to Sugarloaf Ridge State Park, including pedestrian, horseback, off-road bicycle and bus. Possible options include:

- Recommend the Observatory concessionaire and other event coordinators provide shuttle service during special events and identify satellite parking opportunities near State Route 12.
- Provide additional trail access points to the park and work with local jurisdictions to enhance shared use trail connections from adjacent communities to the park.
- Provide share-the-road signs to alert drivers to the fact that bicyclists may be on the road and to slow down. Provide and maintain informational signs at intersections and along all roads alerting bicyclists and other roadway users in advance of roadway conditions such as steep grades, sharp curves, absence of pullouts or frequency of pullouts, and any other condition that might influence the decision to use the roadway.
- Explore establishment of shuttle service between management zone parking lots and public transit stops on State Route 12 during peak season weekends.

CIRC-6: Establish a coordinated way-finding program that provides clear direction to visitors as to how to access the park. Such a program should address appropriate locations for directional signs related to the vehicular access points from State Route 12, the location of the visitor center and camping check-in area, and availability (or prohibition) of horse trailer parking, etc.

### Emergency Access/Safety

Maintaining connections and suitable roads for access and egress to and from the visitor use and wildland areas of park is crucial in emergency situations. Many different conditions can make the roads impassible for emergency vehicles: overgrown vegetation, large rocks and ruts in

the road, and low-water bridges without enough clearance during periods of high water. In developing this *Final General Plan*, several gaps in the emergency access network were noted that should be resolved.

### Goal

- **Ensure adequate emergency access to the park's visitor use and wild land areas.**

### Guidelines

EMERG-1: Consult with the California Department of Forestry (CDF) and the responsible local fire districts to assess emergency access to and within the park. This should include an assessment of the seasonality of alternative access routes. This is important because CDF maintains roads/trails that begin outside of the park boundaries, and various fire districts are first-responders in case of fire emergencies.

EMERG-2: Update the park's GIS database with field-verified information on road and trail emergency accessibility as it becomes available.

EMERG-3: Work with CDF to maintain emergency access roadways to eliminate any gaps in the emergency access circulation system and the trail system in the wild land areas.

### Parking

Most visitors to Sugarloaf Ridge State Park arrive by vehicle, and the existing parking lots are full during peak weekends. Special events at the observatory can also draw large crowds, sometimes resulting in illegal parking and diminishing the visitor experience for campers. Improvements to recreational facilities are likely to increase the parking demand in the future. Because current visitor demand already exceeds available parking spaces, any increase in parking supply will accommodate additional visitors to the park during peak weekends. As such, when considering expanding parking capacity, park staff should also consider the potential repercussions to traffic generation as well as the visitor experience and natural and cultural resources from the resultant increase in visitor use.

### Goal

- **Balance the need for parking with visitor experience, aesthetics, and protection of park's natural and cultural resources.**

### Guidelines

PARK-1: Ensure that adequate parking and/or transit is provided to accommodate public access to the park and serve park uses and facilities.

PARK-2: Distribute parking areas strategically throughout the park to support proposed activities and facilities.

PARK-3: Explore ways to minimize the use of parkland for the development of parking lots, including the following:

- o Design and implement parking improvements in phases in order to be responsive to actual use and demand and to avoid development of too much parking.
- o Base parking demand projections on typical use patterns, rather than worst-case or special event scenarios.
- o Explore alternatives for accommodating special event parking conditions, such as the use of unpaved overflow parking areas, satellite parking areas (outside of the park), special event shuttle service, etc.
- o Explore shared parking arrangements with nearby landowners and/or commercial areas in Kenwood that may have excess capacity on weekends.
- o Explore providing parking availability signs along State Route 12 at each park access roadway location.

PARK-4: Where feasible, parking lots that include horse trailer parking shall allow one-way flow so that horse trailers can drive in and turn around without backing to exit the lot.

### Trail Connections

A part of the Department of Parks and Recreation's mission statement and the California Recreation and Park Commission *Statement of Policy* states:

The Department will provide trails for accessing park features and facilities and to enhance public recreation opportunities. The Department will strive to meet the recreational trail needs of its diverse trail users by developing multi-use trails, consistent with park unit classification, general plan directives, cultural and natural resource protection, public safety, user compatibility and other legal and policy mandates.

Trails historically have provided a means of public access to park features and facilities for interpretation, education and recreation. Increasingly, visitors are using park trails as platforms for strenuous exercise and for physical- and skill-challenging activities. These nontraditional trail uses often increase maintenance demands on trails designed for lower impact uses; introduce conflict between different trail users; and increase the overall numbers of trail users, which may lead to additional public safety concerns.

In addition to offering access, recreation, interpretation and health-enhancing opportunities, trails serve as a valuable management tool by designating and controlling public access to sensitive resource areas. Trails also enhance community involvement in parks.

Trails allow visitors to view and enjoy the wildland areas of the park while also limiting human disturbance of habitat by providing designated routes for travel. A network of trails radiate out from the visitor-serving facilities in upper Adobe Canyon. Fewer trails are provided in the other management zones of the park, and access between the zones by trail is limited or not available at all. New trail connections are needed to link management areas of the park and to provide more consistent access to remote locations. Shared-use trail loops of various lengths will allow visitors to explore all of Sugarloaf Ridge State Park through hiking, bicycling, and horseback riding. The Department will also encourage the development of trail connections between the many state and regional parks and open space areas in the region.

### Goal

- **Provide a system of shared-use trails that link all management zones of the park into an integrated whole and encourage development of trail connections to other nearby state and regional parks and open space providers.**

### Guidelines

TRAIL-1: Develop a Trails System Plan to connect existing trails in Adobe Canyon to the Santa Rosa Creek Watershed Management Zone (McCormick), Bear Creek Watershed Management Zone, Nunns Canyon (Beltane), Hood Mountain Regional Park, any newly acquired properties, and other nearby state parks to create a network of shared use trails. Possible options include:

- o Explore ways to develop strategies that promote user cooperation and mutual respect to enable rewarding trail experiences for all users.
- o Explore ways to develop a new trail connection between the Santa Rosa Creek Watershed Management Zone and Adobe Canyon.
- o Explore developing a more direct trail connection from the Hood Mountain Regional Park parking lot at the end of Los Alamos Road to the Santa Rosa Creek Watershed Management Zone in Sugarloaf Ridge State Park.
- o Work with SCRP and SCAPOSD or other agencies and organizations to provide a trail connection from Pythian Road to Sugarloaf Ridge State Park.
- o Work with SCAPOSD, the Bay Area Ridge Trail Council, and other organizations to develop new trail connection between Nunns Canyon and upper Adobe Canyon.
- o Explore ways to develop a trail connection along Bear Creek from Goodspeed Trail to the Red Barn.

TRAIL-2: Cooperate with appropriate stakeholders such as SCAPOSD, the Bay Area Ridge Trail Council, and other land trust efforts to establish public-access trail connections between Sugarloaf Ridge State

Park and the other state and regional parks in the area:

- o Recognize the Bay Area Ridge Trail as an important non-vehicular transportation corridor and an important means of unifying public use areas within the non-contiguous portions of the park.
- o To improve access to and through the park, support neighboring jurisdictions and other organizations in their efforts to complete the Bay Area Ridge Trail.
- o Cooperate with other stakeholders such as SCAPOSD and SCRP to establish a trail easement to connect State Route 12 to Hood Mountain Regional Park that also connects to Sugarloaf Ridge State Park.

TRAIL-3: Based on the findings of the Trails System Plan open as many trails and trail types as feasible to shared use

.

TRAIL-4: To the extent feasible, design and construct the trail system to provide universal access (see Accessibility guidelines in subsection 3.2.3).

TRAIL-5: Explore opportunities for interpretation on all trails.

TRAIL-6: To the extent feasible and where appropriate, install trail signs that indicate levels of difficulty (per Department standards). For trail projects near adjacent properties, install signs at appropriate intervals that clarify park boundaries.

TRAIL-7: Retain large stands of habitat without trails, or install trails around the perimeter of high-quality habitats.

### Parkwide Interpretation

Sugarloaf Ridge State Park currently provides a variety of interpretative displays and activities for visitors to learn about the many resources of the park. The visitor center contains information regarding the park's natural resources and settlement history; however, it is often closed due to lack of staff and volunteer support. No

specific theme is identified or carried out through the various interpretive displays and programs. Although most visitors are complimentary of the programs provided, many state that they would like to learn more about the park's resources. Population trends show that the average age of county residents is increasing, suggesting a future increase in demand for improved interpretation and classroom activities. Better coordination of volunteers at the visitor center would allow more visitors to enjoy this educational resource. Also, the Robert Ferguson Observatory is a unique resource, offering astronomical classes and celestial viewings for park visitors.

Sugarloaf Ridge State Park serves as an anchor of protected open space in the Mayacamas Ridge. The park plays an important role in preserving wildlife habitat and biocorridors, protecting scenic and cultural landscapes, contributing to water quality at the headwaters of three creeks, and providing a unique wildland recreational experience in the rapidly developing San Francisco Bay Area.

This *Final General Plan* is designed to identify broad interpretive themes for the park, reflect aspects of the area that make it unique, and implement an interpretive program that will educate visitors both about the natural and cultural resources of Sugarloaf Ridge, and about their own responsibilities in protecting its ecological and aesthetic integrity.

### Goal

- **Develop interpretive materials to emphasize central themes that respond to the area's spirit of place, history, and meaning, that will increase visitors' knowledge and appreciation of significant natural and cultural resources at the park and to expand their understanding of ecological relationships.**

### Guidelines

- **Unifying Theme: Sugarloaf Ridge State Park's natural, cultural, and recreational resources constitute a priceless heritage, one which deserves to be protected, studied, appreciated, and enjoyed.**

INTERP-1: **Primary Theme #1: Sugarloaf Ridge State Park's natural resources have great value ecologically, scientifically, aesthetically, and recreationally.**

**Secondary Themes**

**A. The park's diverse natural communities are complex, beautiful, and inviting.**

Describe the ecological balances that visitors can see. Go beyond the physical to address the capacities of the natural environment to inspire and renew the spirit. Include citations from literature and consider showing art inspired by the Park.

**B. The park serves as an outdoor laboratory for scientists.**

Describe the role of Sugarloaf Ridge in the information age. Establish the Park as the cornerstone in providing baseline scientific data about relatively undisturbed natural systems in the North Bay. Water quality and the mountain lion are particular indicators of environmental health, both of conditions within the boundaries of the park, and as a known baseline from which downstream impacts can be measured and evaluated. In addition, scientific information about the area's archeology and biodiversity contributes to a larger understanding of the area's natural and cultural history, and can be used to guide management of sensitive species across a wide variety of ecosystem types.

**C. The park's dark night skies make it an ideal place for observing the wonders of the universe.**

Partner with the Robert Ferguson Observatory in interpreting the astronomical resources and the value of the dark night sky. Acknowledge the park's role in sheltering the observatory from ambient city lights of the surrounding rapidly growing valleys.

INTERP-2: **Primary Theme #2: The Mayacamas Ridge has long exerted an influence on human activity in the region.**

**A. Native American occupancy and use**

Describe the role of the Mayacamas Ridge as both a barrier to and a focus of human activity. Historically, Native American tribes and early homesteaders were drawn to the area, despite the challenge of accessing the high peaks, because of its abundant water, wildlife, and other resources for sustaining their cultures and practices. People are drawn to Sugarloaf Ridge today by the same resources, now valued more for their recreation potential and ecological function rather than utilitarian value.

**B. Historical imprints**

Describe the importance of the historical imprints visible in the Park, such as the first vineyard in Sonoma County, the road to Hurd Ranch, and the uses of Camp butler, to name a few.

**C. Modern recreational use by park visitors**

At a broad scale, the Sonoma Valley is a discrete, closed ecological system, so impacts in one area always have ripple effects elsewhere within the valley, particularly downstream (see FACIL-1, BIO-20, and WQ-3). Trail maps and view plaques can describe these relationships. .

INTERP-3: **Primary Theme #3: Protecting park resources requires help on several levels.**

**A. Enlightened visitor use---explain the need to reduce impact**

Describe effect of personal choices on the natural and cultural landscape. At a finer scale, visitors' behavior can have significant impacts on the park; interpretive materials will encourage visitors to tread lightly or "leave no trace" as they explore this wildland, and to take that same ethic home with them to their urban and suburban environments. Visitors will be reminded to avoid trespassing and to respect private lands.

**B. Communicate effective park resource management policies and programs**

Evaluate ways to enhance volunteer participation in interpretive services within the park. Some suggestions include:

- Provide adequate staff time, training tools, and resources for attracting, training, and maintaining volunteers.
- Include outreach efforts in the park's interpretive opportunities to gain broader involvement from the community and consistent volunteer support.
- Provide safe and comfortable facilities for volunteers to train and work.

**C. Coordination with other agencies to promote open space preservation, biocorridors,**

Open space and available recreation are infrastructure to support healthy local communities. Describe the benefits of the new and expanded park in relationship to the other themes. Interpret the role of SCAPOSD in expanding Sugarloaf Ridge State Park. Portray the partnerships with Sonoma County Regional Parks, local land trusts, conservation organizations, and individuals as a model for future parks. Describe the resource management activities that go into operating the facility and why they're important.

### Goal

- **Portray the interpretative themes through interpretive programs and materials of professional quality via a variety of media, presenters, and facilities.**

### Guidelines

INTERP-4: Design a signature look for interpretive signs, panels, and kiosks that is distinctive for Sugarloaf Ridge State Park and in keeping with state standards. .

INTERP-5: Partner where possible with park concessionaires to provide interpretive services such as the observatory.

INTERP-6: To the extent feasible, include interpretive elements in the design of trailhead and staging area development. Interpretive services should speak to the unique nature of the trail or

management zone and how it fits into the broader interpretive themes.

INTERP-7: Be sensitive to the cultural and scenic landscape in the placement and size of interpretive materials.

### 3.2.3 MAINTENANCE AND OPERATIONS

The recommendations and goals of this *Final General Plan* will be carried out through the day-to-day operations of the park. The guidelines below identify actions to be taken when undertaking area-specific projects to meet the overall goals for Sugarloaf Ridge State Park. Park operations also include maintaining relationships with volunteer groups and other agencies and jurisdictions in the area and planning for future land acquisitions.

#### Goal

- **Improve the efficiency of park operations to meet regulatory requirements and the Department's mission, protect sensitive resources, and improve visitor experience through day-to-day operations by park staff.**

#### Guidelines

OPER-1: Encourage establishment of a consistent, reliable system for collecting visitor use data. Accurate visitor use data is important for making informed decisions about future area-specific projects.

OPER-2: Evaluate the operational changes necessary for establishing primitive camping in the park.

OPER-3: Develop programs to actively encourage day users at nearby parks that are often crowded (Annadel State Park, Jack London State Historic Park, and Napa-Bothe State Park) to visit Sugarloaf Ridge State Park, including providing directions to the park, trail maps, and other informational and promotional materials.

OPER-4: Continue the ongoing communication to provide regional approach to planning and implementation between the park and local jurisdictional agencies and community members to maximize the potential

benefits and opportunities each might bring to the other, such as recent acquisitions nearly doubling the size of the park and improved volunteer programs. Other examples could include connectivity with trails and roads, or shared facilities, which could avoid duplication of facilities.

OPER-5: Encourage equestrian, bicycle, and hiking groups that utilize the park to participate in patrols, trail and camp maintenance.

OPER-6: Explore ways to involve the public, special interest groups, environmental organizations, and governmental agencies in a cooperative process of restoration, planning, and implementation.

OPER-7: To promote air quality in the region, appropriate campfire restrictions will be identified and established, through coordination with the BAAQMD, in conjunction with the development of overnight campgrounds at the Park. Restrictions could limit campfire use during periods designated by the BAAQMD as "No Burn Days".

### Public Safety Staffing, Equipment, and Communications

#### Goal

- **Ensure the safety of park visitors during the planning, review, and implementation of new facilities and acquisitions.**

#### Guidelines

SAFE-1: When planning new facility development or property acquisitions, consider the needs for public safety personnel, equipment, and communication systems.

SAFE-2: When reviewing potential new facility development or property acquisitions, assess the ability to provide for adequate public safety as part of the environmental review process.

SAFE-3: Comply with manufacturers' specifications and State standards for use, storage, transportation, and

disposal of hazardous materials (pesticides, motor oils, etc.).

### Area-specific Project Implementation

This *Final General Plan* provides goals and guidelines for the long-term management of Sugarloaf Ridge State Park. More detailed level of design and environmental review will need to occur before area-specific projects are constructed.

#### Goal

- **Follow the intent of this *Final General Plan* when designing, constructing, and operating area-specific projects.**

#### Guidelines

PROJ-1: As part of the planning and design process for area-specific projects and management plans, the Department will survey and review areas of potential impacts, employing appropriate personnel and responsible agencies, in accordance with CEQA prior to site-specific development. The Department will follow all relevant laws and regulations including the Endangered Species Act, the *Secretary of Interior Standards for the Treatment of Historic Properties*, and others as appropriate. Project-level environmental review may tier off of the EIR prepared for the General Plan.

PROJ-2: To the extent feasible, site and design new facilities to avoid disturbance of sensitive resources, including sensitive habitat, cultural resources, scenic resources and water resources.

PROJ-3: To the extent feasible, relocate existing recreational sites away from sensitive resources, including cultural resources, sensitive habitats, and water resources.

PROJ-4: As part of the planning and design process for area-specific projects, conduct an analysis of potable water availability and wastewater capacity, as appropriate, when determining where and how utilities (e.g., sewer, water, drainage) will be provided. For all projects proposing to use water

originating within the watersheds of Sugarloaf Ridge State Park, provide an assessment of increased water use and protocol for evaluating, monitoring, and adjusting potential effects of changes in stream flow on aquatic habitat, especially for salmonids.

PROJ-5: As part of the planning and design process for area-specific projects, develop noise abatement measures for the construction period to minimize disturbance to park visitors, neighbors, and sensitive wildlife identified as occurring in the area. The following construction measures could be considered:

- Attempt to limit construction activities to the hours of 7:00 a.m. to 10:00 p.m.
- Use best available noise control techniques wherever feasible, including those for vehicles and construction equipment;
- Use hydraulically or electrically powered impact tools when feasible;
- Locate stationary noise sources as far from sensitive receptors as possible.
- To the extent feasible, time construction to avoid nesting/breeding seasons of sensitive wildlife identified as occurring in the area.

PROJ-6: Prior to any site alteration for area-specific projects, implement the following control measures during ground-disturbing projects to reduce potential degradation of air quality:

- Cover all hauling trucks or maintain at least two feet of freeboard.
- Pave, apply water at least twice daily, or apply non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas.
- Sweep daily with water sweepers all paved access roads, parking areas, and staging areas, and sweep streets daily with water sweepers if visible soil material is deposited onto the adjacent roads.

- Hydroseed or apply non-toxic soil stabilizers to inactive construction areas (previously graded areas that are inactive for ten days or more).
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles.
- Limit traffic speeds on any unpaved roads to 15 miles per hour.
- Replant vegetation in disturbed areas as quickly as possible.
- Suspend any activities that cause visible dust plumes that cannot be controlled by watering.

### Accessibility

A significant portion of the population of California has some form of disability. This includes a wide range of mobility, hearing, vision and information processing impairments. The following is a disability status of the civilian non-institutionalized civilian population:

| | |
|---|---|
| Population 5-20 years<br>With a disability | 7.5% |
| Population 21-64 years<br>With a disability | 20% |
| Population 65 years +<br>With a disability | 42% |

*Source: California Department of Finance, Per U.S. Census Bureau, Census 2000.*

Nearly one third of the state's population is between 35 and 55 years of age. In 20 years this group will be 50% larger than the existing over 65 age group. It can be assumed that people with disabilities will increase dramatically during the life of this General Plan.

The Department envisions that universal accessibility be integrated into the Department's culture and embodied in its programs, providing visitors, regardless of their abilities, with high-quality recreational opportunities while preserving the integrity of the park's resources.

The Department has completed a survey of all existing facilities. A transition plan to remove all existing barriers is nearing completion. All new specific projects

will be reviewed by the appropriate agencies for compliance.

### Goal

- **Provide universal access to all park facilities such as buildings, trails, campsites, and picnic sites and their contents, parking, and routes of travel where feasible.**

### Guidelines

ACCESS-1: For development of all existing and new facilities for public use, comply with Title 24, CCR, Part 3, and California Building Code building construction standards.

ACCESS-2: For development of all existing and new outdoor recreational facilities for public use, comply with the *Federal Guidelines of the Architectural and Transportation Board, Accessibility Guidelines for Recreation Facilities and for Outdoor Developed Areas.*

ACCESS-3: If access can not be accomplished for outdoor recreational facilities, use alternative design and/or technologies to provide substantially equivalent or greater experience and usability of the facility. This alternative experience must be completed as part of the same specific project, as required by law.

### Geotechnical Evaluations

Potential geological and natural hazards will be considered when planning new buildings, campsites, roads, or trails within the park. Site-specific investigations will be conducted in any areas where new development is planned. The investigations may consist of reconnaissance geologic mapping, aerial photo surveys, and geotechnical investigations. These investigations are important to protect manmade structures, public safety, and to reduce impacts to the natural environment.

### Goal

- **Conduct geotechnical investigations as appropriate during site-specific planning to protect manmade**

**structures, public safety, and to reduce impacts to the natural environment.**

Guidelines

GEO-1: Identify areas for stabilization and work with the Sonoma County Public Works Department to maintain and repair Adobe Canyon Road, Los Alamos Road, and Nunns Canyon Road for both the stabilization of the road as well as for water quality and habitat protection.

GEO-2: As part of the planning and design process for area-specific projects, and prior to commencement of any ground disturbance, grading or construction related to new facilities, enhancements, or demolition, develop the appropriate project-level CEQA documentation providing the environmental evaluation and mitigation measures necessary to avoid, reduce, or minimize potentially significant geologic impacts.

GEO-3: Consider site-specific surface conditions during the conceptual design phase to evaluate the potential for soil loss by erosion, and develop means (by grading, structural measures, and/or other improvements) to control site erosion.

GEO-4: Perform site-specific geotechnical investigations for siting and design of permanent structures, campground, roads, and trails to mitigate potential damage from unstable soil, landslides, flooding, earthquake-induced damage, and potential soil or groundwater contamination, including:

- Review and update geologic hazard data such as seismic site response, liquefaction potential, hazard from flood and inundation, and potential for earthquake-induced ground failure as may be required.
- Evaluate potential settlements as a result of loads imposed by new buildings and structures; placement of new fills including landscape berms, mounds, levees, trails, roadways, bulkheads, and ramps; and slope protection measures as may be required.

- Evaluate the impact improvements may have on static and seismic slope stability of existing fill slopes as may be required.
- Prepare specific geotechnical recommendations for seismic hazard mitigation, including effects of liquefaction, placement of new fills, reworking of existing fills, and placement of slope protection measures. Provide geotechnical parameters for foundation design, including estimates for differential settlements of underlying fills and soft clays, effects of potentially liquefiable soils, and seismic lateral loads as may be required.
- Prepare recommendations for construction-related issues, including de-watering and temporary excavation support as required for construction of the propose improvements as may be required.

GEO-5: Prepare a comprehensive, detailed geotechnical design, including slope geometries that provide adequate stability during short- and long-term static conditions and seismic ground shaking, slope stabilization measures, grading of new habitat restoration areas, and structures as may be required.

GEO-6: Perform a geotechnical review of final design documents to check conformance with recommendations of the detailed geotechnical investigations as may be required.

GEO-7: Provide geotechnical engineer oversight for any construction that involves significant reconfiguring or grading of the site.

GEO-8: Build new structures in accordance with the appropriate seismic guidelines for the area as set forth in the Uniform Building Code.

### Waste Management

The California Public Resources Code requires state agencies and facilities to meet waste diversion and recycled product procurement goals. In addition, all state agencies are required to buy 11 different categories of recycled materials ranging from paper and plastic to paint, solvents, and lubricating oils. Waste reduction is a

comprehensive approach involving waste prevention, reuse, recycling, and composting practices.

Goal

- **Reduce the amount of waste generated at the park and utilize appropriate technology in processing waste to protect the environment.**

Guidelines

WASTE-1: Follow the Department's integrated waste management plan, as directed under Assembly Bill 756.

WASTE-2: Explore ways to meet the Department's commitment to reduce, reuse, recycle, and buy recycled products.

- o Continue recycling collection system and provide recycling bins at every trash can location.
- o Reduce material use whenever possible, and reuse and recycle materials whenever possible.
- o Reuse building products that are in good shape for other construction products. Send those determined unusable to recycling centers or grind them up for mulch. Recycled building materials include iron, steel, wood, and plastic.
- o Explore ways to reduce waste produced through park operations and maintenance.
- o Buy recycled goods whenever feasible.

### 3.2.4 COORDINATION WITH PROPERTIES OUTSIDE PARK BOUNDARY

Future Property Acquisitions

SCAPOSD and the Sonoma and Napa County Land Trusts, among others are actively acquiring important lands from willing sellers in the Mayacamas Ridge. New acquisitions can provide opportunities for protection of important habitat and development of new recreational facilities.

Although properties have been transferred to the Department at no cost in the past, park staffing and financial resources should be provided to fully incorporate the new lands into the park. Often conservation easements with specific conditions affecting long-term management of the property are held on properties acquired by other entities

and transferred to Department ownership. The District will need to evaluate whether potential future acquisition properties are of statewide significance and whether the District has the necessary resources before accepting management responsibility.

### Goal

- **Explore opportunities to acquire new Sugarloaf Ridge parklands from willing sellers to help achieve or implement goals or guidelines of the General Plan.**

### Guidelines

ACQ-1: Consider acquisition of properties by willing sellers if the property meets any of the following criteria:

- o Property would contribute to a complete and more functional ecological unit or would protect biocorridors, unique features or habitat.
- o Property would contribute to water quality control or protection of sensitive watersheds.
- o Property would contribute to improving the contiguity of parklands and would create a more logical management unit.
- o Property would improve visitor services by providing areas that would allow for more efficient circulation, trail network, enhanced facilities, fewer disturbances to habitat areas, etc.

ACQ-2: Continue to cooperate with SCAPOSD and other organizations in parkland acquisitions.

ACQ-3: Develop a task list identifying immediate and longer-term programs needed to integrate new acquisition properties into the park (trail connections, gates to adjoining properties, operational considerations, etc.) and implement those actions not yet completed for recently acquired properties.

ACQ-4: Observe all conservation easement requirements and restrictions on properties acquired by other entities and transferred to Department ownership.

Annual stewardship audits are conducted by SCAPOSD of conservation easements under their control.

### Hood Mountain Regional Park

Hood Mountain Regional Park, operated by SCRP, shares a northern and southern border with Sugarloaf Ridge State Park. The two parks are closely related, sharing a few trails and the operational responsibility for opening and closing gates. Because the only public access to the Santa Rosa Creek Watershed Management Zone entrance is through Hood Mountain Regional Park, access to the northern portion of Sugarloaf Ridge State Park is subject to SCRP's park closure policies. The two parks combined provide over 6,500 acres of near wildlands experience and protected habitat in the Mayacamas Ridge.

#### Goal

- **Work cooperatively with SCRP to provide an enhanced visitor experience in the Mayacamas Ridge.**

#### Guidelines

HOOD-1: Work cooperatively with SCRP to ensure year-round visitor access and circulation between Sugarloaf Ridge State Park and Hood Mountain Regional Park.

HOOD-2: Explore ways to reduce reliance on SCRP’s open and closure policies for Hood Mountain for visitor access to McCormick from Los Alamos Road. Possible solutions could include:

- Develop a more direct trail connection from the Hood Mountain parking lot east to the Wildcat Creek trail in McCormick.
- Continue joint management of the Hood Mountain parking lot and portion of the Hood Mountain trail to the access point for McCormick via the Santa Rosa Creek trail.
- Develop guidelines with SCRP for joint or consolidated management of Sugarloaf Ridge State Park and Hood Mountain Regional Park.

HOOD-3: Support SCRP and SCAPOSD to develop a new trail connection from the Pythian Road entrance to Hood Mountain Regional Park to Sugarloaf Ridge State Park.

## 3.3 PARK MANAGEMENT ZONE GUIDELINES

As described previously, the management zones for Sugarloaf Ridge State Park are designed around geographically related areas within the park (Map 11). Refer to the Executive Summary of this document for a general description of the management zones. Department decision-making within each management zone will adhere to appropriate park wide goals and guidelines in addition to the following specific guidelines for each zone.

### 3.3.1 ADOBE CANYON

Statement of Management Intent

Upper Adobe Canyon is the primary visitor destination within the park. Most park visitor operations facilities are located in this zone, including the visitor center, camping facilities, trailheads, the observatory, a horse concession, and a maintenance shop and equipment. Adobe Canyon has better vehicular access than other areas of the park, and contains fewer environmental constraints than other areas of this very steep and biologically diverse park. (see Map 12).

The management intent for Adobe Canyon is to remain the hub of visitor use for the park, striking a balance between resource protection and providing a quality visitor experience with increased recreational use over time. Because it is the least constrained area in the park, upper Adobe Canyon could accommodate higher levels of visitor use. The visitor experience would be focused on improving the visitor’s first impression by improving wayfinding and interpretative information, and by creating facilities that are in keeping with the visual character of the park. Visitor facilities should expand over time to accommodate the expected increase in visitor demand. Visitors would be exposed to the resources of the park while remaining in fairly close proximity to vehicles and visitor services.

## Map 11. General Plan Management Zones

## Map 12. Preferred Alternative Environmental Constraints

Noise and frequent contact with other visitors would be expected. Human-caused habitat disturbance would be controlled to the extent possible through the use of education, management guidelines, regulation enforcement, protective barriers, and sustainable design. Managing visitor use to maintain the water quality in Sonoma Creek, as in all management zones, will be a priority. Trails leading from upper Adobe Canyon would allow visitors to access more natural areas of Adobe Canyon and travel to other management zones of the park.

To resolve existing facility siting issues in upper Adobe Canyon, and to improve visitor experience and natural resource protection, this *Final General Plan* provides more detailed site-specific recommendations for Adobe Canyon than for the other management zones. However, because implementation of specific projects is dependent on securing funding, they may take many years to implement. Park circumstances may also change over the years. For this reason, the locations of facilities shown on Map 13 are conceptual in nature. They are recommendations, not directives of the *Final General Plan*. The facilities must be evaluate at the site-specific project level during the design process before construction or grading occurs.

#### Guidelines

ADOBE-1: As part of the planning and design process for area-specific projects, and prior to commencement of grading or construction related to new facilities or enhancements, develop the appropriate project-level CEQA documentation and environmental evaluation and mitigation measures necessary to avoid, reduce, or minimize potentially significant impacts to water quality in Sonoma Creek (see Guideline WQ-1 in subsection 3.2.1).

### Camping Facilities

ADOBE-2: Upgrade restrooms in the family campground with sinks and showers. Evaluate water supply and wastewater capacity during planning and design of the new facility.

ADOBE-3: Relocate the large group camp away from the observatory to reduce light conflicts between the two uses. A recommended new location is on the west side of the horse barn, or another location

near developed activities in upper Adobe Canyon that also has a visual barrier between it and the observatory to block light emissions (lanterns, flashlights, etc.) at night.

ADOBE-4: Remove some family campsites (four to six) from the south wall of the family campground to provide more space between campsites to improve visitor experience and reduce the impact of visitors on existing oak trees.

ADOBE-5: Develop new family campsites in upper Adobe Canyon to respond to the expected increase in visitor demand. Possible options include (see Map 13).

- Complete the figure eight loop in the existing campground (approximately eight campsites).

## Map 13. Upper Adobe Canyon

- o Develop campsites in the campfire center area located to the southeast of the family campground (the existing campfire center to the north would remain in place) (six campsites).
- o Develop additional family campgrounds on the north side of Sonoma Creek.
- o Provide additional ADA accessible campsites, per accessibility guidelines (subsection 3.2.3).

ADOBE-6: Develop limited access (possible vehicular access), small group (15 people per site), and family (eight people per site) campsites in secluded areas in upper Adobe Canyon (see Map 13 for possible locations). Establish operational procedures for checking in campers and patrolling limited access sites.

ADOBE-7: Establish guidelines for siting new campsites 50 to 100 feet or more away from the creek edge to the extent feasible to limit human disturbance of the clean water resources and riparian vegetation along Sonoma Creek. Introduce signs, fencing, or other methods as needed to limit public access to riparian areas.

ADOBE-8: To the extent feasible, make efforts to reduce human-generated noise in upper Adobe Canyon that may reduce the visitor experience in the natural setting.

- o Site new campsites using the natural topography to maximize noise attenuation between the campsites and other use areas.
- o Plant a thick understory of native vegetation between campsites to provide screening and reduce noise between sites.
- o Enforce nighttime quiet hours.
- o Remove some family campsites away from the south vertical cliff in the family campground.
- o Consider native vining vegetation to cover south wall.

### Observatory

ADOBE-9: Retain the Robert Ferguson Observatory in a location that is protected from intrusive light by the surrounding ridges and also is accessible to the public. The present location in upper Adobe Canyon is appropriate.

ADOBE-10: Allow the observatory concessionaire to expand the observatory, if desired, to include additional classroom space, permanent restroom, and/or other uses, with Department approval. Any new enhancements will require the entire building adhere to aesthetics guidelines and will be planned and designed to avoid or minimize impacts to sensitive resources.

ADOBE-11: Encourage use of transit to reduce parking on site.

ADOBE-12: Work cooperatively with the observatory concessionaire to provide astronomical interpretive services for park visitors. Department staff will review their interpretive services during the concessionaire annual review.

ADOBE-13: Evaluate area-specific projects during the planning and design process to ensure that they do not result in increased light emissions at night or direct glare that could reduce the enjoyment of stargazing at the observatory.

### Visitor Center/Entrance Area

ADOBE-14: Allow for the future expansion of the visitor center to include additional classroom space, interpretive displays, staff offices, volunteer support, restrooms, and/or other visitor, interpretive, or operational uses as appropriate. Any new enhancements will be planned and designed to avoid or minimize impacts to sensitive resources.

ADOBE-15: As feasible, develop a permanent restroom at the visitor center. Include measures to ensure that development and operation of the restroom do not adversely affect water quality in nearby Sonoma Creek.

ADOBE-16: Work in partnership with volunteer organizations such as the Valley of the Moon Natural History Association to encourage regular, consistent volunteer staffing of the visitor center.

ADOBE-17: Pursue options to improve the aesthetics of the metal cargo container bins at the park entrance (see Aesthetics section VIS-3 above). Possible options include:

- Remove bins from park entrance and store contents in the proposed new consolidated service area maintenance building.
- Remove bins and replace with a new storage facility adhering to aesthetics guidelines for facilities.
- Screen bins with native vegetation.

ADOBE-18: Clearly communicate interpretative themes and resources available within the park and elsewhere to best understand the importance of Sugarloaf Ridge State Park.

### Equestrian Facilities

ADOBE-19: Provide corrals for visitor use near the small camp to be developed near the barn, to allow equestrians to reserve the corrals with the small group camp and return equestrian camping to upper Adobe Canyon.

ADOBE-20: Encourage input from equestrian groups on design and layout of equestrian facilities throughout the park, including the corrals and nearby small group campground for equestrians. The Backcountry Horsemen have expressed interest. Also, consider development of the small group camp in association with the horse concession.

ADOBE-21: Encourage adaptive reuse of the barn and regular maintenance of the structure. As feasible, eliminate equipment and general storage from the barn. Possible uses include, but are not limited to:

- Allow the horse concession to continue historic use of a portion of the building for tack and

hay storage and animal protection. Modifications may be made to the barn to separate concession equipment and storage areas from public use, while respecting the integrity of the structure.

- Provide interpretive displays with appropriate lighting within the barn.
- Open the barn for self-guided interpretive services by visitors, and use as a staging area for schools and other groups before hikes, etc.

ADOBE-22: Implement measures to reduce transport of animal waste pollutants from the horse barn and equestrian corrals to Sonoma Creek (see WQ-9).

### Picnic Areas

ADOBE-23: Develop additional picnic areas in upper Adobe Canyon to accommodate some of the expected increase in visitor demand (see Map 13 for possible locations).

- Near the day use parking lot
- Near new family campsites on north side of Sonoma Creek
- On the south side of Sonoma Creek near the beginning of the Hillside Trail

### Trails

ADOBE-24: Reconstruct the Creekside nature trail to protect the riparian edge along Sonoma Creek. Provide an interpretive program describing the natural processes at work.

### Circulation and Parking

ADOBE-25: Construct a new bridge to the family campground next to the visitor center in place of the existing low-water crossing, or provide other methods to allow access to the campground during periods of high water.

ADOBE-26: Construct a new vehicular bridge over Sonoma Creek at the east end of the family campground to provide a secondary exit from the enlarged campground area in case of emergency.

ADOBE-27: Expand existing parking lots and develop additional parking facilities to accommodate the likely increase in visitors in upper Adobe Canyon (see Map 13) Possible locations include the visitor center lot, the day-use lot, near the equestrian center and relocated large group camp, and near the new family campsites. Parking improvements will be phased to be responsive to actual use and demand changes with development of new visitor facilities. Runoff from parking lots will be controlled to reduce water velocity.

ADOBE-28: Encourage the observatory concessionaire and other event coordinators to provide shuttle service between designated parking facilities in Kenwood and upper Adobe Canyon during special events.

ADOBE-29: Work with the Sonoma County Public Works Department to identify areas for stabilization, maintenance and repair of Adobe Canyon Road: minimize erosion on cut slopes; lay back and revegetate where possible; improve upslope ditches to prevent erosion and undercutting of pavement; and improve culverts and outflows to reduce water velocity.

### Maintenance/Storage Buildings

ADOBE-30: Consolidate and screen service area facilities and equipment into a new building to improve functionality, provide more space for maintenance operations, improve the appearance of the shop building, and to remove equipment from visitor view. (See Map 13 for possible location near the existing employee residence.) The new building should follow the parkwide aesthetic guidelines.

ADOBE-31: Explore ways of screening other service facilities and equipment through landscaping or replacing them with more attractive permanent facilities, including:

- The metal wood storage container near the entrance station
- The temporary restroom facilities (portable toilets)
- Employee residences

- Trash receptacles
- Park maintenance equipment

### 3.3.2 WESTERN BEAR CREEK WATERSHED

#### Statement of Management Intent

This zone is a separate drainage that flows into upper Sonoma Creek near the main entrance to the park and via Adobe Canyon Road. It includes the headwaters of Bear Creek and two former homestead sites: the Harr Ranch homestead, and the Hurd homestead, otherwise known as the Red Barn, named for the remaining vestige of that homestead. This zone is primarily wildland, and although some visitor use would occur in this zone, natural processes would take precedence over visitor use. The visitor experience in this watershed would be that of a wildland, following trails, (that are discretely marked) observing wildlife and natural process, and experiencing dramatic vistas. Camping in this management area would allow for extended wildland experiences. Although a trailhead and a few parking spaces are provided from Adobe Canyon Road, access to this zone would primarily be by way of hiking, mountain biking, and horseback. This zone serves as a transition zones between other areas of the park.

#### Guidelines

WBCW-1: Evaluate realignment of the Goodspeed Trail in a cooperative effort with SCRP to reestablish the trail in an area with more stable soils. The new alignment should avoid or minimize effects to sensitive habitat such as vegetation growing in serpentine soils. Consider additional land acquisitions, from willing sellers, to better accommodate this relocation.

WBCW-2: Develop Bear Creek Trail connection between the former Harr Ranch homestead and the Red Barn. A portion of the trail could follow the historic Hurd Road to the Red Barn, with interpretive displays describing the history of the path. If feasible, the historic road should be restored in keeping with the appearance it had during its period of significance.

WBCW-3: Develop primitive campsites (eight people per site) near the former homestead area at the Red Barn, located at the current end of the High Ridge Trail, close to where the Western Bear Creek Management Zone and the Santa Rosa Creek Watershed Management Zone meet (up to two campsites).

WBCW-4: Develop picnic sites and interpretive displays near trails as appropriate.

WBCW-5: Consider adaptive reuse of the existing cabin at Harr Ranch by restoring it for use as an employee residence, adhering to the aesthetic guidelines in its redesign. The right-of-way/ownership of Pierson Road and use compatibility with residences on the access road would be taken into consideration when determining the use for Harr Ranch.

WBCW-6: Work with adjacent landowners to establish appropriate watershed management techniques and applications to maintain the high degree of water quality within the watershed.

WBCW-7: As part of the planning and design process for area-specific projects, and prior to commencement of grading or construction related to new facilities or enhancements, develop the appropriate project-level CEQA documentation and environmental evaluation and mitigation measures necessary to avoid, reduce, or minimize potentially significant impacts to water quality in Bear Creek (see Guideline WQ-1 in subsection 3.2.1).

### 3.3.3 SANTA ROSA CREEK WATERSHED

#### Statement of Management Intent

This zone includes the headwaters of Santa Rosa Creek, a completely different watershed from that of the rest of the park. This management zone is typified by steep slopes and provides continuous scenic vistas. Vegetation consists of a mosaic of open grassland, shrubland, and forest and woodland which provide natural habitat for a wide variety of native plants and animals. The management intent is to leave large areas of this zone as wildlands and preserve the diverse natural and scenic resources within it. The visitor experience in this watershed (as with other remote

areas of the Park) would be that of a wildland, following trails, (that are discretely marked) observing wildlife and natural process, and experiencing dramatic vistas. Camping in this management area would allow for extended wildland experiences. Maintaining the water quality in Santa Rosa Creek will be a priority. This zone would provide for outdoor activities in an environment dominated by nature and where humans are visitors. Active visitor use would be restricted to hiking, mountain bike, horseback riding on trails, and primitive camping.

Minimal visitor support services are provided near the existing Hood Mountain Regional Park trailhead and parking lot at the end of Los Alamos Road, but no direct vehicular access would be provided beyond this point (except emergency access). Trail extensions to the Bear Creek Management Zone to the south and east along Pythian Road would provide connections between the various management zones within the park and establish longer trail loops for visitors to explore the diverse habitats within park. Management of this zone is regulated in perpetuity by the *McCormick Ranch Conservation Easement*, owned and managed by SCAPOSD. Management priorities and activities within the easement require at least annual consultation with SCAPOSD.

Guidelines:

SRCW-1: Continue to observe management requirements and to operate these areas as defined in the McCormick Ranch Conservation Easement. The purpose of the easement is "to preserve the open space, natural, scenic, and agricultural values of the property and to prevent any uses of the property that will significantly impair or interfere with those values."

SRCW-2: Work with SCRP to develop additional visitor use and operational facilities at the Los Alamos Road parking lot at the parking and trailhead area at the north end of Hood Mountain Regional Park. Facilities could include a ranger office, employee residence, interpretive sites, an interpretive center, potable water and restrooms.

SRCW-3: Cooperate with SCRP, and other permitting agencies to construct/reconstruct one or more bridges over Santa Rosa Creek to provide access during periods of high water between the Santa Rosa Creek

Watershed Management Zone and Hood Mountain Regional Park from the Santa Rosa Creek Trail.

SRCW-4: Pursue developing a trail connection from the Santa Rosa Creek Trail to the northern portion of the Western Bear Creek Management Zone near the Red Barn. Due to steep topography near the connection point between the two management zones, a trail cannot be developed on existing Department-owned land. A possible solution would be to obtain a trail easement across the adjoining private property where a suitable trail alignment could be developed.

SRCW-5: Explore developing a more direct trail connection into the Santa Rosa Creek Management Zone from the parking lot at the end of Los Alamos Road. A possible solution would be to obtain a trail easement across the private property that lies between them. This access would reduce the emergency vehicle response time to Sugarloaf Ridge State Park.

SRCW-6: Develop one or two primitive campsites (eight people per site) in the more remote areas of the management zone to provide a wildland camping experience.

SRCW-7: As part of the planning and design process for area-specific projects, and prior to commencement of grading or construction related to new facilities or enhancements, develop the appropriate project-level CEQA documentation and environmental evaluation and mitigation measures necessary to avoid, reduce, or minimize potentially significant impacts to water quality in Santa Rosa Creek (see Guideline WQ-1 in subsection 3.2.1).

SRCW-8: As feasible, implement resource protection and restoration recommendations as identified in the *McCormick Sanctuary Natural Resource Analysis and Enhancement Plan* prepared for LandPaths by Circuit Rider Productions.

SRCW-9: Consider developing interpretive sites as identified in the *McCormick Sanctuary Natural Resource Analysis and Enhancement Plan.*

### 3.3.4 NUNNS CANYON

#### Statement of Management Intent

This zone includes the headwaters of Calabasas Creek, a tributary of Sonoma Creek. The land varies from gently sloping valley floor to rolling hills with some rocky hillsides along the northern boundary. Areas along Calabazas Creek are heavily wooded with Douglas-fir and redwood, and most of the hillsides are heavily wooded and brushy. The property forms a narrow corridor along Nunns Canyon Road for about a mile and then fans out as the land steepens. The management intent is to leave large areas of this zone as wildlands and preserve the diverse natural, cultural, and scenic resources within it. The visitor experience in this watershed (as with other remote areas of the Park) would be that of a wildland, following trails, (that are discretely marked) observing wildlife and natural process, and experiencing dramatic vistas. Camping in this management area would allow for extended wildland experiences. Recreational activities would focus on immersion and appreciation for the natural environment, including trail use (hiking, mountain biking, horseback riding) and primitive camping.

Minimal visitor support services, including a trailhead parking lot and restrooms, would be provided at the former quarry on Nunns Canyon Road. No vehicular access for park use would be allowed past this point (except emergency access). Special attention would be paid to managing the narrow strip of land east of the quarry where the roadway, trails, private property, and Calabasas Creek come together to ensure natural resources are preserved, private property rights and access are protected, and park visitors are provided a safe quality recreational experience. Management of this zone is regulated by the Beltane Ranch Conservation Easement, currently owned and managed by SCAPOSD. Management priorities and activities within the easement may require annual consultation with SCAPOSD. This zone is separated from the rest of the park by private property.

#### Guidelines

NC-1: Continue to observe management requirements and to operate these areas as defined in the Beltane Ranch Conservation Easement.

NC-2: Develop day-use visitor facilities at the former quarry area of Beltane. Facilities could include a trailhead, picnic sites, interpretive sites, restrooms, and parking (including parking for horse trailers). Existing debris will need to be removed as a part of development for public use.

NC-3: Explore developing a trail connection between the trail network in Adobe Canyon and the parking lot and trailhead at the quarry in Nunns Canyon. Develop a series of shared trails from the trailhead at the quarry to the northern portion of the Nunns Canyon Management Zone. Work with the Bay Area Ridge Trail Council and other organizations to explore opportunities for obtaining a trail easement or other method to continue the trail across the private property between the two management zones.

NC -4: Develop one or two primitive campsites (eight people per site) in the more remote areas of the management zone to provide a wildland camping experience.

NC -5: Prior to opening park visitor access from Nunns Canyon Road, develop management strategies to allow safe use of the road by park visitors and residential property owners which could include but not be limited to the following;

- Allow residential property owners to maintain vehicular access to their properties from Nunns Canyon Road. Consider options such as coded access for residents, their guests and suppliers.
- Discourage visitor trespassing on private property adjacent to the park by posting the park boundary, controlling vehicular access to areas east of the quarry area, ranger surveillance, or other methods to control access to private property.
- Restrict park visitor vehicular access beyond the quarry.
- Consider ways to separate pedestrian, bicycle, and equestrian uses from vehicular use of the roadway. Where this is infeasible, use traffic

management strategies, such as automated traffic control gates, speed limits, signage, enforcement, and other methods to slow vehicular traffic.

- Consider widening the road or constructing shoulder pullouts without damaging the riparian corridor.
- Work with Sonoma County Public Works Department to identify areas for soil stabilization to improve and maintain Nunns Canyon Road to reduce erosion.

NC-6: As part of the planning and design process for area-specific projects, and prior to commencement of grading or construction related to new facilities or enhancements, develop the appropriate project-level CEQA documentation and environmental evaluation and mitigation measures necessary to avoid, reduce, or minimize potentially significant impacts to water quality in Calabasas Creek (see Guideline WQ-1 in subsection 3.2.1).

NC-7: Work with CDF and other jurisdictions to establish a secondary emergency access route for park visitors and residences in case upper Nunn's' Canyon Road is blocked during an emergency.

## 3.4 MANAGEMENT OF VISITOR USE IMPACTS (CARRYING CAPACITY)

The California Public Resources Code, Sections 5001.96 and 5019.5, requires that the land carrying capacity shall be determined before any park development plan is adopted, and that attendance at State Park System units shall be held within the limits established by this capacity. A definition of carrying capacity by the code, however, is not provided.

### 3.4.1 CHARACTERIZATION OF CARRYING CAPACITY

Carrying capacity relates not only to the area's environmental resources but also to the desired type and quality of visitor experience. The carrying capacity (or allowable use intensity) of land is developed by evaluating the interaction between existing/preferred land uses and dynamic natural systems to determine how these interactions

will affect, over time, the land's integrity and the sustainability of the land use. Capacity is exceeded when the systems' regeneration capacity is exceeded by human demands and there is resulting degradation or destruction of the systems. These systems could be natural, such as streams and riparian corridors around them, or they could be manmade.

Carrying capacity may be extended in meaning for park and recreation planning to suggest that no cumulative net losses would occur in any of a park's resource values (natural, cultural, aesthetic, or recreational) due to human use (activities or facility development). Seemingly insignificant effects can have a permanent impact on resource values such as erosion of trails carrying sedimentation in the creek which thereby affects spawning habitat for salmon and steelhead. The intent of the Public Resource Code is to avoid degradation of resource-based park systems. Visitation, individual or group usage, time, and types of seasonal recreational use patterns all contribute to the impact on variable resource systems. To reduce the existing impacts of visitation, management can ensure proper design, enact visitor control measures, establish and monitor indicators of environmental health, and educate the public by interpreting the resource values and the need for resource protection.

### 3.4.2 ADAPTIVE MANAGEMENT

Adaptive management is a tool to address carrying capacity issues over time and is included as a guideline for implementation of this *Final 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 corrective management action when the desired conditions are not being realized.

The desired conditions for the park are reflected in the goals of this plan, particularly those pertaining to visitor experience and resource protection. If the Department determines through an evaluation of selected indicators that the entire park or a specific area of the park is not meeting the goals, then desired conditions would not have been realized and a corrective management action would be initiated. The management action could determine that the condition was caused by natural

variation (e.g., increased bank erosion caused by meandering river) or by human-induced variables (e.g., trampling associated with increasing hiking activities or improper trail siting). Actions to evaluate the trail and/or manage the visitor use would be implemented when the desired condition was not met. Management actions could include, but are not limited to, the following:

- Proper siting of facilities during the general planning process and in project implementation to avoid sensitive resources
- 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)
- Altering access (e.g., parking in proximity to sensitive resources, bike access)

Following the implementation of the management action, monitoring would be conducted to determine if the desired outcome is being achieved. If it is, then the park is being operated within its carrying capacity. If the desired outcome is not being achieved, then alternative management actions would be carried out until the desired outcome is achieved.

It should be noted that environmental quality indictors may be modified on a regular basis, based on site-specific knowledge, recent observations in the field, and updates in scientific understandings, if it is discovered that the existing environmental quality indicators are not good predictors of the desired outcome.

### 3.4.3 ENVIRONMENTAL QUALITY INDICATORS AT THE PARK

Desired conditions, which are reflected in the goals in this plan, include the following:

- Maintenance of sustainable populations of special-status plant, fish, and wildlife species
- Retention of the integrity and value of cultural resources
- Maintenance of a quality visitor experience
- Maintain the park's water quality
- Protection of the park's scenic resources

Desired conditions may be measured by assessing whether environmental quality indicators and the type of visitor experience have been achieved. Potential mechanisms for monitoring these environmental indicators may include, but are not limited to, the following:

- Long-term monitoring of special-status species populations
- Ongoing inventories of biological resources in the park
- Monitoring of invasive species populations
- Conducting visitor surveys regarding satisfaction and overall experience
- Maintaining accurate counts of visitors and use patterns
- Monitoring water quality at selected sites
- Developing screening criteria for future development aimed at protection of scenic resources

Environmental quality indicators should be good predictors of the desired outcome and should be carefully selected. In some special cases (e.g., sustainable populations of special-status species), the indicator monitoring processes may require field surveys undertaken by staff with special qualifications. Successful results would be attained if the monitoring process is accomplished as a part of regular operations. For example, if the environmental quality indicators are physical conditions that are observable

during the day-to-day operational activities, then the monitoring process would occur continuously with minimal additional effort. Qualitative measurements are preferred, since detailed quantitative monitoring and analyses render the monitoring process infeasible.

Table 3-1 contains selected environmental quality indicators that are developed based on the goals in this plan and their associated desired outcomes.

### 3.4.4 EXISTING CONDITIONS IN THE PARK

Sugarloaf Ridge State Park currently provides a high-quality visitor experience in the wildlands of the Mayacamas Ridge, which would not be diminished by moderate increases in visitor use. However, specific conditions could be corrected to minimize the effects of existing visitor use on resources in upper Adobe Canyon. The correction of specific conditions could enable more visitors to enjoy the park without degrading resources, and in some cases could actually improve the resources. A preliminary carrying capacity evaluation of existing conditions within the park identified that degradation of resources resulting from existing visitor use is occurring in upper Adobe Canyon. Park facilities in this area are sometimes poorly sited and may be insufficient to meet recreational demand, since many are at capacity on most weekends during the peak season from May to October.

Elevated sedimentation is affecting the riparian corridor and water quality in Sonoma Creek. The alignment and condition of Adobe Canyon Road, trails near the creek, and unrestricted visitor access to the creek in the campground area contribute to the sedimentation rates.

Facility development in the park in many cases has been limited to temporary facilities due to the lack of a General Plan. Such facilities are often undersized, resulting in a negative visitor experience. Campground and parking demand often exceed supply on peak weekends, and portable restrooms have been installed to accommodate visitors. Sites in the family campground are close together and noisy, which may be exacerbated in part due to the large numbers of small groups camping in family campsites due to the lack of other facilities. The large group camp site is located near the observatory, and use of the campsite is restricted if the observatory is rented,

since campfires or other light sources interfere with use of the observatory.

Correction of these conditions, through implementation of actions proposed in this *Final General Plan*, would enable a moderate increase in the visitor capacity in this portion of the park without degradation of the park's natural and cultural resources.

## Table 3-1: Carrying Capacity

| GOAL | DESIRED OUTCOME / STANDARD | ENVIRONMENTAL QUALITY INDICATORS[a] | POTENTIAL MONITORING ACTIVITIES |
|---|---|---|---|
| SUST: Incorporate principles and practices of sustainability into the park's design, improvements, operations and maintenance, and utilize adaptive management principles | Sustainable design practices are incorporated into area-specific projects during the planning and design phases | ✓ New facilities are sited to minimize potential environmental impacts<br>✓ Available water supply and wastewater treatment capacity are not exceeded<br>✓ Waste generated at the park is reduced<br>✓ Energy consumption is reduced<br>✓ Fewer toxic materials are used | ✓ Use of adaptive management techniques to monitor and adjust approaches to resource and visitor management<br>✓ Adherence to sustainability guidelines during project design and facility siting |

## Table 3-1: Carrying Capacity

| GOAL | DESIRED OUTCOME / STANDARD | ENVIRONMENTAL QUALITY INDICATORS[a] | POTENTIAL MONITORING ACTIVITIES |
|---|---|---|---|
| WQ: Protect and restore the water quality in the Sonoma, Santa Rosa, Bear, and Calabazas Creek watersheds | Water quality in the park's creeks exceeding established standards and forming the baseline for all water quality evaluations downstream | ✓ Adequate stream flow is available to continue to support spawning habitat for steelhead and Chinook salmon. Bank erosion where roads and trails are known to have caused sedimentation is minimized<br>✓ Discharge of sediment from road and trail management activities is minimized.<br>✓ Grassy swales and other erosion and water quality control measures after storm events properly function<br>✓ Septic or other wastewater treatment systems properly function<br>✓ Regularly monitor turbidity in water courses to evaluate changes in environmental conditions. | ✓ Measure water well production rates and evaluate ground water levels with stream flows.<br>✓ Staff observations during day-to-day operations<br>✓ Periodic steelhead surveys<br>✓ Periodic testing of water quality with the Sonoma Ecology Center or other organizations<br>✓ Evaluation of park access roads for erosion and sediment control |
| BIO: Protect and restore special-status and native plant species and communities within the park | Sustainable populations of special-status plant species | ✓ Occurrence of special-status plant species increases<br>✓ Invasive plant species are reduced | ✓ Periodic field surveys |

## Table 3-1: Carrying Capacity

| GOAL | DESIRED OUTCOME / STANDARD | ENVIRONMENTAL QUALITY INDICATORS[a] | POTENTIAL MONITORING ACTIVITIES |
|---|---|---|---|
| BIO: Protect and restore the park's sensitive habitats that are important for plant and animal diversity | Retention of the integrity and value of sensitive habitats, including the mesic herbaceous, native grasslands, white alder riparian woodland, rock outcrops, and serpentine habitats | ✓ Occurrence of healthy stands of sensitive habitat increase<br>✓ Disturbance to existing sensitive habitats is minimized<br>✓ Biocorridors provide wildlife migration routes | ✓ Periodic field surveys |
| BIO: Preserve special-status wildlife species and restore their habitat within the park | Sustainable populations of special-status plant and wildlife species | ✓ Active nest sites are present<br>✓ Suitable habitat is present<br>✓ Prey species are abundant | ✓ Periodic field surveys<br>✓ Checks for active nest sites prior to construction activities |
| CULT: Identify, protect, preserve, and interpret significant cultural resources identified within the park | Retention of the integrity and value of cultural resources. | ✓ Known archaeological sites are not disturbed<br>✓ Historic building facades are retained | ✓ Staff observations during day-to-day operations |

## Table 3-1: Carrying Capacity

| GOAL | DESIRED OUTCOME / STANDARD | ENVIRONMENTAL QUALITY INDICATORS[a] | POTENTIAL MONITORING ACTIVITIES |
|---|---|---|---|
| FACIL: Provide a range of high-quality recreational opportunities that facilitate and enhance the public's enjoyment and appreciation of the park's natural, cultural, and scenic resources | Recreational facilities that are sufficient for accommodating visitors in all management zones and provide a good visitor experience | ✓ Visitor experience is not compromised by a sense of overcrowding<br>✓ Conflicts between recreational opportunities or resources are reduced<br>✓ Trail access is provided to and between all management zones of the park<br>✓ Wear and tear is consistent with the expected life of the facilities | ✓ Visitor comments, received informally through conversations with park staff and through periodic Department surveys<br>✓ Staff observations during day-to-day operations<br>✓ Daily visitation logs |
| PARK: Balance the need for parking with visitor experience, aesthetics, and protection of park's natural and cultural resources | Adequate parking to accommodate public access to the park based on typical use patterns | ✓ Visitors are not frequently turned away due to lack of parking<br>✓ New or expanded parking facilities are sited to minimize potential environmental impacts<br>✓ Shuttles are used during special events expecting visitors in excess of available parking spaces | ✓ Staff observations of parking demand on peak summer weekends<br>✓ Project-level evaluation of environmental impacts during design of new or expanded parking lots<br>✓ Evaluation of shuttle operations in pilot studies |

## Table 3-1: Carrying Capacity

| GOAL | DESIRED OUTCOME / STANDARD | ENVIRONMENTAL QUALITY INDICATORS[a] | POTENTIAL MONITORING ACTIVITIES |
|---|---|---|---|
| VIS: Ensure manmade facilities complement and do not detract from the park's natural setting | Buildings that exhibit a "park-like" character with natural colors and materials and facilities that do not interrupt scenic views | ✓ New facilities exhibit a consistent character or identity for the park<br>✓ Facilities are sited to be sensitive to scenic views<br>✓ Design guidelines are established and implemented<br>✓ Service equipment, portable restrooms, and trash receptacles are screened or replaced | ✓ Staff observations during day-to-day operations<br>✓ Adherence to design guidelines during project design |
| SKY: Maintain and protect the dark nighttime sky for celestial viewing | Avoidance of nighttime glare that would disturb celestial viewing from the observatory | ✓ Lighting levels within the park are kept as low as possible, consistent with appropriate safety standards for a remote park[b]<br>✓ Lighting is not provided within direct view of the observatory | ✓ Adherence to design guidelines during project design and facility siting |

[a] *Environmental quality indicators may be updated by park staff based on field observations, new scientific knowledge, etc.*

[b] *Reference Yosemite National Park Exterior Lighting Guidelines, Pacific Lightworks, 1997*

# SUGARLOAF RIDGE STATE PARK

## *4. Environmental Analysis*

# 4. *Environmental Analysis*

## 4.1 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS

This chapter provides an environmental assessment of the proposed Sugarloaf Ridge State Park *Final General Plan,* described in the previous chapters of this document. This chapter discloses any potentially significant environmental effects of the General Plan, consistent with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the CEQA Guidelines (California Code of Regulations, Section 15000 et seq.), for a programmatic Environmental Impact Report (EIR).

The California Department of Parks and Recreation (the Department) is the agency responsible for preparing the General Plan and is the lead agency for the EIR. As lead agency, the Department has authority over whether to certify the EIR and approve the *Final General Plan* upon consideration of the potential environmental consequences. However, the State Park and Recreation Commission is responsible for approving the General Plan.

As noted in Chapter 1, this *Final General Plan* and *EIR* are combined as one document. As such, Chapter 2, Existing Conditions, serves as the environmental setting for the environmental analysis, and Chapter 3, Park Plan, serves as the project description. Resource protection and restoration is a key focus of this *Final General Plan,* and Chapter 3 includes specific guidelines to avoid or minimize any potential adverse environmental impacts. These mitigating guidelines are identified where applicable in the environmental analysis in Section 4.4.

### 4.1.1 PURPOSE OF THIS EIR

The purpose of this EIR is to inform the Department decision-makers, responsible agencies, and the public about any significant and potentially significant effects that could result from the implementation of the General Plan. 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 EIR for the *Final General Plan* is programmatic, and thus does not contain project-specific analysis for the area-specific projects recommended in the plan. Because the General Plan is a long-range plan, additional siting and design work would be completed prior to the implementation of individual park improvement projects. As such, there may not be sufficient information reasonably available to support a full assessment of potential impacts for future site-specific projects in this EIR. When detailed implementation plans are developed, the projects would undergo subsequent CEQA review, as appropriate. Project-specific environmental compliance documents will be consistent with the General Plan's Program EIR. Securing any permits required for future implementation projects would also be part of subsequent planning actions and environmental review.

### 4.1.2 FOCUS OF THE EIR

The Department established the focus of this EIR after considering comments from public agencies and the community regarding the General Plan. The Department completed a Notice of Preparation (NOP) on January 15, 2003, a Notice of Availability (NOA) on December 10, 2003, and a Notice of Determination (NOD) on May 14, 2004 (Appendix A). In addition, a community scoping session on the project was held on February 2, 2003, to inform the public of the General Plan, solicit comments, and identify areas of concern. The Preferred Alternative (park plan) was selected based on input gathered at a public meeting held on May 22, 2003, written comments received before and after the meeting, and consultation with various state, regional, and local agencies and organizations.

Issues addressed in this EIR include the following:

- Aesthetics
- Biological Resources
- Cultural Resources
- Water Quality
- Transportation/Traffic
- Air Quality
- Noise

### 4.1.3 ENVIRONMENTAL REVIEW PROCESS

Consistent with the requirements of CEQA, a good faith effort has been made during the preparation of this EIR to contact and consult with affected agencies, organizations, and persons who may have an interest in this project. An overview of the CEQA process with key milestones for the Sugarloaf Ridge State Park EIR is provided in Table 4-1. The CEQA process included the circulation of an NOP on January 15, 2003, 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 Sugarloaf Ridge State Park, and to invite specific comments on the scope and content of the EIR. A scoping meeting was held on February 2, 2003.

**Table 4-1: CEQA Process**

| KEY MILESTONES | DATES |
|---|---|
| Notice of Preparation (NOP) | January 15, 2003 |
| Notice of Availability (NOA) (Draft EIR) | December 10, 2003 |
| Notice of Availability (NOA) (Final EIR) | April 1, 2004 |
| Commission Hearing and Approval | May 14, 2004 |
| Notice of Determination (NOD) | May 18, 2004 |

A NOA of the Draft EIR was published on December 10, 2003 to inform the public and interested agencies of the publication of the Draft EIR. A 45-day review period (starting from date of filing with the State Clearinghouse) was provided for the public and other agencies to review and comment on the Draft EIR. Reviewers of the Draft EIR focused on the sufficiency of the document in identifying and analyzing the potential environmental impacts of the General Plan. Comments were made on the Draft EIR in writing before the end of the comment period. Following the close of the public review period, the Department prepared responses to comments on the content and conclusions of the Draft EIR and revised the draft document as necessary to address those comments. The Draft EIR and technical appendices, together with the responses to comments constituted the Final EIR. An NOA of the Final EIR was issued on April 1, 2004.

The Department reviewed the Final EIR for adequacy and considered it for certification pursuant to the requirements of Section 15090 of the CEQA Guidelines. The

State Park and Recreation Commission held a hearing and approved the Plan and certified the FEIR on May 14, 2004 and prepared a NOD filed on May 18th, 2004 with the State Clearinghouse. The notice included a description of the project, the date of approval, and the address where the Final EIR and record of project approval was available for review. The Draft General Plan and EIR were then revised to form this *Final General Plan* and *EIR*.

Subsequent environmental review of future planning and project level activities will follow the requirements outlined by the Department review of phasing, siting, construction, and grading plans to ensure they are consistent with the General Plan. If the Department finds, pursuant to Section 15162 of the CEQA Guidelines, that no new effects can occur or no new mitigation measures will be required, the Department can approve the activity as being within the scope of the plan covered by this EIR, and no new environmental documentation will be required. However, if a proposed phase of the plan would have effects that were not examined in this EIR, additional environmental document preparation will be required (CEQA Guidelines Section 15168[c][1]).

## 4.2 ENVIRONMENTAL ANALYSIS SUMMARY

### 4.2.1 SUMMARY OF IMPACTS AND MITIGATION

The *Final General Plan* for Sugarloaf Ridge State Park reflects the Department's dual mandates as the steward of sensitive resources and the provider of recreation opportunities. Chapter 3, Park Plan identifies goals and guidelines for protection of the natural environment; resource restoration; and the siting, design, and construction of area-specific projects. The goals and guidelines of this *Final General Plan* seek to avoid potentially significant effects on the environment.

An evaluation of the potential for significant environmental effects to visual resources, biological resources, cultural resources, water quality, transportation/traffic, air quality, and noise is provided in Section 4.3. The specific guidelines that, when implemented, would maintain potential environmental impacts at a less-than-significant level are identified for each environmental topic.

The protection and restoration of natural and cultural resources are key components of the *Final General Plan*. The plan leaves large expanses of the park as wildlands, which supports wildlife biocorridors; allows for greater biological diversity, watershed recharge, and water quality protection; preserves scenic and cultural landscapes; and contributes to protecting the dark night sky.

The plan also identifies conceptual sites for proposed new and expanded park facilities. Facilities would be located in the least environmentally constrained areas of the park, as shown in Map 12.

The environmental analysis prepared for the *Final General Plan* is programmatic in scope and therefore does not contain project-specific analysis for the facilities recommended in the plan. The plan, however, does include guidelines that govern project-level environmental review of area-specific projects to avoid or minimize any potential adverse site-specific effects to some resources during construction or operations of the facilities. Specific projects identified in this plan will undergo subsequent CEQA review in the future as appropriate.

### 4.2.2 SUMMARY OF ALTERNATIVES CONSIDERED

Three concept alternatives were considered during development of the General Plan. Each presented different ways to balance the protection of natural and cultural resources with meeting the demand for recreation and maintaining a satisfactory visitor experience. The Preferred Alternative, which was refined into the goals and guidelines provided in Chapter 3, Park Plan, of this *Final General Plan*, is a combination of components from the three alternatives.

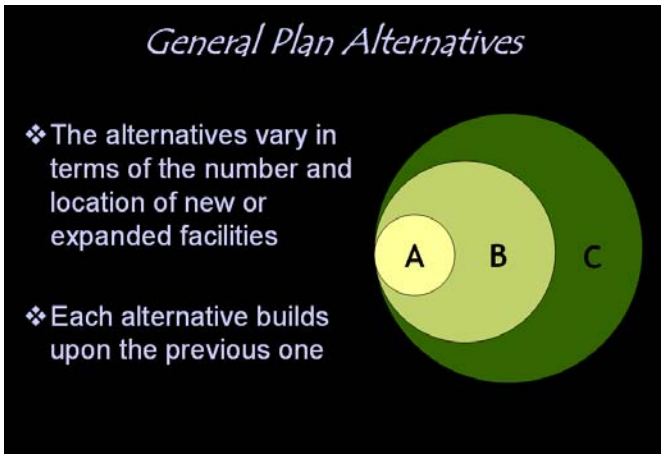
An environmental evaluation of these three alternatives, as well as the No Project alternative, is provided in Section 4.6. Each of the three concept alternatives builds on the previous one.

- **Alternative A:** Protect Existing Wildlands Resources and Improve Visitor Experience in Upper Adobe Canyon (the "fix-it" approach). This alternative represents the minimum actions needed to address existing issues within the park and proposes a lower

intensity of facility development than the proposed *Final General Plan*.

- **Alternative B:** Establish Primitive Campsites in Preserved Wildlands and Concentrate New Facilities in Upper Adobe Canyon (the "fix-it" plus moderate enhancements approach). This alternative proposes moderate enhancements to facilities concentrated in upper Adobe Canyon, but only proposes development of limited access campsites in the broader areas of the park. This alternative proposes fewer new facilities than the proposed *Final General Plan.*

- **Alternative C:** Develop Visitor Support Facilities at Trailheads in the Broader Areas of the Park ("fix-it" plus more enhancements over time). This alternative would provide many of the new or expanded facilities as the proposed plan, but would also include developing the former Harr Ranch homestead as a small special-events center.




Section 4.6 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 the *Final General Plan* were not adopted.

The Park Plan is considered the environmentally preferred alternative. The Preferred Alternative was selected after considering public and responsible agency feedback on the three concept alternatives. It is a combination of features from the three concept alternatives. With input

from the community and agencies, the Department focused the goals and guidelines of this General Plan to address the environmental concerns of the public and meet resource agency rules and regulations. This *Final General Plan* provides increased resource protection features and guidelines to limit potential impacts from construction and operation of proposed new or expanded facilities. Implementation of the *Final General Plan* would also substantially enhance the visitor's recreational experience and address some of the anticipated increase in visitor use and demand for recreational areas in the rapidly growing San Francisco Bay and Sacramento areas. The plan would provide the flexibility to address recreational demand in the region in the future.

### 4.2.3 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

The Department actively engaged the public in development of the *Draft and Final General Plan and EIR* for Sugarloaf Ridge State Park. The Department received input from the public in response to the NOP; surveys distributed at the park, over the Internet, and with the first General Plan newsletter; during the two General Plan public meetings; and through stakeholder meetings with state, regional, and local agencies and organizations.

The following concerns in addition to those presented in the FEIR were raised during the development of this *Final General Plan* and selection of the Preferred Alternative:

- Some people expressed the concern that facility development near creeks could adversely affect water quality.
- Some were concerned that allowing equestrian use and equestrian camping in the park would adversely affect water quality through soil erosion and waste.
- Some people were concerned about the use of Nunns[1] Canyon Road as a new access road into the park with respect to potential traffic, pedestrian, and equestrian conflicts on the narrow, winding roadway. Some were concerned that if the road were widened to address safety and traffic issues, that there could be adverse effects on the water quality of Calabazas Creek[2], which runs along the south side of the road. Others wanted to restrict equestrian use on Nunn's Canyon Road because they felt there could be adverse effects to water quality in Calabasas Creek.
- Some people expressed the desire for pedestrian-only trails.
- Some people expressed the desire for equestrian-only trails.
- Some people wanted to ensure that emergency vehicles could access the wildland areas of the park, particularly with the expected increase in visitors to the park.
- Bio-corridor preservation and enhancement was identified as a priority for some people.
- Some were concerned about traffic on the park access roads.
- Nearby residents were concerned about the use of Pierson Road to access Harr Ranch.

[1] The spelling of "Nunns Canyon" is consistent with US Geological Survey maps. There is however, common usage of the spelling "Nuns Canyon" as referenced by Thomas Brothers Maps and street signs

[2] The spelling of "Calabazas" is consistent with USGS maps.

## 4.3 ENVIRONMENTAL SETTING

Refer to Chapter 2, Existing Conditions for a description of the existing park environment, significant resource values within the park, and the local and regional environment in the vicinity. An assessment of existing conditions at the onset of this general planning process was valuable in identifying and evaluating environmental constraints within the park and in developing specific goals and guidelines to avoid potential impacts.

## 4.4 ENVIRONMENTAL IMPACTS

### 4.4.1 HYDROLOGY AND WATER QUALITY

This section analyzes impacts related to hydrology and water quality that would result from implementation of the *Final General Plan*.

#### Thresholds

The water quality analysis uses criteria from *CEQA Guidelines Appendix G, Environmental Checklist Form*. According to these criteria, implementation of this *Final General Plan* would have a significant water quality impact if it would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard areas as mapped on a federal flood hazard boundary or Flood Insurance Rate Map or other flood delineation map; or

- Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

### Impact

With implementation of the *Final General Plan,* impacts to hydrology and water quality would be avoided through careful siting and design of recreational facilities and management guidelines would be in effect to avoid any potential impacts or limit them to a less-than-significant level.

#### Water Quality

Primary surface waters within the park include Santa Rosa Creek, Sonoma Creek, Bear Creek, and Calabasas Creek. All creeks are adjacent to existing or proposed recreation facilities and are susceptible to water quality impacts. Many water quality problems are related to nonpoint sources, such as soil erosion, stormwater runoff (sediment and chemicals), and individual septic wastewater disposal systems. Nonpoint sources have been identified as the major cause of water pollution in California.

The Sonoma Creek watershed, including the Adobe Canyon, Bear Creek Watershed, and Nunns Canyon Management Zones, is within the Bay Area Regional Water Quality Control Board (RWQCB) jurisdiction. The Santa Rosa Creek Watershed Management Zone is in the North Coast RWQCB jurisdiction. Waste discharge requirements are set by each RWQCB for point sources, including wastewater management systems and individual septic systems, and for nonpoint sources, which are addressed through control of surface runoff pollutants into drainage channels, streams, and groundwater.

Soils in many areas of the park are classified as highly erodible (see Chapter 2, Existing Conditions and Issues). Human activities in the watershed can greatly accelerate the rate and amount of erosion and sedimentation in the creeks. An increase in sediment loading to these waters can fill pools, smother fish spawning beds, cover or obscure food supplies, reduce the amount of sunlight reaching aquatic plants, increase water temperature, and clog fish gills.

Erosion of existing trails and roads within the park and visitor use in riparian areas contribute to sedimentation within the creeks. Implementation of this *Final General*

*Plan* would reduce the existing erosion problems by reconstructing trails and roadways (Guidelines GEO-1, ADOBE-23), replacing low-water bridges with bridges that span over the streams (Guidelines ADOBE-24, SRCW-3), and limiting visitor access to streams (Guidelines WQ-3, ADPBE-7).

Some proposed activities at the park that could increase sedimentation and pollutant loads may include construction of new or expanded facilities, operations and maintenance practices, and increased visitor use in riparian areas.

Construction activities associated with proposed recommendations of this *Final General Plan* include grading, filling, paving, and construction equipment use and storage. Surface and groundwater contamination may occur from construction materials, such as concrete, paint, and other chemical products carried in stormwater runoff. Unless mitigated, any proposed soil-disturbing activities may contribute to increased sedimentation loads and potentially significant adverse impacts to water quality. The National Pollutant Discharge Elimination System (NPDES) program requires individual permits for construction sites.

Impervious surfaces may contribute to water pollution as a source of vehicle contaminants, such as oils, grease, and other petroleum and chemical products. These substances become suspended or dissolved in stormwater runoff and may enter surface or groundwater. Maintenance and operations practices may include trail maintenance and vegetation removal by mechanical or chemical methods. These practices can disturb the ground surface, contributing to increased erosion and sedimentation, and runoff containing pesticides (applied as per legal requirements) could enter groundwater or surface waters.

The *Final General Plan* avoids or limits these potential water quality impacts from construction, maintenance, and operations by requiring project-level implementation of best management practices as appropriate and control measures to reduce sedimentation and pollution in stormwater runoff during and after construction (Guidelines WQ-8, GEO-3). It also includes Guidelines WQ-5 and WQ-12, which direct the Department to minimize the removal of riparian vegetation, which is beneficial for naturally filtering pollutants before they reach the water.

Recreation impacts can include soil compaction in campgrounds, day-use areas, and along trails and streambanks. Intense visitor use may also cause increased erosion on trails as well as disturbance to or destruction of sensitive wetland and riparian vegetation due to trampling. In addition, leaking septic systems can contaminate ground and surface water, causing a health and safety hazard. The *Final General Plan* includes Guideline WQ-3, which discourages park visitors from entering creeks, except at specified visitor access points, and Guideline WQ-4, which incorporates a setback from steams and creeks during the planning and design of area-specific projects to limit this potential impact to a less-than significant level. The *Final General Plan* also includes Guidelines WQ-1, WQ-9, and ADOBE-21, which direct the Department to identify potential sources of pollution and take source-specific (septic systems, pollutants from horse-related facilities, etc.) abatement actions. These guidelines would avoid, minimize, or compensate for any potential water quality impacts, which would limit them to a less-than-significant level.

### Water Supply/Groundwater

The *Final General Plan* recommends the construction of a new restroom facility with showers in the family campground in the Adobe Canyon Management Zone. The park's existing potable water is supplied by groundwater. The availability of groundwater to supply the restroom's additional water demand is unknown. The *Final General Plan* is a program-level document outlining future development on a parkwide scale; therefore, the level of detail necessary for project-level impact analysis is not possible. Feasibility studies, including water supply availability would assess potential effects of increased water use to evaluate potential effects to stream flow to minimize impacts aquatic habitat, especially salmonids. These studies would be conducted in conjunction with detailed project design and construction (Guideline PROJ-4). Additional environmental review would occur at a project level, and appropriate mitigation measures to avoid or minimize impacts to the groundwater source or changes in stream flow would be developed at that time. The *Final General Plan* recommends ways to reduce water demand, reduce runoff, and increase groundwater table infiltration to limit potential impacts to a less-than-significant level (Guidelines WQ-7).

Flood Hazards

Federal Emergency Management Agency (FEMA) data do not indicate the presence of flood-prone areas in the Sonoma or Santa Rosa Creek watersheds or areas within the 100-year flood zone in the vicinity of the park. Some degree of flooding can be expected in low-lying areas and perennial and seasonal creeks during periods of heavy rainfall and runoff, but is not considered substantial.

Although significant hydrological impacts are not anticipated, additional project-level environmental review of facilities would be conducted prior to construction to ensure projects would not result in additional storm drainage flow, substantially alter drainage patterns, or site structures that may impede or redirect flood flows (Guidelines WQ-6 and WQ-8), thereby limiting the potential impact to a less-than-significant level.

### 4.4.2 BIOLOGICAL RESOURCES

This section analyzes impacts related to biological resources that would result from implementation of the *Final General Plan*.

#### Thresholds

The biological resources analysis uses criteria from *CEQA Guidelines Appendix G, Environmental Checklist Form*. According to these criteria, implementation of this *Final General Plan* would have a significant biological resources impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDFG) or U.S. Fish and Wildlife Service (USFWS);
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc) through direct

removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

### Impact

In developing the *Final General Plan,* it was recognized that implementation of the plan could have the potential to adversely affect biological resources, including special-status species and wetlands, that are known to occur in the park. Therefore, the *Final General Plan* has included guidelines that would avoid, minimize, or compensate for these effects, and would thus limit them to a less-than-significant level.

Facility rehabilitation and development, including additional trails and resource management, have the potential to disturb, degrade, or remove habitat. The introduction of new facilities and structures into previously undisturbed areas of the park could create adverse impacts on plants and wildlife. The *Final General Plan* identifies the majority of potential facility development in areas that have been previously disturbed and currently receive a large amount of visitor use. There would be minimal potential for adverse impacts to vegetation and wildlife in these areas, and potential impacts would be limited to a less-than-significant level through careful siting and design of recreational facilities.

The following discussion describes and evaluates the potential for adverse effects on biological resources and references the management guidelines in the *Final General Plan* that would avoid or limit these effects to a less-than-significant level.

#### Special-status Plant Species

Twenty-eight sensitive plant species are known to occur in the park or are potentially present in suitable habitat, as

described in more detail in Chapter 2, Existing Conditions. Of these, four are listed under the Federal Endangered Species Act: Sonoma alopecuris (*Alopecuris aequalis* var. *sonomensis*), Clara Hunt's milk-vetch (*Astragalus clarianus*), white sedge (*Carex albida*), and Kenwood marsh checkerbloom (*Sidalcea oregana* ssp. *valida*). The north coast semaphore grass (*Pleuropogon hooverianus*) is listed as a candidate species by CDFG under the California Endangered Species Act. The remaining 23 plant species are listed as rare, threatened, or endangered by the California Native Plant Society (CNPS) list 1B[3], but have no official federal or state status.

The development of facilities, especially the introduction of new facilities and structures into previously undisturbed areas of the park, could create adverse impacts on special-status plants. Facility rehabilitation and development, including trail construction and resource management, have the potential for degrading or removing habitat for special-status plants.

Ground disturbance, including grading, soil compaction, or vegetation removal, has the potential to provide habitat for non-native invasive species that could compete with special-status plants. Ground disturbance could include new facility construction (structures, parking lots) as well as trail and campground development or rehabilitation. Trails and roads can also become dispersal corridors for invasive plants. The spread of invasive species, especially in previously undisturbed native habitats or sensitive habitats, may have adverse impacts by promoting the loss of native habitat and reducing species diversity.

The *Final General Plan* incorporates Guideline BIO-3, which would avoid, minimize, or compensate for possible impacts on special-status plant species by requiring protection measures to be prepared prior to developing park facilities as part of specific project plans. These measures include preconstruction surveys for special-status plant species, modification of development plans to avoid or limit impacts, protection measures during construction, and appropriate measures to offset any unavoidable impacts.

[3] California Native Plant Society's list 1B includes plants that are rare, threatened, or endangered in California and elsewhere.

### Sensitive Upland Habitats

Sensitive habitats include those that have experienced a precipitous decline since the arrival of early Americans to California. These habitats have been lost due to conversion of the land to agricultural, commercial, or residential uses. In some cases, poor management and the influx of invasive species have also reduced the value of sensitive habitats. The sensitive habitats that occur in the General Plan study area are the native grasslands, white alder riparian woodland, rock outcrops, and serpentine habitats. A significant impact would occur if an action resulted in substantial loss or degradation of sensitive habitat.

The *Final General Plan* incorporates Guidelines BIO-7 and BIO-11, which would avoid, minimize, or compensate for possible impacts on special-status plant species by designing projects that would avoid or limit removal or degradation of sensitive upland habitat and restoring like habitat if avoidance is not feasible.

### Riparian and Aquatic Habitats

The riparian habitat in the park supports high wildlife diversity and functions as an important wildlife corridor. Visitor activities (hiking, equestrians, camping) near riparian areas could potentially adversely affect riparian habitat through degradation of stream banks, increased erosion, and trampling of vegetation. Riparian habitat is considered a sensitive habitat and often receives legal protection from CDFG and the U.S. Army Corps of Engineers. Riparian vegetation associated with rivers, streams, or lakes in California is also subject to regulation by CDFG, pursuant to Sections 1600 through 1603 of the California Fish and Game Code. Riparian habitat within the ordinary high water mark of jurisdictional waters of the U.S is subject to jurisdiction by the Corps under Section 404 of the clean Water Act.

The *Final General Plan* incorporates specific Guidelines BIO-9, BIO-11, and WQ-12, which would avoid, minimize, or compensate for possible impacts on riparian and aquatic habitat by designing projects that would avoid or limit removal or degradation of sensitive habitat and restoring like habitat if avoidance is not feasible. Guidelines WQ-1 through WQ-6 and WQ-8 through WQ-10 direct the Department to use adaptive management techniques to minimize the

potential degradation of water quality from human use within the park.

### Wetlands

Implementation of projects recommended in this *Final General Plan* could have adverse effects on wetlands due to trail construction, construction of other park facilities, and temporary effects during wetland and riparian restoration projects. The disturbance of federally protected jurisdictional waters of the U.S., as defined by Section 404 of the Clean Water Act, would be a significant effect. Wetlands have been given regulatory protection because of their multiple functions and values, including their importance to wildlife.

The *Final General Plan* incorporates management guidelines that direct the Department to incorporate protection measures for wetlands as part of the specific project plans. Guideline BIO-8 directs long-term management actions to ensure the persistence and health of preserved and restored wetlands. Guideline BIO-11 directs the Department to conduct a delineation (map) of wetlands and other aquatic habitats that are subject to Corps jurisdiction and to modify the development plans to avoid or minimize any potential impacts on wetlands and other aquatic habitats. If some disturbance to wetlands is unavoidable, Guideline BIO-11 also directs the Department to implement appropriate measures to ensure that the project does not result in a net loss of wetland acreage or habitat value. Implementation of these guidelines would avoid, minimize, or compensate for possible impacts on wetlands.

### Special-status Wildlife Species

Fifteen special-status species are known to inhabit the park or are potentially present in suitable habitat, as described in more detail in Chapter 2, Existing Conditions. Of these, four are listed on the federal threatened species list: California freshwater shrimp (*Syncaris pacifica*), steelhead (*Oncorhynchus mykiss irideus),* California red-legged frog *(Rana aurora draytonii),* and the northern spotted owl *(Strix occidentalis caurina).* The rest are recognized by CDFG as California species of special concern.

The expansion and development of facilities, especially the introduction of new facilities and structures into previously undisturbed areas of the park, could create adverse impacts on wildlife. Facilities development, resources management, and disturbance of roosting and nesting sites by public use have the possibility of affecting special-status wildlife species.

The *Final General Plan* incorporates Guideline BIO-12, which would avoid, minimize, or compensate for possible impacts on special-status plant species by requiring protection measures as part of specific project plans to be prepared prior to developing park facilities. These measures include preconstruction surveys for special-status wildlife species, modification of development plans to avoid or limit impacts, protection measures during construction, and appropriate measures to offset any unavoidable impacts.

### 4.4.3 CULTURAL RESOURCES

This section analyzes impacts related to cultural resources that would result from implementation of the *Final General Plan*.

#### Thresholds

The cultural resources analysis uses criteria from *CEQA Guidelines Appendix G, Environmental Checklist Form*. According to these criteria, implementation of this *Final General Plan* would have a significant impact on cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resources (as defined in CEQA Guidelines Section 15064.5);
- Cause a substantial adverse change in the significance of an archaeological resource (pursuant to CEQA Guidelines Section 15064.5);
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

### Impact

With implementation of the *Final General Plan,* impacts to cultural resources would be avoided through careful siting and design of recreational facilities, and management guidelines would be in effect to avoid any potential impacts or limit them to a less-than-significant level.

Sugarloaf Ridge State Park contains significant and potentially significant cultural resources that could be destroyed or degraded by new development and facility improvements proposed in this *Final General Plan*. These resources consist of prehistoric and ethnographic sites, historic resources, and cultural landscapes. Archaeological sites, homesteads, historic structures, and historic roads and trails are important features. There has not been a complete inventory of the park's cultural resources; therefore, there is potential for the discovery of previously unknown prehistoric and historic sites during facilities construction, rehabilitation, resource management projects, restoration, or maintenance operations.

#### Ground-disturbing Activities

Previously undiscovered cultural resources may be encountered during ground-disturbing activities related to implementation of this *Final General Plan*, including park facility development, maintenance, and habitat restoration. Damage or destruction to these unknown resources prior to the assessment of their importance and implementation of resource-specific mitigation measures would be considered a potentially significant adverse impact.

The *Final General Plan* incorporates Guidelines CULT-3 and CULT-6, which would avoid, minimize, or compensate for these effects by requiring protection measures as part of specific project plans. Guideline CULT-6 requires that a qualified cultural resource professional conduct appropriate record reviews and fieldwork prior to ground-disturbing activities. The guideline directs the Department to design activities to avoid cultural resources to the extent feasible and implement appropriate measures to offset any unavoidable impacts.

### Potential Disturbance of Historic Resources

The *Final General Plan* recommends the provision of limited-access camping near former homesteads (Camp Butler, Red Barn) and the adaptive reuse of the horse barn and Harr Ranch homestead. The proposed Bear Creek Trail also utilizes a historic resource, the old Hurd Road. Other historic structures within the park and from future acquired properties may also be considered for adaptive reuse for operations, maintenance, concessions, and housing.

Interpretive facilities, recreational facilities, and trails near historic landscapes can potentially increase the threat of vandalism or damage due to additional public use. Adaptive reuse of historic structures and roads could involve the modification, replacement, or removal of historic fabric such as walls, doors, windows, hardware, and utilities, or introduce nonhistoric elements into a structure, including access ramps, furniture, and heaters. Such alterations have the potential to cause a substantial adverse change in the significance of historic resources.

The *Final General Plan* incorporates Guideline CULT-7, which would avoid, minimize, or compensate for these effects by requiring all construction, maintenance, or improvements of historic structures to conform with the Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* and the California Historical Building Code. Guideline WBCW-2 recommends that the Hurd Road be restored in keeping with its appearance during the road's period of significance, as a condition of its use as a new trail connection between the Goodspeed Trail and the Red Barn.

### Potential Disturbance of Human Remains

No human remains are known to be present within the park, including those interred outside of formal cemeteries. However, it is impossible to be certain about the presence or absence of human remains until excavation, grading, or other ground-disturbing activities occur.

The *Final General Plan* incorporates specific management guidelines that would avoid, minimize, or compensate for these potential effects. Guideline CULT-6 requires cultural resources review of area-specific projects, which

would minimize the possibility of disturbing human remains. Guideline CULT 8 directs the Department to contact the County coroner and implement appropriate measures, including contacting the Native American Heritage Commission if Native American remains are found.

### 4.4.4 AESTHETICS

This section analyzes impacts related to visual resources that would result from implementation of the (preferred plan) *Final General Plan*.

#### Thresholds

The aesthetic analysis uses criteria from *CEQA Guidelines Appendix G, Environmental Checklist Form*. According to these criteria, implementation of the *Final General Plan* would have a significant aesthetic impact if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway; or
- Substantially degrade the existing visual character or quality of the site and its surroundings.

#### Impact

With implementation of the *Final General Plan* goals and guidelines, impacts to aesthetic resources would be avoided through careful siting and design of facilities. Creation and implementation of design guidelines during the development of the first new facility, for all new facilities thereafter, would avoid or limit any potential impacts to a less-than-significant level (Guideline VIS-1).

Sugarloaf Ridge State Park provides visitors with a wildland experience, including spectacular landscapes and views. The *Final General Plan* recognizes that implementation could have an adverse effect on the overall visual setting of the park if development of visitor-serving facilities is not in keeping with the park setting. Adverse effects to aesthetic resources could result from poor design and/or facility siting, improper selection of building materials and equipment, use of non-native or inappropriate plants for landscaping, or selection of lighting that causes uncontrolled nighttime glare. The

proposed new or improved facilities envisioned by the *Final General Plan* that could cause potential adverse aesthetic effects include, but are not necessarily limited to, the following:

- Expansion of visitor center
- Expansion of observatory
- Interpretive exhibits/facilities
- Parking lots
- New campsites
- Equestrian facilities, including fencing, corrals, barns, and manure disposal
- Adaptive reuse of historic barn
- Trails, trailheads, and trail connections
- Rehabilitation of areas where the landscape has been disturbed

### Landscape Character and Architectural Style

To support the goal of ensuring that facilities complement and do not distract from the park's natural setting, the *Final General Plan* incorporates guidelines that would avoid, minimize, or compensate for the above-stated effects. Guideline VIS-1 directs the Department to create architectural design guidelines for the park to be implemented during area-specific facility development, and Guideline VIS-2 recommends native landscaping be used to partially screen facilities.

### Facility Selection and Design

The sizing and location of large facilities, especially parking lots, have the potential to adversely affect the aesthetic environment of the park. Therefore, the stated goal of the *Final General Plan* is to balance the need for facilities and parking at recreational areas with a positive visitor experience and protection of the park's natural and cultural resources. This goal is implemented through Guideline PROJ-1, which directs the Department to site and design facilities to limit the effects to scenic resources. Guideline PARK-3 also directs the Department to phase parking improvements to be responsive to the actual use and demand and to explore shared parking arrangements and alternatives for accommodating special-event parking.

### Signage/Identity

The design and placement of signs assists visitors in general orientation and wayfinding. Poorly designed signs, however, can become overbearing sources of blight in the landscape. Thus, Guideline VIS-5 directs the Department to provide standards for signage and guidelines for location and distribution of signs.

### Viewshed Protection for Wildlands

Protection of the overall viewshed maintains the wildland character of the park. However, much of the viewshed supporting the wildlands experience is outside of the park. Since the park is primarily located away from the Sonoma Valley floor, only rare views of it are afforded from scenic State Route 12. Yet, the broader views of the Mayacamas ridge provide the important natural backdrop that supports the regional character of this scenic state route. Therefore protection of these unencumbered natural landscapes of the Mayacamas ridge is key to protecting the scenic corridor along State Route 12 as well as maintaining the wildland aspect of the park. The *Final General Plan* includes Guideline VIS-3 requiring sensitive placement of park facilities with respect to scenic views. Guideline VIS-4 also recommends the Department work with other jurisdictions to protect views of the ridgetops.

### Dark Night Sky

The dark nighttime sky is an important resource at Sugarloaf Ridge State Park for celestial viewing at the Robert Ferguson Observatory and is a contributing factor to the remote and natural setting of the park. A stated goal in the *Final General Plan* is to maintain and protect the dark nighttime sky for celestial viewing. Guidelines SKY-1 through SKY-4 direct the Department to reduce nighttime glare from view of the observatory and work with other stakeholders to protect the dark night sky as a resource.

### Lighting

Lighting has a direct effect on the quality and darkness of the nighttime sky and may affect habitat values for nocturnal animals. The *Final General Plan* provides guidelines to avoid, limit, or eliminate the detrimental effects of lighting. Guideline VIS-8 restricts lighting to the more developed areas of the park and provides other measures to minimize disturbance to wildlife. In

consideration of wildlife, Guideline VIS-7 also recommends controlling lighting systems to minimize operating time. Guideline VIS-6 provides specific recommendations for reducing the splay of ambient light from light fixtures within the park.

### 4.4.5 TRANSPORTATION/TRAFFIC

This section analyses impacts related to traffic and circulation that would result from implementation of the *Final General Plan*.

#### Significance Thresholds

The traffic analysis uses criteria from *CEQA Guidelines Appendix G, Environmental Checklist Form*, and Sonoma County environmental impact significance criteria.

CEQA Guidelines, Appendix G, Environmental Checklist Form

According to these criteria, implementation of the General Plan would have a significant traffic impact if it would:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections);
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access; or
- Result in inadequate parking capacity.

Sonoma County Significance Criteria for Project-level Impacts[4]

The County of Sonoma would consider a project to have a significant traffic impact if it would result in any of the following conditions:

- *Parking:* Proposed on-site parking supply would not be adequate to accommodate parking demand.
- *Policies and Plans:* The project conflicts with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).
- *Road Hazards:* Hazards are substantially increased due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

[4] These criteria were developed by the EIR traffic analyst and the Permit and Resource Management Department (PRMD) staff and approved by PRMD staff for use in evaluating projects in Sonoma County. They incorporate the latest methodologies for determining intersection level of service, which are taken from the *Highway Capacity Manual* (Transportation Research Board 2000).

*Significance Criteria for Both Project-level and Cumulative Impacts*

The County of Sonoma employs the following criteria to determine both project-level and cumulative traffic impacts. The impact would be significant if:

- *Vehicle Queues:* The 95th percentile queue length exceeds roadway turn-lane storage capacity.[5]
- *Signal Warrants:* Conditions change to cause an intersection to meet or exceed the California Department of Transportation (Caltrans) signal warrant criteria.[6]
- *Turn Lanes:* Traffic volumes are increased to a level meeting or exceeding criteria for provision of a right or left turn lane on an intersection approach.[7]
- *Sightlines:* An unsignalized intersection is created or traffic is added to an existing unsignalized intersection approach that does not have adequate sightlines, based upon Caltrans criteria for state highway intersections and county criteria for county roadway intersections.
- *County Signalized Intersections:* There would be a significant cumulative impact if the operation of a county road intersection is worse than level of service (LOS) D in the existing base case, or if future cumulative peak-hour traffic would cause the intersection operation to become worse than LOS D.

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[5] Based upon HCS analysis methodology for signalized intersections and formula contained in November 2001 Institute of Transportation Engineers article (*Estimation of Queue Length at Unsignalized Intersections*) for side-street stop-sign-controlled intersections.

[6] The Caltrans *Traffic Manual* contains 11 possible tests for determining whether a traffic signal should be considered for installation. These tests, called "warrants," consider criteria such as actual traffic volume, pedestrian volume, presence of school children, and accident history. Caltrans typically (but not always) requires two or more warrants be met before a signal is considered for installation. This analysis applied the test for peak-hour volumes (Warrant #11), using "Rural" warrant criteria. Based upon 2005 and 2012 base-case traffic volumes, the State Route 12/Adobe Canyon Road intersection would meet the peak-hour signal warrant criterion: the traffic volume of the minor street approach would exceed the 75 vehicles per hour required by Caltrans Warrant #11. In the future, the County or Caltrans should conduct detailed analyses to determine whether other signal warrants are met.

[7] Based upon Caltrans criteria for state highways and Transportation Research Board Circular 279 (*Warrants for Provision of Left Turn Lanes*) for county roadways.

- If there is a significant cumulative impact as described above, then the project-related traffic would be considered a significant impact that is "cumulatively considerable" if it exceeds the delay or volume thresholds listed in Table 4-2. LOS and delay apply to the entire intersection.

- Criteria found in Table 4-3 apply to all-way stop-sign-controlled or side-street stop-sign-controlled intersections on county roads. The criteria do not apply to low-volume roadways.[8]
  - There would be a significant cumulative impact if operation of a county road intersection is worse than LOS D in the existing base case, or if future cumulative peak-hour traffic volumes would cause the operation of the intersection to become worse than LOS D.
  - If there is a significant cumulative impact as described in the paragraph above, then the project-related traffic is considered to be a significant impact that is "cumulatively considerable" if it exceeds the delay or volume thresholds listed below. For all-way stop-sign-controlled intersections, LOS and delay apply to the entire intersection.

**Table 4-2: County Signalized Intersections Significance Criteria**

| If the existing or base case (without project) LOS is: | Then the existing control delay is:[a] | The project impact is considered significant if the increase in control delay associated with the project is: |
|---|---|---|
| A | 10 seconds or less | 10 seconds |
| B | 10.1 to 20 seconds | 10 seconds |
| C | 20.1 to 35 seconds | 7.5 seconds |
| D | 35.1 to 55 seconds | 7.5 seconds |
| E | 55.1 to 80 seconds | 7.5 seconds or 40 vehicle trips[b] |
| F | Greater than 80 seconds | 5 seconds or 25 vehicle trips[b] |

[a] *As defined in the 2000 Highway Capacity Manual. Note: The manual refers to average control delay for side-street stop-sign-controlled intersections.*

[8] LOS significance criteria do not apply to roadways with projected traffic volumes of less than 30 vehicles per hour per approach or per exclusive left-turn movement.

[b] *Signalized Intersections: If the addition of project traffic results in a reduction (rather than an increase) in intersection control delay, evaluation should then consider an impact to be significant if 40 or more project vehicle trips are added to an intersection operating at LOS E, or 25 or more project vehicle trips are added to an intersection operating at LOS F.*

**Table 4-3: County Unsignalized Intersections Significance Criteria [6]**

| If the existing or base case (without project) LOS is: | Then the existing control delay is:[a] | The project impact is considered significant if the increase in control delay associated with the project is: |
|---|---|---|
| A | 10 seconds or less | 10 seconds |
| B | 10.1 to 20 seconds | 5 seconds |
| C | 20.1 to 35 seconds | 5 seconds |
| D | 35.1 to 55 seconds | 5 seconds |
| E | 55.1 to 80 seconds | 5 seconds or 30 vehicle trips[b] |
| F | Greater than 80 seconds | 5 seconds or 20 vehicle trips[b] |

[a] *As defined in the 2000* Highway Capacity Manual*. Note: The manual refers to average control delay for side-street stop-sign-controlled intersections.*
[b]*Unsignalized intersections: If the addition of project traffic results in a reduction (rather than an increase) in average control delay for the critical approach or turn movement (or for the entire intersection for an all-way stop-controlled-intersection), the impact is significant if 30 or more project vehicle trips are added to an intersection with one or more movements operating at LOS E, or 20 or more project vehicle trips are added to an intersection with one or more movements operating at LOS F.*

### Operation of State Highways

State highway thresholds apply only to state highways (Caltrans 2001). Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on state highways. If the existing operation of a state highway is worse than LOS C, the existing "measures of effectiveness" should be maintained. Measures of effectiveness are: (a) control delay per vehicle for signalized intersections; (b) average control delay per vehicle for unsignalized intersections; (c) average speed for two lane highways; and (d) density for multi-lane highways (Transportation Research Board 2000). There would be a significant cumulative impact if operation of a state highway is worse than LOS C in the base case, or if projected future peak-hour cumulative traffic volumes would cause the operation to become worse than LOS C. A project would have a significant impact if the project-related traffic causes the operation of a state highway to become worse than LOS C.

### Impact

In developing the *Final General Plan,* it was recognized that implementation of the plan could potentially result in impacts to traffic and circulation. Therefore, the General Plan includes guidelines that would avoid, minimize, or compensate for these effects and would thus limit them to a less-than-significant level.

#### 2005 and 2012 Base Case Intersection Operation

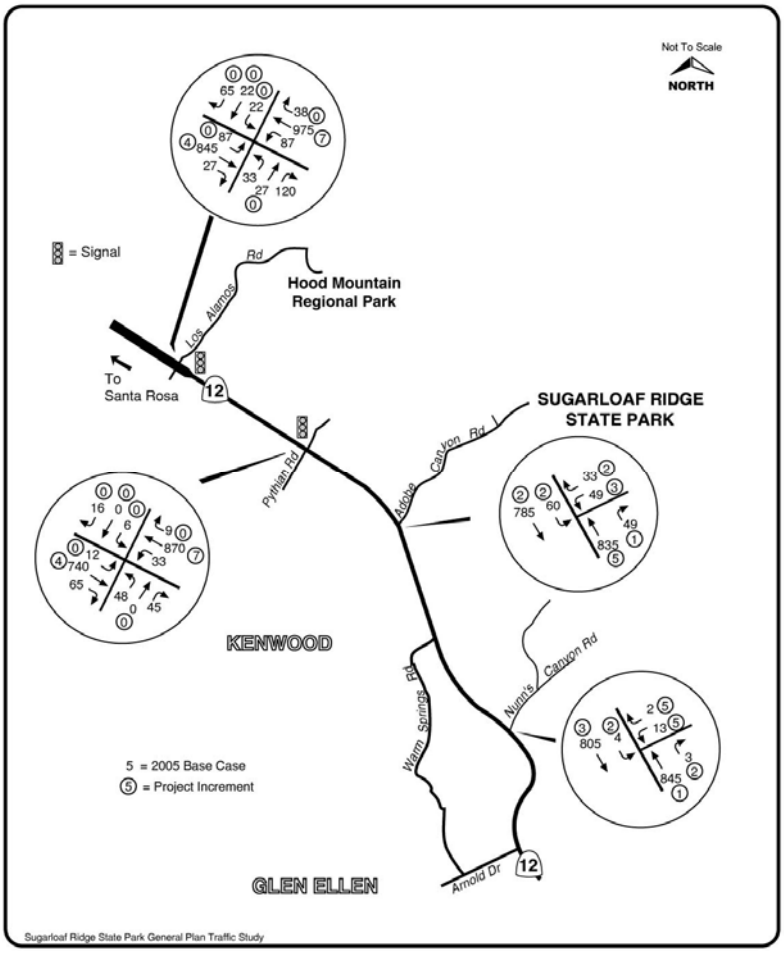
*Traffic Volumes*

Traffic impacts are evaluated for two scenarios: the years 2005 and 2012. Base-case conditions are used to evaluate what weekend peak-hour traffic conditions would be expected under likely development conditions in the future, without the addition of the proposed project. This provides a basis to compare the relative incremental effects plan implementation would have on traffic in the future. The controlling factor in this analysis is weekend peak-hour traffic conditions on State Route 12 (Sunday between 4:30 and 5:30 p.m.). This time period, however, does not coincide with the peak hours of park access or egress, which are earlier in the day.

For this analysis, the expected ambient (base case) year 2005 and 2012 traffic volumes for summer Sunday peak-hour traffic are identified using the system of traffic volumes prepared for the Sonoma Country Inn Draft EIR, a recently completed EIR for a project proposed near the intersection of Adobe Canyon Road, prepared by Crane Transportation Group for the County of Sonoma, February 2003. This methodology for determining base case conditions has been approved by the County of Sonoma. In the analysis, future traffic volumes along State Route 12 and adjoining roadways were developed using recent historical growth rates for traffic along State Route 12 between the north end of Sonoma Valley (near Glen Ellen) and Santa Rosa. Since various locations showed peak-hour growth rates ranging from 1% to 3%, a conservative 3% per year growth rate was selected for the near-term (2005) horizon year. This growth rate would include traffic generated from proposed projects in the vicinity of the project site as well as regional growth in tourist traffic. A growth rate of 2.4% per year was projected from year 2002 to 2012. A reduced rate for the 10-year projection was considered appropriate, because the 3% per year growth rate documented for some

sections of State Route 12 over the past 10 years is high for other sections, and considered unlikely to be sustained throughout the study area over the 2002 through 2012 time period. Figures 4-1 and 4-2 show 2005 and 2012 base case traffic volumes for the affected roadways in the Sugarloaf Ridge State Park area.

**Figure 4-1: 2005 Summertime Base Case and Project Sunday P.M. Peak-Hour Volumes**




*Source: Crane Transportation Group.*

### *2005 Base Case Intersection Operation*

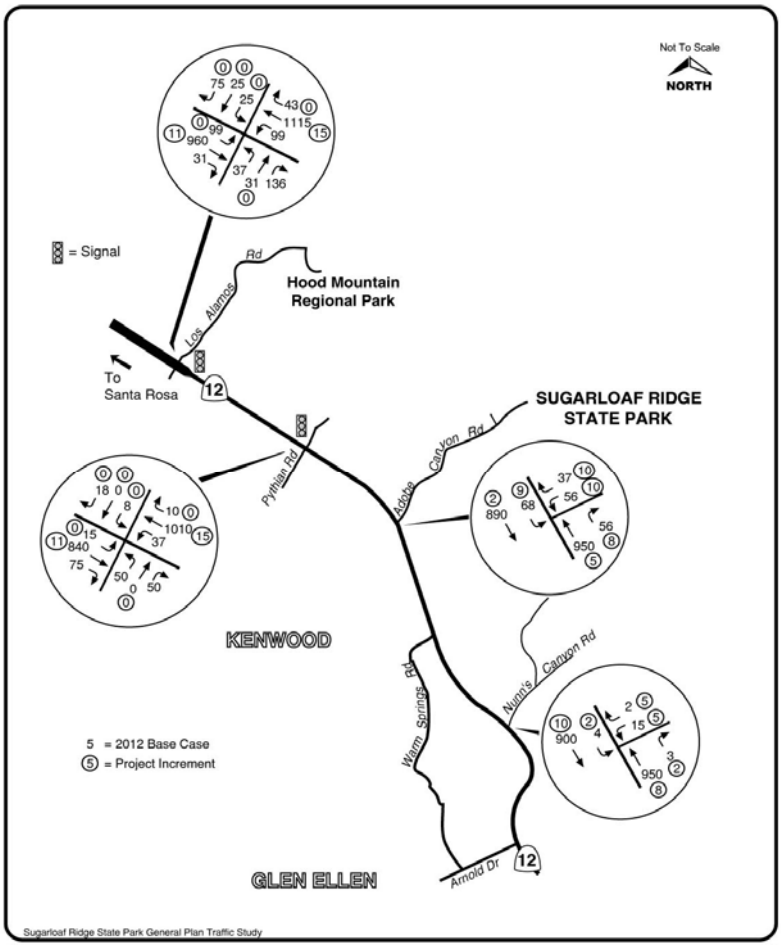
Table 4-4 shows that under base case 2005 conditions, the State Route 12/Los Alamos Road and State Route 12/Pythian Road signalized intersections would maintain LOS A operation by 2005 during the Sunday p.m. peak hour.

Under base case 2005 conditions at the State Route 12/Adobe Canyon Road intersection, the stop-sign-controlled Adobe Canyon Road westbound left turn to State Route 12 would

operate at LOS F during the Sunday p.m. peak hour. The State Route 12 southbound left turn to Adobe Canyon Road would operate at LOS B during the same time period.

Under base case 2005 conditions at the State Route 12/Nunns Canyon Road intersection, the stop-sign-controlled Nunns Canyon Road westbound approach to State Route 12 would operate at LOS F during the Sunday p.m. peak hour. The State Route 12 southbound left turn to Nunns Canyon Road would operate at LOS A during the same peak hour.

**Figure 4-2: 2012 Summertime Base Case and Project Sunday P.M. Peak-Hour Volumes**




*Source: Crane Transportation Group.*

### *2012 Base Case Intersection Operation*

Table 4-4 shows that under base case 2012 conditions, the State Route 12/Los Alamos Road and State Route 12/Pythian

Road signalized intersections would maintain LOS A operation by 2012 during the Sunday p.m. peak hour.

Under base case 2012 conditions at the State Route 12/Adobe Canyon Road intersection, the stop-sign-controlled Adobe Canyon Road westbound left turn to State Route 12 would operate at LOS F during the Sunday p.m. peak hour. The State Route 12 southbound left turn to Adobe Canyon Road would operate at LOS B during the same time period.

Under base case 2012 conditions at the State Route 12/Nunns Canyon Road intersection, the stop-sign-controlled Nunns Canyon Road westbound approach to State Route 12 would operate at LOS F during the Sunday p.m. peak hour. The State Route 12 southbound left turn to Nunns Canyon Road would operate at LOS B during the same peak hour.

*2005 and 2012 Base Case Intersection Signalization Needs*

Employing the Caltrans Rural Area Peak Hour Volume Warrant, by 2005 base case volumes would exceed peak-hour signal warrant criteria levels at the State Route 12/Adobe Canyon Road intersection during the Sunday p.m. peak hour.

By 2005 or 2012, base case volumes would not meet signal warrant criteria levels at the State Route 12/Nunns Canyon Road intersection during the Sunday p.m. peak hour.

**Table 4-4: Intersection Level of Service**

| INTERSECTION | EXISTING | 2005 | | 2012 | |
|---|---|---|---|---|---|
| | | BASE CASE | BASE CASE + PROJECT | BASE CASE | BASE CASE + PROJECT |
| State Route 12 / Los Alamos Road | A-9.1[a] | A-9.3 | A-9.3 | A-9.6 | A-9.6 |
| State Route 12 / Pythian Road | A-5.5[a] | A-7.0 | A-7.0 | A-9.0 | A-9.2 |
| State Route 12 / Adobe Canyon Road | F-92.7/ B-10.1[b] | F-158.0/ B-10.6 | F-176.6/ B-10.6 | F-342.1/ B-11.3 | F-470.8/ B-11.5 |
| State Route 12 / Nunns Canyon Road | E-41.2/ A-9.6[c] | F-50.8/ A-9.9 | E-52.6/ A-10.0 | F-70.0/ B-10.3 | F-73.7/ B-10.4 |

[a] *Signalized level of service.*

[b] *Side-street stop-sign-controlled level of service; average vehicle delay westbound approach/southbound left.*

[c] *Side-street stop-sign-controlled level of service; average vehicle delay*

*westbound approach/southbound left.*
*Source: Crane Transportation Group.*

## Project Trip Generation

Estimated trip generation for the proposed *Final General Plan* was developed based on interviews with state park rangers and visitation information obtained from park records for summer peak-season weekends. By 2005, only the proposed expansion of the service area/horse barn parking (25 new spaces) and the proposed parking lot for the new large group camp (25 spaces) with access via Adobe Canyon Road, and a new parking lot proposed for the former quarry on Nunns Canyon Road (40 regular spaces, plus 5 horse trailer spaces [or 12 regular spaces]) are projected to be constructed. For purposes of presenting a conservative analysis, by 2012 all plan components were assumed completed. Table 4-5 shows projections of expected maximum inbound and outbound park traffic during the Sunday p.m. peak hour for 2005 and 2012, while Figures 4-1 and 4-2 show project traffic distributed to the roadway system. The additions to traffic volumes due to implementation of the General Plan are shown in circles on the figures.

**Table 4-5: Project Trip Generation (Vehicle Trips)**

| LOCATION | 2005 SUNDAY P.M. PEAK HOUR 3:30 - 4:30 | | 2012 SUNDAY P.M. PEAK HOUR 3:30 - 4:30 | |
|---|---|---|---|---|
| | INBOUND TRIPS | OUTBOUND TRIPS | INBOUND TRIPS | OUTBOUND TRIPS |
| Los Alamos Road Access | 0 | 0 | 0 | 0 |
| Adobe Canyon Road Access | 3 | 5 | 17 | 20 |
| Nunns Canyon Road Access | 4 | 10 | 4 | 10 |
| TOTAL | 7 | 15 | 21 | 30 |

*Trip Rate Source: Sugarloaf Ridge State Park Ranger. See Appendix D for details.*
*Compiled by: Crane Transportation Group.*

*2005*

At the Adobe Canyon Road/State Route 12 intersection (serving the main park access), implementation of the plan would generate approximately 3 new inbound trips and 5 new outbound trips during the Sunday p.m. peak hour, while at the Nunns Canyon Road/State Route 12 intersection the project would generate about 4 new inbound trips and 10 new outbound trips. No new trips are anticipated at the Los Alamos Road/State Route 12 intersection with implementation of the *Final General Plan*.

*2012*

At the Adobe Canyon Road/State Route 12 intersection (serving the main park access), implementation of the plan would generate approximately 21 new inbound trips and 24 new outbound trips during the Sunday p.m. peak hour, while at the Nunns Canyon Road/State Route 12 intersection the project would generate about 4 new inbound trips and 10 new outbound trips. No new trips are anticipated at the Los Alamos Road/State Route 12 intersection with implementation of the *Final General Plan*.

Project Trip Distribution

Project traffic was distributed on the local roadway system based on existing traffic flow patterns, the EIR traffic analyst's knowledge of local area attractions, and on the assumption that visitors to the park would travel to and

from the park with a 50/50 north-south distribution pattern on State Route 12.

### *2005 and 2012 Base Case-Plus-Project Intersection Operation*

Years 2005 and 2012 base case-plus-project volumes would result in a 5-second or more increase in average control delay for critical movements at the State Route 12 intersection with Adobe Canyon Road, where base case conditions are at LOS F. Because the General Plan includes Guideline CIRC-3, which directs the Department to conduct appropriate CEQA environmental review for area-specific projects and pay a fair-share contribution to intersection improvements warranted by each project (i.e., where project-generated traffic would surpass the County's "5-second" impact threshold), this impact would not be considered significant. At such time that the Department is ready to expand areas served by Adobe Canyon Road, and if Caltrans has approved provision of a signal, then costs for the signal should be paid on a fair-share proportional basis by the Department and other development projects utilizing Adobe Canyon Road.

### *2005 Intersection Level of Service Operation With Project*

Table 4-4 shows that with the addition of project traffic, the State Route 12/Los Alamos Road and State Route 12/Pythian Road signalized intersections would maintain LOS A operation by 2005 during the Sunday p.m. peak hour.

At the State Route 12/Adobe Canyon Road intersection, the stop-sign-controlled Adobe Canyon Road westbound left turn to State Route 12 would continue to operate at LOS F during the Sunday p.m. peak hour, with over 5 seconds added delay due to project-generated traffic (i.e., the project would exceed the County's "5-second" impact threshold). Because the *Final General Plan* includes Guideline CIRC-3, which directs the Department to conduct appropriate CEQA environmental review for area-specific projects and pay a fair-share contribution to needed intersection improvements warranted by each project, this impact would not be considered significant. The State Route 12 southbound left turn to Adobe Canyon Road would continue to operate at LOS B during the same time period.

At the State Route 12/Nunns Canyon Road intersection, the stop-sign-controlled Nunns Canyon Road westbound approach to State Route 12 would continue to operate at LOS F during

the Sunday p.m. peak hour, with the project addition of about 1.8 seconds delay (i.e., below the County's "5-second" impact threshold). The State Route 12 southbound left turn to Nunns Canyon Road would continue to operate acceptably at LOS A during the same time period. These impacts would not be considered significant.

### *2012 Intersection Level of Service Operation With Project*

Table 4-4 shows that, with the addition of project traffic, the State Route 12/Los Alamos Road and State Route 12/Pythian Road signalized intersections would maintain acceptable LOS A operation by 2012 during the Sunday p.m. peak hour.

At the State Route 12/Adobe Canyon Road intersection, the stop-sign-controlled Adobe Canyon Road westbound left turn to State Route 12 would continue to operate at LOS F during the Sunday p.m. peak hour, with over 5 seconds added delay due to project-generated traffic (i.e., the project would exceed the County's "5-second" impact threshold). Because the *Final General Plan* includes Guideline CIRC-3, which directs the Department to conduct appropriate CEQA environmental review for area-specific projects and pay a fair-share contribution to needed intersection improvements warranted by each project, this impact would not be considered significant. The State Route 12 southbound left turn to Adobe Canyon Road would continue to operate acceptably at LOS B during the same time period. These impacts would not be considered significant.

At the State Route 12/Nunns Canyon Road intersection, the stop-sign-controlled Nunns Canyon Road westbound approach to State Route 12 would continue to operate at LOS F during the Sunday p.m. peak hour, with the project addition of about 3.7 seconds delay (i.e., below the County's "5-second" impact threshold). The State Route 12 southbound left turn to Nunns Canyon Road would continue to operate at LOS B during the same time period. These impacts would not be considered significant.

### *2005 and 2012 Signalization Need Impacts*

By 2005, project volumes would contribute to increasing volumes above meeting signal warrant criteria levels at the State Route 12/Adobe Canyon Road intersection. Because the *Final General Plan* Guideline CIRC-3 incorporates contributions to planned or needed intersection

improvements, this would be considered a less-than-significant impact.

### Access Roadways

#### *Adobe Canyon Road*

Adobe Canyon Road has two travel lanes, centerline striping, and minimal shoulder areas for about 2.25 miles before entering the park. Much of Adobe Canyon Road meets the County minimum standard for lane width (9 feet), but shoulder widths vary and generally do not meet the County's minimum standard of 2-foot-wide unpaved shoulders (American Association of State Highway and Transportation Officials 1990). This fact raises concerns, particularly for bicyclists. Roadways with narrow paved shoulders (or only dirt or gravel shoulders) can be hazardous for bicycle riders. They must share the travel lane with vehicles, and the faster-moving vehicles can come upon them suddenly. The absence of paved shoulders leaves bicyclists with no safe space to get out of the way of vehicles, and turning sharply onto dirt or gravel shoulders can cause the bicycle to lose traction, and the bike rider to fall.

The *Final General Plan* encourages visitors to access the park through alternative modes of transportation, including on foot, horseback, bicycle (on appropriately safe routes), or by bus. Guideline CIRC-2 directs the Department to improve and maintain primary visitor access roads to safely accommodate expected visitor use. The General Plan addresses existing conditions for bicyclists on access roads by slowing traffic and providing signs indicating that drivers must share the road (Guideline CIRC-2). Guideline CIRC-5 directs the Department to provide signage alerting bicyclists and other roadway users to roadway conditions.

Although these guidelines would improve the current condition on access roads for bicyclists, the roadways would still not be considered safe routes for bicyclists. In order to better accommodate use of bicycles on Adobe Canyon Road, the Department could consider providing a minimum 5-foot-wide paved shoulder on both sides of the roadway for the entire length in anticipation of encouraging Class II bicycle route signing on Adobe Canyon Road. However, roadway widening to provide consistent paved shoulder widths would likely be constrained by topography, the concern for project-level environmental

impacts, construction costs (i.e., costs for such items as drainage improvements, roadbed repair and possible upgrade, as well as expansion of the roadway width), and other issues such as tree removal and fenceline relocation.

### *Los Alamos Road*

The *Final General Plan* does not propose any new parking lots or expansion of existing parking lots on Los Alamos Road. As described in Chapter 2, Existing Conditions and Issues, Los Alamos Road is a narrow two-lane road with minimal to no shoulders. Sections of the roadway have narrow lanes and sharp horizontal curves. Narrow sections do not have sufficient width for two vehicles to pass in opposite directions; this is of particular concern as a vehicle towing a horse trailer meets another vehicle towing a horse trailer traveling in the opposite direction. Although there are no steep grades on the narrowed section, frequent curves limit sightlines. The entire length of the narrowed road (approximately one mile) has been posted with a 10-mile-per-hour speed limit. Given the long west-to-east downhill grade, some vehicles may experience overheated brakes when leaving the park and have no place to pull off the road. This could be a problem for vehicles towing horse trailers.

Because no new parking spaces are proposed for Los Alamos Road parking lot, and no new active recreation activities are proposed in the Santa Rosa Creek Management Zone, the Department does not anticipate any addition of traffic for Los Alamos Road on a summer Sunday afternoon during the peak traffic hour due to implementation of the *Final General Plan*. However, the General Plan includes guidelines to improve safety on Los Alamos Road. Guideline CIRC-2 directs the Department to work with the Sonoma County Public Works Department to improve and maintain primary visitor access roads to safely accommodate expected visitor use, with special attention to use by vehicles pulling horse trailers. Guideline CIRC-5 directs the Department to establish a way-finding program and appropriate signage on access roads to the park.

### *Nunns Canyon Road*

Nunns Canyon Road is a one-lane roadway of varying width, poor pavement, and minimal to no shoulders. There are currently no park facilities served by Nunns Canyon Road. The proposed 40 regular parking spaces and 5 horse trailer

parking spaces (or 12 regular parking spaces) would introduce park-generated traffic to this substandard county roadway. The problems described for Los Alamos Road concerning narrow sections and insufficient width for two vehicles to pass in opposite directions also apply to Nunns Canyon Road. This is of particular concern for two vehicles towing horse trailers traveling in opposite directions: in the absence of two lanes, shoulders, or turnouts, vehicles would be unable to proceed.

The General Plan incorporates Guidelines CIRC-2, NC-2, and NC-5, which would avoid, minimize, or compensate for these effects. Guideline CIRC-2 directs the Department to work with the Sonoma County Public Works Department to improve and maintain primary visitor access roads to safely accommodate expected visitor use, with special attention to use by vehicles pulling horse trailers. Guideline CIRC-2 also provides possible options for improving safety conditions on access roadways, including identifying areas for stabilization, creating additional shoulder pullouts, and providing appropriate signage about roadway conditions. Guideline NC-5 directs the Department to develop specific management strategies for use of Nunns Canyon Road to ensure safe use by park visitors and residential property owners and provides specific improvements for consideration. Guideline NC-2 also encourages the Department to work with the California Department of Forestry and Fire to establish a secondary emergency access route from the Nunns Canyon Management Zone.

### 4.4.6 AIR QUALITY

This section analyses impacts related to air quality that would result from implementation of the *Final General Plan*.

#### Thresholds

The air quality analysis uses criteria from *CEQA Guidelines Appendix G, Environmental Checklist Form: Environmental Checklist*. According to these criteria, implementation of the General Plan would have a significant air quality impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

The project site is located within the jurisdictional boundary of the Bay Area Air Quality Management District (BAAQMD).[9] Based on the *BAAQMD CEQA Guidelines,* the project would have a significant impact based on the following criteria (BAAQMD 1999):

- A significant impact on local air quality is defined as an increase in carbon monoxide concentrations that causes a violation of the most stringent ambient air quality standard for carbon monoxide (20 parts per million [ppm] for the one-hour averaging period, 9.0 ppm for the eight-hour averaging period).
- A significant impact on regional air quality is defined as an increase in emissions of an ozone precursor or particulate matter 10 microns or greater in size ($PM_{10}$) exceeding the BAAQMD thresholds of significance. The current significance thresholds are 80 pounds per day (or 15 tons/year) for ozone precursors or $PM_{10}$.
- Any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact.

[9] Sonoma County is part of two distinct air basins and air districts. The northwestern portion of the county is in the Northern Sonoma County Air Pollution Control District (NSCAPCD). Southern Sonoma County is part of the Bay Area Air Quality Management District (BAAQMD). Sugarloaf Ridge State Park is within the BAAQMD.

- Any project with the potential to frequently expose members of the public to objectionable odors would be deemed to have a significant impact.

The BAAQMD significance threshold for construction dust impacts is based on the appropriateness of construction dust controls. The BAAQMD guidelines provide feasible control measures for construction emissions of $PM_{10}$. If the appropriate construction controls are implemented, then air pollutant emissions for construction activities would be considered less-than-significant.

This EIR uses the BAAQMD significance criteria as a further refinement of the air quality criteria provided in the CEQA Guidelines.

### Impact

With implementation of the *Final General Plan,* impacts to air quality would be avoided through adherence to BAAQMD control measures during construction and management guidelines would be in effect to avoid any potential impacts or limit them to a less-than-significant level.

#### Construction-related Impacts

Activities and motor-driven equipment used during construction or reconstruction of park facilities, including digging, grading, and paving, would generate ozone precursors, carbon monoxide, nitrogen and sulfur oxides, and particulate matter. Construction dust could affect local air quality at various times during construction of the proposed project. Clearing, grading, and earthmoving activities have a high potential to generate particulate matter and dust whenever soil moisture is low, and particularly when the wind is blowing. Dust emissions from construction activities would be greatly reduced by implementing fugitive dust control measures. *BAAQMD CEQA Guidelines* provide that the significance of construction impacts to air quality is based on the control measures that would be implemented.

The *Final General Plan* incorporates Guidelines PROJ-1 and PROJ-6, which would avoid, minimize, or compensate for these effects. Guideline PROJ-1 directs the Department to conduct environmental review of area-specific projects and implement measures to avoid or limit potential impacts to a less-than-significant level. Guideline PROJ-6 directs the

Department to implement control measures during the construction period specifically to minimize air quality effects. According to the *BAAQMD CEQA Guidelines*, implementation of the measures listed in PROJ-6 would limit the potential air quality impacts associated with grading and new construction to a less-than-significant level.

### Localized Pollutant Concentrations

Implementation of the proposed General Plan would not result in the operation of any major stationary or area sources of hazardous air pollutants. However, motor vehicles may contribute to increases in localized concentrations of carbon monoxide (CO). As a result, CO emissions are typically analyzed at a local rather than regional level.

CO concentrations are a direct function of vehicle idling time and thus traffic flow conditions. CO transport is extremely limited, as it disperses rapidly with distance from the source under normal meteorological conditions. Under certain meteorological conditions, however, CO concentrations close to a congested roadway or intersection may reach unhealthy levels. Typically, areas of high CO concentrations, or "hot spots," are associated with signalized intersections operating at high levels of service (i.e., LOS E, or worse). In areas with a high ambient background CO concentration, modeling of CO concentrations at affected signalized intersections is recommended in determining a project's effect on local CO levels.

Based on the traffic analysis prepared for this *Final General Plan*, nearby signalized intersections, including the intersections of State Route 12 with Los Alamos Road and Pythian Road, would continue to operate at acceptable LOS (i.e., LOS A) with implementation of the plan. Based on this analysis, and given the relatively low ambient CO concentrations anticipated in the area, the associated effects of localized mobile-source CO concentrations would not be anticipated to exceed state or national ambient air quality standards. As a result, local air quality impacts attributable to the proposed plan would be considered minor.

Increases in Regional Criteria Pollutants

Long-term increases in regional emissions would primarily occur with increased motor vehicle and campfire activities associated with increased levels of visitation. Other sources of emissions (e.g., landscape maintenance activities and energy usage) are not anticipated to increase substantially in comparison to existing operations, and thus would not contribute substantially to increases in long-term emissions. Furthermore, any minor increases in energy demands associated with the proposed facilities would likely be somewhat offset due to increased energy efficiency and insulation requirements for newly proposed structures.

Based on the traffic analysis prepared for this project, implementation of the proposed plan would result in a net increase of approximately 404 vehicle trips. Mobile emissions were calculated using year 2004 emission factors obtained from the California Air Resources Board–approved Emfac 2002 (Version 2.2) computer program and assume an average trip distance of 25 miles. Based on the modeling conducted, implementation of the proposed plan would generate net increases in mobile-source emissions of approximately 18 pounds/day of reactive organic gases (ROG), 13 pounds/day of nitrogen oxides ($NO_x$), and less than 1 pound/day of $PM_{10}$.

Net increases in mobile-source emissions are not estimated to exceed the BAAQMD's recommended significance thresholds of 80 pounds/day for the modeled pollutants. However, as noted above, increased visitation is anticipated and may result in increased campfire emissions. Emissions associated with wood burning consist primarily of particulate matter, including $PM_{10}$, as well as the ozone precursor pollutants ROG and $NO_x$. Studies completed by the BAAQMD have indicated that wood burning is a substantial contributor to $PM_{10}$ concentrations within the basin (BAAQMD 2003).

Combined increases in long-term operational emissions, including emissions from mobile sources and on-site campfires, could exceed the BAAQMD-recommended significance thresholds and could contribute to local or regional violations of ambient air quality standards. Consequently, long-term operations could be considered to have a significant air quality impact, primarily attributable to potential increases in campfire emissions.

The *Final General Plan* incorporates Guideline OPER-7, which would avoid these effects by managing the use of campfires in accordance with direction provided by the BAAQMD.

### 4.4.7 NOISE

This section analyzes impacts related to noise that would result from implementation of the *Final General Plan*.

#### Thresholds

The noise analysis uses criteria from *CEQA Guidelines Appendix G, Environmental Checklist Form*. According to these criteria, implementation of the *Final General Plan* would have a significant noise impact if it would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above existing levels without the project; or
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels without the project.

Table 4-6 shows the noise level limits contained in the Sonoma County Noise Element. State agencies are not required to abide by local noise regulations; however, these limits are provided as a reasonable standard for evaluating noise impacts. As suggested by the Noise Element, the limits have been adjusted to account for the quiet ambient conditions. The Noise Element provides that, under these conditions, the noise limits would be more stringent than usual.

**Table 4-6: Sonoma County Noise Standards**

| SOUND STANDARD | LEVEL (IN DBA[A]) EXCEEDED FOR SPECIFIED CUMULATIVE DURATION OUT OF ONE HOUR | | | | |
|---|---|---|---|---|---|
| | 30-60 MINUTES | 15-30 MINUTES | 5-15 MINUTES | 1-5 MINUTES | 0-1 MINUTES |

| | | | | | |
|---|---|---|---|---|---|
| Sonoma County Limits (7 a.m. – 10 p.m.) | 45 | 50 | 55 | 60 | 65 |
| Sonoma County Limits (10 p.m. – 7 a.m.) | 50 | 45 | 60 | 55 | 60 |

*Source: Sonoma County General Plan Noise Element, Table NE-2, adopted by the Sonoma County Board of Supervisors, March 23, 1989. http://www.sonoma-county.org/prmd/gp2020/1998/98gp-11.html#3.0*
*Note: The Sonoma County limits have been derived from Table NE-2 in the Sonoma County General Plan Noise Element. They have been adjusted in accordance with the provisions in paragraph NE-1c(3) of the Noise Element to take into account the quiet ambient conditions (5 dBA limit reduction).*
*[a]dBA = A-weighted decibel. A-weighting is a frequency correction that correlates overall sound pressure levels with the frequency response of the human ear.*

### Impact

With implementation of the *Final General Plan,* noise impacts would be avoided through careful siting and design of recreational facilities, and management guidelines would be in effect to limit any potential impacts to a less-than-significant level.

#### Construction-related Impacts

Construction-related noise would be temporary and localized, including noise from truck hauling of material and construction equipment used in site preparation and facility development. Impacts associated with construction-related noise would be minimized through timing constraints and use of standard noise abatement measures to avoid negative impacts to park visitors, neighbors, and sensitive wildlife in the vicinity.

The *Final General Plan* incorporates Guidelines PROJ-1 and PROJ-5, which would avoid, minimize, or compensate for these effects by requiring environmental review of area-specific projects and implementation of mitigation measures to avoid or limit potential impacts to a less-than-significant level. Guideline PROJ-5 specifically directs the Department to implement noise abatement measures during the construction period to minimize disturbance to park visitors, neighbors, and sensitive wildlife in the area.

#### Stationary Noise Sources

Noise carries easily in the visitor-serving area of upper Adobe Canyon, where the steep hillsides form a bowl that

reflects noise inside. Under existing conditions, human-generated noise in this natural setting can reduce the overall camping experience for visitors. The noise is exacerbated by campsites located very close to one another in the family campground and special events held at the observatory at night. Implementation of the *Final General Plan* would reduce, but not eliminate, existing noise disturbances within the campgrounds in Adobe Canyon by using native vegetation to act as a buffer between campsites and to reduce noise reflection off of the cliff face near the campsites, and by removing some campsites to create more space between the ones that remain (Guideline ADOBE-8).

No new major stationary noise sources are anticipated with implementation of the *Final General Plan.* Additional noise generated from increased visitor use includes intermittent and short-term noise associated with the opening and closing of vehicle doors, the voices of adults and children, and park maintenance equipment. However, because such noise occurs on an infrequent basis, substantial increases in ambient noise levels (i.e., 3 dBA or greater) would not be anticipated.

#### Project-Generated Traffic Noise Impacts

The *Final General Plan* recommends new facility development and expansion that would likely increase visitor use and thus vehicle-related noise in the park and along access roadways. Several residences are located on Adobe Canyon Road, Los Alamos Road, and Nunns Canyon Road which would be used as access roads into Sugarloaf Ridge State Park. The estimated increase in daily traffic trips is provided in subsection 4.4.5, Transportation/Traffic. Ambient noise levels would increase by less than 3 dBA on each of the modeled roadway segments. Noise increases less than 3 dBA would not be noticeable. A doubling of traffic is typically required to result in a noticeable increase in local noise levels. No mitigation is required for this less-than-significant impact.

## 4.5 CEQA-REQUIRED ANALYSIS

As required by CEQA, this section presents discussions related to effects found not to be significant, unavoidable significant effects, significant irreversible environmental effects, growth-inducing impacts, and cumulative impacts.

Subsequent development projects to implement the General plan could have project-specific impacts that would be addressed, as appropriate, on a project-by-project basis pursuant to CEQA.

### 4.5.1 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 further evaluated in this EIR. These issues are identified and briefly discussed in this section. Future implementation of plan proposals would be subject project-level environmental review, as appropriate.

#### Agricultural Resources

Implementation of the *Final General Plan* would not convert farmland to nonagricultural use. The acquisition of a portion of the Beltane Ranch (Nunns Canyon Management Zone) is the only action that would change privately owned or managed land to parkland. The Beltane Ranch is designated as "Resources and Rural Development" in the Sonoma County General Plan. Portions of the Beltane acquisition are identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the maps pursuant to the Farmland Mapping and Monitoring Program; however, there are no agricultural resources on site. The transfer of this open space to the Department ownership would not remove existing farmland from production, nor would it preclude the future conversion of this land to agriculture. Thus, the proposed *Final General Plan* would not have an adverse effect on agricultural resources.

#### Geology and Soils

While the area of Sugarloaf Ridge State Park is geologically active and experiences frequent ground shaking and landslides, the *Final General Plan* does not permit uncontrolled development of permanent facilities in known high risk areas and requires geologic studies prior to development. The *Final General Plan* requires site-specific geotechnical investigations for siting and design of permanent structures, campground, roads, and trails to mitigate potential damage from unstable soil, landslides, and earthquake-induced damage. The change in risk after implementation of the General Plan would be dependent upon where visitors might be during the occurrence of a seismic event. Maximum risk would be assumed to be on trails or

roads on steep slopes. As this risk exists now and might be expected to lessen with future trail improvements, the impact is not considered to be significant.

### Hazards and Hazardous Materials

Implementation of the *Final 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 *Final 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 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.

The quarry area of Nunns Canyon Management Zone (former Beltane Ranch) could have soil or groundwater contamination from previous use. A Phase 1 assessment of the property and implementation of appropriate mitigation measures will be included as part of the transfer of land to SCAPOSD and then Department ownership. Additional areas of contamination may be present in future acquisitions. A Phase I assessment should be conducted to determine any areas of potential contamination prior to future acquisitions.

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 *Final General Plan* for Sugarloaf Ridge State Park provides guidelines for future land use and development and is consistent with the Sonoma County General Plan. The

General Plan proposals are consistent with the existing land use in the area, which includes large parcels of both private and public land that are primarily in a wildland state or in rural agricultural use. The General Plan includes guidelines to discourage visitor trespassing on private property adjacent to the park and ensure residential property owners have vehicle access to their properties when primary access is from roads passing through the park. No significant land use and planning impacts are anticipated.

### Mineral Resources

The *Final General Plan* policies encourage resource conservation and recreational uses for Sugarloaf Ridge State Park. The potential development and improvements recommended in the General Plan would require minimal amounts of energy, would not require additional energy capacity to serve the park, and would not adversely affect peak- and base-period demands for electricity.

There are no known mineral resources within Sugarloaf Ridge State Park. The *Final General Plan* includes the protection of large expanses of undeveloped land and would not preclude the development of any mineral resources if found in the future. Therefore, the proposed General Plan would not have an adverse effect on mineral resources.

### Population and Housing

Implementation of the *Final 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 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 that would necessitate the construction of housing elsewhere. Implementation of the General Plan could result in an increased need for staff; however, it is unlikely that the number of new jobs generated would be significant or exceed the projected job growth in the area.

### Public Services

The *Final General Plan* would not result in a substantial increase in the population of surrounding communities, and thus would not adversely affect community schools and libraries. Park rangers provide police services within the

park boundaries, and thus the General Plan would not require additional government services for police protection. The Department works cooperatively with local fire protection districts and the California Department of Forestry and Fire Protection to provide fire protection services within the park. The General Plan includes guidelines for continuing to work with these agencies to identify and remove any gaps in the emergency circulation network within the park.

### Utilities and Service Systems

Currently utilities are sufficient to meet existing demand. Future development could be limited by the supply of water, sewage treatment feasibility, electricity supply, etc. The *Final General Plan* recommends the construction of a new restroom facility with showers in the family campground in the Adobe Canyon Management Zone. Feasibility studies, including water supply availability would be conducted prior to detailed project design and construction. Additional environmental review would occur at a project level.

## 4.5.2 UNAVOIDABLE SIGNIFICANT EFFECTS ON THE ENVIRONMENT

The proposed *Final General Plan* would not result in any unavoidable significant effects, as discussed in Section 4.4, Environmental Impacts, of this EIR. Evaluation at the specificity of this first-tier review indicates that the potential effects from projects proposed in this General Plan can be limited to a less-than-significant level with appropriate facility siting, the implementation of resource management programs and the implementation of described goals and guidelines.

Until specific uses, locations, and scope of facilities or management plans are identified, the actual level of impact, whether individual or cumulative, cannot be determined. However, all projects are required to be in compliance with local, state, and federal permitting and regulatory requirements and are subject to subsequent CEQA review and project-specific mitigation.

## 4.5.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL EFFECTS

No significant irreversible changes to the natural environment are anticipated from the adoption and implementation of this *Final 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. The Department does remove, replace, or realign facilities, such as trails and campsites, 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 nonrenewable resources. This impact would be minor due to the limited number of facilities planned for development and to the use of sustainable practices in site design, construction, maintenance, and operations, as proposed in the *Final General Plan*. Sustainable principals used in design and management emphasize environmental sensitivity in construction, the use of nontoxic materials and renewable resources, resource conservation, recycling, and energy efficiency.

Many cultural resources 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 would 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.

### 4.5.4 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 (CEQA Guidelines Section 15126.2[d]). Projects that would remove obstacles to population growth, such as an expansion of a wastewater treatment plant, 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 *Final General Plan* would likely result in an increase in visitation to the park. The General Plan recommends increasing the number of campsites and parking spaces available within the park, thereby increasing its capacity for visitors. Improvements to the

visitor center, observatory, and other facilities would also attract more visitors to the park. Improving trail connections between the broader areas of the park and constructing new limited-access campsites would raise the park's profile as a destination for wildland experiences, contributing to the potential for increased overnight use.

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 in the Harr Ranch area of the park. These proposals would result in a very minimal direct population growth impact to the area.

The park's water supply and wastewater treatment systems are self-contained for park use only, and thus any recommended improvements to these systems 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 proposals in 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, the Sonoma Valley area has a strong recreation and tourism-based sector of the economy, and there are several other recreational and housing developments proposed for the region. Population growth in the state and region will continue to create an increased use and demand for recreational opportunities at Sugarloaf Ridge State Park. Although the proposals in the *Final General Plan* would accommodate additional tourist visitation in Sonoma County, this increase in visitation would likely fill existing and future demands for recreation and would not significantly increase population growth in Sonoma County.

### 4.5.5 CUMULATIVE IMPACTS

Cumulative impacts refer to two or more individual effects which, when considered together, are substantial or which 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 from 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 reasonable foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CEQA Guidelines Section 15355).

The Sonoma Valley area is experiencing tremendous population growth. New development is planned in Kenwood, Oakmont, Santa Rosa, Glen Ellen, and other communities near Sugarloaf Ridge State Park. This development includes residential subdivisions, winery expansions, hotels and events centers, in addition to the expansion of government buildings and schools. A list of cumulative projects is provided in Table 4-7.

**Table 4-7: Cumulative Projects**

| PROJECT | DESCRIPTION/NOTES |
|---|---|
| **2005** | |
| Sonoma Country Inn | 50-room inn, spa, winery and residential complex |
| Stone Gate Subdivision | 8 single family residential units |
| Ledson Winery and Event Center | Existing facility, no new vehicle trips |
| Community School | Replacement of existing school – no new trips |
| Hood Mountain Park Plan | No estimates of visitor use are available |
| Hood Mansion Restoration | No trips projected |
| Kenwood Wedding Center | Existing facility, no new trips |
| Darius Anderson Subdivision | 3 single-family residential units |
| Deerfield Ranch Winery | New 45,000-case winery<br>20 special events per year |
| Mayo Winery | |
| Chauvet Hotel Site | 6 Condominiums |
| Glen Ellen Inn | Expansion - 4 new rooms |
| Gaige House Inn | Expansion from 15 to 23 units (8 new rooms) |
| Juvenile Justice Center | Facility expansion |
| Valley of the Moon Children's Home | |
| Orchards at Oakmont Subdivision | new senior subdivision - 165 senior units |
| Annadel Vineyards | New winery - 50,000 cases |
| Mobius Painter Winery | New winery - 150,000 cases<br>Tours, tasting, sales<br>10 a.m. to 4 p.m. weekdays |
| Landmark Winery | Winery expansion - expand to 35,000 cases per year |
| Blackstone Winery (formerly known as | Winery expansion and events application - expand from 14,000 cases to 125,000 cases per |

**Table 4-7: Cumulative Projects**

| PROJECT | DESCRIPTION/NOTES |
|---|---|
| McRhostie and St. Francis Winery) | year plus special events |
| St. Francis Winery and Vineyards | Events application only |
| Chateau St. Jean Winery Expansion | Winery expansion and events application - expand from 250,000 cases to 750,000 cases per year plus special events |
| Korbel (Kenwood Winery) | Expand from 125,000 cases to 500,000 cases per year |
| Kenwood Inn Expansion | 24 new units |
| Graywood Ranch Subdivision | 3 single-family residential units |
| **2012** | |
| Wolf House Hotel | |
| Las Ventanas Sonoma | 98-room resort, spa, 180-seat restaurant |

*Source: Sonoma County Permit and Resource Management Department, September 2003*

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 plan proposes a number of goals and guidelines to avoid or minimize impacts to these resources. In addition, the protection of large expanses of wildlands and possible acquisitions and conservation easements discussed in the *Final General Plan* would act to protect existing park resources, preserve viewsheds, and enhance plant and wildlife habitat by providing habitat linkages and buffers.

Cumulative projects could potentially increase erosion and degrade water quality in Sonoma, Santa Rosa, and Calabasas Creeks. The headwaters of these streams are located in Sugarloaf Ridge State Park, and any degradation of the water quality would exacerbate cumulative impacts downstream. The *Final General Plan* includes guidelines to avoid or limit the potential for water quality impacts to a less-than-significant level by requiring project-level implementation of best management practices as appropriate and control measures to reduce sedimentation and pollution in stormwater runoff during and after construction, and by limiting visitor access into streams and waterways. The protection of wildlands from development at the headwaters would continue to help protect water quality within the streams.

Many of the cumulative projects are located in the groundwater recharge area of the Sonoma Valley Groundwater Basin, the major groundwater basin that underlies the flatter topography of the valley. Sugarloaf Ridge State Park preserves large expanses of land in the recharge zone, and as such contributes to groundwater recharge in the basin. Potential groundwater extraction for the proposed new restroom with showers in the family campground would be "less than cumulatively considerable" and would not result in significant groundwater depletion.

The potential cumulative impacts from the anticipated increase in traffic to and from the park and resultant effects on air quality and noise are discussed in the Transportation/Traffic, Air Quality, and Noise sections of Section 4.4, Environmental Impacts, in this EIR. These guidelines will limit the potential cumulative impacts resulting from implementation of the *Final General Plan* to a less-than-significant level.

As part of the planning and design process for area-specific projects recommended in the *Final General Plan*, the Department would develop the appropriate project-level CEQA documentation and environmental evaluation and mitigation measures necessary to avoid or limit any potentially significant impacts to a less-than-significant level. With implementation of the General Plan guidelines, including resource protection, restoration, and requirements for project-level environmental review, the effects from the proposed plan would not be cumulatively considerable.

## 4.6 ALTERNATIVES TO THE PROPOSED PLAN

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 *Final 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]).

Three concept alternatives were presented to the public for comment at the second public meeting held at the Kenwood Fire Protection District Station on May 22, 2003, described in Newsletter No. 2, which was distributed to over 350 people. The Department 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. The Department also considered statewide interests, the park's purpose and vision, environmental constraints, and resource agency rules and regulations. The Preferred Alternative is a combination of features from the three concept alternatives. The Preferred Alternative was further refined into the *Final General Plan* presented in this document (in the Park Plan section).

An environmental evaluation of the three concept alternatives considered during development of this *Final 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 *Final General Plan* and a determination as to whether or not the alternative would reduce, eliminate, or create new significant impacts.

### 4.6.1 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 *Final General Plan* for Sugarloaf Ridge State Park was not approved, the existing situation would continue with respect to park development, operation, and 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 (Public Resources Code 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.

### Evaluation

The limitations of existing facilities would continue if the General Plan was not adopted. Without the facility improvements to accommodate the existing visitor demand as well as the projected increase in visitor use, the visitor experience would be diminished. Under the No Project Alternative, public use, over time, could degrade sensitive natural and cultural resource areas.

Visitation to Sugarloaf Ridge State Park is increasing every year, and there is public pressure to expand some facilities at the park. However, without a *Final General Plan*, the Department would not have the authority to develop or enhance facilities to respond to this demand. Funding for recreation and interpretation improvements to enhance the visitor experience may be difficult to obtain. Recreational and interpretive improvements that could enhance the visitor experience at the park's current level of use or anticipated future needs would not be developed. The ability to develop recreational facilities on any new acquisition properties would be also limited.

Under the No Project Alternative, development of the park's trail system would generally be limited to routine maintenance and rehabilitation. Because projects would be limited to existing trails, new trail connections between the broader areas of the park, including the Santa Rosa Creek Watershed Management Zone and the Nunns Canyon Management Zone, would not be developed. Thus, opportunities to create a higher quality visitor experience in the backcountry and the ability to extended shared-use loop trails between the management zones could be missed. The opportunities for regional trail linkages may also be lost.

Traffic and circulation improvements may not be accomplished with the No Project Alternative. Parking problems, particularly during large special events at the observatory, would continue. As noted previously, the management zones would be isolated from one another and

only accessible by vehicle. Improvements to informational and directional signage would not occur. The construction of new bridges to allow better vehicle access to campgrounds in Adobe Canyon and to the Santa Rosa Creek Watershed Management Zone would not occur, leaving gaps in the emergency access circulation system during periods of high water.

The existing visual character of the park could not be improved or enhanced in a significant way, and protection of existing scenic vistas by acquisition or conservation agreement may not be provided under the No Project Alternative. The light conflicts between the large group camp and the observatory would remain, and thus the use of the large group camp would be restricted for much of the year.

Without an organized land use plan, management plans, or development guidelines for the park, incremental cumulative impacts may adversely affect the park in the future. Under the No Project Alternative, the park's natural and cultural resources may not receive an increased level of protection. Comprehensive parkwide restoration programs and policies for natural and cultural resource protection may not be developed. Under the No Project Alternative, development of a systematic assessment process to determine the future treatment of cultural resources within the park would be unlikely, because implementation of new programs would require adoption of a General Plan. Programs to limit visitor use in riparian areas would not be implemented in a comprehensive way.

### 4.6.2 ALTERNATIVE A

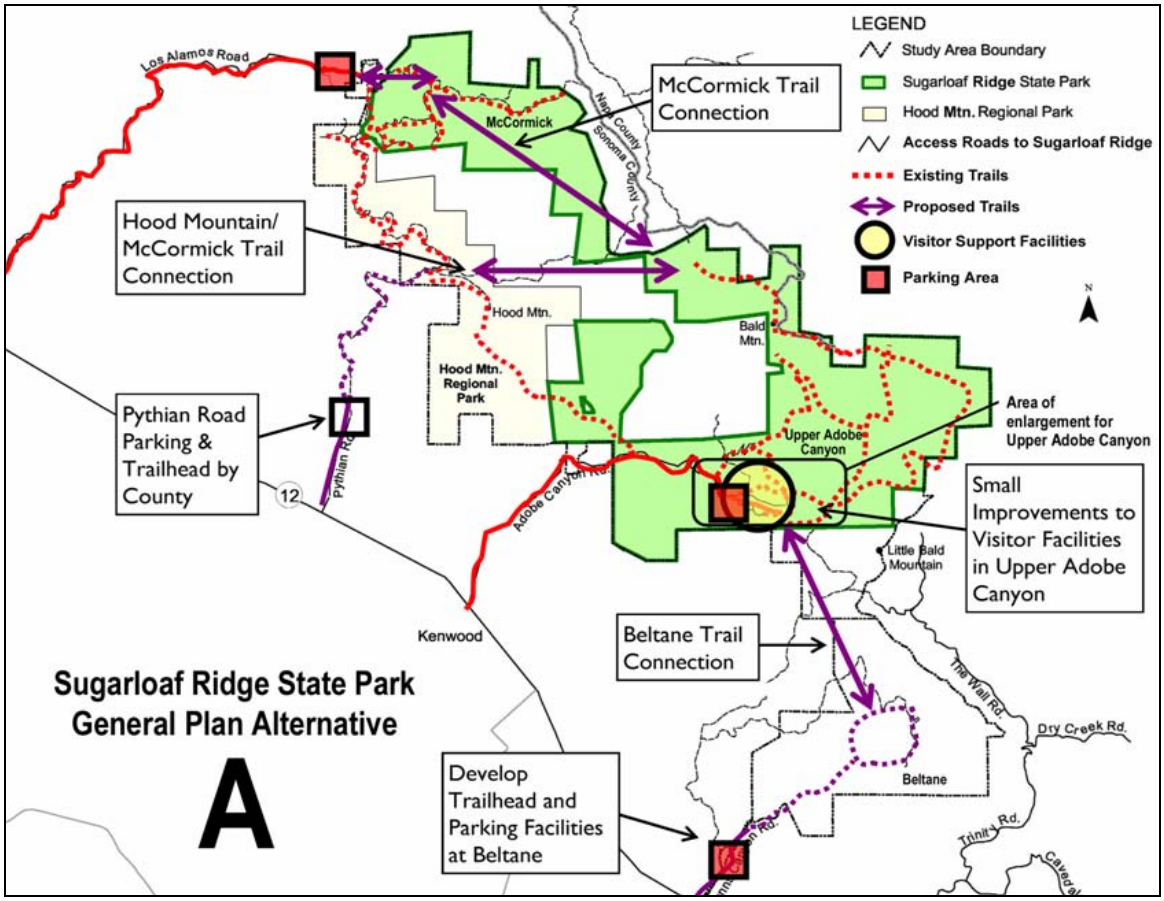
#### Description

Alternative A: Protect Existing Wildland Resources and Improve Visitor Experience in Upper Adobe Canyon (the "fix-it" approach) represents the minimum actions needed to address existing issues within the park. This alternative would provide many of the same resource protection features and trail connections as the proposed plan, but proposes a lower intensity of facility development.

Visitor use would be concentrated in upper Adobe Canyon, but trailhead facilities and a parking lot would be developed at the quarry area of Nunns Canyon to provide access to this newly acquired property (see Figure 4-3).

With this development there would be three points of direct access to Sugarloaf Ridge State Park: Adobe Canyon Road, Los Alamos Road, and Nunns Canyon Road.

**Figure 4-3: Alternative A**




In the Adobe Canyon Management Zone, the large group camp would be relocated away from the observatory, and a new restroom with showers would be provided in the family campground. Service area buildings would be consolidated to improve functionality and screen service equipment from view, and the maintenance equipment would be removed from the horse barn. New bridges would be built to address gaps in emergency access during periods of high water. The visitor center and day-use parking lots would be expanded.

The expansion of all other existing facilities and development of new facilities as proposed in the *Final General Plan* would not occur. No new facilities would be developed in the Santa Rosa Creek Watershed Management Zone, and only trailhead and parking facilities would be developed in Nunns Canyon. Additional family and small

group camping facilities would not be provided in upper Adobe Canyon, and the observatory and visitor center would remain at their existing sizes. Limited-access and primitive campsites would not be developed in the more remote areas of the park, and the Bear Creek Trail connection between the Red Barn and Harr Ranch would not be developed.

### Evaluation

Alternative A minimizes the number of new or expanded facilities that would be constructed within the park and, as such, there would be fewer potential project-specific effects to sensitive resources related to construction or use in previously undeveloped sites than in the proposed plan. However, under the proposed *Final General Plan*, these potential impacts would be mitigated through project-level design and environmental review.

Under Alternative A, the relocation of the large group camp and the expansion of day-use parking would be the only actions that would bring activity into previously undeveloped sites within the park. However, the proposed sites are in the vicinity of previously developed areas and existing parking, and thus the relocation would still minimize the intrusion into pristine areas.

Under Alternative A, the park would not be well positioned to take on more visitors without future impacts. Alternative A proposes only those changes to visitor facilities necessary to resolve existing issues, and therefore Alternative A offers no further advantages to the visitor experience. Alternative A does not address the anticipated increase in visitor use and demand for recreational areas expected from changing demographics in user populations. No new or expanded camping facilities are proposed, nor is expansion of the visitor center or observatory to accommodate classrooms or additional interpretive resources. Although new and expanded parking facilities would help to ease parking congestion, other facilities would continue to be crowded and undersized. Demand for small group camping, additional family camping, and equestrian camping would go unmet.

Because Alternative A does not address this existing demand for recreation, which currently exceeds the parking and camping capacity within the park, and does not address the

anticipated increase in demand in the future, Alternative A would exacerbate ongoing environmental damage by not planning for increased visitor use. Existing circumstances, such as illegal parking in sensitive habitats because parking lots are full and trampling of native vegetation around overcrowded campsites, would continue to be a problem.

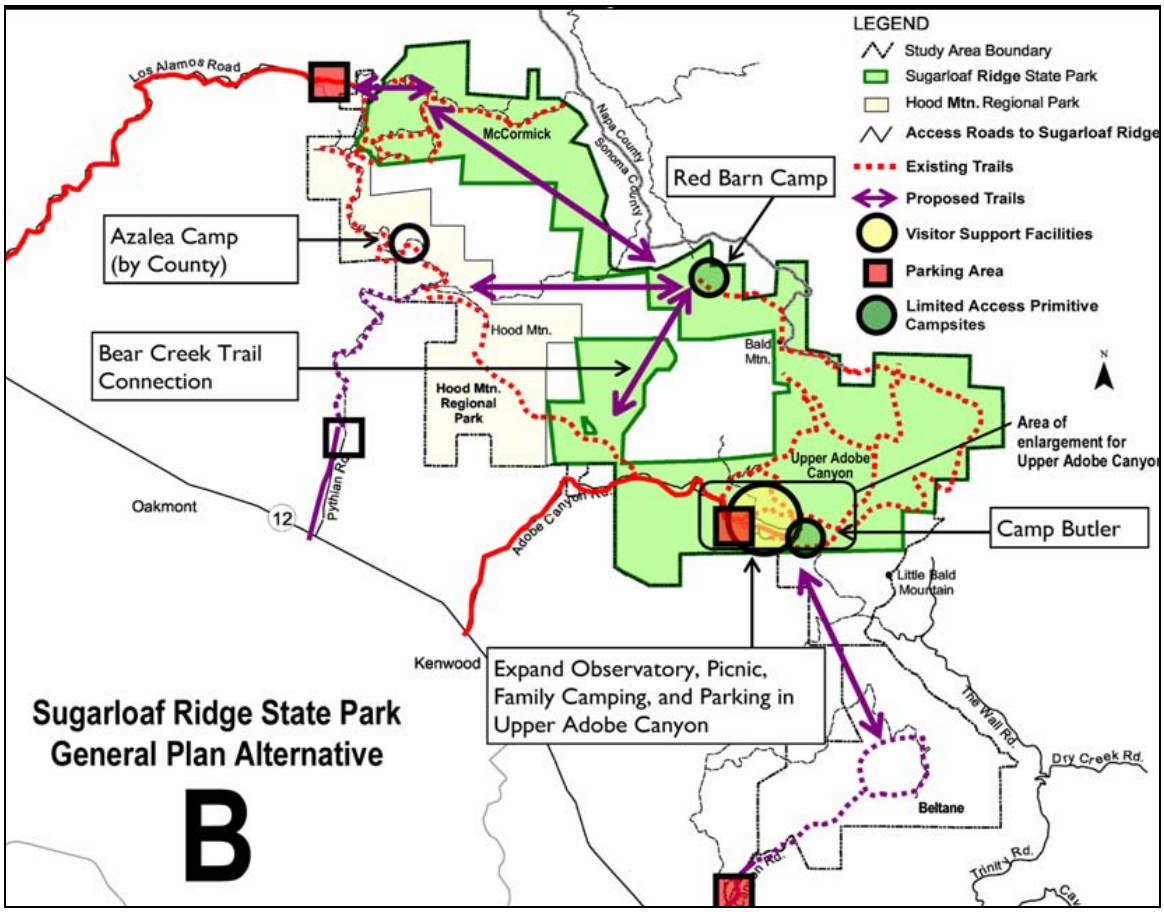
### 4.6.3 ALTERNATIVE B

#### Description

Alternative B: Establish Primitive Campsites in Preserved Wildlands and Concentrate New Facilities in Upper Adobe Canyon (the "fix-it" plus moderate enhancements approach) would concentrate visitor use in upper Adobe Canyon, leaving the Santa Rosa Creek Watershed Management Zone and the Nunns Canyon Management Zone as wildland. Alternative B builds upon and includes the same features as Alternative A.

This alternative would provide many of the same resource protection features and trail connections as the proposed plan and proposes moderate enhancements to facilities. Alternative B would introduce a few primitive campsites into areas outside of upper Adobe Canyon and would develop a trail connection along Bear Creek between the Red Barn and Harr Ranch (see Figure 4-4). Visitor use would still be concentrated in upper Adobe Canyon.

**Figure 4-4: Alternative B**




Alternative B provides more camping opportunities in Adobe Canyon by expanding the family campground and developing limited-access and primitive campsites. Additional family campsites would be developed to complete the "figure eight" loop and in the former campfire areas to the southeast of the existing family campground. Primitive campgrounds would be developed at the former homestead sites at the Red Barn and the former Boy Scout campsite at Camp Butler. The observatory and the parking lot near the horse barn and relocated large group camp would be expanded.

### Evaluation

In Alternative B, fewer new or expanded facilities would be constructed within the park than in the proposed plan, and as such there would be fewer potential project-specific effects on sensitive resources related to construction or use in previously undeveloped sites. However, under the proposed *Final General Plan*, these potential impacts would

be mitigated through project-level design and environmental review.

Although Alternative B would introduce a few primitive campsites into areas outside of upper Adobe Canyon, like in the proposed plan, large areas of wildlands would be preserved, which would support the protection of important wildlife biocorridors and the Santa Rosa Creek and Calabasas Creek watersheds. The limited access campgrounds proposed under Alternative B would be developed in areas which had been previously developed, so the potential for impacts to habitat may be reduced.

Although the siting of the primitive campsites would seek to minimize effects to natural and cultural resources, there is the potential for site-specific adverse effects to sensitive resources from construction. However, like under the proposed *Final General Plan*, these potential impacts would be mitigated through project-level design and environmental review. Because the campsites will be located in areas away from the concentration of visitor use in upper Adobe Canyon, the potential for human-wildlife encounters would also increase, which is part of the intent.

Under the Alternative B scenario, it is reasonable to assume that visitor use and associated traffic on Adobe Canyon Road and connecting roadways will increase with the development of new recreational facilities compared with Alternative A, but would be less than anticipated with the proposed Plan.

Alternative B begins to respond to the increase in visitor use and demand for backcountry recreation areas (e.g., trails, family and group campsites, primitive camping) expected from changing demographics, but would not provide the flexibility to address recreational demand in the region in the future.

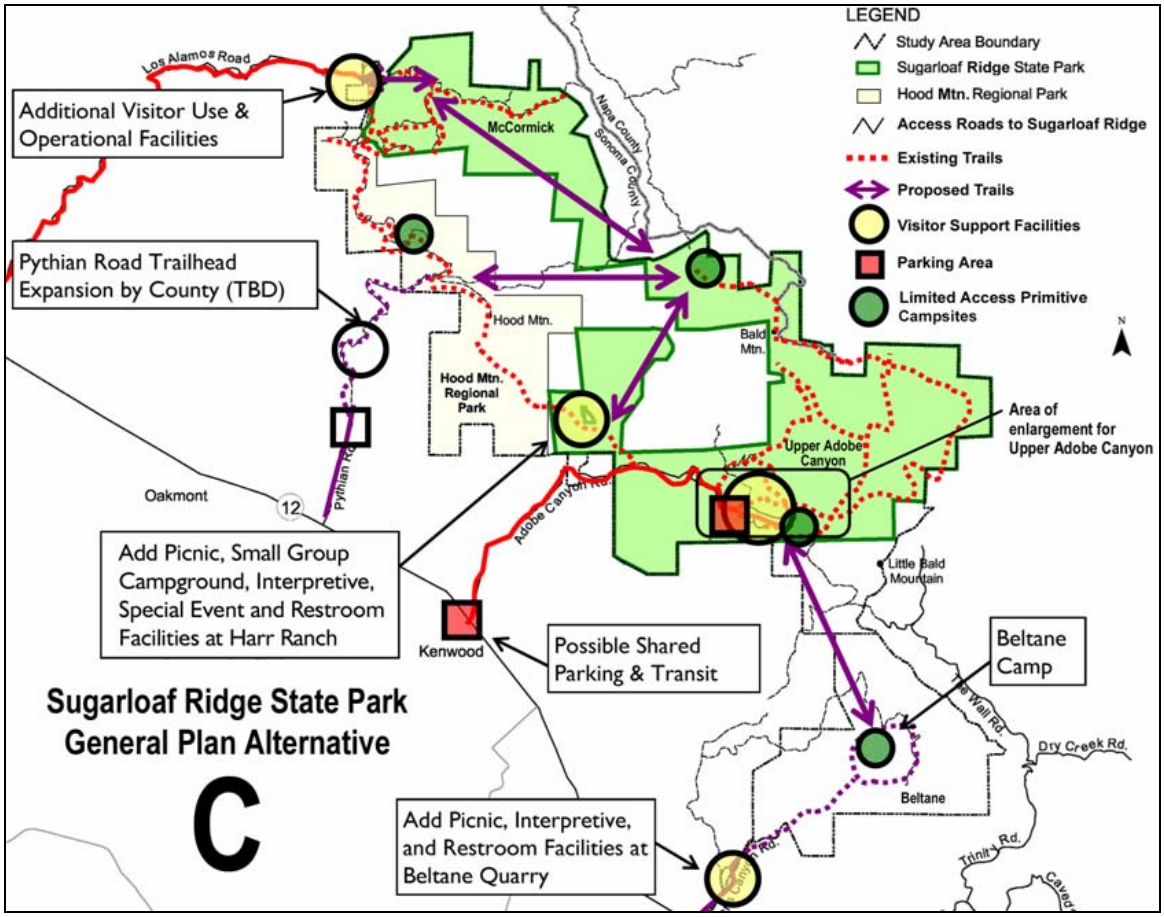
### 4.6.4 ALTERNATIVE C

#### Description

Alternative C: Develop Visitor Support Facilities at Trailheads in the Broader Areas of the Park (“fix-it” plus more enhancements over time) would build upon and include the same features as Alternatives A and B. This alternative would provide many of the same resource

protection features, trail connections, and new or expanded facilities as the proposed plan, except the former Harr Ranch homestead would be developed as a special-events center for a maximum of 50 people. In addition to the rehabilitation of the former homestead, additional support facilities would be necessary at this site. Parking facilities would be developed, and the park roads and circulation system would require modification to accommodate a higher number of visitors in this location of the park (see Figure 4-5).

**Figure 4-5: Alternative C**




Alternative C would include all other new facilities proposed in the *Final General Plan*. Those features not already described in Alternatives A and B are as follows: Alternative C would develop additional facilities outside of Adobe Canyon to spread visitor use to the broader areas of the park. Picnic sites, interpretive sites, and restrooms would be developed at the quarry in Nunns Canyon. The Department would work with the Sonoma County Regional

Parks Department to develop visitor use and operational facilities at the Los Alamos Road parking lot at the north end of Hood Mountain Regional Park. Facilities could include a ranger office, employee residence, interpretive sites, potable water, and restrooms. Limited-access campgrounds would be provided in secluded areas of Adobe Canyon, and primitive campsites would be established in Santa Rosa Creek Watershed, and Nunns Canyon Management Zones. In Adobe Canyon, additional family campsites would be developed, and corrals would be provided for visitor use near the small group camp to allow for equestrian camping. Additional parking would be provided in Adobe Canyon, phased to accommodate expected visitors within the new and expanded facilities.

### Evaluation

Although the grassland habitat in the Harr Ranch area has been previously disturbed, this area currently receives minimal visitor use. If the site were to be developed to accommodate special events, habitat disturbance and noise impacts to wildlife could occur, and therefore there may be a higher value to wildlife if used only as an employee residence, as proposed under the proposed *Final General Plan.*

If the Harr Ranch were to be developed as a special-events center, access would have to be maintained year-round for vehicles and pedestrians. The right-of-way/ownership of Pierson Road and use compatibility with residences on the access road would need to be taken into consideration. The roadway would need to be improved to accommodate increased use. There would be the potential for adverse impacts associated with construction practices in this area, which is known to have highly erodible soil. The need to modify the current roadway would result in disturbance to soil and vegetation, as well as increase the amount of impervious surface. There would be the need to negotiate road maintenance with the County. The special events located near other residences may potentially have significant adverse noise impacts to the residences.

All other features in Alternative C are the same as the proposed plan and thus would not avoid or substantially lessen any potential environmental impacts in those areas.

Table 4-8 is a comparison of the alternatives presented. These were discussed in the second public meeting held on May 22, 2003.

**Table 4-8: Alternatives Comparison Table**

| FACILITIES | EXISTING CONDITION | ALTERNATIVES | | |
|---|---|---|---|---|
| | | A | B | C |
| Max Visitors at One Time (Preliminary Estimate)[b] | 900 | 1,000 | 1,300 | 1,700 |
| Max Visitors Per Day (Preliminary Estimate)[b] | 1,700 | 1,800 | 2,400 | 3,000 |
| Trail Connections | | | | |
| McCormick–Red Barn trail connection | No | Yes | Yes | Yes |
| Hood Mtn.–McCormick trail connection | No | Yes | Yes | Yes |
| Beltane–Upper Adobe Canyon trail connection | No | Yes | Yes | Yes |
| Bear Creek trail connection | No | No | Yes | Yes |
| Facilities in Upper Adobe Canyon | | | | |
| Camping Facilities | | | | |
| Family Campsites (8 people per site) | 49 | 44 | 58 | 70 |
| Move Large Group Campsite (50 people) | No | Yes | Yes | Yes |
| Add Reservable Corrals for Equestrian Camping | No | No | No | Yes |
| Limited Access Small Group Campsites (15 people per site) | 0 | 0 | 1 | 4 |
| Primitive Campsites (8 people per site) | 0 | 0 | 0 | 8 |
| Expand Observatory (classrooms & restroom ) | No | No | Yes | Yes |
| Horse Barn | | | | |
| Horse Concession | Yes | Yes | Yes | Yes |
| Maintenance Storage | Yes | No | No | No |
| Interpretive Center | No | No | Yes | Yes |
| Picnic Area | No | No | Yes | Yes |
| Visitor Center (no changes) | Yes | Yes | Yes | Yes |
| New restroom facility with showers | No | Yes | Yes | Yes |
| Picnic areas | 5 | 5 | 8 | 8 |
| Consolidate maintenance shop and equipment storage into new facility | No | Yes | Yes | Yes |
| Parking [c, d] total: (new): | 241 | 253 (12) | 356 (103) | 418 (62) |

## Table 4-8: Alternatives Comparison Table

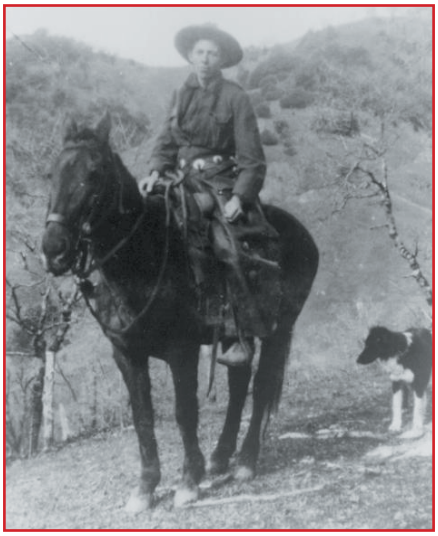
| FACILITIES | EXISTING CONDITION | ALTERNATIVES | | |
|---|---|---|---|---|
| | | A | B | C |
| Max Visitors at One Time (Preliminary Estimate)[b] | 900 | 1,000 | 1,300 | 1,700 |
| Max Visitors Per Day (Preliminary Estimate)[b] | 1,700 | 1,800 | 2,400 | 3,000 |
| Facilities in Broader Areas of the Park | | | | |
| McCormick | | | | |
| Los Alamos Road trailhead & parking (by County) | 30 | 30 | 30 | 30 |
| Construct new bridge(s) over Santa Rosa Creek for access to Hood Mtn and McCormick | No | Yes | Yes | Yes |
| Additional visitor use and operational facilities (Ranger station and/or interpretive center) | No | No | No | Yes |
| Primitive campsites (8 people per site) | 0 | 0 | 2 | 4 |
| Beltane | | | | |
| Quarry area restoration and trailhead | No | Yes | Yes | Yes |
| Parking c | 0 | 20 | 30 | 40 |
| Interpretive displays | No | No | No | Yes |
| Picnic areas | No | No | Yes | Yes |
| Primitive campsites (8 people per site) | 0 | 0 | 2 | 4 |
| Red Barn | | | | |
| Primitive Campsites (8 people per site) | 0 | 0 | 2 | 4 |
| Harr Ranch | | | | |
| Picnic area | No | No | Yes | Yes |
| Interpretive displays | No | No | No | Yes |
| Limited access small group campsite (15 people per site) | 0 | 0 | 0 | 1 |
| Special event facility (25 people max) | No | No | No | Yes |
| Restroom facilities | No | No | No | Yes |
| Hood Mountain Regional Park (by County)[e] | | | | |
| Pythian Road trailhead & parking | No | Separate County Action | | |
| Primitive campsites (Azalea Camp) | No | Separate County Action | | |

*b Visitor estimates are based on parking availability and observed turn-over rates.*

*c Parking space numbers are estimates. Parking will be sized to meet growing demand over time.*

*d Parking in Upper Adobe Canyon includes expansion of the day use lot, visitor center lot, horse barn lot, and parking for additional small group and family campsites.*

*e State Parks supports the County's development of the Azalea Campground and Pythian Road trailhead and parking for Hood Mountain Regional Park.*



SUGARLOAF RIDGE STATE PARK

*5. References*

*6. Acronymns*

*7. Glossary*

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# 6. Acronyms

| | |
|---|---|
| ACSC | Areas of Critical State Concern |
| ADT | Average Daily Traffic |
| APCD | Air Pollution Control District |
| AQMD | Air Quality Management District |
| ARB | California Air Resource Board |
| BLM | Bureau of Land Management |
| BMP | Best Management Practices |
| C | Celsius |
| CAA | Clean Air Act |
| CAAA | Clean Air Act Amendments |
| Caltrans | California Department of Transportation |
| CCR | California Code of Regulations |
| CEQA | California Environmental Quality Act |
| CESA | California Endangered Species Act |
| CFP | California Fully Protected Species as designated by the California Fish and Game Code |
| CFR | Code of Federal Regulation |
| cfs | cubic feet per second |
| CNEL | Community Noise Equivalent Level |
| CNPS | California Native Plant Society |
| CO | Carbon Monoxide |
| CORRP | California Outdoor Recreation Resource Plan |
| CCC | California Coastal Commission |
| CUP | Conditional Use Permit |
| CVP | Central Valley Project |
| CWA | Clean Water Act |
| CZMA | Coastal Zone Management Act |

| | |
|---|---|
| dBA | A-Weighted Decibels |
| DEIR | Draft Environmental Impact Report |
| DFG | State of California, Department of Fish an Game |
| DOE | Department of Energy (U.S.) |
| du | dwelling units |
| DWR | State of California, Department of Water Resources |
| EIR | Environmental Impact Report |
| F | Fahrenheit |
| FCAA | Federal Clean Air Act |
| FEIR | Final Environmental Impact Report |
| FEMA | Federal Emergency Management Agency |
| FESA | Federal Endangered Species Act |
| FIRM | Flood Insurance Rate Map |
| FIP | Federal Implementation Plan |
| gal | gallon |
| GIS | Geographic Information System |
| GP | General Plan |
| GPS | Global Positioning System |
| HAPs | Hazardous Air Pollutants |
| HC | Hydrocarbons |
| HCP | Habitat Conservation Plan |
| ISO | Insurance Services Offices (Rating) |
| kW | Kilowatt |
| kWh | Kilowatt-Hour |
| LAFCO | Local Agency Formation Commission |

| | |
|---|---|
| LOS | Level of Service |
| M | Richter Scale Magnitude |
| mgd | million gallons per day |
| ml | milliliters |
| mm | millimeter |
| MOU | Memorandum of Understanding |
| msl | mean sea level |
| MW | megawatts |
| N | Nitrogen |
| NA | Not applicable |
| NAAQS | National Ambient Air Quality Standards |
| NCCP | Natural Communities Conservation Program |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act |
| $NO_x$ | Nitrogen Oxide(s) |
| NOP | Notice of Preparation |
| NPDES | National Pollutant Discharge Elimination System |
| NRCS | National Resource Conservation Service |
| NRHP | National Register of Historic Places |
| NTHP | National Trust for Historic Preservation |
| $O_3$ | Ozone |
| OHP | State of California, Office of Historic Preservation |
| OHV | Off-Highway Vehicle |
| ppb | parts per billion |
| ppm | parts per million |
| PRC | Public Resources Code |
| RWQCB | Regional Water Quality Control Board |

| | |
|---|---|
| SB | State Beach |
| SHPO | State Historic Preservation Officer |
| SMARA | California Surface Mining and Reclamation Act of 1975 |
| $SO_2$ | Sulfur Dioxide |
| SP | State Parks |
| SRA | State Recreation Area |
| SSC | Species of Special Concern |
| SWP | State Water Project |
| SWRCB | State Water Resources Control Board |
| TAC | Toxic Air Contaminants |
| THC | Total Hydro Carbons |
| TCM | Transportation Control Management/Measures |
| TSM | Transportation Systems Management |
| UC | University of California |
| USACE | U.S. Army Corps of Engineers |
| USBR | U.S. Bureau of Reclamation |
| USDA | U.S. Department of Agriculture |
| USDI | U.S. Department of the Interior |
| USDOT | U.S. Department of Transportation |
| USEPA | U.S. Environmental Protection Agency |
| USFS | U.S. Forest Service |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| V | Volts |
| V/C | Volume to capacity ratio (of traffic volume to roadway capacity) |

# 7. Glossary of Terms

**Adaptive Use:** use of a historic structure for a purpose other than for which it was originally intended.

**Aesthetics:** refer to 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 the shows movement within the last 11,000 years and can be expected to move within the next 100 years.

**Alluvium:** a general term for all detrital deposits resulting from the operations of modern rivers, thus including the sediments laid down in riverbeds, flood plains, lakes, fans at foot of mountain slopes and estuaries.

**Ambient Air Quality:** the atmospheric concentration (amount in specified volume of air) of a specific compound as actually experienced at a particular geographic location that may be some distance from the source of the relevant pollutant emissions.

**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.

**Aquifer:** the underground layer of water-bearing rock, sand, or gravel through which water can seep or be held in natural storage. Such water holding rock layers hold sufficient water to be used as a water supply.

**Bedrock:** the solid rock underlying unconsolidated surface materials.

**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.

**Bikeways:** bicycle travel way, encompasses bicycle lanes, bicycle paths, and bicycle routes.

**Best Management Practices (BMP):** the most current methods, treatments, or actions in regards 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 Coastal Commission:** established by the 1972 Coastal Act to review and approve projects and actions within a defined zone along the California coastline for compliance with the Coastal Act.

**California State Parks and Recreation Commission:** established in 1927 to advise the Director 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 State Parks' general plan (and amendments) for each park unit.

**California Environmental Quality Act (CEQA):** a state law (PRC §21000 et al.) 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.

**Classification:** official designation of units of the State Park System. Classification are established by the State Parks and Recreation Commission at the recommendation of Department staff and are based on the sensitivity and kind of unit's most important resources and what types of use the unit will receive from the public.

**Clean Water Act (CWA):** enacted in 1972 to create a basic framework for current programs to control water pollution; provide 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 unit'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.

**Constraints:** (1) the state of being restricted or confined within prescribed bounds (2) one that restricts, limits, or regulates; a check.

**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 prehistoric (dating from before European settlement) or historic (post-European contact).

**Cultural Preserve:** the subclassification protects areas of outstanding historic interest in state parks, including such features as sites, buildings, or zones where significant events in the flow of history in California occurred. They need to be large enough to protect resources from potential damage and to permit effective

management and interpretation and must also have complete integrity of the resources; no conflicting improvements, such as roads, are permitted. Natural resources values are secondary to historical values in cultural preserves.

**Culvert:** a drain, ditch, or conduit not incorporated in a closed system that carries drainage water under driveway, roadway, railroad, pedestrian walk or public way. Culverts are often built to channelize streams and as part of flood control systems.

**Cumulative Impact:** as defined by the state CEQA Guidelines (§15355) two or more individual effects which, when considered together are considerable or which 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 nonnative 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.

**Ecology:** the study of the interrelationship of living things to one another and their environment.

**Ecosystem:** a community consisting of all biological organisms (plant, animals, insects, etc.) in a given area interacting with the physical environment (soil, water, air) to function together as a unit of nature.

**Ecotone:** a transition area between two adjacent ecological communities, usually exhibiting competition between organisms common to both; often a rich biological area.

**Effect/Impact:** an environmental change; as defined by State CEQA Guidelines §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 is considered to be endangered when its prospects for survival and reproduction are in immediate jeopardy form one or more causes. The U.S. Fish and Wildlife Service and/or the California Department of Fish and Game make this designation.

**Endemic:** indigenous to, and restricted to, a particular area.

**Environment:** as defined in State CEQA Guidelines §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 effects of 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.

**Ethnographic:** a multi-format group of materials gathered and organized by an anthropologist, folklorist, or other cultural researcher to document human life and traditions.

**Exotic Species:** a species occurring in an area outside of its historically known natural range that has been intentionally introduced to or have 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).

**Floodway:** the channel of a natural stream or river and portions of the flood plain adjoining the channel, which are reasonable required to carry and discharge the floodwater or flood flow of any natural stream or river.

**Forbes:** any herbaceous (non-woody) plant having broad leaves, and therefore excluding grasses and grass-like plants.

**Geology:** the scientific study of the origin, history, and structure of the earth.

**General Plan (GP):** a genera plan is 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 unit as well as addressing environmental impacts in a programmatic manner. A park unit must have an approved general plan prior to implementing any major development project.

**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.

**Historic Character:** 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. These qualities are often referred to as character defining.

**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, which reduces or prevents absorption of water into land.

**Infrastructure:** public services and facilities, such as sewage-disposal systems, water supply systems, other utility systems, road and site access systems.

**Initial Study:** as defined by State CEQA Guidelines §15365, an analysis of a project's potential environmental effects and their relative significance. An initial study is preliminary to deciding whether to prepare a negative declaration or an EIR.

**Interpretation:** In this planning document, it refers to a communication process, designed to reveal meanings and relationships of our cultural and natural heritage, through involvement with objects, artifacts, landscapes, sties, and oral histories.

**Kilowatt:** A measure of the rate of electrical flow equal to one thousand watts.

**Kilowatt – Hour:** A measure of quality of electrical consumption equal to the power of one kilowatt acting for one 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 §15370).

**Morphology:** Form and structure of a plant that is typical.

**Mycology:** The study of fungi.

**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 physical integrity to accurately convey their appearance during their period of significance. Crystal Cove was listed on the NRHP as a Historic District on June 15, 1976.

**Native species:** A plant or animal that is historically indigenous to a specific site area.

**Negative Declaration:** When a project is not exempt from CEQA and will not have a significant effect upon the environment a negative declaration must be written (see State CEQA Guidelines §15371).

**Natural Preserve:** A subclassification within a unit of the State Park System that requires parks and Recreation Commission approval. Its main purpose is to maintain such features as rare and endangered plants and animals and their supporting ecosystems in perpetuity.

**Office of Historic Preservation (OHP):** The governmental agency primarily responsible for the statewide administration of the historic preservation program in California. Its responsibilities include identifying, evaluating, and registering historic properties and ensuring compliance with federal and state regulatory obligations.

**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.

**Project:** As defined by the State CEQA Guidelines §15378, a project can be one of the following a) activities undertaken by any public agency; b) activities undertaken by a person which are supported in whole or in part through contracts, grants, subsidies, loans or other forms of assistance from one or more public agencies; c) activities involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies.

**Public Resources Code (PRC):** In addition to the State Constitution and Statues, California Law consists of 29 codes covering various subject areas. The PRC addresses natural, cultural, aesthetic, and recreation resources of the State.

**Riprap:** A loose assemblage of broken rock or concrete often used to prevent erosion.

**Riparian:** Riparian habitat represents the vegetative and wildlife areas 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 absences 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 §15382, 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.

**Shoulder Season:** The months of the year immediately before and after the park’s busy recreation season. This term generally refers to April and October, but could also shade into late March and early November, depending upon activities under discussion.

**Siltation:** The process of silt deposition. Silt is a loose sedimentary material composed of finely divided particles of soil or rock, often carried in cloudy suspension in water.

**Solid Waste:** Term used to describe the mixture of items, discarded by agricultural, residential and non-residential activities.

**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.

**State Historic Preservation Officer (SHPO):** The chief administrative officer for the OHP and is also the executive secretary of the State Historic Resources Commission.

**Subclassification:** A separate classification for a portion or unit of the State Park System. The State Parks and Recreation Commission establish these at the recommendation of Department staff. Cultural Preserves and Wilderness are subclassifications.

**Subsidence:** The gradual sinking of land as a result of natural or man-made causes.

**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 trial, 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:** Includes the environment of subtidal, mudflats, tidal salt marsh, periodically inundated or brackish marsh, diked marshland, associated upland, and freshwater marsh.

**Wilderness:** Within state parks, this is a subclassification requiring approval by the State Parks and Recreation Commission. It provides protection for plants and animals and their supporting ecosystems while also encouraging recreational use. Its provision includes no permanent facilities other than “semi-improved campgrounds” and possible retention of structures existing when the land was designated. No mechanical equipment may be used in a wilderness (including bicycles), and there is a 2000-foot no-fly zone above.

# 8. Report Contributors

## CALIFORNIA DEPARTMENT OF PARKS AND RECREATION

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# SUGARLOAF RIDGE STATE PARK

## APPENDICES


APPENDIX A: CEQA NOTICES

APPENDIX B: BIOLOGICAL RESOURCES REGULATORY BACKGROUND

APPENDIX C: PLANT LIST FOR THE SUGARLOAF RIDGE STATE PARK GENERAL PLAN STUDY AREA

APPENDIX D: CIRCULATION AND TRAFFIC BACKGROUND

APPENDIX E: MASTER RESPONSE F FROM SONOMA COUNTY INN FINAL EIR

APPENDIX F: EXCERPT FROM RESPONSE TO COMMENT 9.1 FROM SONOMA COUNTY INN FINAL EIR

APPENDIX G: PREHISTORIC SETTING

APPENDIX H: CULTURAL RESOURCES IDENTIFIED WITHIN THE SUGARLOAF RIDGE STATE PARK GENERAL PLAN STUDY AREA (CONFIDENTIAL)

# *Appendix A: CEQA Notices*

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*State of California – The Resources Agency*

**DEPARTMENT OF PARKS AND RECREATION**

# NOTICE OF PREPARATION

## *SUGARLOAF RIDGE STATE PARK GENERAL PLAN*

## ENVIRONMENTAL IMPACT REPORT

The California Department of Parks and Recreation (DPR), as the Lead Agency, will prepare a programmatic Environmental Impact Report (EIR) for the Sugarloaf Ridge State Park General Plan. We would like to know the views of interested persons, organizations, and agencies as to the scope and content of the information to be included and analyzed in the EIR. Agencies should comment on the elements of the environmental information that are relevant to their statutory responsibilities in connection with the proposed project.

The project description, location, and potential environmental effects of the proposed project (to the extent known) are contained in this Notice of Preparation (NOP).

Due to the time limits mandated by State law, your response should be sent at the earliest possible date, but **not later than 30 days** after issuance of this notice, which establishes the final deadline as **February 14, 2003.**

Please send your written response to Wayne Woodroof, Statewide General Plan Coordinator, California Department of Parks and Recreation, at the address shown below. Responses should include the name of a contact person at your agency.

**DEPARTMENT OF PARKS AND RECREATION CONTACT PERSON:**

Mr. Wayne Woodroof
Manager, Statewide General Plan Program
California Department of Parks and Recreation
Northern Service Center
One Capitol Mall, Suite 500
Sacramento, CA 95814
(916) 445-8850

A planning workshop and EIR scoping meeting has been scheduled to give the public an opportunity to comment on the scope, focus, and content of the Sugarloaf Ridge State Park General Plan and EIR. The meeting will be held from 6:30 pm to 8:30 pm on February 4, 2003 at the Kenwood Fire Protection District station located at 9045 Sonoma Highway, Kenwood, CA.

**PROJECT TITLE:** Sugarloaf Ridge State Park General Plan

**PROJECT LOCATION:**
Sugarloaf Ridge State Park is located in Sonoma County, approximately three miles northeast of Kenwood and seven miles east of Santa Rosa (see attached Figure 1: Local Vicinity Map and Figure 2: Regional Vicinity Map). The park is located on the western slopes of the Mayacamas Mountains, between the Sonoma and Napa valleys.

**PROJECT DESCRIPTION:**
DPR's General Plan Unit, in conjunction with its Silverado District office, is in the process of developing a General Plan for Sugarloaf Ridge State Park ("Park") in accordance with Public Resources Code §5002.2 referencing General Plan guidelines and §21000 et seq. concerning the California Environmental Quality Act (CEQA). The purpose of the General Plan is to guide future development activities and management objectives at the Park. A carrying capacity analysis will be integrated into the general planning process and EIR to evaluate the level of visitor use in relationship to its potential effect on natural, cultural, aesthetic, and recreational resources, as well as overall visitor experience.

The Sugarloaf Ridge State Park General Plan study area encompasses approximately 10,000 acres of land on the eastern edge of Sonoma Valley, about a one- to two-hour drive away from the densely populated San Francisco Bay and Sacramento metropolitan areas. The pressures from nearby urban population growth and expanding vineyards in Sonoma County have begun encroaching upon the once plentiful wildlands in the hillsides of the Sonoma Valley The Sonoma County Agricultural Preservation and Open Space District (SCAPOSD) has acquired conservation easements and properties in fee title in support of Sugarloaf Ridge State Park in the past and is currently in negotiations with some nearby landowners. Because of the evolving context in

which the park is located, the General Plan study area includes the current boundaries of Sugarloaf Ridge State Park, nearby Hood Mountain Regional Park operated by the Sonoma County Regional Parks Department, and lands surrounding and within the existing park boundaries that may have an influence on the future management of the State Park (see Figure 1). Lands are within the study area due to their status with SCAPOSD, their direct proximity to the Park, their location within the viewshed of the park, or their function as an important component of wildlife habitat.

Although the General Plan study area encompasses many surrounding privately and publicly-owned properties, the General Plan will provide specific management guidelines and recommendations only for the properties owned and operated by State Parks. Because of the similar recreational objectives and proximity of Hood Mountain Regional Park, the General Plan may also include recommendations for joint management strategies between the two parks, with consultation from Sonoma County Regional Parks Department.

The study area lands are mostly steep rocky hillsides leading to the Mayacamas Mountains ridge, with intervening rolling hills, including 'Sugarloaf Ridge', the namesake of the park. The headwaters of Sonoma and Santa Rosa Creeks are contained within the study area, and the ridges within the park form the dividing line between the two watersheds. The State Park lands offer a range of recreational resources including hiking, camping, mountain biking, equestrian use, picnicking, wildlife, wildflower and astronomical viewing at the Robert Ferguson Observatory. Many of the Park's facilities were built as temporary buildings and need to be upgraded or relocated to minimize environmental disturbance and provide a positive visitor experience.

Preparation of the General Plan is in its early stages, so ultimate land use and resources management provisions have not yet been determined. DPR is currently in the process of evaluating existing resources and management opportunities and constraints at the Park that will aid in the development of the General Plan, with plan provisions to minimize any potential environmental impact. Known resources within the study area include:

- Headwaters of Sonoma Creek including it's main tributary of Calabasas Creek to the south, and the headwaters of Santa Rosa Creek;
- Sensitive habitats (e.g., Mesic Herbaceous, Native Grasslands, White Alder Riparian Woodland, Rock Outcrops, Serpentine Habitats);
- Special-status species (e.g., Steelhead, California red-legged frog, and others);
- Cultural resources;
- High-use recreational areas (e.g., family campground, group camp, extensive multi-use trails, Robert Ferguson Observatory);
- Existing and potential acquisition areas; and
- Clear and dark night skies for celestial viewing.

Issues that will be considered as part of the General Plan process include, but are not limited to, the following:

- Protection and long-term management of sensitive natural, cultural, and aesthetic resource areas;
- Increased recreational access, including undeveloped area access;
- Expansion of recreational facilities and access (e.g., environmental education camps and primitive campground areas, roads and trails );
- Development of interpretive facilities;
- Potential opportunities for concessions;
- Property acquisition to form contiguous management tracts;
- Relationship with Hood Mountain Regional Park, managed by the Sonoma County Regional Parks Department; and
- Developing a management relationship with owners of contributing properties.

**POSSIBLE ENVIRONMENTAL EFFECTS:**
Although ultimate land use and resources management provisions of the General Plan have not yet been determined, generally expected types of potential environmental impacts that could occur as a result of the General Plan can be identified. The General Plan will seek to minimize any potential effects through the plan alternatives development process. Based on the resource characteristics of the Park and generally anticipated Park needs and uses, potential environmental effects that will be addressed in the General Plan and also in the EIR include:

- Potential conflicts between facility development and sensitive wildlife species/natural communities;
- Potential for effects to significant cultural resources in the park from facility development;
- Potential erosion/water quality impacts along the Sonoma and Santa Rosa Creeks and their tributaries;
- Potential for alteration of the existing drainage pattern of the project area;
- Availability of water supply and the construction of new water or septic tank facilities;
- Traffic impacts resulting from potential change in recreational use levels; and
- Air and noise impacts resulting from potential construction activities, potential increased use, and traffic.

If the potential to take threatened and endangered species is identified, the EIR will describe future State and Federal consultation and permit requirements that will be necessary for facility development and the types of typical mitigation expected.

**INTENDED USE OF THE EIR:**
DPR and the Parks and Recreation Commission will use the EIR component of the General Plan to consider the environmental effects, mitigation measures, and alternatives, when reviewing the proposed General Plan for approval. The EIR will serve as the State's CEQA compliance document for adoption of the General Plan. It will also serve as the programmatic environmental document that may be referenced in implementing future actions included in the General Plan. Subsequent project-level activities identified in the General Plan will be examined in light of the program EIR to determine whether an additional environmental document must be prepared prior to project approval and implementation (State CEQA Guidelines 15168(c)). Responsible agencies may also use the EIR as needed for subsequent discretionary actions.

**By:** _____

**Signature:** _____

**Title:** _____

**Date:** _____

**Attachments:** Figure 1: Local Vicinity Map
Figure 2: Regional Vicinity Map

## Figure 1: Local Vicinity Map

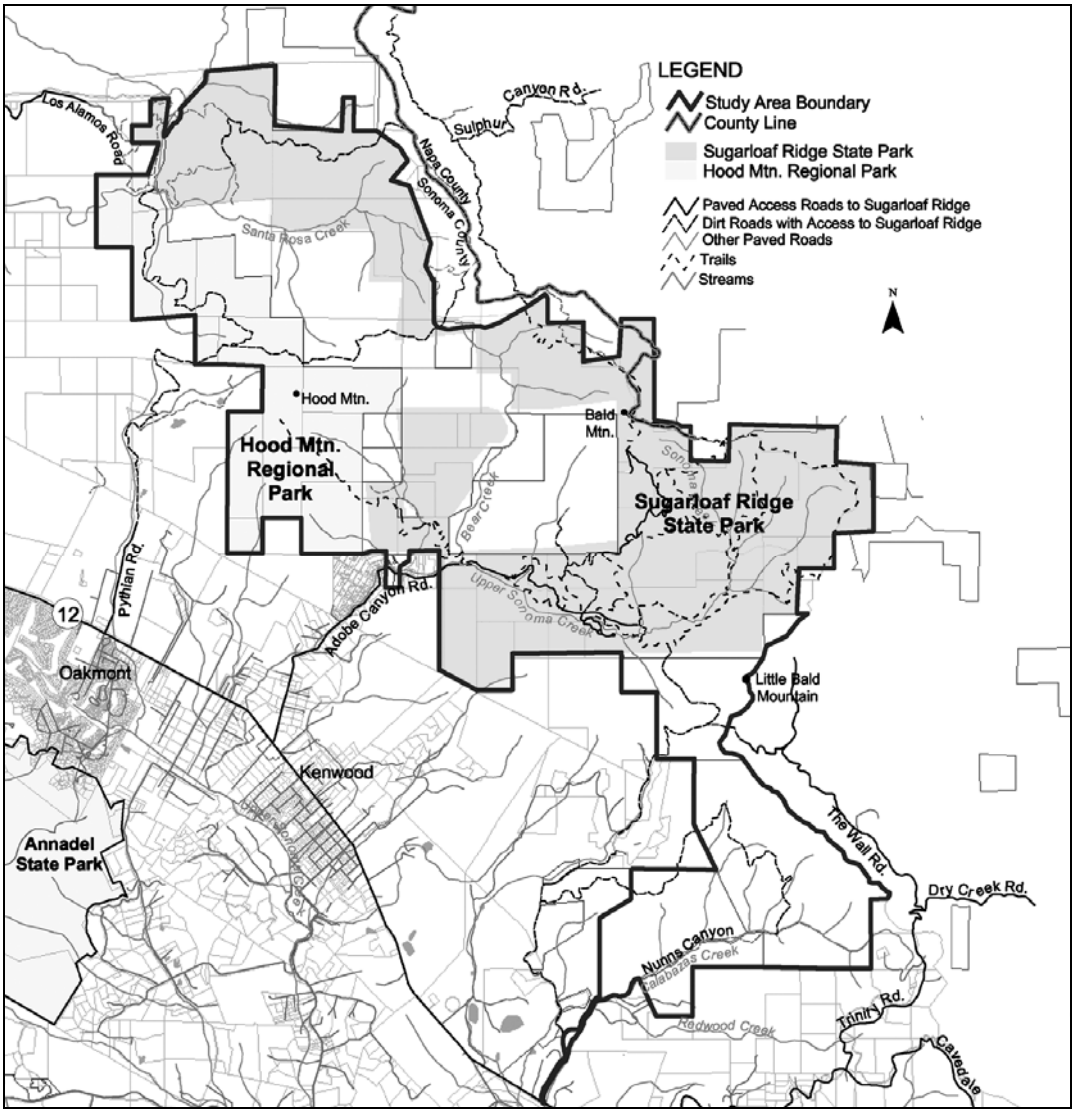
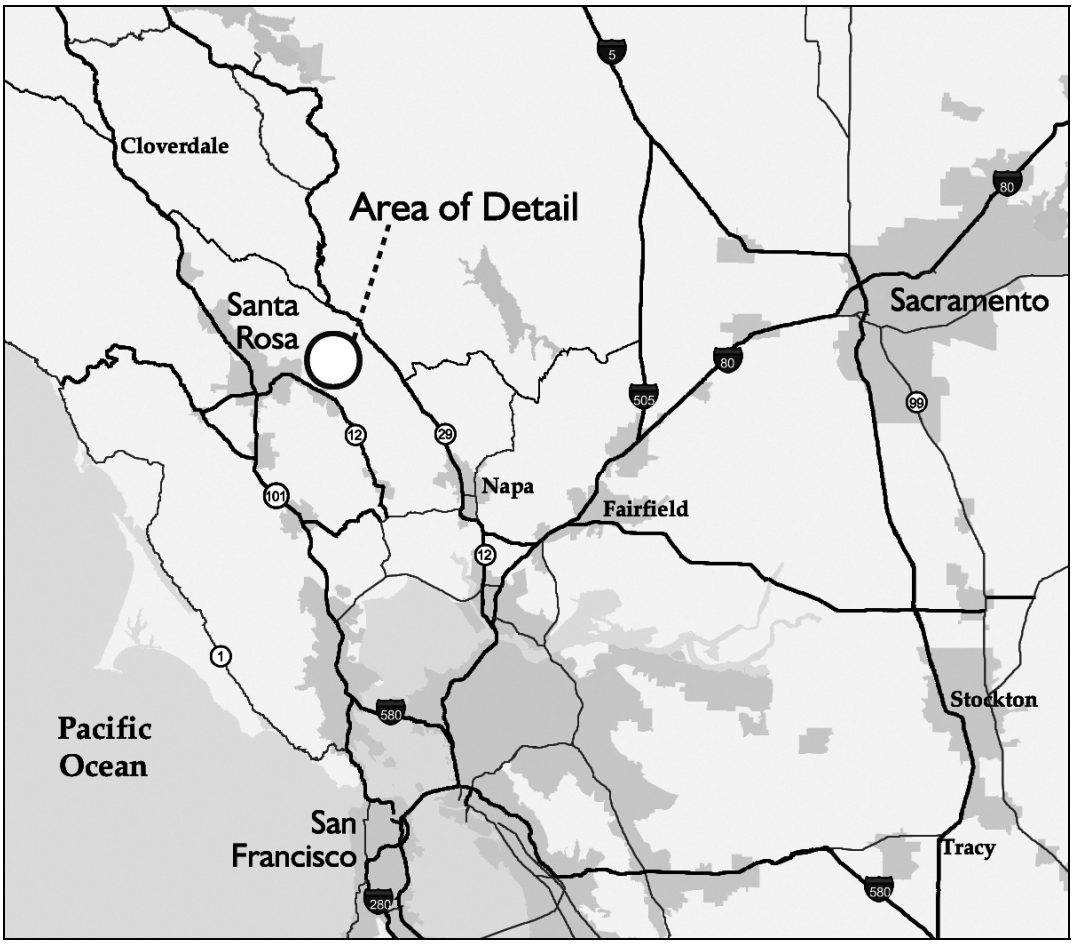


**Figure 2: Regional Vicinity Map**



December 10, 2003

All Interested Agencies, Organizations, and Persons

# NOTICE OF AVAILABILITY

## SUGARLOAF RIDGE STATE PARK PRELIMINARY GENERAL PLAN DRAFT ENVIRONMENTAL IMPACT REPORT

A Draft Environmental Impact Report (EIR) has been prepared by the California Department of Parks and Recreation (Department) for the Sugarloaf Ridge State Park Preliminary General Plan (General Plan). The Department is the lead agency, pursuant to the California Environmental Quality Act (CEQA), responsible for preparation of this document.

**PROJECT LOCATION:**
Sugarloaf Ridge State Park (Park) is located in the Mayacamas Ridge between the Sonoma and Napa Valleys just east of the City of Santa Rosa in Sonoma County. The 5,100 acre Park is accessible from State Route 12 and is approximately a 60 miles north of San Francisco and a similar distance to the west of Sacramento. It sits adjacent to the 1,450 acre Hood Mountain Regional Park.

**PROJECT DESCRIPTION:**
The purpose of the proposed project is to develop a General Plan for the Park which has nearly doubled in size in the last five years. The Park is a popular getaway for local residents and regional visitors, and hosts numerous recreational activities in the Mayacamas wildlands including camping, hiking, and horseback and bicycle riding on its extensive trail system. The Park is home to a number of important natural and cultural resources including the headwaters to four of the region's watersheds, extraordinarily diverse wildlife habitat and a rich cultural history. The Park hosts two concessions including the Robert Ferguson Observatory and an equestrian stable. The Park has not had a General Plan before and needs a guide for future development activities and management objectives.

The General Plan contains a comprehensive and cohesive set of park-wide and location-specific goals and guidelines for the long-term direction of the Park. Several park management zones are identified in the plan, encompassing the entire Park and providing detailed direction tailored

to each of the areas within the Park. The four zones are organized by the watersheds that physically divide them – Santa Rosa Creek, Upper Bear Creek, Adobe Creek, and Calabasas Creek. Each zone provides for high-quality park and wildland experiences for visitors while enhancing and preserving the natural and cultural features that make the Park a unique destination. The General Plan responds to the issues affecting the park and seeks to balance the need for recreational facilities, the desire for a positive visitor experience supported by the park's facilities and aesthetics, and protection of the park's natural and cultural resources.

Park improvements are identified in the General Plan's goals and guidelines, including protection of water quality, provision of primitive campsites, protection of large expanses of preserved wildland areas, and development of key trail connections linking the broader and newly expanded areas of the Park. Construction of a trailhead and parking lot at an abandoned quarry site would also support public access into the newly acquired Nunns Canyon property.

The hub of visitor-serving facilities would remain in Adobe Canyon and limited expansion of facilities in this area is recommended. Expansion of the visitor center and the Robert Ferguson Observatory would allow for improved interpretation opportunities. Relocating the large group camp away from the observatory would resolve existing light conflicts between the two uses. Re-development of a small equestrian group campground with corrals is proposed near the stable concession. Moderate expansion of the family campground and picnic facilities would also help meet some of the expected increase in visitor demand.

**SUMMARY OF IMPACTS:**
The EIR analyzes a program-level analysis of the potential environmental impacts associated with the Preliminary General Plan. No significant environmental impacts would occur as a result of the proposed project.

**PUBLIC COMMENT PERIOD:**
**The 45-day public comment period for this Draft EIR will commence on December 12, 2003 and concludes on January 27, 2004.** Copies of the Preliminary General Plan and Draft EIR will be available on line at www.parks.ca.gov and at these local locations:

Diablo Vista District Headquarters
363 3rd Street West
Sonoma, California 95476

The Rincon Valley Regional Library
6959 Montecito Blvd.
Santa Rosa, CA 95409

Sonoma County Central Library
3rd and E Streets
Santa Rosa, CA 95404

Please submit comments in writing to the address provided below. Comment letters must be postmarked by January 27, 2004.

Mr. Wayne Woodroof
Manager, Statewide General Plan Program
California Department of Parks and Recreation
Northern Service Center
One Capitol Mall, Suite 500
Sacramento, CA 95814
(916) 445-8850

April 1, 2004

All Interested Agencies, Organizations, and Persons

## NOTICE OF AVAILABILITY

**SUGARLOAF RIDGE STATE PARK GENERAL PLAN and FINAL ENVIRONMENTAL IMPACT REPORT**

The Final Environmental Impact Report (EIR) has been prepared by the California Department of Parks and Recreation (Department) for the Sugarloaf Ridge State Park General Plan (General Plan). The Final EIR is an adjunct to the Preliminary General Plan and Draft EIR and includes comments received during the public review period[1] and the Department's responses to those comments. The Department is the lead agency, pursuant to the California Environmental Quality Act (CEQA), responsible for preparation of this document.

[1] The 45-day public comment period for the Draft EIR began on December 12, 2003 and concluded on January 27, 2004.

**Project Location:**
Sugarloaf Ridge State Park (Park) is located in the Mayacamas Ridge between the Sonoma and Napa Valleys just east of the City of Santa Rosa in Sonoma County. The 5,100 acre Park[2] is accessible from State Route 12 and is approximately a 60 miles north of San Francisco and a similar distance to the west of Sacramento. It sits adjacent to the 1,450 acre Hood Mountain Regional Park.

**Project Description:**
The project developed a General Plan for the Park which has nearly doubled in size in the last five years. The Park is a popular getaway for local residents and regional visitors, and hosts numerous recreational activities in the Mayacamas wildlands including camping, hiking, and horseback and bicycle riding on its extensive trail system. The Park is home to a number of important natural and cultural resources including the headwaters to four of the region's watersheds, extraordinarily diverse wildlife habitat and a rich cultural history. The Park hosts two concessions including the Robert Ferguson Observatory and an equestrian stable. The Park has not had a General Plan before and needs a guide for future development activities and management objectives.

The General Plan contains a comprehensive and cohesive set of park-wide and location-specific goals and guidelines for the long-term direction of the Park. Several park management zones are identified in the plan, encompassing the entire Park and providing detailed direction tailored to each of the areas within the Park. The four zones are organized by the watersheds that physically divide them – Santa Rosa Creek, Upper Bear Creek, Adobe Creek, and Calabasas Creek. Each zone provides for high-quality park and wildland experiences for visitors while enhancing and preserving the natural and cultural features that make the Park a unique destination. The General Plan responds to the issues affecting the park and seeks to balance the need for recreational facilities, the desire for a positive visitor experience supported by the park's facilities and aesthetics, and protection of the park's natural and cultural resources.

[2] The 5,100 acre figure includes the 1,200 acre Beltane parcel, for which the Sonoma County Agricultural Preservation and Open Space District is in purchasing negotiations.

Park improvements are identified in the General Plan's goals and guidelines, including protection of water quality, provision of primitive campsites, protection of large expanses of preserved wildland areas, and development of key trail connections linking the broader and newly expanded areas of the Park. Construction of a trailhead and parking lot at an abandoned quarry site would also support public access into the newly acquired Nunns Canyon property.

The hub of visitor-serving facilities would remain in Adobe Canyon and limited expansion of facilities in this area is recommended. Expansion of the visitor center and the Robert Ferguson Observatory would allow for improved interpretation opportunities. Relocating the large group camp away from the observatory would resolve existing light conflicts between the two uses. Re-development of a small equestrian group campground with corrals is proposed near the stable concession. Moderate expansion of the family campground and picnic facilities would also help meet some of the expected increase in visitor demand.

**Summary of Impacts:**
The EIR provides a program-level analysis of the potential environmental impacts associated with the Preliminary General Plan. No significant environmental impacts would occur as a result of the proposed project.

**Final EIR Available for Public Review**
Two documents are now available for public review. First, The Preliminary General Plan and Draft EIR, and now the Final EIR (Response to Comments) are available on line at www.parks.ca.gov and at these local locations:

Diablo Vista District Headquarters
363 3rd Street West
Sonoma, California 95476

Sonoma Valley Regional Library
755 West Napa St.
Sonoma, CA 95476

The Rincon Valley Regional Library
6959 Montecito Blvd.
Santa Rosa, CA 95409

Sonoma County Central Library
3rd and E Streets
Santa Rosa, CA 95404

*State of California – The Resources Agency*

**DEPARTMENT OF PARKS AND RECREATION**

# NOTICE OF DETERMINATION

**TO**: State Clearinghouse
Office of Planning and Research
1400 Tenth Street, Room 222
P.O. Box 3044
Sacramento, California 95812-3044

**FROM**: Department of Parks and Recreation
1416 Ninth Street
P.O. Box 942896
Sacramento, California 94296-0001

**SUBJECT**: Filing of the Notice of Determination in compliance with Section 21108 of the Public Resources Code.

**PROJECT TITLE**: Sugarloaf Ridge State Park Final General Plan and Environmental Impact Report

**STATE CLEARINGHOUSE NUMBER**: 2003012051

**CONTACT PERSON**: Mr. Wayne Woodroof **PHONE NO.**: (916) 445-8850
Manager, Statewide General Plan Program
California Department of Parks and Recreation
Northern Service Center
One Capital Mall, Suite 500
Sacramento, CA 95814

**PROJECT LOCATION**:
Sugarloaf Ridge State Park, Sonoma and Napa Counties

**PROJECT DESCRIPTION**:
A final General Plan and Environmental Impact Report has been prepared for the Park which has nearly doubled in size in the last five years. The Park is a popular getaway for local residents and regional visitors, and hosts numerous recreational activities in the Mayacamas wildlands including camping, hiking, and horseback and bicycle riding on its extensive trail system. The Park is home to a number of important natural and cultural resources including the headwaters to four of the region's watersheds, extraordinarily diverse wildlife habitat and a

rich cultural history. The Park hosts two concessions including the Robert Ferguson Observatory and an equestrian stable. The Park has not had a General Plan before and needs a guide for future development activities and management objectives.

The General Plan contains a comprehensive and cohesive set of park-wide and location-specific goals and guidelines for the long-term direction of the Park. Several park management zones are identified in the plan, encompassing the entire Park and providing detailed direction tailored to each of the areas within the Park. The four zones are organized by the watersheds that physically divide them – Santa Rosa Creek, Upper Bear Creek, Adobe Creek, and Calabasas Creek. Each zone provides for high-quality park and wildland experiences for visitors while enhancing and preserving the natural and cultural features that make the Park a unique destination. The General Plan responds to the issues affecting the park and seeks to balance the need for recreational facilities, the desire for a positive visitor experience supported by the park's facilities and aesthetics, and protection of the park's natural and cultural resources.

Park improvements are identified in the General Plan's goals and guidelines, including protection of water quality, provision of primitive campsites, protection of large expanses of preserved wildland areas, and development of key trail connections linking the broader and newly expanded areas of the Park. Construction of a trailhead and parking lot at an abandoned quarry site would also support public access into the newly acquired Nunns Canyon property.

The hub of visitor-serving facilities would remain in Adobe Canyon and limited expansion of facilities in this area is recommended. Expansion of the visitor center and the Robert Ferguson Observatory would allow for improved interpretation opportunities. Relocating the large group camp away from the observatory would resolve existing light conflicts between the two uses. Re-development of a small equestrian group campground with corrals is proposed near the stable concession. Moderate expansion of the family campground and picnic facilities would also help meet some of the expected increase in visitor demand.

**The California Department of Parks and Recreation has approved this project on May 14, 2004, and has made the following determinations:**

1. ☒ The project will not have a significant effect on the environment.

   ☐ The project will have a significant effect on the environment.

2. ☐ A Final Negative Declaration was prepared and adopted, pursuant to the provisions of the California Environmental Quality Act (CEQA).

   ☒ A Final Environmental Impact Report has been completed in compliance with CEQA, and has been presented to the decision-making body of this Department for its independent review and consideration of the information, prior to approval of the project.

3. Mitigation measures ☐ were ☒ were not made conditions of project approval.

4. A Statement of Overriding Considerations ☐ was ☒ was not adopted for this project.

5. Findings ☐ were ☒ were not made on environmental effects of the project.

The EIR and record of project approval may be examined at the California Department of Parks and Recreation, Northern Service Center, located at One Capital Mall, Suite 500 in Sacramento, California.

_____

Dr. Mark Schrader
Deputy Director
Acquisition and Development

_____

Date

# *Appendix B: Biological Resources Regulatory Background*

Many biological resources in California are protected and/or regulated by laws, regulations, and policies. Key regulatory compliance issues that may need to be addressed during implementation of the General Plan are listed below.

## Federal Regulatory Issues

### *Federal Endangered Species Act*

Pursuant to the Federal Endangered Species Act (FESA), USFWS has regulatory authority over projects that may affect the continued existence of a federally listed (Threatened or Endangered) species. Section 9 of FESA prohibits the take of federally listed species; take is defined under FESA, in part, as killing, harming, or harassment of such species. Under federal regulations, take is further defined to included habitat modification or degradation where it actually results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Section 7 of FESA outlines procedures for federal interagency cooperation and participation in the conservation and recovery of federally listed species and designated critical habitat. Section 7(a) (2) requires federal agencies to consult with other federal agencies with regulatory authority to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat identifies specific areas that have the physical and biological features that are essential to the conservation of a listed species, and that may require special management considerations or protection.

For projects where a federal nexus is not involved and take of a listed species may occur, the project proponent may seek to obtain an incidental take permit under Section 10(a) of FESA. Section 10(a) of FESA allows USFWS to permit the incidental take of listed species if such take is accompanied by a Habitat Conservation Plan (HCP) that

includes components to minimize and mitigate impacts associated with the take.

### *Clean Water Act*

The U.S. Army Corps of Engineers (USACE) regulates the placement of fill into Waters of the U.S. under Section 404 of the Clean Water Act. Waters of the U.S. include lakes, rivers, streams, and their tributaries and wetlands. Wetlands are defined under Section 404 as areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Activities that require a permit under Section 404 include, but are not limited to, placing fill or riprap, grading, mechanized land clearing, and dredging. Any activities that results in the deposit of dredge or fill material within the "Ordinary High Water Mark" of Waters of the U.S. usually requires a permit from USACE, even if the area is dry at the time the activity takes place. A variety of processes are available for obtaining Section 404 authorization from USACE, ranging from the Nationwide Permit Process to the Individual Permit Process.

## State Regulatory Issues

### *California Endangered Species Act*

Pursuant to the California Endangered Species Act (CESA), a permit from the California Department of Fish and Game (CDFG) is required for projects that could result in "take" of a state-listed Threatened or Endangered species. Section 2080 of CESA prohibits take of state-listed species. The take of state-listed species incidental to other otherwise lawful activities requires a permit, pursuant to Section 2081(b) of CESA. The state has the authority to issue an incidental take permit under Section 2081 of the Fish and Game Code, or to coordinate with USFWS during the Section 10(a) process to make the federal permit also apply to state-listed species.

### *Section 1600 of the California Fish and Game Code*

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources is subject to regulation by CDFG, pursuant to Sections 1601 of the

California Fish and Game Code. Section 1601 makes it unlawful for any governmental agency, state or local, and any public utility to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake without first notifying CDFG of such activity. The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. CDFG's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A CDFG Streambed Alteration Agreement must be obtained for any project that would result in an impact to a river, lake, or stream.

### *Section 3503.5 of the California Fish and Game Code*

Section 3503.5 of the California Fish and Game Code states that it is "unlawful to take, possess, or destroy any birds-of-prey in the orders Falconiformes or Strigiformes." These orders include hawks, owls, eagles, and falcons. The loss of an active nest is considered a violation of this code by CDFG. This statute does not provide for the issuance of any type of incidental take permit.

# *Appendix C: Plant List for Sugarloaf Ridge State Park General Plan Study Area*

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| *Acer macrophyllum* | Big-leaf maple |
| *Achillea millefolium* | Yarrow |
| *Achyrachaena mollis* | Blow-wives |
| *Adenocaulon bicolor* | Trail plant, Indian guide, Silver arrow |
| *Adenostoma fasciculatum* | Chamise |
| *Adiantum aleuticum* | Five-finger fern |
| *Adiantum jordanii* | California maiden-hair Fern |
| *Aegilops triuncialis* | Barbed goatgrass |
| *Aesculus californica* | California buckeye |
| *Agoseris apargioides* | Agoseris |
| *Agoseris grandiflora* | Large-flowered Agoseris |
| *Agoseris heterophylla* | Annual Agoseris |
| *Agoseris retrorsa* | Spear-leaved Agoseris |
| *Agrostis capillaris* | Colonial bent grass |
| *Agrostis exarata* | Western bent grass |
| *Agrostis oregonensis* | Bent grass |
| *Agrostis pallens* | Bent grass |
| *Agrostis pallens* | Bent grass |
| *Agrostis sp.* | Bent grass |
| *Aira caryophyllea* | Silver European hair grass |
| *Allium amplectens* | Narrow-leaved onion |
| *Allium falcifolium* | Scythe-leaved onion |
| *Allophyllum divaricatum* | Allophyllum |
| *Alnus rhombifolia* | White alder |
| *Alnus rubra* | Red alder |
| *Amelanchier alnifolia* | Service berry |
| *Amelanchier utahensis* | Utah service berry |
| *Amorpha califomica* var. *napensis* | False Indigo |
| *Amsinckia menziesii* var. *intermedia* | Fiddleneck |
| *Anagallis arvensis* | Scarlet pimpernel |
| *Anaphalis margaritacea* | Pearly everlasting |
| *Angelica tomentosa* | Angelica |
| *Anthemis cotula* | Mayweed |
| *Anthriscus caucalis* | Bur chervil |
| *Antirrhinum virga* | Tall snapdragon |
| *Aphanes occidentalis* | Western lady’s mantle |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| *Apiastrum angustifolium* | Wild celery |
| *Aquilegia eximia* | Columbine |
| *Aquilegia formosa* | Columbine |
| *Arabis breweri* | Brewer's rock cress |
| *Arabis glabra* var. *glabra* | Tower mustard |
| *Aralia californica* | Elk Clover |
| *Arbutus menziesii* | Pacific madrone |
| *Arctostaphylos canescens* | Hoary manzanita |
| *Arctostaphylos glandulosa* ssp. *glandulosa* | Eastwood manzanita |
| *Arctostaphylos manzanita* | Common manzanita |
| *Arctostaphylos stanfordiana* ssp. *stanfordiana* | Stanford Manzanita |
| *Arctostaphylos tomentosa* ssp. *crustacea* | Brittle-leaf manzanita |
| *Arctostaphylos viscida* | White-leaved manzanita |
| *Aristolochia californica* | California pipevine |
| *Arnica discoidea* | Rayless Arnica |
| *Artemisia douglasiana* | Mugwort |
| *Asclepias cordifolia* | Purple Milkweed |
| *Aspidotis densa* | Indian's dream |
| *Aster radulinus* | Rough-leaved aster |
| *Astragalus gambelianus* | Dwarf locoweed |
| *Athysanus pusillus* | Dwarf Aathysanus |
| *Avena barbata* | Slender wild oat |
| *Avena fatua* | Wild oat |
| *Avena sativa* | Cultivated oat |
| *Baccharis pilularis* | Coyote brush |
| *Barbarea orthoceras* | Winter cress |
| *Barbarea vulgaris* | Common winter cress |
| *Boykinia occidentalis* | Boykinia |
| *Brachypodium distachyon* | Brachypodium |
| *Brassica nigra* | Black mustard |
| *Brassica rapa* | Field mustard |
| *Briza maxima* | Large quzking grass |
| *Briza minor* | Small quaking grass |
| *Brodiaea elegans* ssp. *elegans* | Harvest brodiaea |
| *Bromus carinatus* var. *carinatus* | California brome |
| *Bromus diandrus* | Ripgut grass |
| *Bromus hordeaceus* | Soft chess |
| *Bromus laevipes* | Woodland brome grass |
| *Bromus madritensis* ssp. *rubens* | Foxtail chess |
| *Calamagrostis ophitidis* | Serpentine reed grass |
| *Calandrinia ciliata* | Red maids |
| *Calochortus amabilis* | Diogenes' lantern, Golden fairy |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| | lantern |
| *Calochortus luteus* | Yellow mariposa lily |
| *Calochortus tolmiei* | Pussy ears |
| *Calycadenia truncata* | Rosin weed |
| *Calycanthus occidentalis* | Spicebush |
| *Calyptridium quadripetalum* | Four-petaled pussypaws |
| *Calystegia collina* | Morning-glory |
| *Calystegia malacophylla* | Sierra morning-glory |
| *Calystegia occidentalis* ssp. *occidentalis* | Morning-glory |
| *Calystegia purpurata* | Morning-glory |
| *Calystegia purpurata* ssp. *purpurata* | Morning-glory |
| *Capsella bursa-pastoris* | Shepherd's purse |
| *Cardamine californica* | Milk maids |
| *Cardamine californica* | Milk maids, toothwort |
| *Cardamine oligosperma* | Bitter-cress |
| *Carduus pycnocephalus* | Italian thistle |
| *Carex amplifolia* | Ample-leaved sedge |
| *Carex brevicaulis* | Short-stemmed sedge |
| *Carex buxbaumii* | Buxbaum's sedge |
| *Carex densa* | Dense sedge |
| *Carex globosa* | Round-fruited sedge |
| *Carex nudata* | Torrent sedge |
| *Carex ovalis* | Sedge |
| *Carex subfusca* | Rusty sedge |
| *Carex tumulicola* | Foothill sedge |
| *Carthamus sp.* | Distaff thistle |
| *Castilleja attenuata* | Valley tassels |
| *Castilleja densiflora* | Owls clover |
| *Castilleja foliolosa* | Woody Indian paintbrush |
| *Castilleja rubicundula* ssp. *lithospermoides* | Cream sacs |
| *Ceanothus confusus* | Rincon Ridge Ceanothus |
| *Ceanothus cuneatus* | Buck brush |
| *Ceanothus divergens* | Calistoga Ceanothus |
| *Ceanothus foliosus* var. *foliosus* | Wavyleaf Ceanothus |
| *Ceanothus jepsonii* var. *jepsonii* | Musk brush |
| *Ceanothus oliganthus* var. *sorediatus* | Jim brush |
| *Ceanothus parryi* | Parry's Ceanothus, lady-bush |
| *Ceanothus sonomensis* | Sonoma Ceanothus |
| *Centaurea diffusa* | Diffuse knapweed |
| *Centaurea melitensis* | Tocalote, Napa thistle |
| *Centaurea solstitialis* | Yellow star-thistle |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| *Centaurium davyi* | Davy's centaury |
| *Centaurium trichanthum* | Alkali centaury |
| *Cerastium glomeratum* | Mouse-ear chickweed |
| *Cercocarpus betuloides* | Mountain-mahogany |
| *Chamomilla suaveolens* | Pineapple weed |
| *Cheilanthes intertexta* | Coastal lip-fern |
| *Chlorogalum pomeridianum* | Soap plant, Amole |
| *Chorizanthe membranacea* | Pink spineflower |
| *Cichorium intybus* | Chicory |
| *Cirsium occidentale* var. *venustum* | Venus thistle |
| *Cirsium remotifolium* | Remote-leaved thistle |
| *Cirsium vulgare* | Bull Thistle |
| *Clarkia amoena* | Farewell-to-spring |
| *Clarkia concinna* | Red ribbons |
| *Clarkia gracilis* | Clarkia |
| *Clarkia purpurea* | Purple Clarkia |
| *Clarkia purpurea* ssp. *quadrivulnera* | Four-spot |
| *Clarkia purpurea* ssp. *viminea* | Clarkia |
| *Clarkia unguiculata* | Clarkia |
| *Claytonia exigua* ssp. *exigua* | Claytonia |
| *Claytonia gypsophiloides* | Claytonia |
| *Claytonia parviflora* | Claytonia |
| *Claytonia parviflora* ssp. *parviflora* | Claytonia |
| *Claytonia perfoliata* | Miner's lettuce |
| *Clematis lasiantha* | Pipestems |
| *Collinsia heterophylla* | Chinese houses |
| *Collinsia sparsiflora* var. *arvensis* | Few-flowered blue-eyed Mary |
| *Collinsia sparsiflora* var. *collina* | Few-flowered blue-eyed Mary |
| *Conium maculatum* | Poison hemlock |
| *Convolvulus arvensis* | Bindweed |
| *Conyza canadensis* | Horseweed |
| *Corallorhiza striata* | Striped coralroot |
| *Cordylanthus sp.* | Bird's-beak |
| *Corylus cornuta v. califomica* | Hazelnut |
| *Crassula connata* | Sand pigmyweed |
| *Cryptantha flaccida* | Flaccid Cryptantha |
| *Cupressus sargentii* | Sargent cypress |
| *Cuscuta californica* var. *californica* | Dodder |
| *Cymopterus terebinthinus* | Cymopterus |
| *Cynodon dactylon* | Bermuda grass |
| *Cynoglossum grande* | Hound's tongue |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| *Cynosurus echinatus* | Hedgehogdogtail grass |
| *Cyperus eragrostis* | Nutsedge |
| *Cystopteris fragilis* | Fragile fern |
| *Cytisus scoparius* | Scotch broom |
| *Dactylis glomerata* | Orchard grass |
| *Danthonia californica* var. *californica* | California oatgrass |
| *Datisca glomerata* | Durango root |
| *Daucus pusillus* | Rattlesnake weed |
| *Delphinium decorum* | Coast larkspur |
| *Delphinium hesperium* | Western larkspur |
| *Delphinium nudicaule* | Red larkspur |
| *Dendromecon rigida* | Bush poppy |
| *Dichelostemma capitatum* ssp. *capitatum* | Blue dicks |
| *Dichelostemma congestum* | Ookow |
| *Disporum hookeri* | Hooker's fairy bells |
| *Dodecatheon hendersonii* | Sailor caps, Mosquito bills |
| *Dryopteris arguta* | Coastal wood fern |
| *Dryopteris expansa* | Wood fern |
| *Dudleya cymosa* | Live-forever |
| *Eleocharis macrostachya* | Pale spike-rush |
| *Elymus elymoides* ssp. *californicus* | Squirreltail |
| *Elymus glaucus* ssp. *glaucus* | Bluewildrye |
| *Elymus multisetus* | Big squirreltail |
| *Elymus trachycaulus* var. *subsecundus* | Slender wheatgrass |
| *Emmenanthe penduliflora* | Whispering bells |
| *Epilobium brachycarpum* | Willow herb |
| *Epilobium canum* | California fuchsia |
| *Epilobium minutum* | Minute willow herb |
| *Equisetum arvense* | Common horsetail |
| *Equisetum hyemale* ssp. *affine* | Common scouring rush |
| *Equisetum laevigatum* | Smooth scouring rush |
| *Equisetum telmateia* ssp. *braunii* | Giant horsetail |
| *Eremocarpus setigerus* | Dove weed, turkey mullein |
| *Ericameria arborescens* | Golden fleece |
| *Erigeron biolettii* | Streamside daisy |
| *Erigeron foliosus* | Leafy daisy |
| *Erigeron inornatus* | California rayless daisy |
| *Erigeron philadelphicus* | Philadelphia daisy |
| *Erigonum luteolum* var. *luteolum* | Wild buckwheat |
| *Erigonum nudum* var. *nudum* | Naked-stemmed Eriogonum |
| *Erigonum vimineum* | Wild buckwheat |
| *Eriodictyon californicum* | Yerba Santa |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| *Eriophyllum confertiflorum* var. *confertiflorum* | Golden-yarrow |
| *Eriophyllum lanatum* var. *achillaeoides* | Wooly sunflower |
| *Eriophyllum lanatum* var. *arachnoideum* | Wooly sunflower |
| *Erodium botrys* | Long-beaked filaree, storksbill |
| *Erodium brachycarpum* | Filaree, storksbill |
| *Erodium cicutarium* | Red-stemmed filaree |
| *Erodium moschatum* | White-stemmed filaree, storksbill |
| *Erodium obtisuplicatum* | Filaree, storksbill |
| *Erysimum capitatum* | Western wallflower |
| *Eschscholzia californica* | California poppy |
| *Eucalyptus globulus* | Blue gum |
| *Euphorbia peplus* | Petty spurge |
| *Festuca californica* | California fescue |
| *Festuca elmeri* | Elmer's fescue |
| *Festuca idahoensis* | Idaho fescue, blue bunchgrass |
| *Ficus carica* | Fig |
| *Filago californica* | California filago |
| *Filago gallica* | Narrow-leaved Filago |
| *Foeniculum vulgare* | Sweet fennel |
| *Fragaria vesca* | Wood strawberry |
| *Fraxinus latifolia* | Oregon ash |
| *Fritillaria affinis* | Checker lily |
| *Fritillaria recurva* | Scarlet fritillary |
| *Galium aparine* | Goose grass, bedstraw, cleavers |
| *Galium californicum* | California bedstraw |
| *Galium divaricatum* | Lamarck's bedstraw |
| *Galium murale* | Tiny bedstraw |
| *Galium parishii* | Parish's bedstraw |
| *Galium parisiense* | Wall bedstraw |
| *Galium porrigens* var. *tenue* | Climbing bedstraw |
| *Garrya congdonii* | Silk tassel bush |
| *Garrya elliptica* | Coast silk tassel bush |
| *Garrya fremontii* | Fremont's silk tassel bush |
| *Gastridium ventricosum* | Nit grass |
| *Gaultheria shallon* | Salal |
| *Genista monspessulana* | French broom |
| *Geranium carolinianum* | Carolina Geranium |
| *Geranium dissectum* | Cut-leaved Geranium |
| *Geranium molle* | Dove's-foot Geranium |
| *Gilia capitata* | Globe gilia |
| *Gilia capitata* ssp. *capitata* | Blue-field gilia |
| *Gilia tricolor* ssp. *diffusa* | Bird's eyes, Tricolor Gilia |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| *Gilia tricolor* ssp. *tricolor* | Bird's eyes, Tticolor Gilia |
| *Gnaphalium californicum* | Cudweed |
| *Gnaphalium canescens* | Cudweed |
| *Gnaphalium purpureum* | Purple cudweed |
| *Guillenia lasiophylla* | California mustard |
| *Hedypnois cretica* | Crete weed |
| *Helenium puberulum* | Sneezeweed |
| *Helianthella californica* | California Helianthella |
| *Helianthemum scoparium* | Peak rush-rose |
| *Hemizonia congesta* ssp. *luzulifolia* | Hayfield tarweed |
| *Heracleum lanatum* | Cow parsnip |
| *Hesperevax sparsiflora* | Hesperevax |
| *Hesperolinon micranthum* | Small-flowered dwarf flax |
| *Hesperolinon spergulinum* | Slender dwarf flax |
| *Heterocodon rariflorum* | Heterocodon |
| *Heteromeles arbutifolia* | Christmas berry, toyon |
| *Heuchera micrantha* | Alumroot |
| *Hieracium albiflorum* | White-flowered hawkweed |
| *Hirschfeldia incana* | Hoary mustard |
| *Hoita macrostachya* | Hoita |
| *Holcus lanatus* | Velvet grass |
| *Holocarpha virgata* | Graceful tarplant |
| *Holodiscus discolor* | Cream bush, oceanspray |
| *Hordeum brachyantherum* ssp. *brachyantherum* | Meadow barley |
| *Hordeum jubatum* | Foxtail barley |
| *Hordeum marinum* ssp. *gussoneanum* | Mediterranean barley |
| *Hordeum murinum* ssp. *leporinum* | Wild barley |
| *Hordeum murinum* ssp. *murinum* | Wild barley |
| *Hypericum concinnum* | Gold-wire |
| *Hypericum perforatum* | Klamathweed |
| *Hypochaeris glabra* | Smooth cat's ear |
| *Hypochaeris radicata* | Rough cat's ear |
| *Iris fernaldii* | Fernald's iris |
| *Iris macrosiphon* | Bowltube or slender-tubed iris |
| *Iris purdyi* | Purdy's iris |
| *Isopyrum stipatatum* | Siskiyou rue-anemone |
| *Juglans californica* var. *californica* | Southern California black walnut |
| *Juglans californica* var. *hindsii* | Northern California black walnut |
| *Juncus balticus* | Baltic rush |
| *Juncus bolanderi* | Bolander's Rush |
| *Juncus bufonius* var. *bufonius* | Toad rush |
| *Juncus effusus* var. *pacificus* | Common rush |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| *Juncus nevadensis* | Sierra rush |
| *Juncus occidentalis* | Western rush |
| *Juncus oxymeris* | Pointed rush |
| *Juncus patens* | Common or spreading rush |
| *Juncus xiphiodes* | Iris-leaved rush |
| *Keckiella corymbosa* | Redwood Keckiella |
| *Koeleria macrantha* | Junegrass |
| *Lactuca serriola* | Prickly lettuce |
| *Lamarckia aurea* | Goldentop |
| *Lamium purpureum* | Red dead-nettlet |
| *Lasthenia californica* | Goldfields |
| *Lathyrus aphaca* | Yellow pea |
| *Lathyrus brownii* | Wild pea |
| *Lathyrus cicera* | Red peavine |
| *Lathyrus hirsutus* | Caley pea |
| *Lathyrus sphaericus* | Grass pea |
| *Lathyrus vestitus* var. *ochropetalus* | Pacific pea |
| *Lemna minor* | Lesser duckweed |
| *Lemna minuta* | Duckweed |
| *Lepechinia calycina* | Pitcher sage |
| *Lepidium nitidum* var. *nitidum* | Shining pepperweed |
| *Lepidium strictum* | Upright pepperweed |
| *Lessingia ramulosa* | Sonoma lessingia |
| *Ligusticum apiifolium* | Celery-leaved lovage |
| *Lilium pardalinum* | Leopard lily |
| *Limnanthes douglasii* | Common meadowfoam |
| *Linanthus androsaceus* | Common Linanthus, false baby stars |
| *Linanthus bicolor* | Bicolored Linanthus |
| *Linanthus parviflorus* | Linanthus |
| *Lithocarpus densiflorus* | Tanbark oak |
| *Lithophragma affinie* | Woodland star |
| *Lithophragma campanulatum* | Siskiyou Mountain woodland star |
| *Lithophragma heterophyllum* | Hillside woodland star |
| *Lolium multiflorum* | Italian ryegrass |
| *Lolium perenne* | Perennial ryegrass |
| *Lolium temulentum* | Darnel ryegrass |
| *Lomatium californicum* | California Lomatium |
| *Lomatium caruifolium* | Alkali desert parsley |
| *Lomatium dasycarpum* ssp. *dasycarpum* | Woolly-fruited lomatium |
| *Lomatium dasycarpum* ssp. *tomentosum* | Lomatium |
| *Lomatium repostum* | Napa lomatium |
| *Lomatium utriculatum* | Common lomatium |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| *Lonicera hispidula* var. *vacillans* | Californica honeysuckle |
| *Lonicera interrupta* | Chaparral honeysuckle |
| *Lotus humistratus* | Bird's foot lotus, hill Lotusl |
| *Lotus micranthus* | Small flowered trefoil, hill Lotus |
| *Lotus purshianus* var. *purshianus* | Spanish clover |
| *Lotus scoparius* | Deerweed |
| *Lotus wrangelianus* | Calf lotus |
| *Lunaria annua* | Money plant, moonwort |
| *Lupinus affinis* | Fleshy lupine |
| *Lupinus albifrons* var. *albifrons* | Silver bush lupine |
| *Lupinus bicolor* | Dove lupine, miniature lupine |
| *Lupinus formosus* var. *robustus* | Summer lupine, |
| *Lupinus latifolius* var. *latifolius* | Broad-leaved lupine |
| *Lupinus microcarpus* | Chick lupine |
| *Lupinus nanus* | Sky lupine |
| *Lupinus pachylobus* | Big pod lupine |
| *Lupinus stiversii* | Harlequin lupine |
| *Luzula comosa* | Common or Pacific wood rush |
| *Lythrum hyssopifolium* | Hyssop loosestrife |
| *Madia anomala* | Plump-seeded madia, Tarweed |
| *Madia elegans* var. *vernalis* | Common madia |
| *Madia exigua* | Threadstem madia |
| *Madia gracilis* | Slender tarweed |
| *Madia madioides* | Woodland madia |
| *Madia nutans* | Volcanic tarweed |
| *Malacothrix floccifera* | Woolly desert dandelion |
| *Marah fabaceus* | Wild cucumber, Common manroot |
| *Marrubium vulgare* | Horehound |
| *Medicago polymorpha* | Bur-clover |
| *Melica californica* | California melic |
| *Melica geyeri* | Oniongrass, Melic |
| *Melica subulata* | Alaska onion-grass |
| *Melica torreyana* | Torrey's melic |
| *Melilotus indicus* | Yellow sweet clover |
| *Melissa officinalis* | Lemon Balm |
| *Mentha pulegium* | Pennyroyal |
| *Micropus californicus* var. *californicus* | Slender cottonweed |
| *Microseris douglasii* | Silver puffs |
| *Mimulus aurantiacus* | Bush Monkeyflower |
| *Mimulus cardinalis* | Scarlet monkeyflower |
| *Mimulus congdonii* | Congdon's monkeyflower |
| *Mimulus guttatus* | Seep monkey flower |
| *Mimulus kelloggii* | Kellogg's monkeyflower |
| *Mimulus moschatus* | Musk monkeyflower |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| *Minuartia douglasii* | Douglas' sandwort |
| *Monardella villosa* | Coyote Mint |
| *Monardella viridis* | Coyote Mint |
| *Montia fontana* | Water-chickweed |
| *Myosotis discolor* | Forget-me-not |
| *Nassella cernua* | Nodding needlegrass |
| *Nassella lepida* | Foothill needlegrass |
| *Nassella pulchra* | Purple needlegrass |
| *Navarretia leucocephala* | White-flowered navarretia |
| *Navarretia squarrosa* | Skunk weed |
| *Nemophila breviflora* | Basin nemophila |
| *Nemophila heterophylla* | Small white Nemophila |
| *Nemophila menziesii* ssp. *atomaria* | Baby white eyes |
| *Nemophila menziesii* ssp. *menziesii* | Baby blue eyes |
| *Nemophila pedunculata* | Littlefoot nemophila |
| *Oemleria cerasiformis* | Oso Berry |
| *Oenanthe sarmentosa* | Pacific oenanthe |
| *Olea europea* | Olive |
| *Orobanche bulbosa* | Broom-rape |
| *Orobanche fasciculata* | Clustered broom-rape |
| *Osmorhiza berteroi* | Sweetcicely |
| *Osmorhiza brachypoda* | California sweetcicely |
| *Parentucellia viscosa* | Yellow parentucellia |
| *Paspalum dilatatum* | Dallis grass |
| *Pedicularis densiflorus* | Indian warrior |
| *Pellaea andromedifolia* | Coffee fern |
| *Pellaea mucronata* | Bird's-foot Fern |
| *Penstemon heterophyllus* | Bear-tongue, Penstemon |
| *Penstemon heterophyllus* var. *heterophyllus* | Foothill penstemon |
| *Pentagramma triangularis* | Goldback Fern |
| *Perideridia kelloggii* | Kellogg's yampah |
| *Petrorhagia dubia* | Hairy pink |
| *Petrorhagia nantueilii* | Carnation |
| *Phacelia californica* | California phacelia |
| *Phacelia distans* | Wild heliotrope |
| *Phacelia imbricata* ssp. *imbricata* | Imbricate phacelia |
| *Phacelia tanacetifolia* | Lacy phacelia |
| *Phalaris aquatica* | Harding Grass |
| *Phleum pratense* | Timothy |
| *Phlox gracilis* | Slender phlox |
| *Phoradendron densum* | Dense mistletoe |
| *Phoradendron villosum* | Oak mistletoe |
| *Physocarpus capitatus* | Pacific ninebark |
| *Pickeringia montana* | Chaparral pea |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| *Picris echioides* | Bristly ox-tounge |
| *Pinus attenuata* | Knobcone pine |
| *Pinus ponderosa* | Ponderosa pine |
| *Pinus radiata* | Monterey pine |
| *Pinus sabiniana* | Gray pine |
| *Piperia elegans* | Elegant rein orchid |
| *Piperia elongata* | Piperia |
| *Piperia transversa* | Piperia |
| *Piperia unalascensis* | Slender-spire orchid |
| *Piptatherum miliaceum* | Smilo grass |
| *Plagiobothrys collinus* | Cooper's popcorn flower |
| *Plagiobothrys nothofulvus* | Popcorn flower |
| *Plantago erecta* | California plantain |
| *Plantago lanceolata* | English plantain |
| *Plantago ovata* | Desert indianwheat |
| *Plantago patagonica* | Woolly plantain |
| *Platystemon californicus* | Cream cups |
| *Plectritis brachystemon* | Longspur |
| *Plectritis macrocera* | White plectritis |
| *Poa annua* | Annual bluegrass |
| *Poa bulbosa* | Bulbous bluegrass |
| *Poa nemoralis* | Wood bluegrass |
| *Poa secunda* ssp. *secunda* | One-sided bluegrass |
| *Poa trivialis* | Trivial poa |
| *Polycarpon tetraphyllum* | Four-leaved allseed |
| *Polygala californica* | Milkwort |
| *Polygonum arenastrum* | knotweed, Doorweed |
| *Polygonum douglasii* ssp. *spergulariiforme* | Knotweed |
| *Polygonum hydropiper* | Smartweed |
| *Polypodium californicum* | California polypody |
| *Polypodium calirhiza* | Nested polypody |
| *Polypodium glycyrrhiza* | Licorice fern |
| *Polypogon interruptus* | Ditch rabbitsfoot grass |
| *Polypogon monspeliensis* | Rabbitfoot grass |
| *Polystichum dudleyi* | Shield fern |
| *Polystichum imbricans* ssp. *curtum* | Narrowleaf swordleave |
| *Polystichum munitum* | Western sword fern |
| *Potentilla glandulosa* ssp. *glandulosa* | Sticky cinquefoil |
| *Prunus avium* | Sweet cherry |
| *Prunus cerasifera* | Cherry plum |
| *Prunus domestica* | European plum |
| *Prunus emarginata* | Bitter cherry |
| *Prunus virginiana* var. *demissa* | Western choke cherry |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| *Pseudotsuga menziesii* | Douglas Fir |
| *Psilocarphus oregonus* | Wooly-heads |
| *Psoralea physodes* | California tea |
| *Pteridium aquilinum* | Bracken fern |
| *Pteridium aquilinum* var. *pubescens* | Bracken fern |
| *Pterostegia drymarioides* | Pterostegia |
| *Quercus agrifolia* | Coast live oak |
| *Quercus berberidifolia* | Scrub oak |
| *Quercus chrysolepis* | Canyon oak |
| *Quercus douglasii* | Blue oak |
| *Quercus durata* | Leather oak |
| *Quercus garryana* | Oregon oak |
| *Quercus kelloggii* | California black oak |
| *Quercus lobata* | Valley oak |
| *Quercus wislizenii* | Interior live oak |
| *Ranunculus californicus* | California buttercup |
| *Ranunculus lobbii* | Lobb's buttercup |
| *Ranunculus muricatus* | Stickseed buttercup |
| *Ranunculus orthorhynchus* | Straightbeak buttercup |
| *Raphanus sativus* | Radish |
| *Rhagadiolus stellatus* | Endive daisy |
| *Rhamnus californica* | Coffeeberry |
| *Rhamnus crocea* | Red berried buckthorn |
| *Rhamnus ilicifolia* | Holly-leaved coffeeberry |
| *Rhododendron occidentale* var. *sonomense* | Western Azalea |
| *Rhus trilobata* | Skunkbrush |
| *Ribes californicum* | Hillside gooseberry |
| *Ribes inerme* | White-stemmed gooseberry |
| *Ribes menziesii* | Canyon gooseberry |
| *Ribes quercetorum* | Oak gooseberry |
| *Ribes roezlii* var. *cruentum* | Sierra gooseberry |
| *Ribes victoris* | Victor's gooseberry |
| *Rorippa nasturtium-aquaticum* | Watercress |
| *Rosa eglanteria* | Sweet-brier |
| *Rosa gymnocarpa* | Wood Rose |
| *Rosa spithamea* var. *sonomensis* | Sonoma ground rose |
| *Rubus discolor* | Himalaya Blackberry |
| *Rubus leucodermis* | Blackcap Raspberry |
| *Rubus parviflorus* var. *parviflorus* | Thimbleberry |
| *Rubus ursinus v. ursinus* | California Blackberry |
| *Rumex acetosella* | Sheep sorrel |
| *Rumex crispus* | Curly dock |
| *Rumex pulcher* | Fiddle dock |
| *Rumex salicifolius* var. | Willow dock |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| *salcifolius* | |
| *Rupertia physodes* | Scurf-pea |
| *Sagina sp.* | Pearlwort |
| *Salix laevigata* | Red willow |
| *Salix lasiolepis* | Arroyo willow |
| *Salix lucida* ssp. *lasianda* | Yellow willow |
| *Salvia columbariae* | Chia |
| *Salvia sonomensis* | Sonoma sage |
| *Sambucus mexicana* | Blue elderberry |
| *Sanicula bipinnatifida* | Poison Sanicle, Purple sannicle |
| *Sanicula crassicaulis* | Yellow sanicle, Pacific sanicle |
| *Sanicula laciniata* | Coast sanicle |
| *Satureja douglasii* | Yerba Buena |
| *Saxifraga californica* | California saxifrage |
| *Scandix pectin-veneris* | Venus' Needle, Shepherd's needle |
| *Scirpus microcarpus* | Panicled bulrush |
| *Scrophularia californica* | Bee plant |
| *Scutellaria californica* | skullcap |
| *Sedum spathulifolium* | Pacific Stonecrop |
| *Selaginella bigelovii* | Spike-moss |
| *Selaginella wallacei* | Little club moss |
| *Senecio aronicoides* | Butterweed |
| *Senecio greenei* | Green's packera |
| *Senecio vulgaris* | Common groundsel |
| *Sequoia sempervirens* | Redwood |
| *Sidalcea diploscypha* | Fringed checker bloom |
| *Sidalcea malvaeflora* | Checker bloom |
| *Silene californica* | California catchfly |
| *Silene dichotoma* | Dichotoma silene |
| *Silene gallica* | Common catchfly, Windmill pink |
| *Silybum marianum* | Milk thistle |
| *Sisymbrium officinale* | Hedge mustard |
| *Sisyrinchium bellum* | Western blue-eyed grass |
| *Smilacena stellata* var. *sessilifolia* | Slim solomon |
| *Smilacina racemosa* | False Solomon's seal |
| *Solanum sp.* | Nightshade |
| *Solanum xanti* | Chaparral nightshade |
| *Soliva sessilis* | Field burreed |
| *Sonchus asper* ssp. *asper* | Prickly sow-thistle |
| *Sonchus oleraceus* | Common sow thistle |
| *Spergula arvensis* ssp. *arvensis* | Stickwort, starwort |
| *Spergularia rubra* | Sand-spurrey |
| *Stachys ajugoides* ssp. *ajugoides* | Hedge-nettle |
| *Stachys ajugoides* var. *rigida* | Rigid hedge-nettle |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| *Stachys albens* | White hedge-nettle |
| *Stellaria calycantha* | Northern starwort |
| *Stellaria media* | Common chickweed |
| *Stellaria nitens* | Shining chickweed |
| *Stellaria pallida* | Chickweed |
| *Stephanomeria virgata* | Rod wirelettuce |
| *Streptanthus barbiger* | Bearded jewellflower |
| *Streptanthus glandulosus* ssp. *glandulosus* | Jewelflower |
| *Stylocline amphiloba* | Mt. Diablo cottonweed |
| *Symphoricarpos albus v. laevigatus* | Snowberry |
| *Symphoricarpos mollis* | Trailing snowberry, Creeping snowberry |
| *Taeniatherum caput-medusae* | Medusahead |
| *Taraxacum californicum* | Horned dandelion |
| *Taraxacumn officinale* | Dandelion |
| *Thermopsis macrophylla* | False lupine |
| *Thysanocarpus curvipes* var. *elegans* | Fringe pod |
| *Torilis arvensis* | Hedge parsley |
| *Torreya californica* | California nutmeg |
| *Toxicodendron diversilobum* | Poison Oak |
| *Tragopogon dubius* | Goat’s beard |
| *Tragopogon porrifolius,* | Oyster plant |
| *Trichostemma laxum* | Vinegar weed |
| *Trientalis latifolia* | Star flower |
| *Trifolium albopurpureum* var. *albopurpureum* | Common Indian clover |
| *Trifolium albopurpureum* var. *dichotomum* | Common Indian clover |
| *Trifolium appendiculatum* | Long-keeled clover |
| *Trifolium barbigerum* | Bearded clover |
| *Trifolium bifidum* var. *decipiens* | Notch-leaved clover |
| *Trifolium campestre* | Hop clover |
| *Trifolium ciliolatum* | Tree clover |
| *Trifolium depauperatum* var. *amplectens* | Balloon sack clover |
| *Trifolium depauperatum* var. *depauperatum* | Cowbag clover, Dwarf sack clover |
| *Trifolium dichotomum* | Branched Indian-clover |
| *Trifolium dubium* | Hop clover, Shamrock |
| *Trifolium fragiferum* | Strawberry clover |
| *Trifolium fucatum* | Bull clover |
| *Trifolium hirtum* | Rose clover |
| *Trifolium microcephalum* | Small headed clover |
| *Trifolium microdon* | Valparaiso clover, Square-head |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| | clover |
| *Trifolium obtusiflorum* | Clammy clover |
| *Trifolium oliganthum* | Few-flowered clover |
| *Trifolium repens* | White clover |
| *Trifolium striatum* | Clover |
| *Trifolium subterraneum* | Subterranean clover |
| *Trifolium tomentosum* | Woolly clouer |
| *Trifolium variegatum* | White-tipped clover |
| *Trifolium willdenovii* | Tomcat clover |
| *Trilliam albidum* | Wake robin |
| *Trillium chloropetalum* | Common trillium |
| *Trillium ovatum* | Western wake robin |
| *Triodanis biflora* | Venus looking-glass |
| *Triphysaria eriantha* ssp. *eriantha* | Butter-and-eggs, Johnny-tuck |
| *Triphysaria pusilla* | Dwarf owl's-clover |
| *Triphysaria versicolor* ssp. *faucibarbata* | Smooth owl's cover |
| *Trisetum canescens* | Tall trisetum |
| *Triteleia hyacinthina* | White brodiaea |
| *Triteleia laxa* | Ithuriel's Spear |
| *Triteleia lugens* | Coast Range triteleia |
| *Triticum aestivum* | Wheat |
| *Typha domingensis* | Cattail |
| *Umbellularia californica* | California Bay |
| *Uropappus lindleyi* | Lindley's silverpuff |
| *Urtica dioica* | Stinging nettle |
| *Urtica dioica* ssp. *gracilis* | California Stinging Nettle |
| *Urtica dioica* ssp. *holosericea* | Hoary nettle, Stinging nettle |
| *Vaccinium ovatum* | California huckleberry |
| *Verbascum thapsus* | Mullein |
| *Verbena lasiostachys* | Western verbena |
| *Veronica persica* | Veronica, Speedwell |
| *Vicia americana* var. *americana* | American vetch |
| *Vicia dasycarpa* | Vetch |
| *Vicia gigantea* | Giant vetch |
| *Vicia lathyroides* | Spring vetch |
| *Vicia lutea* | Yellow vetch |
| *Vicia sativa* ssp. *sativa* | Narrow-leaved vetch |
| *Vicia villosa* | Hairy vetch |
| *Vicia villosa* ssp. *varia* | Vetch |
| *Vinca major* | Greater periwinkle |
| *Viola lobata* | Pine violet |
| *Viola ocellata* | Western heart's ease |
| *Vitus californica* | California Wild Grape |
| *Vulpia bromoides* | Brome vulpia, Six-week fescue |

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| *Vulpia microstachys* | Small fescue |
| *Vulpia myuros* var. *hirsuta* | Rattail fescue |
| *Whipplea modesta* | Yerba de selva |
| *Woodwardia fimbriata* | Western Chain Fern |
| *Wyethia angustifolia* | Narrow-leaf mule ears |
| *Wyethia glabra* | Mule ears |
| *Xerophyllum tenax* | Indian basket grass, Bear grass |
| *Zigadenus fremontii* | Star lily, Fremont's death camas |
| *Zigadenus micranthus* | Small-flowered zygadene |

*Sources: Bowcutt, F.S. 1994; Bowcutt, F.S. 1999; Carroll, A. 2001; Dean, E. 1999; McBride, J.R. and S.J. Barnhart. Undated; Stocking, K. Undated; Warner. P.J. 2001.; Wright, K.E. 1975.*

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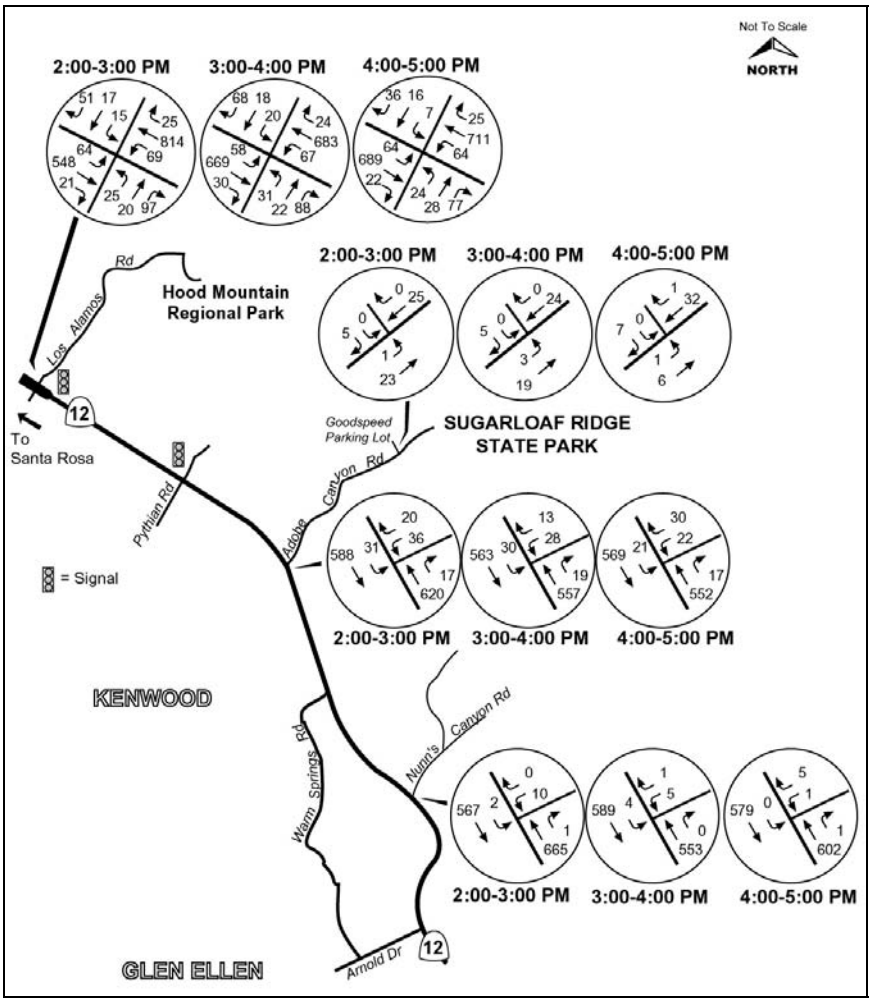
# *Appendix D: Circulation and Traffic Background*

This appendix provides additional information referenced in the Circulation section of the Existing Conditions Report for the Sugarloaf Ridge State Park General Plan Study Area.

## Traffic Counts

Sunday afternoon (2:00-5:00 PM) traffic counts were conducted by Crane Transportation Group on November 17, 2002 at the S.R.12 intersections with Los Alamos Road, Adobe Canyon Road and Nunn's Canyon Road, as well as along Adobe Canyon Road at the entrance to Sugarloaf Ridge State Park. Count results are presented in Figure D-1.

**Figure D-1: Sunday PM Peak Hour Volumes**
**November 17, 2002 (2:00-5:00PM)**




*Source: Crane Transportation Group, 2002.*

## Intersection Level of Service Methodology

### *Signalized Intersections*

Intersections, rather than roadway segments between intersections, are almost always the capacity controlling locations for any circulation system. Signalized intersection operation is graded based upon two different scales. The first scale employs a grading system called Level of Service (LOS) which ranges from Level A, indicating uncongested flow and minimum delay to drivers, down to Level F, indicating significant congestion and delay on most or all intersection approaches. The Level of Service scale is also associated with a control delay tabulation (year 2000 Transportation Research Board (TRB) *Highway Capacity Manual* [HCM] operations method) at each intersection. The control delay designation allows a more detailed examination of the impacts of a particular project. Greater detail regarding the LOS/control delay relationship is provided in Table D-1.

**Table D-1**
**LOS Control Delay Relationship**
**for Signalized Intersections**

| LEVEL OF SERVICE | CONTROL DELAY PER VEHICLE (IN SECONDS)* |
|---|---|
| A | # 10 |
| B | > 10 - 20 |
| C | > 20 - 35 |
| D | > 35 - 55 |
| E | > 55 - 80 |
| F | > 80 |

**Control delay includes initial deceleration delay, queue move up time to first in line at the intersection, stopped delay as first car in queue, and final acceleration delay.*
*Source: Highway Capacity Manual 2000, Transportation Research Board*

### *Unsignalized Intersections*

Unsignalized intersection operation is also typically graded using the Level of Service A through F scale. LOS ratings for all-way stop intersections are determined using a methodology outlined in the year 2000 TRB *Highway Capacity Manual*. Under this methodology, all-way stop intersections receive one LOS designation reflecting operation of the entire intersection. Average control

delay values are also calculated. Intersections with side streets only stop sign controlled (two-way stop control) are also evaluated using the LOS and average control delay scales using a methodology outlined in the year 2000 TRB *Highway Capacity Manual*. However, unlike signalized or all-way stop analysis where the LOS and control delay designations only pertain to the entire intersection, in side street stop sign control analysis LOS and delay designations are computed for only the stop sign controlled approaches or individual turn and through movements. Table D-2 provides greater detail about unsignalized analysis methodologies.

**Table D-2**
**LOS Average Control Delay Relationship for Two-way Stop Control (Side Street Stop Sign Control) Intersections**

| LEVEL OF SERVICE | AVERAGE CONTROL DELAY PER VEHICLE (IN SECONDS)* |
|---|---|
| A | 0 - 10 |
| B | > 10 - 15 |
| C | > 15 - 25 |
| D | > 25 - 35 |
| E | > 35 - 50 |
| F | > 50 |

**Control delay includes initial deceleration delay, queue move up time to first in line at the intersection, stopped delay as first car in queue, and final acceleration delay.*

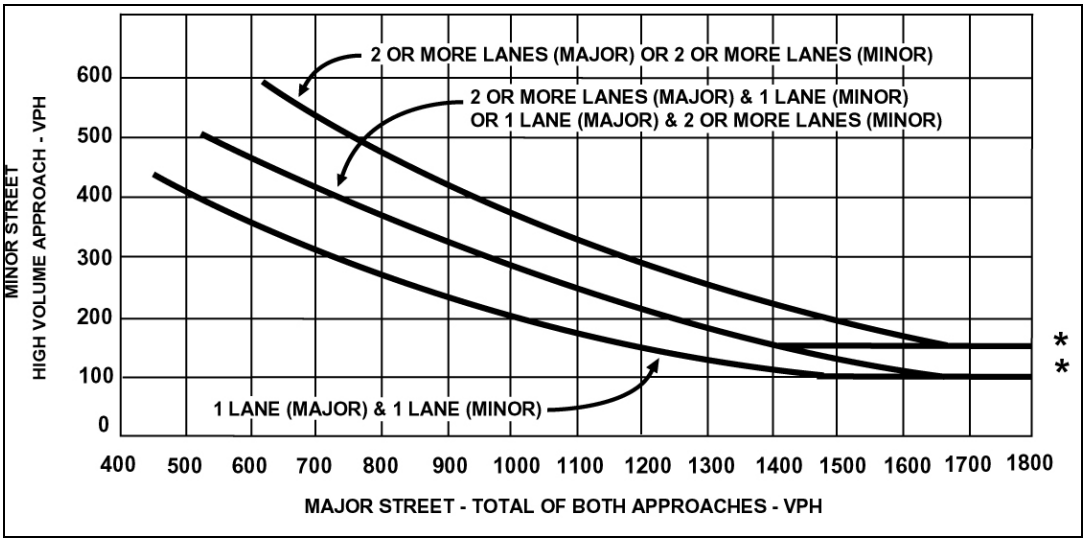
*Source: Highway Capacity Manual 2000, Transportation Research Board*

### *Signal Warrants*

Traffic signals are used to provide an orderly flow of traffic through an intersection. Many times they are needed to offer side street traffic an opportunity to access a major road where high volumes and/or high vehicle speeds block crossing or turn movements. They do not, however, increase the capacity of an intersection (i.e., increase the overall intersection's ability to accommodate additional vehicles) and, in fact, often slightly reduce the number of total vehicles that can pass through an intersection in a given period of time. Signals can also cause an increase in traffic accidents if installed at inappropriate locations.

There are 11 possible tests for determining whether a traffic signal should be considered for installation. These tests, called "warrants", consider criteria such as actual traffic volume, pedestrian volume, presence of school children, and accident history. Usually, two or more warrants must be met before a signal is installed. In this report, the test for Peak Hour Volumes (Warrant #11) has been applied. When Warrant 11 is met there is a strong indication that a detailed signal warrant analysis covering all possible warrants is appropriate. These rigorous analyses are described in Chapter 9 of the Caltrans Traffic Manual while Warrant 11 is presented in Table D-3.

**Table D-3. Peak Hour Volume Warrant (Urban Area)**




**150 VPH applies as the lower threshold volume for a minor street approach with two or more lanes and 100 VPH applies as the lower threshold for a minor street approaching with one lane.*

*Source: Caltrans Traffic Manual, July 1998 (provided by Crane Transportation Group*

It is possible that an unsignalized intersection will not meet signal warrants, but will have one or more moments that experience LOS F operations. Level of service F can be indicated for a very low volume of vehicles at a stop sign. Although these stopped vehicles may experience long delays of one minute or more, there would not be an overall benefit if the higher numbers of vehicles on the major street are stopped in favor of the few vehicles on the minor street. The signal warrant considers a balance between major street and minor street delays, and may indicate that there is overall benefit if drivers for some turn movements from the minor street continue to experience long (LOS E or F) delays.

Park visitation estimates are provided in Tables D-4 and D-5 below.

**Table D-4**
**Parking Capacity and Maximum Peak Day Visitation General Plan Projections***

| | TOTAL PARKING SPACES (EXISTING + PROPOSED) | MAXIMUM VISITORS AT ONE TIME [A] | TYPICAL DURATION OF VISIT [B] | TYPICAL PARKING TURNOVER PER DAY | MAX VISITORS PER DAY [C] |
|---|---|---|---|---|---|
| Adobe Canyon | | | | | |
| Visitor Center/Entrance Station | | | | | |
| Short-term parking | 9 | 0 | 15 min | 10 | - |
| Day use parking | 34 **(34)** | 92 **(92)** | 4 hr | 2 | 184 **(184)** |
| Campground/Day Use Area | | | | | |
| Day Use Lot | 68 **(34)** | 184 **(92)** | 4 hr | 2 | 368 **(184)** |
| Family Campsites | 140 **(42)** | 448 **(134)** | all day | 1 | 448 **(134)** |
| Family Campsite Overflow | 35 **(10)** | 112 **(32)** | all day | 1 | 112 **(32)** |
| Service Area/Horse Barn | | | | | |
| Parking (expansion into the former service area) | 32 **(12)** | 86 **(32)** | 3 hr | 3 | 258 **(96)** |
| Parking for the new Group Camp[d] | 25 **(25)** | 50 **(50)** | all day | 1 | 50 **(50)** |
| Observatory Area (no change) | 25 | 67 | 4 hr | 2 | 134 |
| Adobe Canyon Road | | | | | |
| Trailhead parking | 20 | 54 | 2-3 hr | 3 | 162 |
| Pull-outs | 10 | 27 | 1.5 hr | 5 | 135 |
| Illegal overflow (no change) | 30 | 81 | 3 hr | 3 | 243 |
| *Subtotal for Adobe Canyon:* | *428* | *1201* ***(432)*** | | | *2094 (680)* |
| Broader Areas of Sugarloaf Ridge State Park | | | | | |
| Santa Rosa Creek Management Zone (Los Alamos entrance at Hood Mountain Regional Park) | | | | | |
| Upper & Lower Parking Lots | 30 | 81 | 4 hr | 2 | 162 |
| Illegal overflow parking | 10 | 27 | 4 hr | 2 | 54 |
| Nunns Canyon Management Zone | 40 **(40)** | 108 **(108)** | 4 hr | 2 | 216 **(216)** |
| Bear Creek Management Zone | 0 | 0 | -- | -- | 0 |
| Horse Trailer Parking | | | | | |
| Adobe Canyon (Service Area/Horse Barn) | 10 **(5)** | 68 **(34)** | | | 202 **(101)** |
| Nunns Canyon (Quarry) | 5 **(5)** | 34 **(34)** | | | 101 **(101)** |
| *Total Horse Trailer Parking at Sugarloaf Ridge SP* | *15* ***(10)*** | | | | |

## Table D-4
## Parking Capacity and Maximum Peak Day Visitation General Plan Projections*

| | TOTAL PARKING SPACES (EXISTING + PROPOSED) | MAXIMUM VISITORS AT ONE TIME [A] | TYPICAL DURATION OF VISIT [B] | TYPICAL PARKING TURNOVER PER DAY | MAX VISITORS PER DAY [C] |
|---|---|---|---|---|---|
| *Standard Parking Space Equivalent (2.5/horse trailer space)* | 37 **(25)** | 101 **(69)** | 3 hr | 3 | 303 **(207)** |
| SUBTOTAL: VISITORS ARRIVING BY VEHICLE | | | | | |
| *Subtotal (based on parking capacity only)* | | 1,517 **(609)** | | | 2,826 **(1,100)** |
| VISITORS ARRIVING BY BICYCLE OR ON FOOT (5% of Visitors arriving by vehicle per day) | | | | | |
| Bicyclists (3.75%) | | 57 | | | 106 **(41)** |
| Pedestrians (1.25%) | | 19 | | | 35 **(14)** |
| | | | | | |
| **TOTAL** | | **1,593 (639)** | | | **2,967 (1,155)** |

** Note: number in parentheses indicate the number of new parking spaces and visitors that would be added with implementation of the Draft General Plan.*

*[a] Parking spaces x Car Occupancy (2.7 hikers, 3.2 campers/car)* *[b] From Ranger Observations*

*[c] Parking Capacity x Occupancy x Turnover* *[d] Larg e Group Camp = 50 visitors*

## Existing and Future Sugarloaf Ridge State Park Trip Generation

**Table D-5**
**Summer Sunday Peak Hour[1] Trip Generation Existing Conditions**

| PARKING LOT LOCATION | TOTAL PARKING | 3:30 - 4:30 INBOUND VEHICLE TRIPS | 3:30 - 4:30 OUTBOUND VEHICLE TRIPS |
|---|---|---|---|
| **Adobe Road Access** | | | |
| Short term | 9 | 1 | 2 |
| New Day Use lot near Visitor Center | 0 | 0 | 0 |
| Day use lot | 34 | 7 | 7 |
| Family Campsites | 98 | 11 | 2 |
| Family Campsites Overflow | 25 | 0 | 0 |
| Horse Barn | 20 regular +12 w/o horse trailers= 32 | 3 | 6 |
| Parking for new Large Group Camp | 0 | 0 | 0 |
| Observatory/former Large Group Camp | 25 | 0 | 0 |
| Trailhead | 20 | 2 | 4 |
| Waterfall shoulder pullouts | 10 | 2 | 2 |
| Adobe Canyon Road Illegal Overflow | 30 | 0 | 6 |
| **TOTAL** | | **26** | **29** |
| **Hood Mountain – Los Alamos Road Access** | | | |
| Upper & Lower Parking Lots | 30 | 1 | 6 |
| Illegal | 10 | 0 | 2 |
| TOTAL | | 1 | 8 |
| **Nunns Canyon Road** | | | |
| Parking Lot | 0 | 0 | 0 |
| **TOTAL** | | **0** | **0** |

[1]*The controlling factor in the traffic analysis is weekend peak hour traffic conditions on Highway 12 (Sunday between 4:30 and 5:30 PM). This however does not coincide with the peak hours of park access or egress, which are earlier in the day.*

*Trip Rate Source: EDAW staff conversations with Robin Ishimatsu, Ranger, Sugarloaf Ridge State Park, October, 2003.*

## Table D-6
## Summer Sunday Peak Hour General Plan Build-Out Trip Generation

| PARKING LOT LOCATION | TOTAL PARKING | 3:30 - 4:30 INBOUND VEHICLE TRIPS | 3:30 - 4:30 OUTBOUND VEHICLE TRIPS |
|---|---|---|---|
| **Adobe Road Access** | | | |
| Short term | 9 | 1 | 2 |
| New Day Use lot near Visitor Center | 34 | 3 | 7 |
| Day use lot | 68 | 14 | 14 |
| Family Campsites | 140 | 16 | 2 |
| Family Campsites Overflow | 35 | 0 | 0 |
| Horse Barn | 32 regular +25 w/o horse trailers= 57 | 6 | 11 |
| Parking for new Large Group Camp | 25 | 0 | 0 |
| Observatory/former Large Group Camp | 25 | 3 | 5 |
| Trailhead | 20 | 2 | 4 |
| Waterfall shoulder pullouts | 10 | 2 | 2 |
| Adobe Canyon Road Illegal Overflow | 30 | 0 | 6 |
| **TOTAL** | | **47** (- 26 existing) (- 4 due to expected growth without General Plan) 17 net new trips with General Plan | **53** (-29 existing) (- 3 due to expected growth without General Plan) 21 net new trips with General Plan |
| **Hood Mountain - Los Alamos Road Access** | | | |
| Upper & Lower Parking Lots | 30 | 1 | 6 |
| Illegal | 10 | 0 | 2 |
| **TOTAL** | | **1** (no change from existing) | **8** (no change from existing) |
| **Nunns Canyon Road** | | | |
| Parking Lot | 40 regular +12 w/ no horse trailers= 52 | 4 | 10 |
| **TOTAL** | | **4** (all new trips with General Plan) | **10** (all new trips with General Plan) |

[1]*The controlling factor in the traffic analysis is weekend peak hour traffic conditions on Highway 12 (Sunday between 4:30 and 5:30 PM). This however does*

*not coincide with the peak hours of park access or egress, which are earlier in the day.*

*Trip Rate Source: EDAW staff conversations with Robin Ishimatsu, Ranger, Sugarloaf Ridge State Park, October, 2003.*

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# *Appendix E: Master Response F from Sonoma Country Inn Final EIR*

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# *Appendix F: Excerpt from Response to Comment 9.1 from Sonoma Country Inn FEIR*

The following describes the change in level of service analysis methodology shown for Adobe Canyon Road in the Sonoma Country Inn FEIR as part of its Response to Comment 9-1:

> The Sonoma Country Inn Draft EIR used a conservative approach to analysis of Adobe Canyon Road and did not consider the use of the SR 12 refuge lane on the westbound approach to Adobe Canyon Road by vehicles turning left from Adobe Canyon Road. This decision was based on the EIR traffic analyst's observations that few motorists at this intersection use the lane as a refuge, because high-speed through traffic on SR 12 can be daunting to turn into. The available center turn lane was observed to be used by eastbound SR 12 traffic when making left turns, but was rarely observed to be used as a left turn refuge lane for making two-part turns from Adobe Canyon Road. Field study of the frequency of use of the center lane as a left turn refuge revealed that during the PM peak hour of the day observed, approximately 25 percent of left-turners use the lane in this manner.[1] In the opinion of the EIR preparers, this would not recommend use of the modeling software to assume the refuge as a major factor in reducing delays for left turns at this location. Seventy-five percent of left-turners during the PM peak hour would not benefit from this reduction in turning delay during the PM peak hour. In summary, the EIR analysts determine that delays experienced for left turners at the Adobe Canyon Road intersection during the heaviest traffic on weekdays and Sundays can be very lengthy, and are more accurately depicted by use of the modeling software reported in the DEIR, with no credit given for use of the center lane as a left-turn refuge. For these reasons, the EIR analysts presented the level of service results as shown in the Sonoma Country Inn EIR.

[1] Telephone conversation with Dalene Whitlock, W-Trans, September 16, 2003.

The County of Sonoma PRMD requested Caltrans to provide guidance regarding the appropriate assumptions to make at the intersection. Caltrans engineers concluded that it is acceptable to model the Adobe Canyon Road intersection with the refuge lane (personal communication, Maija Cottle, California Department of Transportation, October 20, 2003).

Based on Caltrans communications with County staff, analysis of the Adobe Canyon Road intersection was revised to account for the use of the center turn lane as a refuge. Sonoma Country Inn Draft EIR Exhibits 5.2-6, 5.2-7, 5.2-8, 5.2-33, and 5.2-34 were revised consistent with text changes. The resulting level of service at the SR 12/Adobe Canyon Road intersection is far better than presented in the Sonoma County Inn DEIR for all time periods analyzed. For example, rather than the left turning movement being considered to operate at LOS F (existing 2002 PM peak hour conditions), indicating lengthy delays for this turning movement, it would be considered to operate at LOS C (existing conditions), and at LOS D or E (by year 2012).

An additional revision to the Sonoma Country Inn Draft EIR was necessary due to an oversight on the part of the EIR analysts: the SR 12/Adobe Canyon Road intersection just meets the Caltrans rural peak hour signal warrant during the existing (year 2002) Sunday PM peak hour, having an approach volume of 75 vehicles (the minimum approach volume required to meet the peak hour rural signal warrant).

Due to the changed intersection analysis (i.e., credit given for use of the center turn lane as a refuge lane, per Caltrans' direction) and the peak hour signal warrant being met under existing conditions, the text of the Sonoma Country Inn Draft EIR was changed.

Consistent with this changed analysis for the Sonoma Country Inn DEIR, the Sugarloaf Ridge State Park Preliminary General Plan and EIR analyzed the intersection using both methodologies (i.e., both with and without credit for use of the S.R. 12 center turn lane as a refuge for left turns from Adobe Canyon Road). If the refuge lane is taken into account, then

under 2005 Base Case conditions at the State Route 12/Adobe Canyon Road intersection, the stop sign controlled Adobe Canyon Road westbound left turn to State Route 12 would operate at LOS D during the Sunday PM peak hour. Under 2012 Base Case conditions at the State Route 12/Adobe Canyon Road intersection, the stop sign controlled Adobe Canyon Road westbound left turn to State Route 12 would operate at LOS E during the Sunday PM peak hour. The increment of project traffic would result in over 5 seconds added delay (i.e., the project would exceed the County's "5-second" impact threshold for intersections operating unacceptably [LOS E or worse]). Because the Preliminary General Plan includes Guideline CIRC-3, which directs the Department to conduct appropriate CEQA environmental review for area-specific projects and pay a fair share contribution to needed intersection improvements warranted by each project, this impact would not be considered to be significant.

In summary, if analyzed without credit for use of the refuge lane conditions (as analyzed in the DEIR), project-generated volumes would be expected to result in significant impacts during both 2005 and 2012 Sunday PM peak hour conditions. If credit is given for use of the refuge lane, project-generated volumes would be expected to result in significant impacts only during 2012 Sunday PM peak hour conditions.

# *Appendix G: Prehistoric Setting*

In the early 1970s, Fredrickson (1974; 1973) proposed a sequence of cultural manifestations or patterns for the central districts of the North Coast Ranges, placing them within a framework of cultural periods he believed were applicable to California as a whole. The idea of cultural patterns was distinct from the concepts of previous researchers (Beardsley 1954; Meighan 1955) who tended to emphasize assemblages of material goods as the basis for their classifications. Fredrickson took a much broader view of archaeological material culture and defined the term pattern as "...an adaptive mode shared in general outline by a number of analytically separable cultures over an appreciable period of time within an appreciable geographic space" (Fredrickson 1973:117). These different cultural modes could be characterized by:

- similar technological skills and devices (specific cultural items);
- similar economic modes (production, distribution, consumption), including especially participation in trade networks and practices surrounding wealth (often inferential)
- similar mortuary and ceremonial practices (Fredrickson 1973:118).

Fredrickson also recognized that the economic/cultural component of each pattern could be manifested in neighboring geographic regions according to the presence of stylistically different artifact assemblages. He introduced the term aspect as a cultural subset of the pattern, defining it as a set of historically related technological and stylistic cultural assemblages. Fredrickson argued that these temporal periods should be kept separate from the dating and definition of particular patterns given the coexistence of more than one cultural pattern operating at any given point in time in California prehistory (Fredrickson 1974:46). This integrative framework provides the means for discussing temporally equivalent cultural patterns across a broad geographic space.

The following is a summary of Fredrickson's (1974; 1973) temporal periods with descriptions of the associated

cultural patterns that have been identified for the region. The summaries incorporate recent taxonomic and interpretative revisions that are summarized from the recent work of White and Frederickson (1992).

### Paleo-Indian Period (10000 B.C. to 6000 B.C.)

This period saw the first demonstrated entry and spread of humans into California with most known sites being situated along lakeshores. A developed milling tool technology may be present at this time depth although evidence regarding this technology is scarce. The social units were not heavily dependent upon the exchange of resources with trading activities having occurring on an ad hoc, individual basis.

The Post Pattern represents the earliest known occupation of the North Coast Ranges. This Pattern is documented only at the Borax Lake site, and perhaps at the Mostin site (Moratto, 1984:497). Characteristic artifacts noted in the lithic assemblages include fluted projectile points and flaked crescents. Numerous occurrences of this Pattern's distinctive artifacts are reported and can be affiliated with better-documented assemblages in California and throughout North America.

### Lower Archaic Period (6000 B.C. to 3000 B.C.)

The beginning of this period coincides with the middle Holocene climatic shift to more arid conditions that brought about the drying up of the pluvial lakes. Subsistence appears to have been focused more on plant foods although hunting clearly still provided important food and raw material sources. Settlement appeared to be semi-sedentary with little emphasis on material wealth. Most tools were manufactured of local materials, and exchange remained on an ad hoc basis. Distinctive artifact types include large projectile points, milling slabs and handstones.

The Lower Archaic Borax Lake Pattern has been identified in the North Coast Ranges during this period. The Borax Lake Aspect identified in the Clear Lake Basin is the southernmost of three identified cultural divisions to this pattern. The most distinctive typological feature associated with the Borax Lake Aspect is wide-stemmed projectile points.

### Middle Archaic Period (3000 B.C. to 1000 B.C.)

This period starts at the end of mid-Holocene climatic conditions when weather patterns became similar to present-day conditions. Discernable cultural change was likely brought about in response to these changes in climate and accompanying variation in available floral and faunal resources. Economic systems were more diversified and likely included the introduction of acorn processing technology. Hunting remained an important source of food and raw materials although reliance on plant foods appears to have dominated the subsistence system. Sedentism appears to have been fully developed and there was an overall growth in population and a general expansion in land-use. Little evidence is present for the development of regularized exchange relations. Typologically and technologically important artifacts characteristic of this period include the bowl mortar and pestle and the continued use of large projectile points.

The earliest archaeological assemblages identified in the Napa Valley have been interpreted by Bennyhoff (1994:50) as representing a late component of the Borax Lake Pattern. More recent analysis has included this as part of the Hultman Aspect of the Mendocino Pattern (see White and Fredrickson 1992). Bennyhoff identifies this as the Hultman Phase within the Napa Valley cultural sequence distinguished by such stylistically unique obsidian drills, keeled obsidian tools, concave based projectile points and thick lanceolate projectile points. The milling assemblage is comprised exclusively of milling slabs and handstones. This phase shows cultural affiliation to the central districts of the North Coast Ranges where the Mendocino Pattern persists up to the Emergent Period.

### Upper Archaic Period (1000 B.C. to A.D. 500)

A marked expansion of sociopolitical complexity marks this period, with the development of status distinctions based upon material wealth. Group-oriented religions emerge and may represent the origins of the Kuksu religious system that arises at the end of the period. There was a greater complexity of trade systems with evidence for regular, sustained exchanges between groups. Shell beads gained in significance as possible indicators of personal status and as important trade items. This period retained the large

projectile points in different forms, but the milling stone and handstone were replaced throughout most of California by the bowl mortar and pestle.

### Emergent Period (A.D. 500 to 1800)

This period is distinguished by the advent of several technological and social changes. The bow and arrow were introduced, ultimately replacing the atlatl. Territorial boundaries between groups became well established and were documented in early historic accounts. It became increasingly common for distinctions in an individual's social status to have been linked to acquired wealth. The exchange of goods between groups became more regularized with more raw materials, along with finished products, entering into the exchange networks. In the latter portion of this period (1500 A.D. to 1800 A.D.), exchange relations became highly regularized and sophisticated. The clamshell disk bead became a monetary unit of exchange and increasing quantities of goods are transported over greater distances. Specialists arose to govern various aspects of production and exchange.

During this period, the Augustine Pattern becomes the predominant economic/cultural manifestation in the Central Valley, Bay and southern North Coast Ranges with numerous regional aspects having been identified in the archaeological record. Cultural traits that distinguish this pattern include pre-interment grave-pit burning, tightly flexed burials and cremation. Artifact assemblages include clam and Olivella shell disk beads, magnesite cylinders, and banjo type Haliotis ornaments, as well as bird bone whistles and tubes and flanged steatite pipes. The mortar and pestle are the predominant milling implements and small arrow points replaced the larger projectile point forms more commonly associated with atlatls. Also found in the tool assemblages were implements such as harpoons, bone fish hooks and gorge hooks.

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# *Appendix H: Cultural Resources Identified within the Sugarloaf Ridge State Park General Plan Study Area*

This appendix is part of the Sugarloaf Ridge State Park General Plan. It is held under separate cover for confidentiality.

**Table H-1. General Plan Area Cultural Resource Sites**

| SITE NUMBER | DATE RECORDED | SITE TYPE | TESTED | COMMENTS | QUAD | LOCATION | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | TWP. | RANGE | SECTION |
| CA-SON-65 | 1975; 1997; 1998 | Homestead ; lithic scatter | | P-49-000106 | Kenwood | 7 | 6 | 6 |
| CA-SON-66 | 1920; 1978; 1998 | Cabin | | P-49-000107 | Kenwood | 7 | 6 | 7 |
| CA-SON-77 | 1940; 1977 | campsite | y | Part of CA-SON-523? | Kenwood | 7 | 6 | 22 |
| CA-SON-78 | 1960; 1977 | mound | | | Kenwood | 7 | 6 | 22 |
| CA-SON-80 | | | | No information | Rutherf ord | 7 | 6 | 26 |
| CA-SON-81 | 1960 | Lithic scatter | | Peters site | Kenwood | 7 | 6 | 22 |
| CA-SON-82 | 1920s; 1977 | Prehistoric | | Could not relocate? | Rutherf ord | 7 | 6 | 23 |
| CA-SON-396 | 1960; 1977 | Lithic scatter | | Could not relocate | Kenwood | 7 | 6 | 22 |
| CA-SON-521 | 1969; 1984 | midden | y | Mostly graded away in 1976 | Kenwood | 7 | 6 | 22 |
| CA-SON-522 | 1969 | Midden/mound | | | Kenwood | 7 | 6 | 22 |
| CA-SON-523 | 1969; 1977 | Midden/mounds | y | Actively eroding | Kenwood | 7 | 6 | 22 |
| CA-SON-524 | 1969; 1977 | midden | y | Cut by stream | Rutherf ord | 7 | 6 | 23 |
| CA-SON-525 | 1969 | Rock wall | | | Rutherf ord | 7 | 6 | 23 |
| CA-SON-851 | 1975 | Lithic scatter | | | Kenwood | 7 | 7 | 1 |
| CA-SON-1109 | 1977 | Lithic scatter | y | SR-14 | Kenwood | 7 | 6 | 22 |
| CA-SON-1110 | 1977 | Lithic scatter | | SR-8 | Rutherf ord | 7 | 6 | 14 |
| CA-SON-1112 | 1977; 1984 | Lithic scatter, | y | SR-6; Under campsite | Kenwood | 7 | 6 | 22 |

| SITE NUMBER | DATE RECORDED | SITE TYPE | TESTED | COMMENTS | QUAD | LOCATION | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | TWP. | RANGE | SECTION |
| | | BRMs | | | | | | |
| CA-SON-1113 | 1977 | Stratified prehistoric | y | SR-1; Eroded into creek | Rutherf ord | 7 | 6 | 23 |
| CA-SON-1429 | 1983 | Chalcedony quarry | | SRSP-83-2; Behind campsite | Kenwood | 7 | 6 | 22 |
| CA-SON-1437 | 1983 | Lithic procurement area | | Behind campsite | Kenwood | 7 | 6 | 22 |
| CA-SON-1762 | 1977; 1988 | Lithic scatter | | SR-7; CA-NAP-521; Impacted by foot/vehicle traffic | Rutherf ord | 7 | 6 | 14 |
| CA-SON-1984/H | 1992 | Quarried stone | | | Kenwood | 7 | 6 | 22 |
| CA-SON-1985/H | 1992 | Quarried stone | | SLRSP-91-RD-2; Used for BBQ pits | Kenwood | 7 | 6 | 22 |
| CA-SON-1986/H | 1992 | Quarry debris | | SLRSP-91-RD-3; Put around culvert | Kenwood | 7 | 6 | 22 |
| CA-SON-1987/H | 1992 | Quarry debris | | SLRSP-91-RD-4; Put around culvert | Rutherf ord | 7 | 6 | 23 |
| CA-SON-2102 | 1993 | Lithic scatter | | In vineyard | Kenwood | 6 | 6 | |
| CA-SON-2134 | 1993; 1997 | Lithic scatter | | | Kenwood | | | 9 |
| CA-SON-2135/H | 1993 | Historic trash; lithic scatter | | P-49-000031 | Kenwood | 7 | 6 | 10 |
| CA-SON-2139/H | 1994 | Historic trash scatter | | P-49-000054; SLRSP 2 | Kenwood | 7 | 6 | 22 |
| CA-SON-2140/H | 1995 | Historic road and penstock | | P-49-000055; SLRSP 3 | Kenwood | 7 | 6 | 21 |
| CA-SON-2141/H | 1995 | Historic road for Hurd family? | | P-49-000057; SLRSP 5 | Kenwood | 7 | 6 | 9, 16 |
| CA-SON-2142/H | 1995 | Historic road | | P-49-000059; SLRSP 8 | Kenwood | 7 | 6 | 22 |
| CA-SON-2143/H | 1995; 1996 | Charcoal hearths; lithic scatter | | SR-13; P-49-000060; SLRSP 9 | Rutherf ord | 7 | 6 | 23 |
| CA-SON-2144/H | 1995 | Charcoal hearth | | SR-13; P-49-000061; SLRSP 12 | Rutherf ord | 7 | 6 | 23 |
| CA-SON- | 1995 | Charcoal hearth | | P-49-000062 | Rutherf | 7 | 6 | 23 |

| SITE NUMBER | DATE RECORDED | SITE TYPE | TESTED | COMMENTS | QUAD | LOCATION | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | TWP. | RANGE | SECTION |
| 2145/H | | | | | ord | | | |
| CA-SON-2146/H | 1995 | Historic road for charcoal production? | | SR 13; P-49-000063; SLRSP 13 | Rutherford | 7 | 6 | 23 |
| CA-SON-2147/H | 1995 | Charcoal hearths | | SR 13; P-49-000064; SLRSP 14 | Kenwood | 7 | 6 | 22 |
| CA-SON-2148/H | 1995 | Historic road and terrace | | P-49-000065; SLRSP 15 | Rutherford | 7 | 6 | 23 |
| CA-SON-2149/H | 1995;1996 | 1910 Cabin site; lithic scatter | | SR-9; P-49-000066; SLRSP 17 | Rutherford | 7 | 6 | 23 |
| CA-SON-2154/H | 1995 | Mine | | SR-2; P-49-001604; SLRSP 16 | Rutherford | 7 | 6 | 23 |
| CA-SON-2200 | 1996 | Lithic scatter | | SRSP-96-1 | Kenwood | 7 | 6 | 22 |
| CA-SON-2148 | 1996 | Historic; lithic scatter | y | P-49-000065; SRSP-96-4 | Rutherford | 7 | 6 | 23 |
| CA-SON-2202 | 1996 | Lithic scatter | | SRSP-96-5; Near campground | Kenwood | 7 | 6 | 22 |
| CA-SON-2203 | 1996 | Lithic scatter | | SRSP-96-6; Actively eroding | Kenwood | 7 | 6 | 22 |
| CA-SON-2204 | 1996 | Lithic scatter | | SRSP-96-9 | Kenwood | 7 | 6 | 22 |
| CA-SON-2205 | 1996 | Lithic scatter | | SRSP-96-10; Active erosion; in campsite | Kenwood | 7 | 6 | 22 |
| CA-SON-2206 | 1996 | Lithic scatter | | SRSP-96-11 | Kenwood | 7 | 6 | 22 |
| CA-SON-2228 | 1997 | Lithic scatter | | P-49-001936 | Kenwood | 7 | 6 | 6 |
| CA-SON-2292 | 1998 | Lithic scatter | | P-49-002638 | Kenwood | 7 | 6 | 6 |
| CA-SON-2293 | 1998 | Lithic scatter | | P-49-002639; Cypress Trail crosses site | Kenwood | 7 | 6 | 7 |
| P-49-000025 | 1993 | Obsidian biface | | | Rutherford | 7 | 6 | 14 |
| P-49-000026 | 1993 | Obsidian biface | | | Kenwood | 7 | 6 | 15 |
| P-49-000027 | 1993 | Obsidian lanceolate | | | Kenwood | 7 | 6 | 15 |
| P-49-000028 | 1994 | Obsidian bifaces | | | Kenwood | 7 | 6 | 15 |
| P-49-000053 | 1994 | Obsidian biface | | SLRSP-1 | Kenwood | 7 | 6 | 22 |
| P-49-000056 | 1995 | Milling slab | | SLRSP-4 | Kenwood | 7 | 6 | 22 |
| P-49-000058 | 1995 | Historic vehicle chassis | | SLRSP-6 | Kenwood | 7 | 6 | 10 |

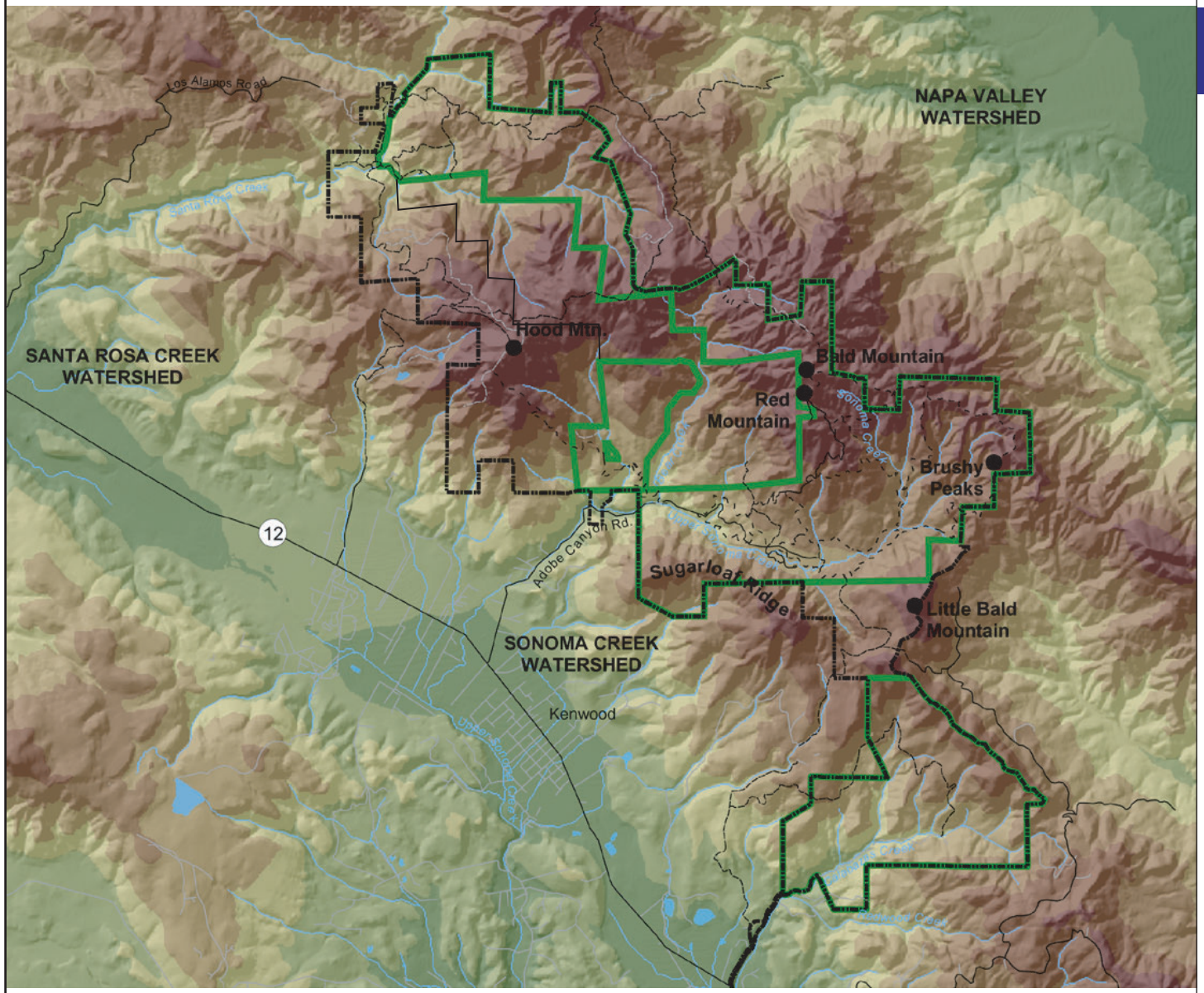
| SITE NUMBER | DATE RECORDED | SITE TYPE | TESTED | COMMENTS | QUAD | LOCATION | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | TWP. | RANGE | SECTION |
| P-49-001040 | 1997 | Obsidian flake | | | Kenwood | 7 | 6 | 6 |
| P-49-001804 | 1996 | Obsidian tool | | SRSP-96-3 | Rutherf ord | 7 | 6 | 23 |
| P-49-001808 | 1996 | Obsidian tool | | SRSP-96-7 | Kenwood | 7 | 6 | 22 |
| P-49-001809 | 1996 | Obsidian flake | | SRSP-96-8 | Kenwood | 7 | 6 | 22 |
| P-49-001937 | 1997 | Obsidian biface | | | Kenwood | 7 | 6 | 6 |
| P-49-001938 | 1997 | Obsidian flake | | | Kenwood | 7 | 6 | 5 |
| P-49-001939 | 1997 | Obsidian tool | | | Kenwood | 7 | 6 | 5 |
| P-49-002640 | 1998 | Obsidian biface | | | Kenwood | 7 | 6 | 7 |
| P-49-002641 | 1998 | Obsidian flake | | | Kenwood | 7 | 6 | 7 |
| P-49-002642 | 1998 | Obsidian biface | | | Kenwood | 7 | 6 | 7 |
| P-49-002643 | 1998 | Obsidian biface | | | Kenwood | 7 | 6 | 7 |
| P-49-002644 | 1998 | Polished stone | | | Kenwood | 7 | 6 | 7 |
| P-49-002645 | 1998 | Obsidian biface | | | Kenwood | 7 | 6 | 7 |
| P-49-002646 | 1998 | Obsidian point | | | Kenwood | 7 | 6 | 7 |
| P-49-002647 | 1998 | Obsidian biface | | | Kenwood | 7 | 6 | 7 |
| P-49-002648 | 1998 | Obsidian biface | | | Kenwood | 7 | 6 | 7 |
| P-49-002649 | 1998 | Obsidian flake | | | Kenwood | 7 | 6 | 7 |
| P-49-002650 | 1998 | Obsidian flake | | | Kenwood | 7 | 6 | 7 |
| P-49-002651 | 1998 | Obsidian point | | | Kenwood | 7 | 6 | 7 |
| P-49-002652 | 1998 | Obsidian biface | | | Kenwood | 7 | 6 | 7 |
| P-49-002653 | 1998 | Obsidian flake | | | Kenwood | 7 | 6 | 7 |
| P-49-002654 | 1998 | Obsidian biface | | | Kenwood | 7 | 6 | 8 |
| P-49-002655 | 1998 | Obsidian flake | | | Kenwood | 7 | 6 | 8 |
| P-49-002656 | 1998 | Obsidian flake | | | Kenwood | 7 | 6 | 8 |
| P-49-002657 | 1998 | Obsidian flake | | | Kenwood | 7 | 6 | 8 |
| P-49-002658 | 1998 | Obsidian point | | | Kenwood | 7 | 6 | 8 |
| P-49-002659 | 1998 | Obsidian biface | | | Kenwood | 7 | 6 | 17 |
| P-49-002660 | 1998 | Obsidian biface | | | Kenwood | 7 | 6 | 17 |
| SRSP-96-12 | 1996 | lithic scatter; swimming hole | | | Kenwood | 7 | 6 | 22 |
| SR-3 | 1977 | Historic structure | | | Kenwood | 7 | 6 | 22 |
| SR-4 | | | | No information | Kenwood | 7 | 6 | 22 |

| SITE NUMBER | DATE RECORDED | SITE TYPE | TESTED | COMMENTS | QUAD | LOCATION | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | TWP. | RANGE | SECTION |
| SR-5 | 1977 | Historic | | Sonoma State Hospital Farm | Kenwood | 7 | 6 | 22 |
| SR-10 | 1977 | Reservoir | | Sonoma State Hospital Farm | Kenwood | 7 | 6 | 22 |
| SR-12 | | | | No information | Kenwood | 7 | 6 | 22 |
| SR-15 | | 1850s vineyard | | | Kenwood | 7 | 6 | 22 |
| SON-ISO-17 | 1988 | Obsidian biface | | | Kenwood | 7 | 6 | 21 |
| SON-ISO-56 | 1983 | Obsidian flake | | SRSP-83-1 | Rutherf ord | 7 | 6 | 23 |

# Sugarloaf Ridge State Park

## GEOPHYSICAL FEATURES

### MAP 1




0 - 242 Feet
242 - 450 Feet
450 - 690 Feet
690 - 961 Feet
961 - 1,261 Feet
1,261 - 1,589 Feet
1,589 - 1,968 Feet
1,968 - 2,733 Feet

Basemap Features
- Study Area Boundary
- Sugarloaf Ridge State Park Boundary
- Paved Access Roads to Sugarloaf Ridge
- Other Paved Roads
- Dirt Roads with Access to Sugarloaf Ridge
- Other Dirt Roads
- Trails within Sugarloaf Ridge State Park
- Streams
- Parcel Boundaries

N

4,000 0 4,000 Feet

Source: Sonoma Ecology Center 2002; USGS 1972

11.24.2003

EDAW

# Sugarloaf Ridge State Park

## GENERAL PLAN KEY CONCEPTS

### MAP 2

**SANTA ROSA CREEK WATERSHED (McCormick):**

- 1 Visitor Use & Operational Facilities at Trailhead
- 2 Limited Access Campsites

**UPPER ADOBE CANYON:**

- 3 Various Improvements to Visitor Facilities in Upper Adobe Canyon
- 4 Possible Shared Parking Near Highway 12

**WESTERN BEAR CREEK:**

- 5 Limited Access Campsites and Picnic Areas
- 6 Employee Residence

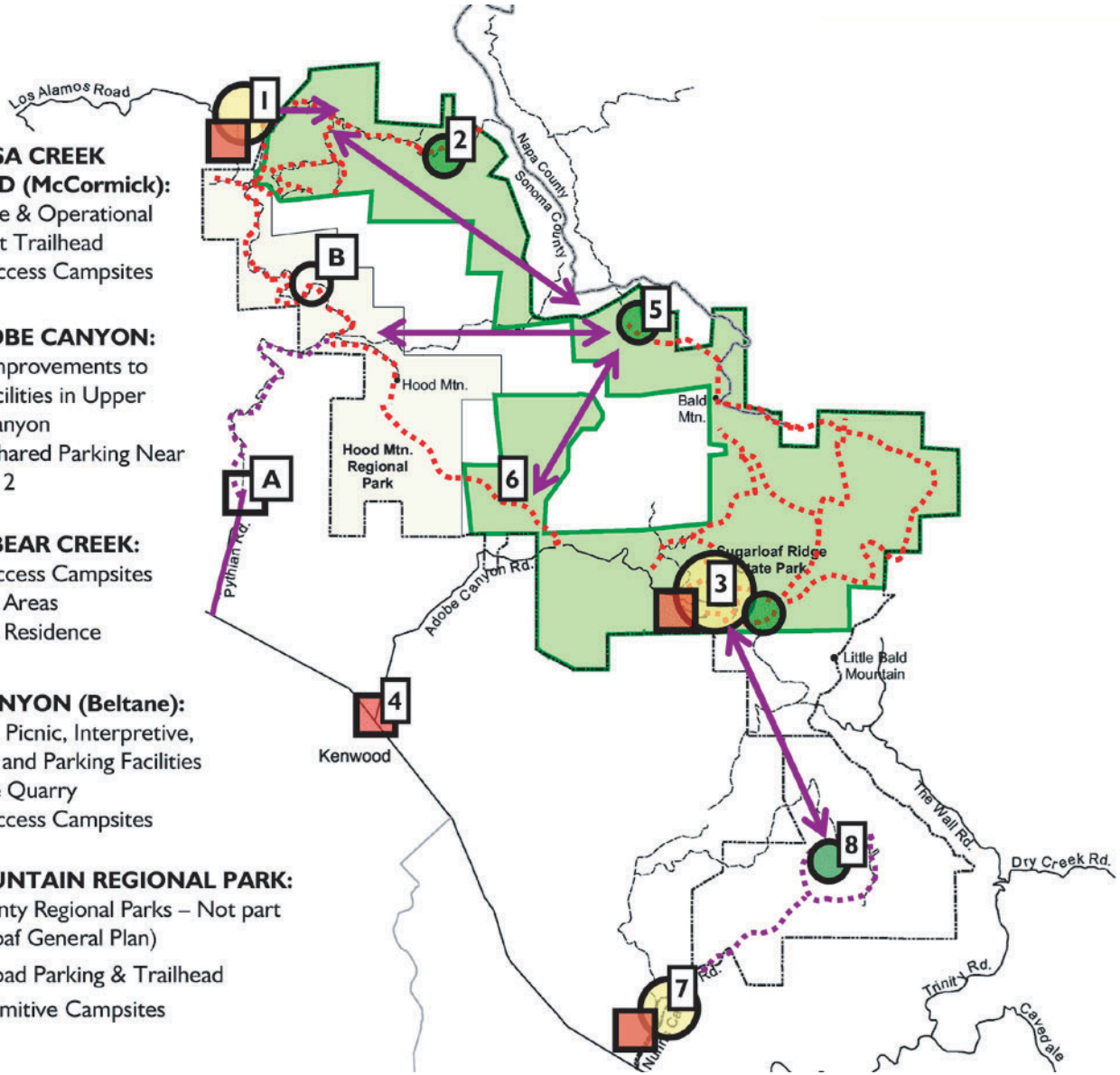
**NUNNS CANYON (Beltane):**

- 7 Trailhead, Picnic, Interpretive, Restroom and Parking Facilities at Beltane Quarry
- 8 Limited Access Campsites

**HOOD MOUNTAIN REGIONAL PARK:**

(Sonoma County Regional Parks – Not part of the Sugarloaf General Plan)

- A Pythian Road Parking & Trailhead
- B Azalea Primitive Campsites




Study Area Boundary

Sugarloaf Ridge State Park

Hood Mountain Regional Park

Access Roads to Sugarloaf Ridge

Existing Trails

Proposed Trails

Visitor Support Facilities

Parking Area

Limited Access Campsites

N

Source: EDAW, Inc.

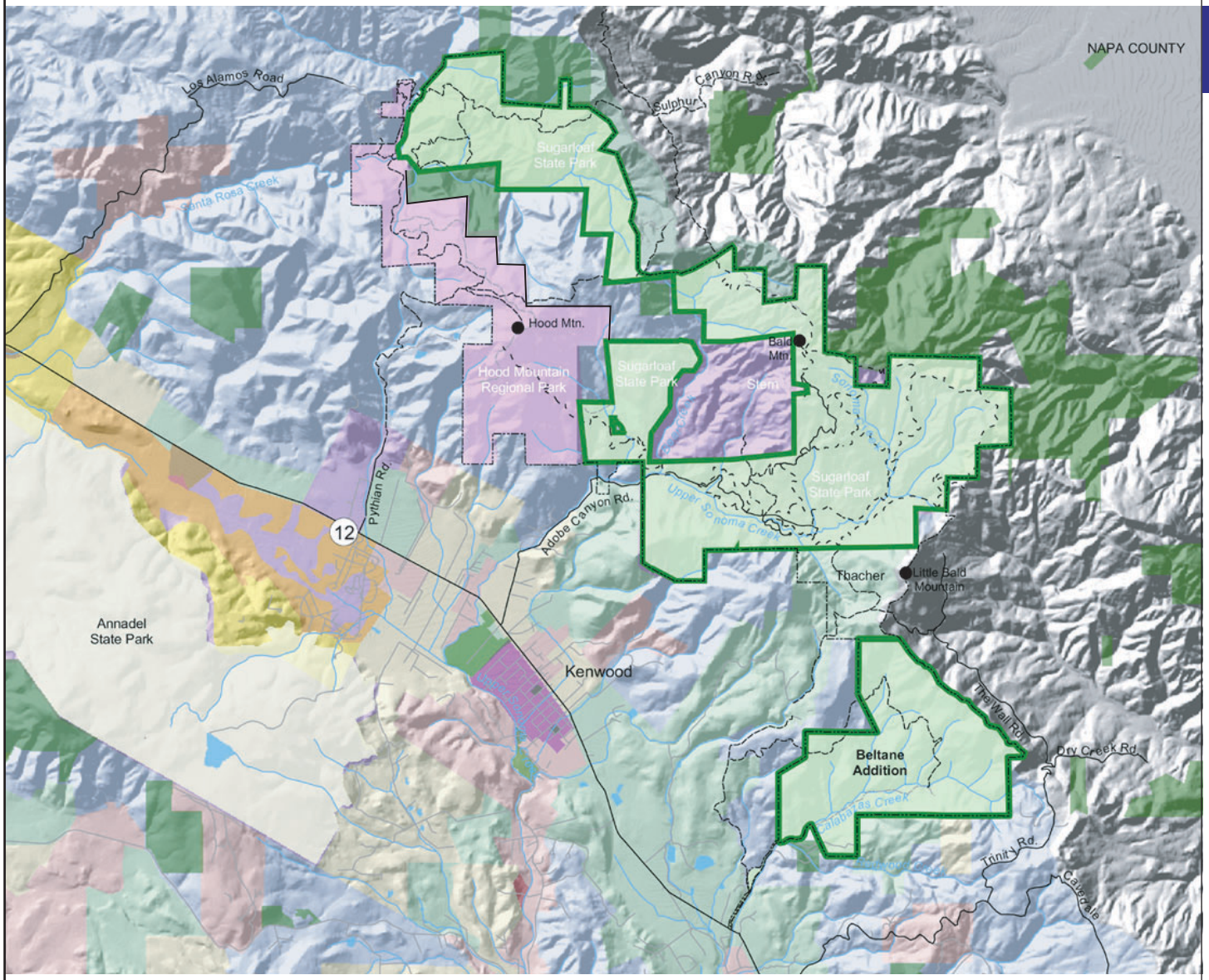
10.27.2003

EDAW

# Sugarloaf Ridge State Park

## GENERAL PLAN LAND USE DESIGNATIONS

### MAP 3




- Commercial
- Land Extensive Agriculture
- Land Intensive Agriculture
- Park/Public
- Residential - High Density
- Residential - Low Density
- Residential - Medium Density
- Resources and Rural Development
- Rural Residential
- Urban Residential

- Conserved Lands

**Basemap Features**

- Study Area
- Sugarloaf Ridge State Park Boundary

- Paved Access Roads to Sugarloaf Ridge
- Other Paved Roads
- Dirt Roads with Access to Sugarloaf Ridge
- Other Dirt Roads
- Trails within Sugarloaf Ridge State Park
- Streams
- Parcel Boundaries

N

4,000 0 4,000 Feet

Source: Sonoma Ecology Center 2002

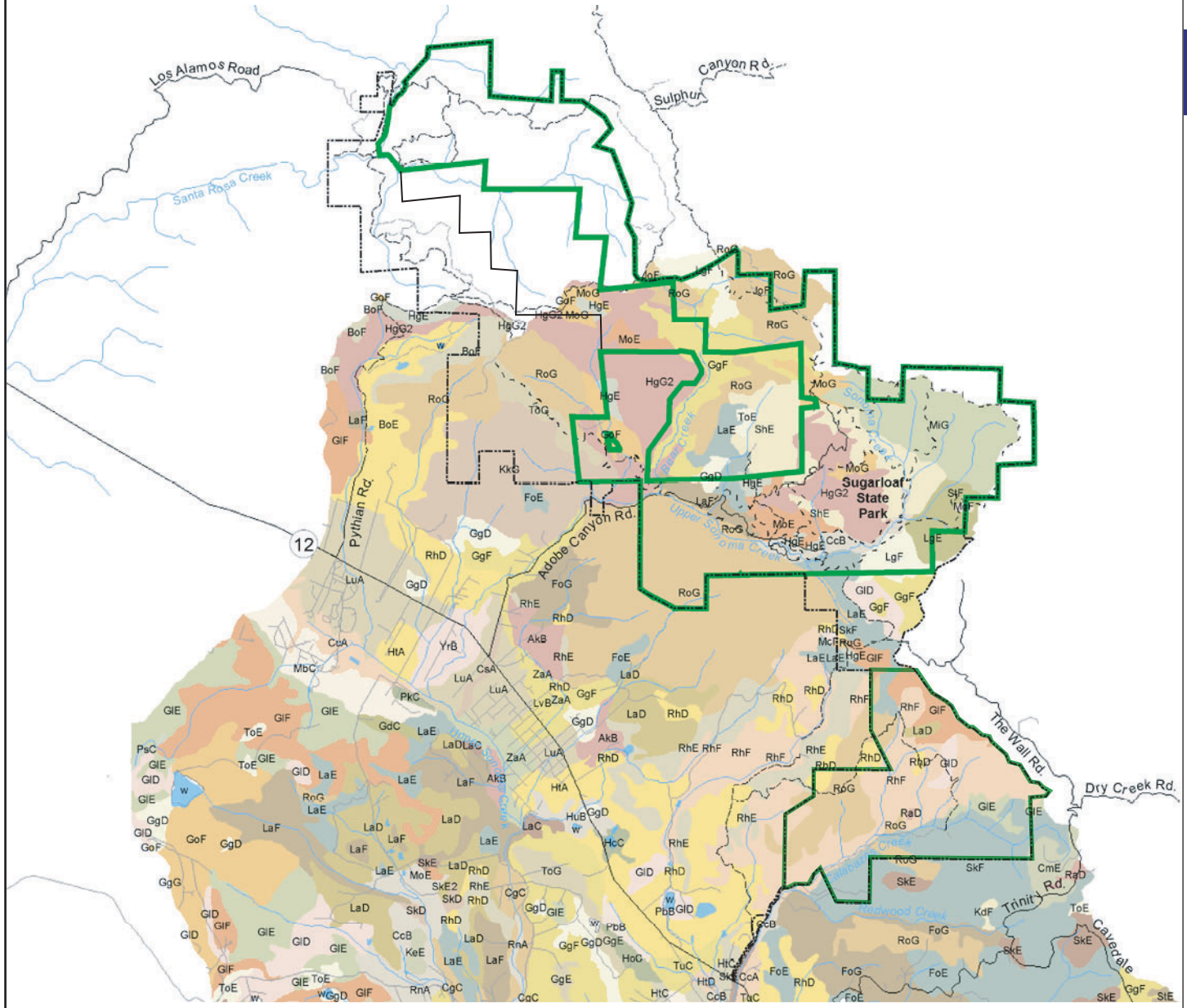
11.24.2003

EDAW

# Sugarloaf Ridge State Park

## SONOMA VALLEY WATERSHED SOILS

### MAP 4




CcB - Clear Lake Vlay Loam, 2-5% Slopes
GgD - Goulding Clay Loam, 5-15% Slopes
GgF - Goulding Clay Loam, 30-50% Slopes
GlD - Goulding Cobbly Clay Loam, 5-15% Slopes
GoF - Goulding-Toomes Complex, 9-50% Slopes
HgE - Henneke Gravelly Loam, 5-30% Slopes
HgG2 - Henneke Gravelly Loam, 30-75% Slopes
JoF - Josephine Loam, 30-50% Slopes
LaE - Laniger Loam, 15-30% Slopes
LaF - Laniger Loam, 30-50% Slopes
LgE - Laughlin Loam, 2-30% Slopes
LgF - Laughlin Loam, 30-50% Slopes
McF - Maymen Gravelly Sandy Loam, 30-50% Slopes
MiG - Maymen-Los Gatos Complex, 30-75% Slopes
MoE - Montara Cobbly Clay Loam, 2-30% Slopes
MoG - Montara Cobbly Clay Loam, 30-75% Slopes
RoG - Rock Land
ShE - Sobrante Loam, 15-30% Slopes
SkF - Spreckles Loam, 30-50%

Basemap Features
Study Area Boundary
Sugarloaf Ridge State Park Boundary

Paved Access Roads to Sugarloaf Ridge
Other Paved Roads
Dirt Roads with Access to Sugarloaf Ridge
Other Dirt Roads
Trails within Sugarloaf Ridge State Park
Streams
Parcel Boundaries

N

4,000 0 4,000 Feet

Source: Sonoma Ecology Center 2002; USGS 1972

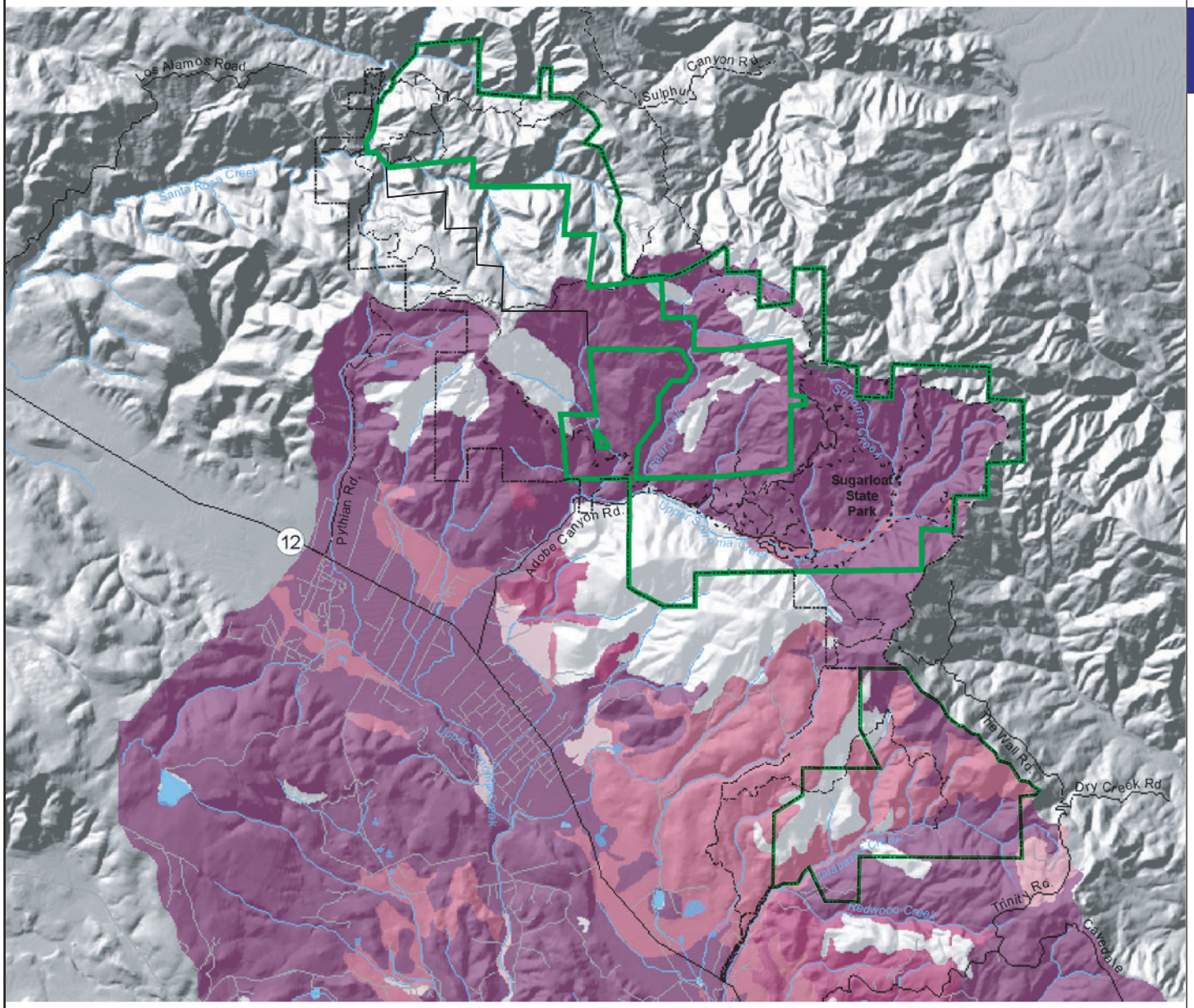
10.27.2003

EDAW

# Sugarloaf Ridge State Park

## SOIL EROSIVITY*

### MAP 5




| | |
|---|---|
| 0% | Low |
| 0.2% | |
| 0.24% | |
| 0.28% | Moderate |
| 0.32% | |
| 0.37% | High |

Basemap Features
- Study Area Boundary
- Sugarloaf Ridge State Park Boundary

- Paved Access Roads to Sugarloaf Ridge
- Other Paved Roads
- Dirt Roads with Access to Sugarloaf Ridge
- Other Dirt Roads
- Trails within Sugarloaf Ridge State Park
- Streams
- Parcel Boundaries

* Soil erosivity is a measure of a soil's likelihood to detach due to water movement. Some of the most important properties are texture, organic matter content, size, and stability of structural aggregates in the exposed layer, permeability of the subsoil, and depth to a slowly permeable layer.

N

4,000 0 4,000 Feet

Source: Sonoma Ecology Center 2002; USGS 1972

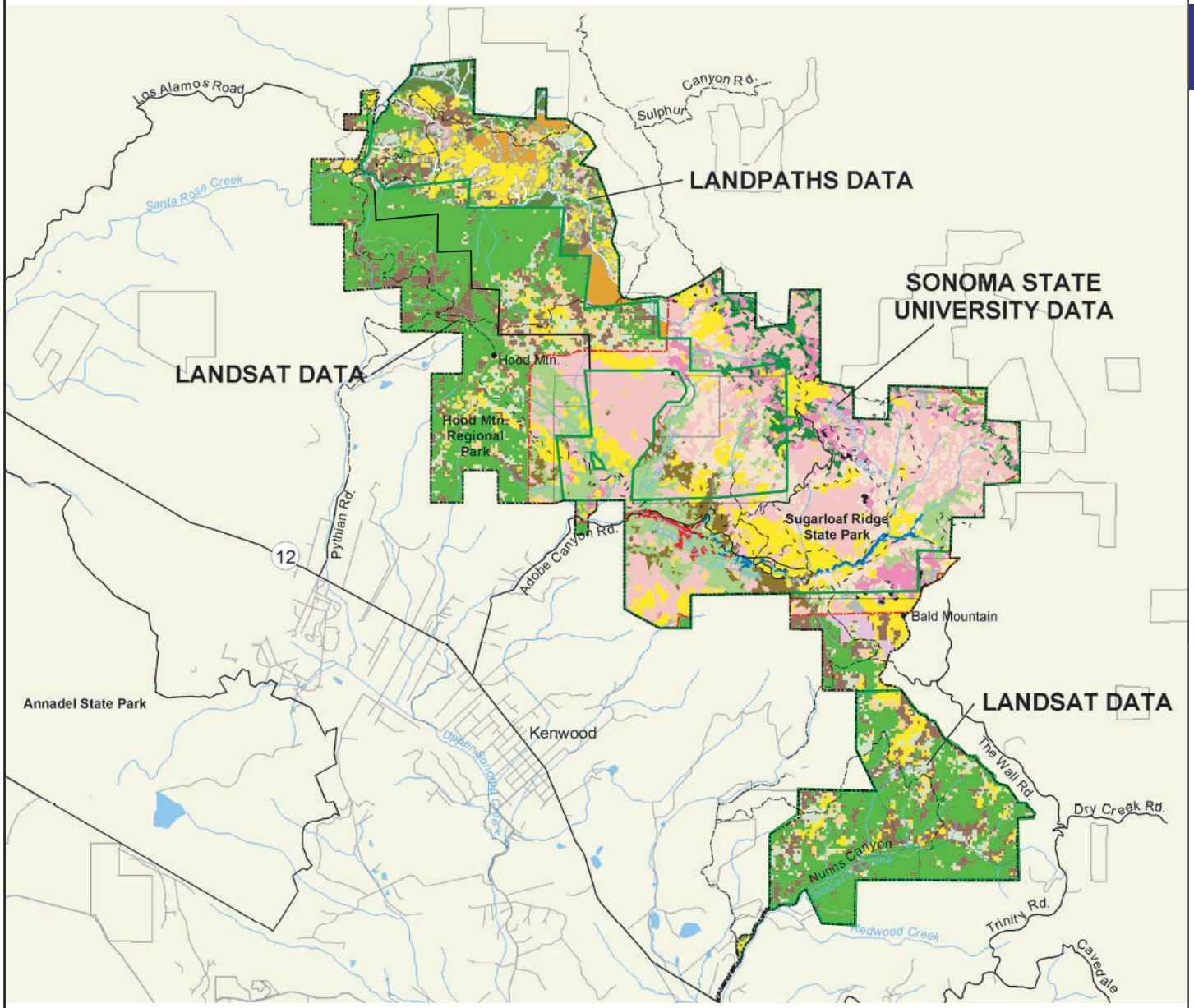
10.27.2003

EDAW

# Sugarloaf Ridge State Park

## VEGETATION

### MAP 6




Basemap Features

- Study Area Boundary
- Sugarloaf Ridge State Park

Three Vegetation Coverages

**LANDSAT***

- Oregon Oak, Black Oak, Valley Oak
- Evergreen Forest
- Mixed Forest
- Scrub and Chaparral
- Orchards/Vineyards
- Grassland

**LANDPATH***

- Grasslands
- Coast Live Oak/Oregon Oak Woodland
- Chamise Chaparrall
- Douglas Fir
- Mixed Chaparral
- Mixed Evergreen Forest
- Canyon Live Oak Woodland

**SSU GIC***

- Coast Live Oak
- California Bay
- Chamise/Chaparral
- Canyon Oak
- Black Oak
- Douglas Fir
- Grey Pine Chaparral
- Big Leaf Maple
- Grasslands
- Water
- Coyote Brush
- Mixed Chaparral
- Valley Oak
- Redwood
- White Alder Riparian
- Coverage Extent

N

4,000 0 4,000 Feet

Source: LANDPATHS (Santa Rosa Creek Watershed Management Zone Only); LANDSAT imagery: Sonoma State University Geographic Information Center (Sugarloaf Property Plus)

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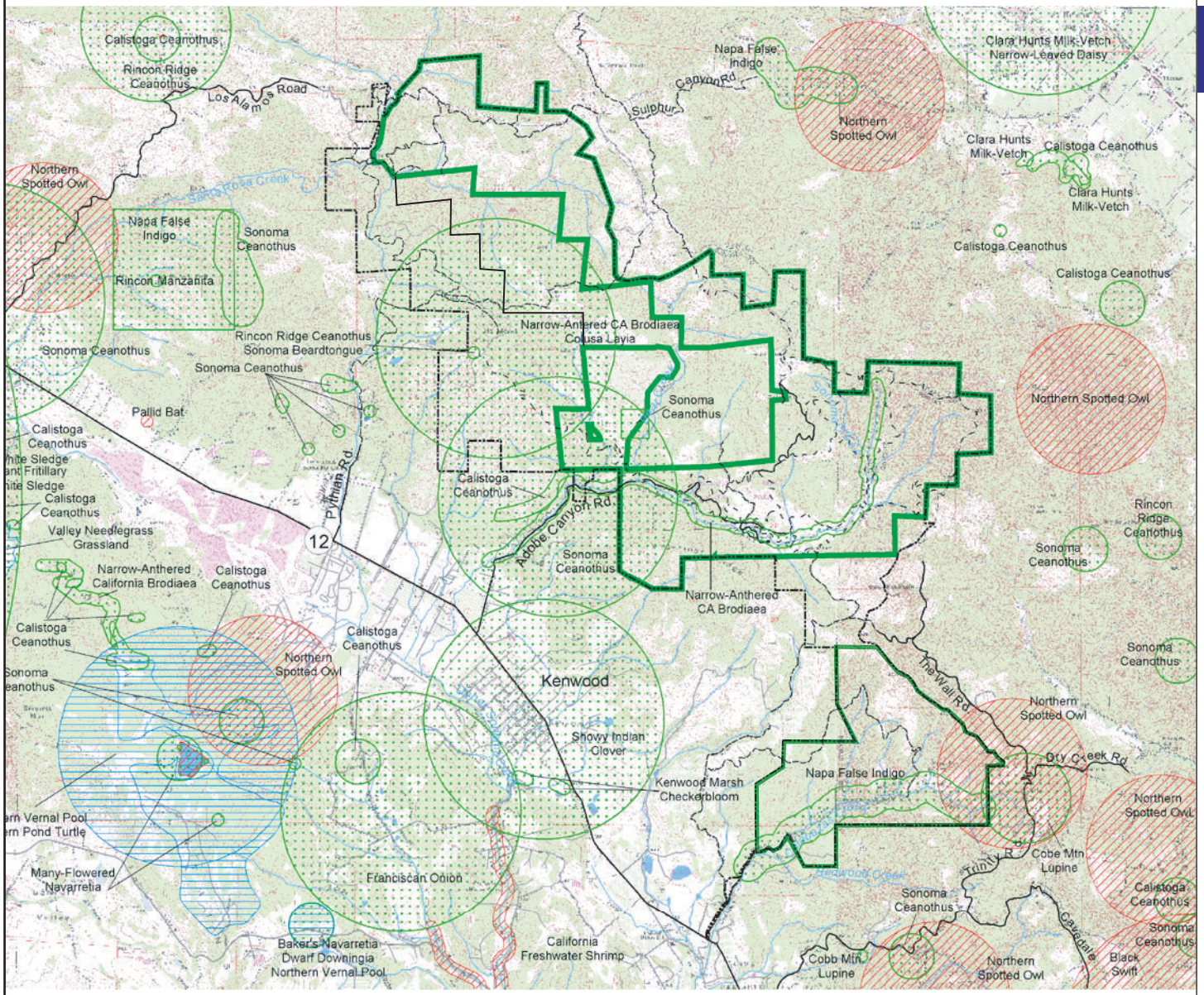
# Sugarloaf Ridge State Park

## CALIFORNIA NATURAL DIVERSITY DATABASE

### MAP 7




Plant
Animal
Terrestrial Community

Basemap Features

Study Area Boundary
Sugarloaf Ridge State Park Boundary

Paved Access Roads to Sugarloaf Ridge
Other Paved Roads
Dirt Roads with Access to Sugarloaf Ridge
Other Dirt Roads
Trails with Sugarloaf Ridge State Park
Streams
Parcel Boundaries

N

4,000 0 4,000 Feet

Source: Sonoma Ecology Center 2002; CNDBB 2002

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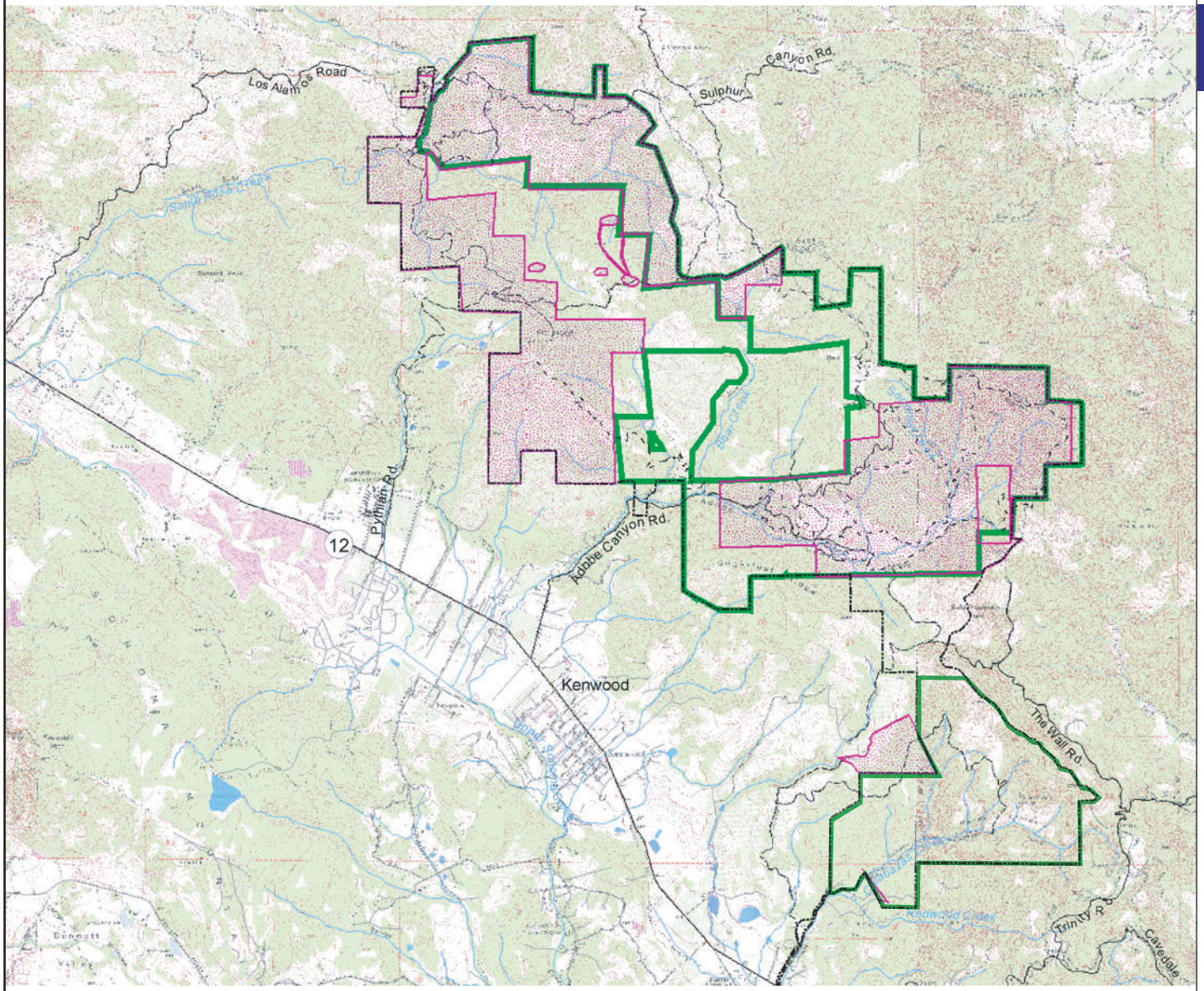
# Sugarloaf Ridge State Park

## PREVIOUS ARCHEOLOGICAL SURVEY COVERAGE

### MAP 8




Survey Area

Basemap Features

- Study Area
- Sugarloaf Ridge State Park Boundary
- Paved Access Roads to Sugarloaf Ridge
- Other Paved Roads
- Dirt Roads with Access to Sugarloaf Ridge
- Other Dirt Roads
- Trails within Sugarloaf Ridge State Park
- Streams
- Parcel Boundaries

N

4,000 0 4,000 Feet

Source: Sonoma Ecology Center 2002; EDAW, Inc. 2002; Charlane Gross 2002

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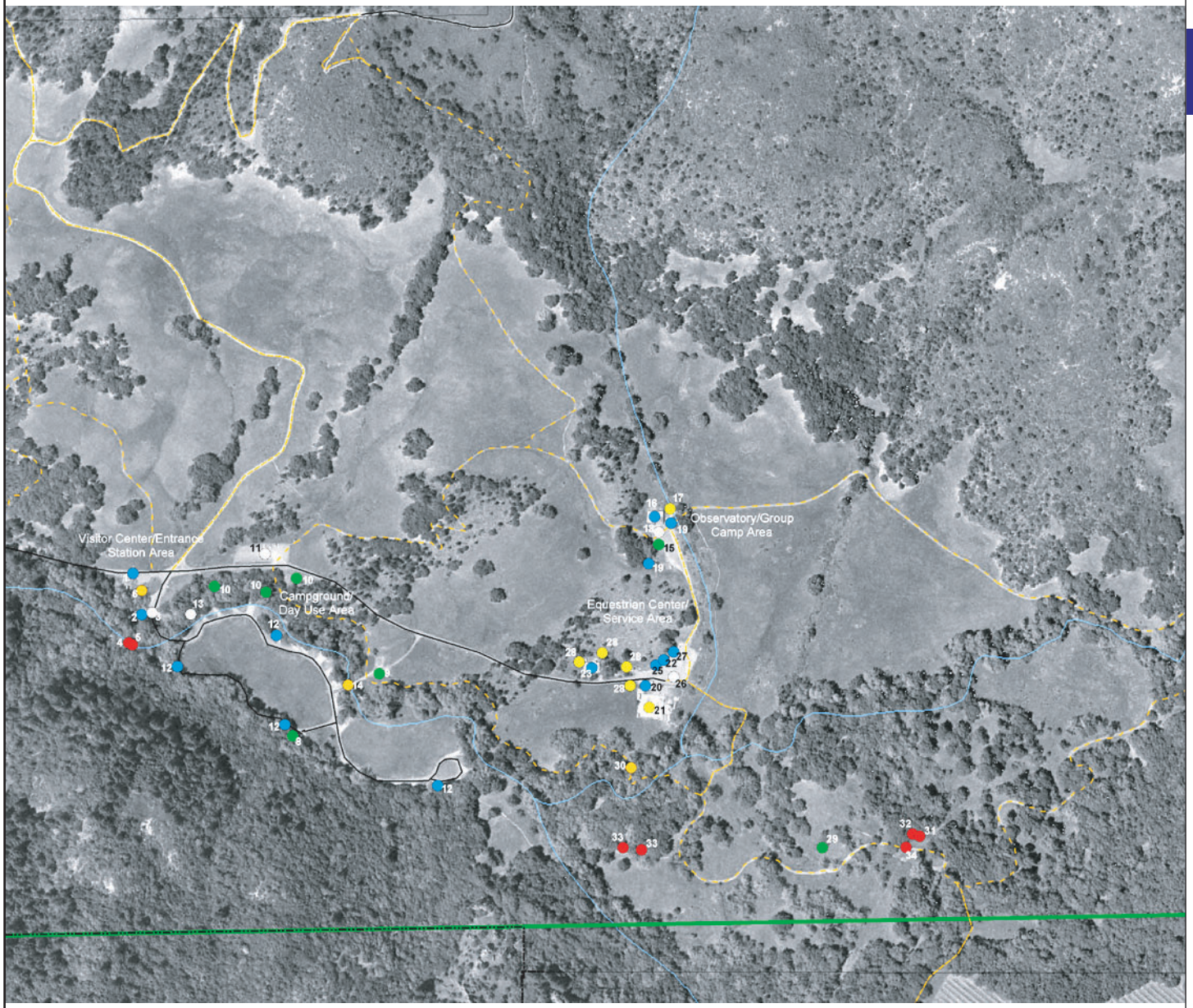
# Sugarloaf Ridge State Park

## EXISTING FACILITIES

### MAP 9




Facilities*

- Buildings
- Park Equipment
- Roads and Parking
- Trails and Footbridges
- Use Areas
- Utilities

*See Table 2-4 for a key to map numbers.*

Basemap Features

- Study Area Boundary
- Sugarloaf Ridge State Park
- Paved Access Roads to Sugarloaf Ridge
- Dirt Roads with Access to Sugarloaf Ridge
- Trails within Sugarloaf Ridge State Park
- Streams

N

400 200 0 400 Feet

Source: Sonoma Ecology Center 2002; Sonoma State University 2002; EDAW, Inc. 2002

10.27.2003

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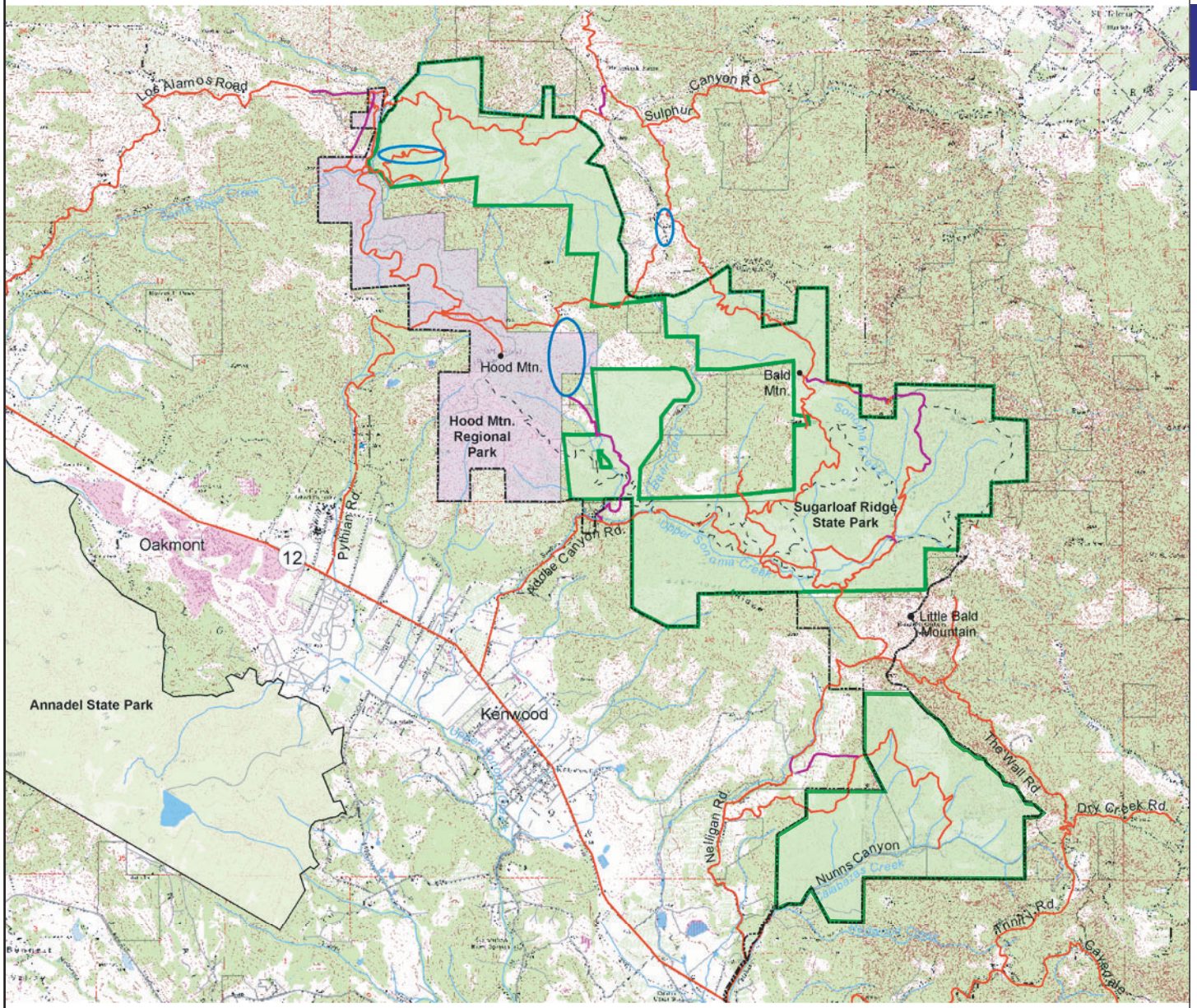
# Sugarloaf Ridge State Park

## EMERGENCY ACCESS AND EGRESS

### MAP 10




Emergency Vehicle Access Roads and Trails 8-Feet Wide and Greater (Per Existing GIS Database)

Known Emergency Access*

Other Paved Roads < 8 Feet Wide

Other Dirt Roads < 8 Feet Wide

Connections or Upgrades Needed

Basemap Features

Study Area

Sugarloaf Ridge State Park Boundary

Streams

Hood Mountain Regional Park

N

4,000 0 4,000 Feet

Source: Sonoma Ecology Center 2002; Sonoma State University 2002

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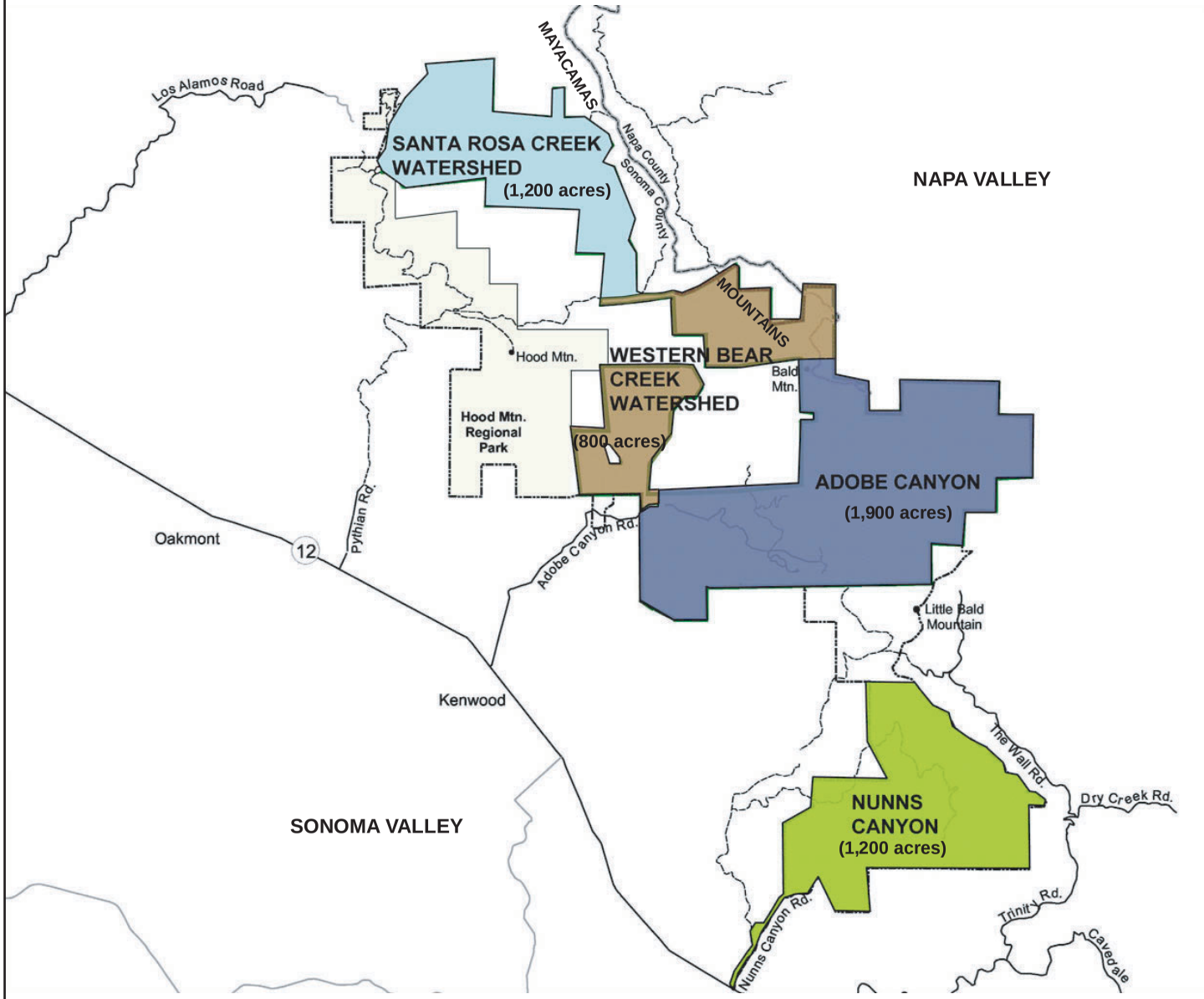
# Sugarloaf Ridge State Park

## GENERAL PLAN MANGEMENT ZONES

### MAP 11




Source: EDAW, Inc.

11.24.2003

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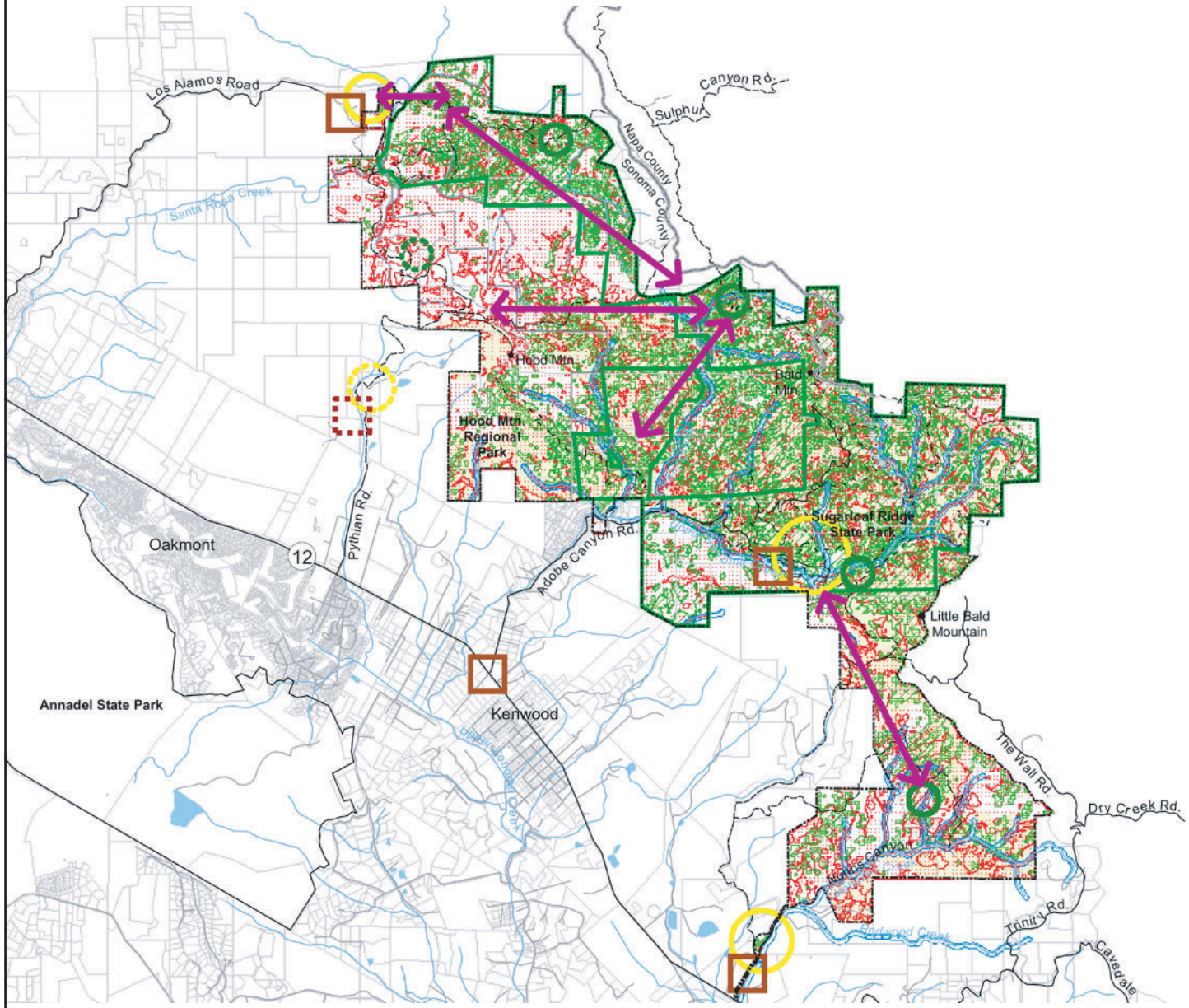
# Sugarloaf Ridge State Park

## PREFERRED ALTERNATIVE ENVIRONMENTAL CONSTRAINTS

### MAP 12




Study Area

Sugarloaf Ridge State Park Boundary

Facility Types

- New Trai Connection
- General Use Area
- Parking Lot
- Small Group/Wilderness Campground
- Owned/Operated by County

Environmental Constraints

**Cultural Resources**

- 100-Foot Buffer (Cultural Resources considered in analysis but not shown for confidentiality)

**Soils**

- Highly Erodible (0.37 Kfactor)

**Slopes**

- Greater than 30%

**Vegetation**

- Sensitive Vegetation*

**Water Features**

- 100-Foot Buffer

*Map indicates extensive compilation of information. For detailed use of this map see the electronic GIS file.*

N

4,000 0 4,000 Feet

Source: EDAW, Inc.; LANDPATHS; LANDSAT Imagery; Sonoma Ecology Center 2002; SSU GIC

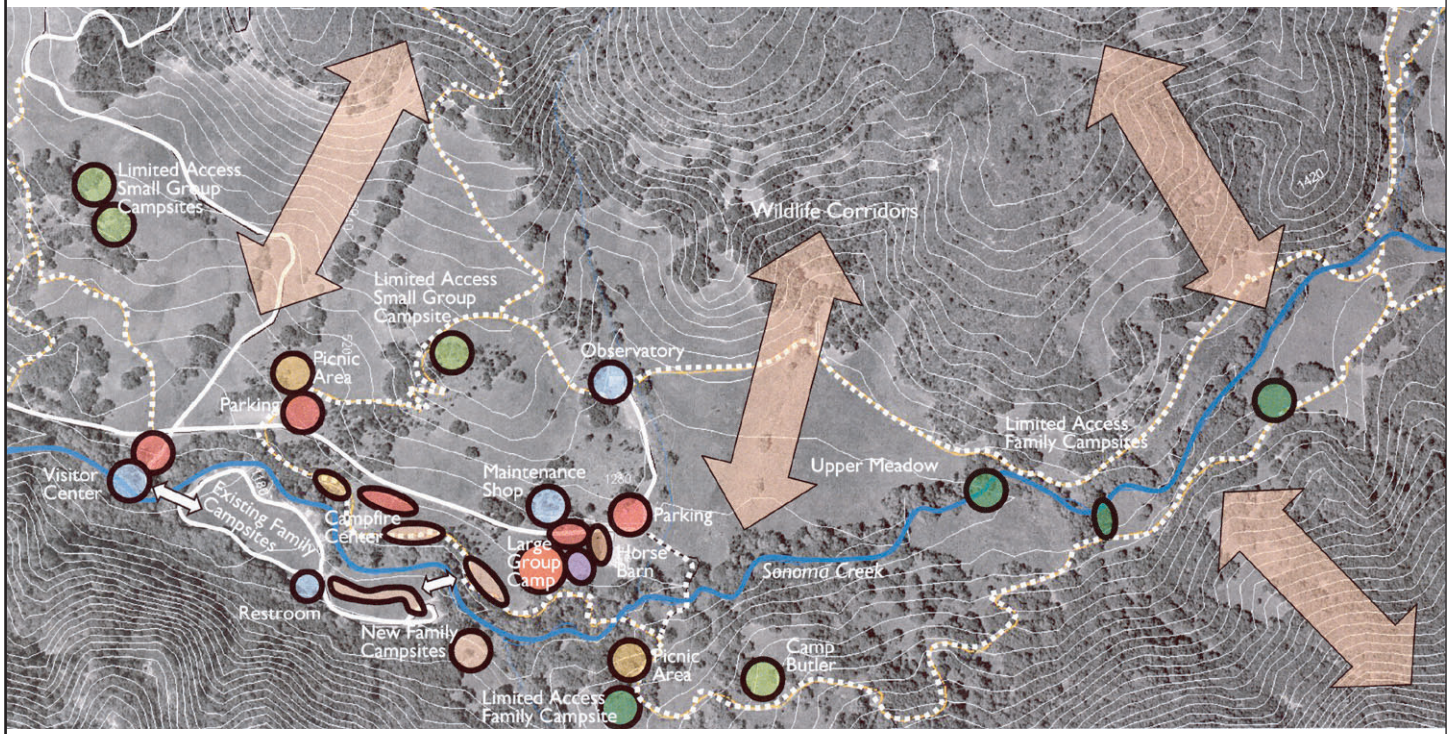
10.27.2003

EDAW

# Sugarloaf Ridge State Park

## UPPER ADOBE CANYON

### MAP 13




- Small Group Campground
- Picnic Area
- Limited Access Family Campground (8 people/campsite)
- Limited Access Small Group Campground (15 people/campsite)
- Family Campground (8 people/campsite)
- Large Group Campground (up to 50 people)
- Equestrian Corrals
- New Building (i.e., restroom, maintenance shop)
- Parking Lot
- Wildlife Corridor
- New Pedestrian or Vehicular Bridge
- Existing Roads/Trails

N

Source: EDAW, Inc. 2003

11.24.2003

EDAW