East Bay
Watershed Master Plan

EAST BAY WATERSHED MASTER PLAN
UPDATE

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East Bay Watershed Master Plan

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LIST OF ACRONYMS AND ABBREVIATIONS

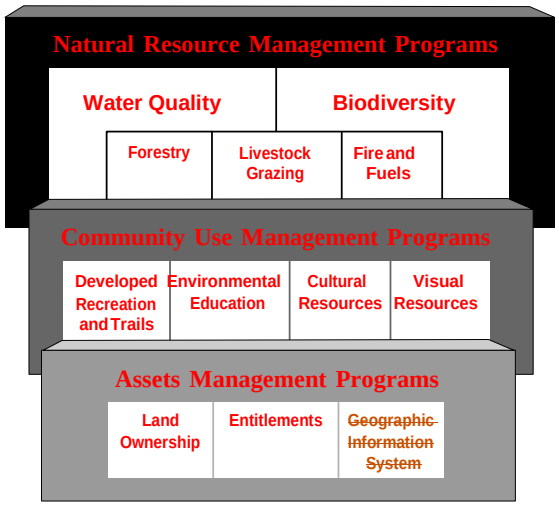
ADA	Americans with Disabilities Act
AUMs	animal unit-months
BHAPA	Briones Hills Agricultural Preservation Area
BMP	best management practice
Board	East Bay Municipal Utility District Board of Directors
CAC	Community Advisory Committee
Caltrans	California Department of Transportation
CCCFPD	Contra Costa County Fire Protection District
Cal Fire~~DF~~	California Department of Forestry and Fire Protection
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CRMP	coordinated resource management plan
DBPs	disinfection byproducts
~~DFG~~	~~California Department of Fish and Game~~
District	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EBWMP	East Bay Watershed Master Plan
~~EIR~~	~~environmental impact report~~
FMU	fire management unit
GIS	geographic information system
HCP	Habitat Conservation Plan
IPM	integrated pest management
ITP	Incidental Take Permit
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
TAC	Trails Adjunct Committee
THMs	trihalomethanes
USFWS	U.S. Fish and Wildlife Service
voCs	volatile organic compounds

Purpose of the East Bay Watershed Master Plan

The East Bay Municipal Utility District (District) owns and manages approximately ~~28~~29,000 acres of land and water surface in the East Bay area **(Figure 1-1)**. These lands surround five reservoirs (Briones, San Pablo, Upper San Leandro, Chabot, and Lafayette) and one basin area that does not contain a reservoir (Pinole Valley). The District's reservoirs store high-quality drinking water and emergency water supplies for approximately 1.~~4~~2 million water users in Alameda and Contra Costa Counties. Protecting water quality is primary in importance to the District.
Additionally, the District is committed to preserving and protecting the natural resources that exist on its lands and its reservoirs. Because these lands have been largely protected from development and human disturbance, they support important and high-quality habitats and resources for a wide variety of plant and animal species.

The District has determined that managing lands and reservoirs to protect water quality and important, high-quality biological resources can best be achieved by promoting biological diversity (biodiversity). Biodiversity is defined here as "the variety and variability among living organisms and the ecological complexes in which they occur" (Office of Technology Assessment 1987).

Focus of the East Bay Watershed Master Plan



Section 1

INTRODUCTION

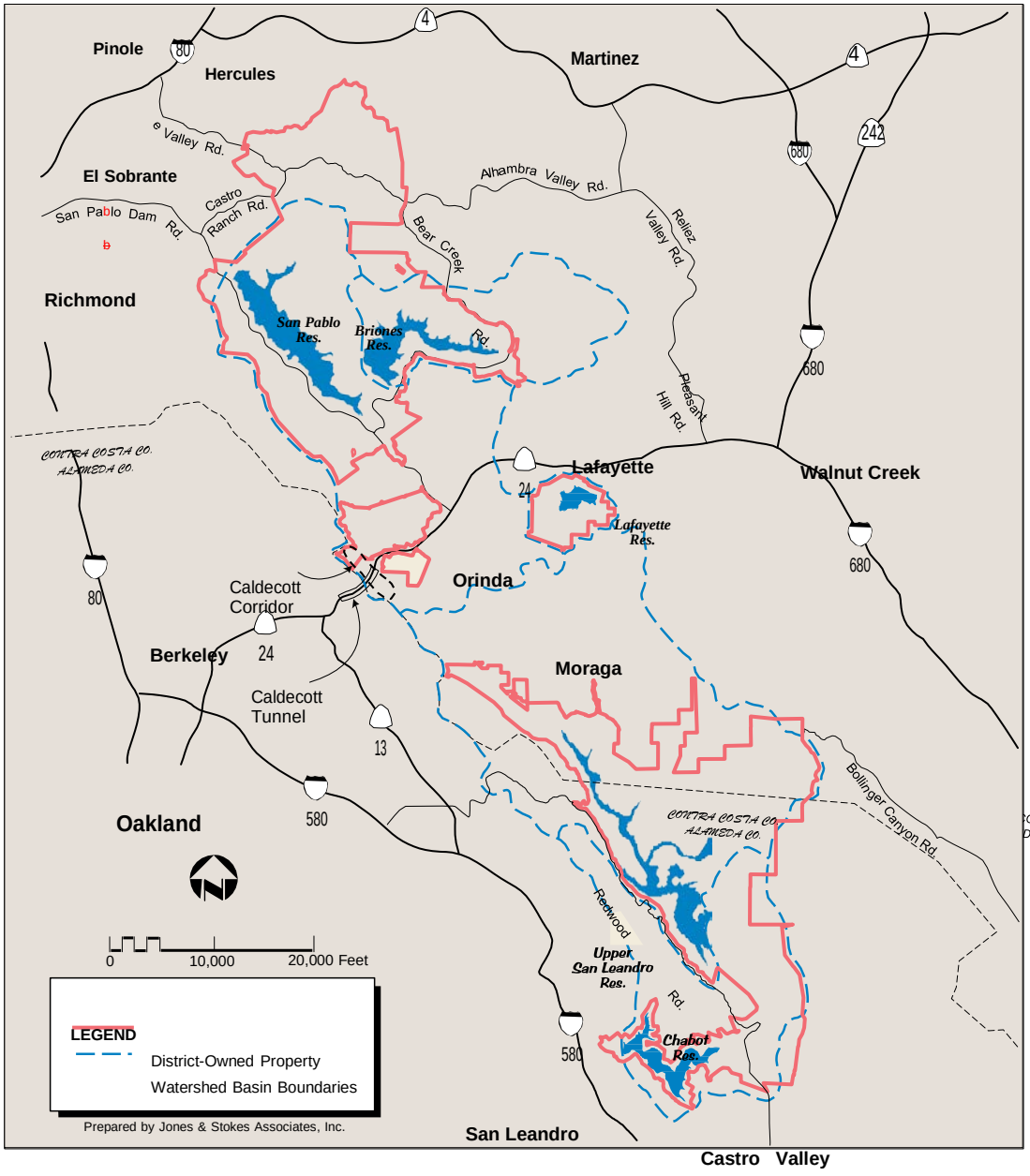


Figure 1-1
East Bay Municipal Utility District Property Boundary

The purpose of the East Bay Watershed Master Plan (EBWMP) is to establish long-term management direction for District-owned lands and reservoirs that will ensure the protection of the District's water resources and preserve environmental resources on District-owned lands. The plan also identifies public uses considered compatible or potentially compatible with the primary water quality and biodiversity goals.

The EBWMP provides clear guidance regarding the management direction on East Bay watershed lands. It is important to note that the EBWMP is not intended to require the implementation of any specific management actions and that approval of the plan by the Board of Directors (Board) does not imply or create a future commitment to fund any programs or program elements. Implementation of such actions will be determined by the Board through the annual budgeting process. If funding is approved for a specific program or program element, the EBWMP will provide the direction on how that program or program element will be implemented.

Plan Terminology

For purposes of this plan, the term "watershed" is typically used to describe District-owned lands that are the subject of the EBWMP. These areas include the:

San Pablo Reservoir watershed,
Briones Reservoir watershed,
Pinole watershed,*
Lafayette Reservoir watershed,
Upper San Leandro Reservoir watershed, and
Chabot Reservoir watershed.

References to "non-District watershed lands" are to those lands that are tributary to District reservoirs and lands but that are not owned by the District. When this document addresses the entire land area that is tributary to a District reservoir, including both District-owned and non-District-owned lands, the terms "hydrologic watershed" and "basin" are used.

*District-owned nonreservoir watershed (see page ~~15~~XX for further description).

Board of Directors' Policy Direction

The mission statement of the District represents general management guidance regarding all lands and reservoirs owned by the District. The guiding principles, developed from the mission statement, have provided direction for the master planning process.

Mission Statement

In 1992, the Board adopted the following District mission statement for management of lands and resources:

To manage the natural resources with which the District is entrusted, to provide high-quality water and wastewater services for the people of the East Bay, and to preserve and protect the environment for

Implicit in the District's mission statement is the commitment to exercise responsible financial management, ensure fair rates and charges, provide responsive customer service, and promote environmental responsibility. The EBWMP reflects the District's mission by using it as the basis for a plan that protects reservoir water quality for future generations through prudent management of District watershed natural resources.

Guiding Principles

In 1993, the District's Board provided seven guiding principles for the EBWMP. These principles have guided an integrated planning process that identifies resource and land use management goals, objectives, and implementation guidelines. These guiding principles are as follows:

1. Protect water quality through sensitive natural resource and recreation management.

2. Ensure protection of the natural, cultural, and historical resources of the watershed on a long-term basis.

3. Respect natural resources; sustain and restore populations of native plants and animals and their environments.

4. Provide for appropriate public access to the watershed consistent with the protection of natural resources and water quality.

5. Maintain an open process with full public involvement in development of the master plan.

6. Provide for public safety for those who utilize the watershed and reside adjacent to it.

7. Exercise financial responsibility in the development and implementation of land use policies and minimize costs to ratepayers.

History of East Bay Watershed Land Use Planning

In 1969, the District began work on its first master plan to address the various possible uses of District-owned lands and provide a framework for reservoir and watershed management. The District adopted a Land Use Master Plan in 1970 and has been using that plan and two subsequent amendments for guidance since its adoption. District Policy Statement 21, which implemented the *Land Use Master Plan*, called for an approach to multiple uses of watershed lands that recognized their importance as open space as second only to the primary purpose of watershed protection.

Because of changes in drinking water regulations, demographics, recreation demand, and residential development adjacent to and near District watershed lands, it became increasingly important to revisit the land use policies for watershed lands. The District ~~has prepared~~ completed the~~is~~ original EBWMP to update the 1970 *Land Use Master Plan* and ~~to~~ reaffirmed the District's commitment to water quality and environmental protection. ~~This EBWMP supersedes and replaces the 1970 *Land Use Master Plan*~~. The 1996 EBWMP was revised in 1999 to reflect new policies and approaches to water quality protection, in particular the need to address emerging contaminants.

In 2015, the District initiated an update of the EBWMP in recognition of the nearly twenty years that had elapsed since its first adoption and the numerous changes and developments that had occurred in that time span. These changes include adoption of several tiered management plans, policy changes, completion of numerous actions prescribed in the EBWMP, community needs, and natural phenomena. This update was adopted by the EBMUD Board of Directors on [**date**].

Scope of the East Bay Watershed Master Plan

The District's lands in Alameda and Contra Costa Counties include approximately 50% of the total basin area that contains the five reservoirs and Pinole Valley; the remaining lands within the hydrologic watersheds are owned by the East Bay Regional Park District or local municipalities or are privately owned.

The EBWMP addresses the present and possible future uses of District-owned lands in the local counties and the District's responsibilities and management direction regarding appropriate land uses. The EBWMP also addresses management issues for lands within the hydrologic watersheds that are not owned by the District.

Public Involvement

The original EBWMP in 1996 was developed using a public involvement program that included scoping meetings, project newsletters, a water bill insert to all of the District's customers, and workshops and presentations before the District Board of Directors. Additionally, the District established a Community Advisory Committee (CAC), comprising 24 individuals appointed by the Board.

The purpose of the CAC was to review issues, address current land use policies, and explore recommendations to be incorporated into the EBWMP.

The committee met approximately monthly over a 4-year period; in addition, numerous field trips were provided to familiarize the CAC with District-owned lands, reservoirs, and recreation areas. The members of the CAC represented a variety of interests, including grazing, fire protection, outdoor recreation, city and county planning, environmental conservation, Native American interests, and other citizens' coalitions.

Section 1

INTRODUCTION

The purpose of the EBWMP is to establish long-term management direction for District-owned lands and ~~reservoirs that will ensure the~~ protection of the District's water resources and preserve environmental resources on District-owned lands.

General Public Involvement in the 2015-2017 Update

During the development of the 1996 Plan, ~~M~~members of the general public were encouraged to comment or ask ques~~-~~tions regarding the EBWMP during three public scoping meetings and nine public issue workshops. The scoping meetings, which were conducted in July 1993, began the California Environmental Quality Act (CEQA) process. During these meetings, information about the project was provided and an opportunity was given to solicit information from the District about the proposed scope of work and to identify issues.

~~Several project newsletters and a water bill insert have been used to inform the public of the planning process and management issues and to provide opportunities to make additional comments, either directly to District staff or during issue workshops.~~

In the years after adoption of the EBWMP, members of the community approached District staff on a regular basis to inquire about potential new uses of and access to the watershed, advocate new parcel acquisitions, or recommend other policy changes. This update was also prompted by the need to revise a number of elements in the Plan to reflect new regulatory requirements and acquired experience managing the watershed.

This update was prepared with the participation of interested stakeholders in two public meetings and seven presentations to Board committees or full Board meetings that were open to members of the public. Public comments were solicited in writing to a dedicated email account and by post. Further, this update complies with the requirements of CEQA as documented in ___.

~~Management Recommendations from Community Advisory Committee~~

~~The District sought ongoing community involvement by establishing a CAC. The CAC brought together 24 individuals appointed by the Board to represent a variety of public interests, such as grazing, fire protection, outdoor recreation, city and county planning, environmental conservation, Native American interests, and other citizens' coalitions.~~

~~The CAC met with the District's watershed management staff approximately monthly since its formation in November 1991 and took numerous field trips. Members became familiar with the watershed lands, existing policy and management objectives, controversial issues, and the views of a broad segment of the public and District staff. The CAC reviewed and discussed issues, considered the consistency of current and proposed policies with the guiding principles adopted by the Board, and evaluated recommendations for consideration by the Board. The committee also held workshops on key issues identified during the public scoping process. Panels of subject matter experts, including a Trails Adjunct Committee (TAC), provided testimony for consideration by the CAC.~~

~~Specifically, CAC workshops addressed issues of concern, comments regarding current land use practices and policies, feedback from different viewpoints, and reaction to new ideas. The general public was invited to all CAC~~

~~meetings, and attendees were given the opportunity to comment on any topic. On the basis of the CAC's analysis and discussion, policy ideas were forwarded to the Board for consideration.~~

Organization and Use of the Plan

Sections 1 and 2 of this plan are introductory sections that describe the overall purpose of developing the EBWMP and summarize watershed resources. The remaining chapters of the EBWMP contain substantive provisions that guide the District's day-to-day management of and long-term planning for its East Bay land and water holdings. The contents of each subsequent section are discussed on the following pages.

Section 3, "General Management Direction"

Section 3 contains objectives and management guidelines that apply to all of the District's East Bay lands and management guidelines that apply to particular planning zones throughout the watershed. The management guidance is divided into three broad categories comprising 12 separate management programs, as follows:

- ***Natural resource management programs*** encompass all of the District's actions that involve management of the watershed's natural resources. These programs are:

  Water Quality,
  Biodiversity,
  Forestry,
  Fire and Fuels, and
  Livestock Grazing.

- ***Community use management programs*** address District actions involving management of the following human-oriented resources on the watershed:

  Developed Recreation and Trails,
  Environmental Education,
  Cultural Resources, and
  Visual Resources.

- ***Assets management programs*** are all of the District's activities that involve management of District property, including leases, and information about the watershed. These programs are:

  Land Ownership,
  and Entitlements.~~,~~
  ~~and~~
  ~~Geographic Information System (GIS).~~

The discussion of each program includes a brief description of the program, the activities conducted under the program, and lists of objectives, management guidelines, and coordination needs with other programs. The discussion about coordination will then inform watershed managers of other program considerations that need to be taken into account when carrying out management activities.

Section 4, "Watershed Management Area Direction"

The organization of this section is similar to that of Section 3 but contains management guidelines that relate only to specific District watershed areas. For example, fire and fuels management program guidelines that apply only to the San Pablo Reservoir watershed are included in Section 4. Management zone guidelines that are specific to a particular watershed are also included in Section 4.

Section 5, "Management Direction for Interjurisdictional Coordination"

Section 5 contains management guidelines for lands that are within the hydrologic watersheds of District reservoirs but are not owned by the District. The primary purpose of this chapter is to provide District staff with guidance regarding interaction with other land use agencies to ensure that the District's interests in water quality protection, fire and fuels management, and biodiversity are represented in local land use planning efforts. For example, Section 5 directs District staff to work closely with local land use authorities to ensure that fire and fuels management activities are incorporated into projects that would be located adjacent to the District's watershed lands. In the past, many developments abutting the District's property boundary were approved with no provisions for fire and fuels management, and the District has been forced to maintain plowed control lines in these locations at ratepayer expense.

Section 5 is intended to be used primarily by the District's watershed management staff in coordination with District planning staff when working with outside agencies and landowners.

Use of the East Bay Watershed Master Plan

To use the plan, watershed managers must first determine under which program or programs a proposed activity falls. Once that determination is made, watershed managers will then review the objectives and guidelines contained in Section 3 to determine if the proposed activity is consistent with the management guidance contained in the plan and what conditions apply. In addition, District staff must carefully review the section "Coordination Requirements for Other Resource Management Programs" to determine which other programs contain guidance that must be applied to the activity.

Staff must also determine whether the activity is contained within a single watershed or involves portions of several watersheds. The management guidance contained in Section 4 for the appropriate watershed or watersheds must then be examined to determine whether any watershed-specific guidance given there applies to the activity.

Section 5 is to be used primarily by District staff in its coordination activities with other land use jurisdictions. These coordination activities include both proactive communication with other agencies (e.g., involvement in the initial land use planning process for a development) and reactive communication (e.g., commenting on an environmental impact report for a land use proposal that is within a reservoir basin or is adjacent to District property).

~~Required Coordination with Other Resource Management Professionals~~

~~Because this master plan addresses a wide range of programs and disciplines, it is intended that those who use it will consult with the appropriate professionals where protection of resources may be an issue. During the early planning stages of resource management activities and where such activities can be reasonably anticipated to have an impact on sensitive resources (including rare, threatened, or endangered species, aquatic resources, and Native American sites), District staff will seek technical input from the appropriate District, regulatory, or consultant specialists. The information thus obtained will be incorporated into the plans for management activities and used to minimize resource impacts.~~

Compliance with the California Environmental Quality Act

The District's Board of Directors certified a programmatic Environmental Impact Report (EIR) for the EBWMP on March 26, 1996. ~~The programmatic environmental impact report (EIR) for the EBWMP~~ The EIR addressed~~s~~ the potential environmental impacts of implementing the EBWMP at a program-wide level. [A CEQA compliance document has been prepared in 2017 to address impacts of implementing the 2017 update to the EBWMP.] ~~However, implementing many of the programs and activities described in the EBWMP may require further review under CEQA.~~ Compliance with CEQA is required whenever a public agency proposes to undertake a project that requires discretionary approval.

The following are resource-specific plans that have been completed based on the EBWMP and their associated CEQA document that was completed:

- Fire Management Plan (October 2000) – Negative Declaration
- Range Resource Management Plan (December 2001) – Mitigated Negative Declaration (October 2001)

~~CEQA defines a project as any activity undertaken directly or indirectly, supported, or permitted by a public agency that may result in a direct or reasonably foreseeable indirect physical change in the environment. Therefore, as detailed implementation plans for individual programs or actions become available, they need to be evaluated to determine the need for additional CEQA compliance. If the potential environmental impacts of the action are adequately described and disclosed in the programmatic EIR, and if adequate mitigation measures are described to avoid or reduce any significant environmental impacts of the action, no additional CEQA documentation may be needed. If new site-specific impacts would be possible, however, the appropriate CEQA document (exemption, negative declaration, or EIR) should be prepared.~~

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Requests for New Watershed Uses

The EBWMP has been designed to be a dynamic management tool that will allow the District to evaluate current watershed management practices and respond to requests for new uses. As part of the EBWMP, the District ~~intends to~~ implements a detailed project evaluation review process to facilitate consideration of new uses ~~that were~~ not explicitly identified under management guidelines. The District's ~~intends the~~ internal review process ~~to be~~ is initiated by detailed requests for new uses and ~~to~~ involves:

- a formal application process and initial use compatibility evaluation,
- review by District committee,
- an EBWMP guideline consistency evaluation involving responses to an evaluation checklist,
- CEQA review and permitting processes, as applicable, and
- a Board approval process.

The evaluation process ~~will~~ recognizes the ~~future~~ need to amend management programs to reflect the District's priorities at the~~at~~ time and to accommodate uses or priorities that could not have been anticipated during the master planning process. ~~The District will implement this process in a timely manner once the Board has adopted the EBWMP.~~

Introduction

The District owns approximately 28,000 acres of land and reservoir surface areas in the East Bay area, comprising portions of the hydrologic watersheds of five reservoirs and a portion of one hydrologic watershed area that does not currently contain a reservoir. This section describes the District's lands and discusses some of the resource issues that are addressed in the EBWMP.

The District's East Bay watershed is a large and unique resource of semiwild, open land that is located in one of the most densely populated areas in the country.

Overview of District Lands

History

In 1928, 5 years after the District was formed, the proceeds of a $26 million bond issue were used to purchase the existing system of the East Bay Water Company. With the facilities came 40,000 acres of land in Alameda and Contra Costa Counties. A 1930 study of District lands indicated that 7,000-10,000 acres were not needed for watershed protection purposes and were suitable for parks and recreation use.

In 1934, the East Bay Regional Park District (EBRPD) was created to negotiate for, acquire, and manage District lands not needed for water quality protection. In 1936, the District agreed to sell approximately 2,000 acres of Wildcat Canyon, Roundtop Peak, and Temescal Reservoir to EBRPD. The park district has continued to acquire lands near and adjacent to District lands.

In 1966, the District opened Lafayette Reservoir to the public. Lake Chabot, which was leased to EBRPD in 1964, was opened for public use shortly thereafter. San Pablo Reservoir was opened to recreation in 1973, 65 miles of trails were opened in 1974, and 4,000 acres of property was set aside for environmental education purposes in 1976. Briones Reservoir is used for local university crew rowing practice which is strictly controlled. Upper San Leandro Reservoir remains closed to public access except for the trail system. In accordance with a comprehensive set of use rules and conditions designed to protect water quality, public access to most other District-owned lands is limited to use by permit only.

Emerging Challenges

Since the original adoption of the EBWMP in 1996, a number of significant changes have taken place that require a management response to continue protecting water quality and biodiversity on the EBMUD-owned watershed lands. This update seeks to address the primarily environmental challenges that have been recognized in the intervening years. The most prominent of these is climate change. While climate change is a global phenomenon with extremely complex impacts on the biosphere, the expected effects on the East Bay watershed include, but are not limited to:

- Increasing average temperatures (average, maximum and minimum), with more frequent, intense, and longer duration droughts;
- Impacts on water quality from intense storm events, including greater sedimentation in reservoirs;
- Erosion impacts from more intense storm events;

- Decreased soil moisture in more months of the year;
- Augmented risk of fires;
- Potentially increased stress on sensitive species;
- Potential for an increase in invasive species;
- Other changes in the vegetation mosaic and species composition; and
- New pathogens and diseases.

These effects will require an increased emphasis on monitoring and adaptive management as climatic conditions continue to change, potentially at an accelerated rate. The District will track climate change science and the potential impacts of climate change on watershed lands, and incorporate findings as appropriate into future studies and into this plan.

Other examples of ecosystem changes include sudden oak death and invasive quagga mussels, both requiring management responses that are described later in this update. Noxious weeds and invasive plants are ongoing concerns in watershed management, as well as non-native and feral animals including pigs.

A renewed emphasis on identifying and measuring contaminants within fish caught by anglers has led to health advisories being issued regarding consumption of particular species of fish. Contaminants range from the legacy of banned chemicals, such as polychlorinated biphenyls (PCBs), or those that occur both naturally and due to various industries, such as mercury. These chemicals bioaccumulate within the tissue of certain fish species, such as largemouth bass, to the point where consumption limits are established. Management actions to reduce the availability of these contaminants within reservoirs and fish populations may involve potential changes in operations and recreational fisheries management.

Adaptive management is a key element in each of the watershed management programs listed in this plan. An adaptive management process that continually evaluates the effectiveness of various avoidance, minimization, and mitigation measures is an important element of any watershed management plan. Adaptive management improves long-term management outcomes by allowing for changes in management that may be necessary in light of new information or environmental conditions. To be successfully implemented, adaptive management provisions are linked to measurable goals and monitoring. Evaluating results and refining management based on what was learned is essential to this approach. Staff continually evaluates, and, if necessary, recommends modifications to management practices. Resource management personnel review results of ongoing monitoring programs and revise management practices as needed to meet or exceed the goals of watershed management plans.

Sustainability in broad terms will continue to be an overarching concern for the management of the watershed, with a special focus on water quality and biodiversity. Trench spoils management will be a growing concern as the District accelerates its replacement schedule for pipelines in the distribution system. Trench spoils storage sites at Briones and on Miller Road have limited capacity, and an increased emphasis will be required to achieve reduced trench spoils production, spoils recycling, and local re-use to limit use of these sites for temporary storage.

Finally, EBMUD's service area has a projected population growth of 300,000 (more than 20%) by 2040, with a commensurate expected increase in demand for open space recreation and related amenities. Although most development in EBMUD's service area will be urban in-fill, there will nonetheless be a greater number of potential recreational users for a limited amount of open space. Meeting the evolving needs of a growing population will present ongoing challenges for EBMUD as it maintains its primary commitment to water quality and biodiversity.

Section 2

DISTRICT LANDS AND RESOURCES

General Description of Watershed Lands

San Pablo Reservoir and Watershed

San Pablo Reservoir covers 834 acres. It is owned and operated by the District for the storage of untreated water. The District owns 8,376 acres surrounding San Pablo Reservoir, or 55% of the basin **(Figure 2-1)**. The entire basin encompasses approximately 15,200 acres, of which 80% is open space, 19% is residential development, and less than 1% each is commercial development and freeway. District lands within the San Pablo Reservoir basin are divided into three separate land units that are discussed below.

San Pablo Reservoir Watershed Lands

The watershed area contiguous with San Pablo Reservoir comprises coastal foothills 300-1,600 feet in elevation, interspersed with flat to gently rolling valley floors and a few level, mid-elevation benches. Vegetation consists of grassland, hardwood forest, coastal scrub, Monterey pine, riparian woodland, and eucalyptus. Monterey pines were planted on portions of the reservoir shoreline to control erosion. The area owned by the District covers 7,022 acres.

Siesta Valley

Siesta Valley, located north of Highway 24 between the Caldecott Tunnel and Orinda (Figure 2-1), is an area of slightly more than 1,000 acres in the headwaters of the San Pablo Reservoir basin. The central section of the property is a valley between steep, U-shaped ridges of volcanic strata that dip beneath the valley floor on one side and reappear on the opposite ridge. The valley floor has gently sloping benches and covers a total area of about 40 acres. Soils on the slopes are thin and of limited value for grazing; those on the valley floor are deeper. The valley floor and western slopes support stands of eucalyptus and cypress that were planted in 1912-1915.

The soil instability of Siesta Valley, based on the geology and soils, make it an area of high erosion hazard and unsuitable for most uses. The valley does, however, have geological significance and has been used for many years as an outdoor geology laboratory by various colleges and universities.

Gateway Area

The Gateway area is ~~an isolated~~ a ~~245~~ 680 ~~-~~acre~~-acre~~ parcel located south of Siesta Valley and Highway 24 (Figure 2-1), ~~also within the upper portion of~~and is split with 218 acres in ~~of~~ the San Pablo Reservoir basin~~.~~ and 460 acres of mitigation area for the Wilder Project in the Upper San Leandro Reservoir basin. The land consists of moderate slopes rising abruptly to a ridge that carries over from Siesta Valley. ~~Relatively level areas are present where two ravines were filled as a byproduct of Bay Area Rapid Transit District work and freeway~~

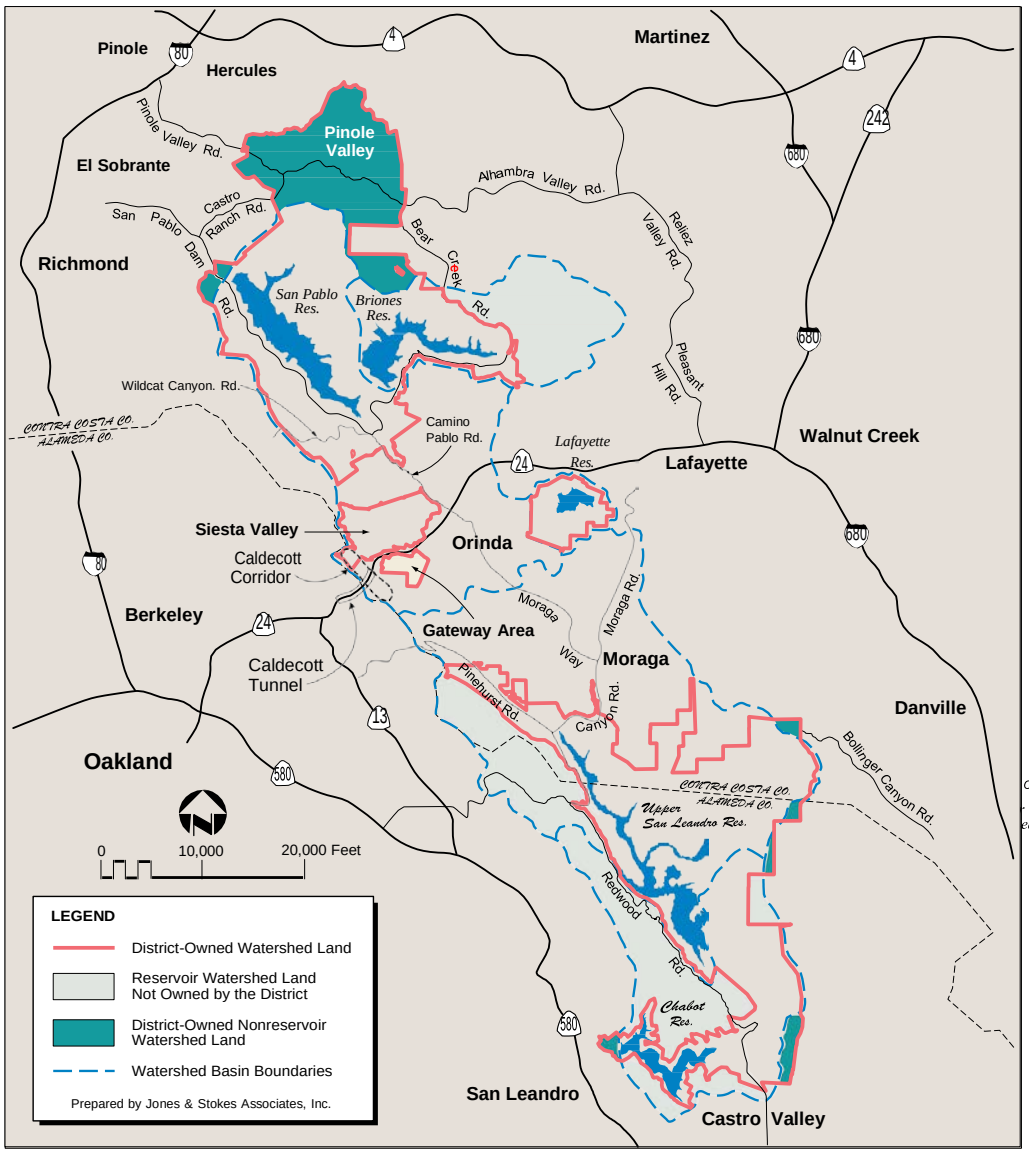

Figure 2-1
District Property and Watershed Boundaries

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~~expansion in the area.~~ Grasslands cover the lower slopes of the interchange side and the west side of the ridge, near the east entrance to the Caldecott Tunnel. Upper slopes are covered with extensive stands of coyote brush, poison oak, and laurel. These slopes also contain some of the best examples of native grasses and forbs found on the District's lands.

Briones Reservoir and Watershed

Briones Reservoir covers 725 acres. The reservoir is owned and operated by the District for raw water storage. Briones Reservoir watershed lands in District ownership encompass 2,642 acres, or 50% of the entire basin area (5,280 acres) (Figure 2-1).

These lands range in elevation from approximately 275 feet at the base of the dam to about 1,500 feet. Primary vegetation types are grasslands, coastal scrub, and oak/bay woodland.

Lafayette Reservoir and Watershed

Lafayette Reservoir covers 126 acres. Water is stored in Lafayette Reservoir for emergency purposes only. Lafayette Reservoir and surrounding lands are managed by the District primarily for recreation. The District owns the entire basin, which comprises 760 acres, including the reservoir (Figure 2-1).

Watershed lands range in elevation from about 350 feet to more than 1,000 feet. Primary vegetation types are oak/bay woodland, coastal scrub, and grassland habitats.

Upper San Leandro Reservoir and Watershed

Upper San Leandro Reservoir covers 794 acres and is enclosed, for the most part, in seven narrow, steep-walled canyons. The reservoir is owned and operated by the District for raw water storage.

The watershed lands in District ownership amount to 8,117 acres, which comprises 43% of the entire basin (Figure 2-1). These lands, ranging in elevation from 460 feet to 2,000 feet, are generally the most rugged and ecologically diverse of the District's East Bay land holdings. Primary vegetation types are hardwood forest, grassland, coastal scrub, riparian woodland, redwood forest, and chamise-black sage chaparral. This watershed also contains the only occurrence of knobcone pine forest on District lands.

The Upper San Leandro Reservoir basin contains 18,680 acres, of which 89% is open space, 9% is residential development, and 2% is commercial development.

Chabot Reservoir and Watershed

Chabot Reservoir covers 340 acres. Water is stored in Chabot Reservoir for emergency purposes only. The reservoir is located in EBRPD's Anthony Chabot Park, and the reservoir and a portion of District watershed land surrounding the reservoir is leased to EBRPD. Management guidance presented in this plan that applies to Chabot Reservoir watershed lands ~~will guide future coordination between the District and EBRPD and, where appropriate, should be~~ are incorporated into ~~future amendments to~~ the Lake Chabot Recreation and Park Lease. The watershed lands owned by the District encompass approximately 3,920 acres, 51% of the entire basin (Figure 2-1).

Watershed lands range in elevation from about 60 feet to approximately 1,100 feet. Primary vegetation types are hardwood forest, grassland, and coastal scrub habitat.

The Chabot Reservoir basin, including lands owned by the District, covers approximately 7,720 acres, of which 97% is open space, 2% is golf course, and 1% is residential development.

District-Owned Nonreservoir Watershed Lands

Pinole Valley

Pinole Valley is located 4 miles from Pinole and 2 miles from San Pablo Reservoir. The valley is an 8,262-acre area in the northernmost planning units of the District's East Bay lands (Figure 2-1). Pinole Valley was purchased as a potential reservoir site, but currently does not contain a reservoir and is not tributary to any of the District's other reservoirs. The District owns 45% of the valley, or 3,681 acres. About 380 acres in the valley floor area are flat; much of the flat land is cultivated for hay farming under lease. The rest of the area, with slopes of 30%-70%, rises to elevations as high as 1,000 feet. Vegetation ranges from grasslands over most of the valley to densely wooded slopes of oak and laurel on the southern rim. In 2017, the District approved the creation of the Oursan Ridge Conservation Bank, a parcel consisting of 430 acres.

Other Areas Not Tributary to District Reservoirs

The District owns approximately 633 acres that are not tributary to the reservoirs or part of the Pinole Valley. In general, these are small areas below dams or on ridges where runoff would not contribute to one of the five District reservoirs. Many of these buffer lands are essential to the District's land holdings to preserve the ridgetops and scenic values in addition to maintaining lands to protect water quality.

Description of Watershed Resources

Hydrology and Water Quality

The District's East Bay reservoirs receive water from Pardee Reservoir on the Mokelumne River through the Mokelumne Aqueduct and from local basin runoff. The 30-year average contribution of local runoff to the total reservoir inflow is shown in **Table 2-1**. On the average, however, only 10% of the total system input comes from local runoff because most Mokelumne River water in the system goes directly to the treatment plants and into the distribution system, bypassing storage in local reservoirs. Mokelumne River water is regularly delivered via aqueducts to San Pablo, Briones, and Upper San Leandro Reservoirs. When water gets released from Briones and Upper San Leandro Reservoirs, it becomes blended and is received by San Pablo and Chabot Reservoirs, respectively. Lafayette Reservoir receives water from the local basin only. Briones, San Pablo, and Upper San Leandro Reservoirs are all used to store water for ongoing domestic use, whereas Lafayette and Chabot Reservoirs would be used only in an emergency.

Table 2-1
~~Thirty~~Fifty-Year Average Contribution of Local Runoff to Total Reservoir Inflow

Reservoir	Watershed Area (acres)[a]	Local Runoff		Local Rainfall		Mokelumne Flow	
		Acre-feet	% Inflow	Acre-feet	% Inflow	Acre-feet	% Inflow
Briones	5,280	~~1,720~~2,100	2~~2~~3	1,55~~9~~20	18	~~4~~5,350~~,860~~[b] ~~60~~59	
San Pablo	15,140	16,910~~470~~	67~~44~~	1,~~,~~715~~7~~0	~~4~~7	~~61~~9,520~~110~~[c] 26~~52~~	
Lafayette	760	4~~6~~40	60~~58~~	28~~7~~0	36	3~~5~~0[d]	~~46~~
Upper San Leandro	18,680	15,~~46~~100	66~~59~~	1,~~3~~470	~~65~~	6,520~~8,990~~[b] 28~~35~~	
Chabot	7,720	2,95~~6~~0	3~~56~~	60~~1~~0	7	4,~~55~~910[e]	5~~86~~

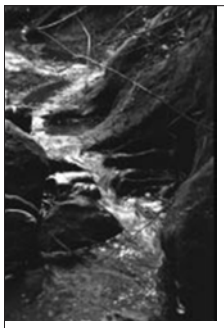
[a] Including reservoir and rounded to the nearest 10-acre increment.
[b] From Moraga Aqueduct.
[c] Combined Mokelumne Aqueduct and Briones Reservoir.
[d] No input from Mokelumne aqueduct since April 1977.
[e] From Upper San Leandro Reservoir.

The quality of water in the District's East Bay reservoirs can vary~~ies~~. Local runoff in the East Bay hills is generally of poorer quality than the Mokelumne River because it contains higher levels of nutrients, organic matter and suspended solids. Some of the local reservoirs, including San Pablo, Upper San Leandro, and Chabot are downstream of developed areas such as the City of Orinda and the Town of Moraga. Generally speaking, the greater the percentage of Mokelumne River water in a local reservoir, the better tis quality.

The water quality in Briones Reservoir is very high, primarily because the reservoir is filled mostly from the Mokelumne Aqueducts with relatively little input from local runoff because the surrounding basin is small and relatively undeveloped. During drought, the District's supplemental water supply from Sacramento River can also be stored in Briones Reservoir and subsequently used as supply to Orinda and other District's Treatment Plants. It is essential that Briones maintain this high quality because it is regularly used at the Orinda Water Treatment plant, which does not have the ability to treat water with high levels of suspended solids, or water containing algal by-products which can create taste and odor problems. ~~basin is small and relatively undeveloped. Consequently, runoff from this basin, as compared to more developed basins, has less negative impact on reservoir water quality. However, because Briones is the largest of the District's East Bay reservoirs and has the strategic ability to directly or indirectly gravity feed all the filter plants, any activi-~~

~~ties in the basin that have the potential to compromise water quality are of the highest concern to the District.~~

~~The water quality of Upper San Leandro and San Pablo Reservoirs is affected to a greater degree by runoff from developed basin lands, and these effects are mitigated to some degree by nearly continuous delivery of water from the Mokelumne River. The Town of Moraga and the City of Orinda are dominant features of the Upper San Leandro and San Pablo basins, respectively. Chabot Reservoir water quality, while still acceptable, is less pristine because this reservoir is not used as an on-line supply. Recreational use of the reservoir and developed recreation in the watershed are relatively high and may affect water quality. Stagnation (poor mixing) is also believed to be a significant water quality problem.~~



Upper San Leandro and San Pablo Reservoirs receive a greater volume of local runoff than Briones Reservoir, including runoff from developed areas. These reservoirs exhibit higher winter turbidities, higher organic matter, and greater concentrations of taste and odor compounds than Briones Reservoir. The Town of Moraga and the City of Orinda are dominant features of the Upper San Leandro and San Pablo basins, respectively. Chabot Reservoir water quality, while still acceptable, is less pristine because it receives very little supply from the Mokelumne River.

In 1998, the District banned to use of two-stroke motors on San Pablo Reservoir, after the gasoline additive MTBE (methyl tert-butyl ether) was detected in the water.

In 1998, the District substituted the use of chloramines for chlorine at all its treatment plants, thus reducing public exposure to disinfection byproducts (see below) for customers throughout the service area. In addition, a hypolimnetic oxygenation system (HOS) was installed at the USL treatment plant in [**year**] to reduce the nutrient load in the source water.

Table 2-2
Constituents of Concern in San Pablo and Upper San Leandro Watersheds

Constituent	Basis for Concern
~~Disinfection byproducts (DBPs)~~	~~Trihalomethanes (THMs) and other DBPs are formed when dissolved organic matter is oxidized in the presence of halogens, such as occurs in the chlorination process to disinfect reservoir water. District water supplies are in compliance with existing DBP regulations. The U.S. Environmental Protection Agency has identified an intent to promulgate DBP regulations that will require modification to the treatment processes for continued compliance. Immediate improvements planned include the conversion of disinfection practice to chloramination. Further improvements may be required after 2000 pending further changes in regulations. Specifically, ozonation of all source water may be required.~~
Pesticides	Drinking water goals for most routinely used pesticides are less than the analytical detection limit. However, pesticides have been detected in District reservoirs. These pesticides have not been detected in treated drinking water.
Blue-green algae	Blue-green algae can produce cyanotoxins that threaten aquatic and terrestrial wildlife, as well as domestic animals.

Mercury	This is a naturally occurring chemical element that can be introduced into water supplies by the weathering of rocks and soils. Concerns about its toxicity have led to a reduction in its use, although it is still used in some electrical components. The proper handling and disposal of mercury containing components is critical to minimizing its release into the environment and water supplies.
Nutrients	Nutrients encourage growth of algae, which leads to taste and odor problems, potential THM precursors formation, and fish kills. Taste and odor control requires treatment using ozone, which is very expensive. Shoreline vegetation can also contribute to nutrient loading as water levels increase.
Pathogens	Runoff samples have extremely high amounts of fecal bacteria, as is typical of developed watersheds. Other pathogens have been detected, including giardia and cryptosporidium. Although these pathogens have been detected, the District treated drinking water is in compliance with all regulations. Future regulations are anticipated that may require further controls.
Polynuclear aromatic hydrocarbons (PAHs)	PAHs are carcinogens for which drinking water standards have been established. Those standards are being attained in District reservoirs, although ~~.~~runoff from developed areas exceeds drinking water regulations. Treated water meets all current regulations.

~~Runoff from developed areas exceeds drinking water regulations, although final treated water meets all current regulations.~~

Nutrients	Nutrients produce algae, which leads to taste and odor problems, potential THM formation, and fish kills. Taste and odor control requires treatment using ozone, which is very expensive.
Metals	Aquatic life and drinking water standards for copper, chromium, lead, nickel, and zinc are exceeded in runoff to reservoirs, but no exceedances in the reservoirs have been noted.
Solids	Solids must be removed from drinking water supplies, which increases operating costs. Some eroded material is deposited in the reservoir and reduces storage volume. Solids in runoff can also cause runoff to "short circuit" through the reservoir to the treatment plant intake structure.

Water is stored in Lafayette Reservoir for emergency use only. Lafayette Reservoir water quality is relatively poor compared to the District's other reservoirs because all water entering this reservoir comes from the surrounding basin. Stagnation and a high level of recreational use may also influence water quality in Lafayette Reservoir.

The effect of land use and management on the quality of runoff and reservoir supply has been documented in District studies, including those summarized in the *Upper San Pablo Creek Watershed Non-Point Source Monitoring Program 1988-89 Project Report* and *Non-Point Source Monitoring Program for the San Pablo, Briones and Upper San Leandro Watersheds 1990-91 Project Report.* **Table 2-2** describes the water quality constituents of concern that have been evaluated in these studies. The following summaries of specific study results illustrate the strong influence of local watershed runoff on water quality.

Although local basin runoff contributes only a portion of the total inflow into East Bay reservoirs, it contributes most of the total contaminant load entering these reservoirs. ~~For example, the estimated load of nitrogen to Upper San Leandro Reservoir from local runoff (76,779 pounds) was 760 times that from the Mokelumne Aqueduct (105 pounds) in 1990-91. In the same water year, local~~

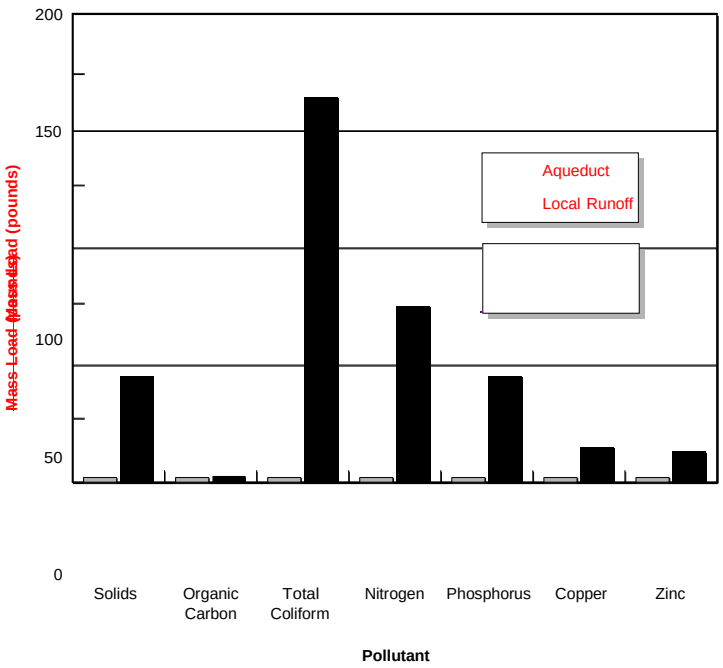


Figure 2-2
Annual Aqueduct Pollutant Mass Load Relative to Local Runoff in San

~~Annual Aqueduct Pollutant Mass Load Relative to Local Runoff in San Pablo Reservoir~~

~~runoff contributed only about 40% of the water to the reservoir, with the balance from the aqueduct. Nitrogen is important because it can stimulate the growth of algae, which has been documented to cause taste and odor problems in District reservoirs. **Figure 2-2** illustrates the relative contribution of local runoff and aqueduct inputs from San Pablo Reservoir.~~

Developed portions of the basins contribute more contamination per acre than undeveloped portions. For example, undeveloped land in the San Pablo Reservoir basin was estimated to produce 120 pounds of sediment per acre per year, whereas a residential area in the same basin was estimated to produce 1,480 pounds per acre per year. Developed areas are typically controlled by land use management agencies other than the District, whereas the District manages a substantial portion of the relatively undeveloped lands in East Bay basins.

Undeveloped land (such as that managed by the District) contributes the greatest quantity of contaminants because this is the dominant land classification. For example, undeveloped land generates about 14,400 pounds of phosphorus per year in the Upper San Leandro Reservoir basin, whereas residential land produces about 5,700 pounds per year, even though residential areas produce phosphorus at a rate per acre that is three to 10 times that of undeveloped land.

The types of pollutants that accumulate on land (and thus in runoff) typically reflect the types of activities that occur in the area. For example, petroleum-based hydrocarbons (which include some carcinogens) accumulate on roadway surface, such as parking lots, gas stations, roads, and freeways, as a result of crankcase oil drips and fuel handling.

Runoff can flow directly across the reservoir with virtually no dilution when the density of the runoff (because of suspended solids, dissolved solids, and temperature) is greater than the density of the surface layer but less than that of the lower layer in a stratified reservoir. Under such conditions, the plume of runoff plunges to the thermocline separating the two layers, then travels quickly across the reservoir. If the withdrawals are occurring at the approximate elevation of the runoff plume, then the plume with its contaminants will be withdrawn with relatively little dilution.

Soils and Geology

The geology of the District's East Bay watershed lands is quite varied. The topography of the area ranges from broad valleys and low rounded hills to steep, narrow drainages and ridge tops. Several faults have been mapped through the area. Some of these are geologically young thrust faults, but most are likely part of the regional fault system. Some may be active. The primary geologic hazards on District lands are landslides and seismic hazards that could potentially affect District facilities. Sediments from landslides and debris slides may enter the reservoirs (thereby affecting water quality) and, to a lesser extent, affect roads, trails, and recreational areas.

Most of the District's East Bay lands lie within the Millsholm-Los Gatos-Los Osos soils association. This association is characterized by steeply sloping and eroding soils. Approximately 55% of District lands have soil erosion hazard ratings of high or very high **(Figure 2-3)**.

Issues related to soils and geologic resources on District lands involve the potential for water quality degradation in District reservoirs (particularly Briones, San Pablo, and Upper San Leandro Reservoirs) from landslides, debris slides, and soil erosion.

Vegetation and Wildlife

Vegetation and wildlife habitat types of the watershed lands include native and non-native forests and woodlands, shrublands, grasslands, riparian woodland and scrub, and wetlands. These habitats support special-status plants that are known or have potential to occur on watershed lands. A detailed description of the acreage and location of vegetation and wildlife of watershed lands is contained in the Natural Resources Inventory (EA Engineering, Science, and Technology 1994a). The distribution of vegetation and wildlife habitats throughout the watershed is shown in **Figure 2-4**.

Native Forest and Woodland

Native forest and woodlands on District lands cover approximately 11,160 acres and include redwood, knobcone pine, mixed hardwood, composed of coast live oak, mixed oak, and black oak woodlands, and oak savanna, composed of mixed oak and valley oak.

The redwood forest and knobcone pine forest are both located in the Upper San Leandro Reservoir watershed. The ***redwood forest*** ~~(269 acres)~~ is considered a locally uncommon plant community because of its limited range in the East Bay area. Although this forest was logged more than a century ago, it has recovered and displays many characteristics of a mature forest that are important to wildlife. Large trees, moderate to dense canopy cover, and snags provide nesting habitat for raptors, woodpeckers, and cavity-nesting birds. A thick litter layer provides cover for amphibians and small mammals.

The ***knobcone pine forest*** ~~(56 acres)~~ is unique in that it is one of only two stands located in the East Bay area. Knobcone pine communities require periodic fire for regeneration. The stand is mature and has not burned in several decades. Dense manzanita chaparral forms the understory. The knobcone pines in this stand are of varied size and form a sparse to open canopy. Knobcone pines produce closed cones that are used by some bird and mammal species. Snags provide nest cavities, and the dense chaparral understory and a thick litter layer offer cover to shrub-nesting birds and small animals.

Hardwood forest ~~(9,533 acres)~~ is the predominant forest type of the watershed lands, covering approximately one-third of the area owned by the District. The mixed hardwood forest (comprising coast live oak, California bay, and ma~~-~~drone) is the most common subtype. Mixed oak woodland is less common, occurring mostly around the margins of San Pablo and Briones Reservoirs. Black oak woodland is the least common subtype. Hardwood forests provide habitat for approximately 175 species of wildlife. These forests provide snags and cavities for nesting birds, a food supply of acorns used by many birds and mammals, a litter layer ranging from small leaves and twigs to large downed logs, and, in damp sites, a lush herbaceous understory. Hardwood forests on watershed lands often encompass the riparian zones of intermittent and perennial creeks.

Oak savanna ~~(418 acres)~~ consists of patches of widely spaced oak trees growing on rolling, grassy hillsides. It is dominated by coast live oak and valley oak. Oak savanna is distributed throughout the watershed but is most common in Alhambra Valley. Oak savanna provides nesting and roosting sites in a relatively open landscape for birds that forage in the open. Oak trees provide snags and cavities for cavity-nesting birds, downed logs for small mammals and reptiles, and an acorn crop used by many species. Many wildlife species associated with hardwood forest or open grassland also use oak savannas.

Sudden Oak Death ~~Syndrome~~ (SOD~~S~~) is a forest disease, caused by the pathogen *Phytophthora ramorum*, that has reached epidemic levels in some coastal forests of central and northern California. Isolated occurrences of SOD~~S~~ have been found on the East Bay watersheds. Infested sites are natural areas characterized by Coast live oak, California bay laurel, and Willow riparian woodland. Because the areas where the infection is occurring is remote there is relatively low-risk for spread or related fire hazard. SOD~~S~~ does not adversely impact source water quality. While eradication is improbable, following BMPs will help slow the spread of the disease.

California Senate Bill 1334, the Oak Woodlands Conservation Act, became law on January 1, 2005 and was added to the CEQA statutes as Section 21083.4. This law, applicable to counties but not to cities or other public agencies, protects oak woodlands that are not protected under the State Forest Practice Act. Preservation of oak woodlands is a management objective for EBMUD.

Non-Native Forest

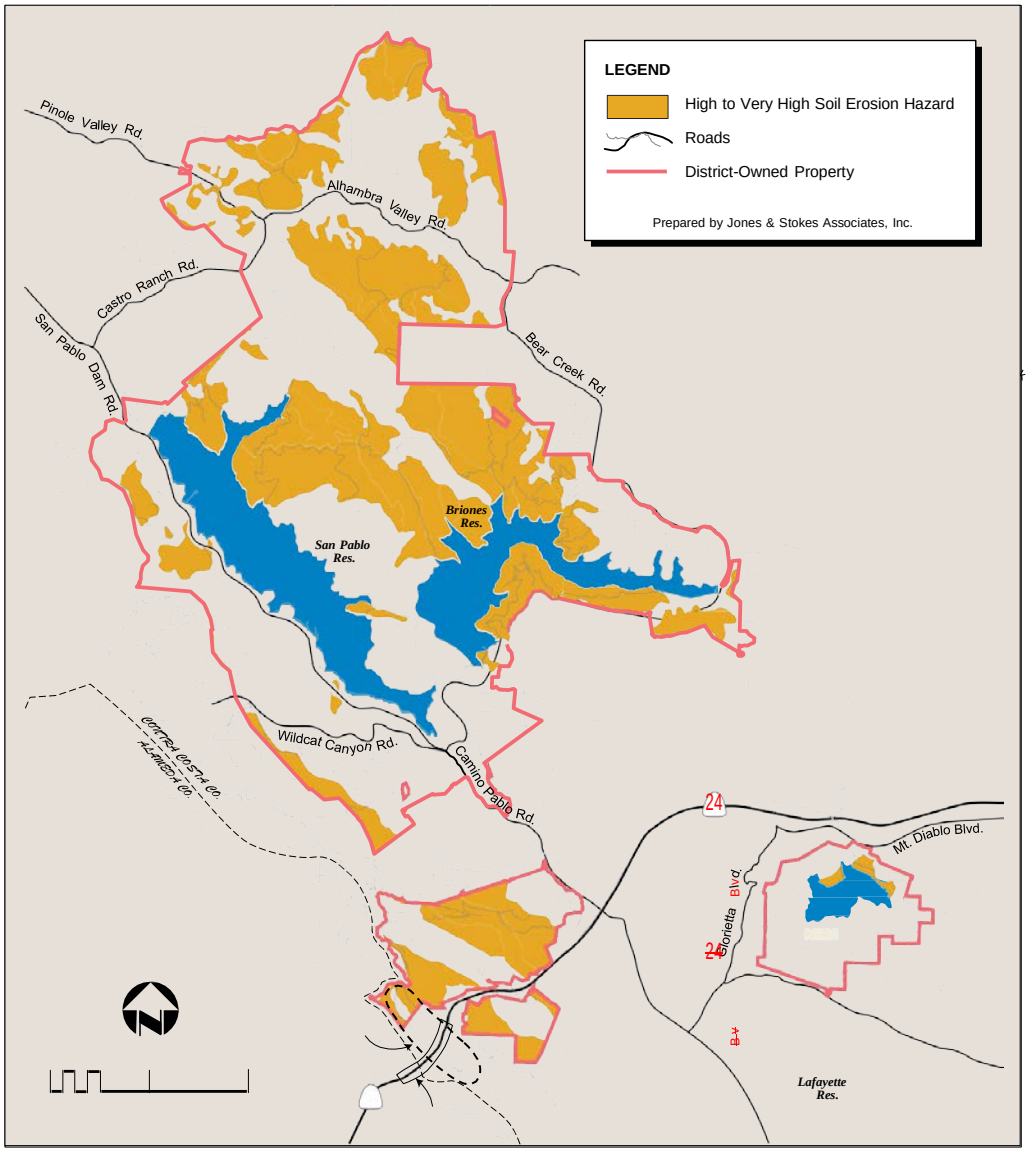
Non-native forest on District watershed lands consists mostly of Monterey pine and eucalyptus plantations.

The largest acreage of ***Monterey pine*** ~~(513 acres)~~ is in the northern portion of the watershed around San Pablo Reservoir. These stands exhibit little natural regeneration. Monterey pine plantations support a wildlife community similar to that occurring in hardwood and native conifer stands.

Eucalyptus plantations are found scattered throughout the watershed, with the largest acreages being in the San Pablo Reservoir ~~(135 acres)~~ and Chabot Reservoir ~~(81 acres)~~ watersheds. These stands are now naturalized communities that maintain their populations through natural regeneration. Eucalyptus trees provide a source of nectar and pollen that attracts insects, which in turn serve as a prey base for birds and other animals. Hummingbirds and many migratory bird species feed extensively on the nectar. In addition, eucalyptus trees produce an abundant seed crop. These tall trees are used as roosting sites for birds. Bald eagles have roosted in eucalyptus groves in the San Pablo Reservoir watershed, and a great blue heron rookery exists in the eucalyptus trees at Watershed Headquarters in Orinda. A great blue heron and great egret rookery was active near the northern arm of Chabot Reservoir in the recent past.

Section 2

DISTRICT LANDS AND RESOURCES



Caldecott Corridor

24

Caldecott Tunnel

Moraga Way

Rheem Blvd.

Figure 2-3 (North)
Areas of High to Very High Soil Erosion Hazard

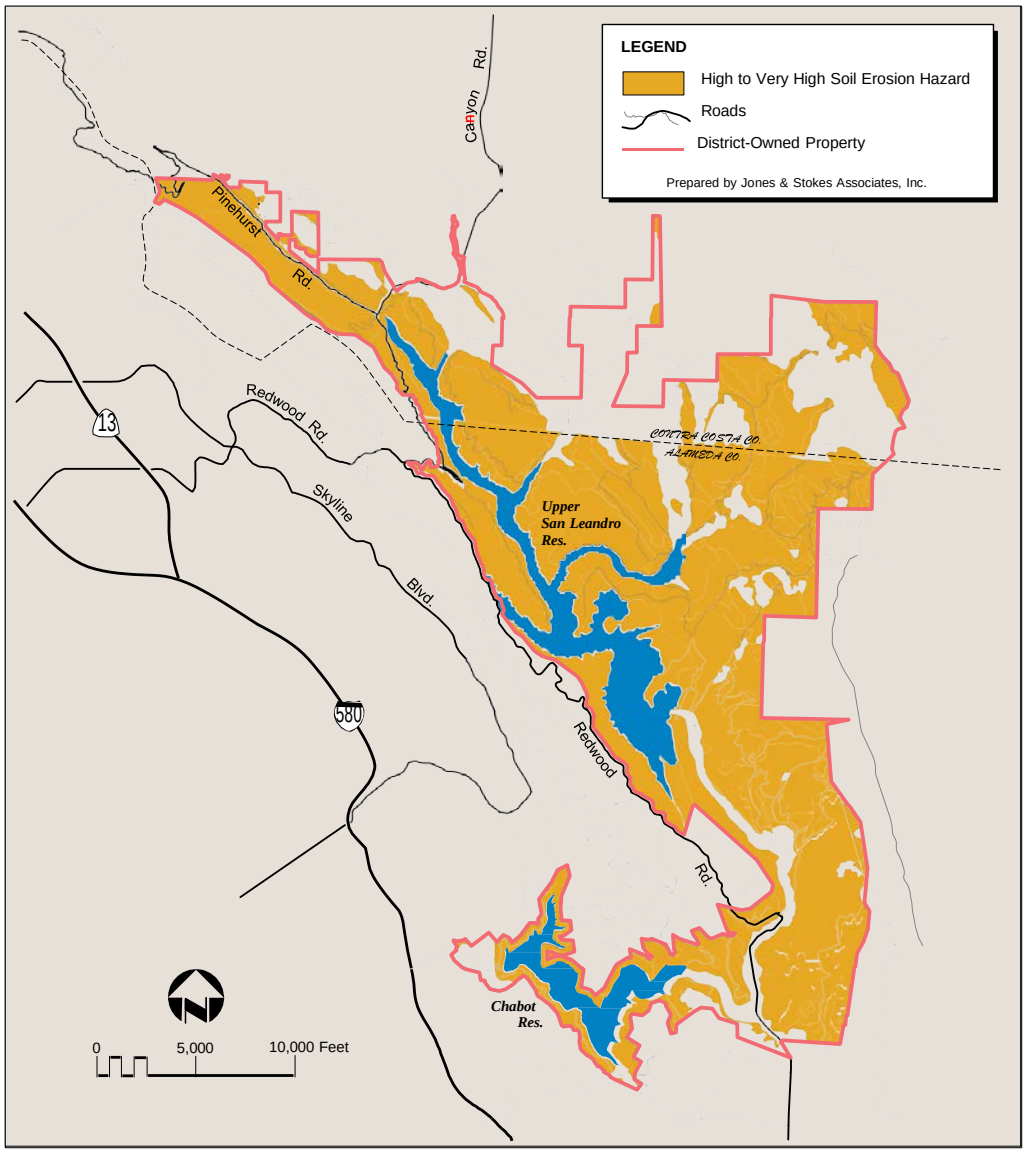


Figure 2-3 (South)
Areas of High to Very High Soil Erosion Hazard

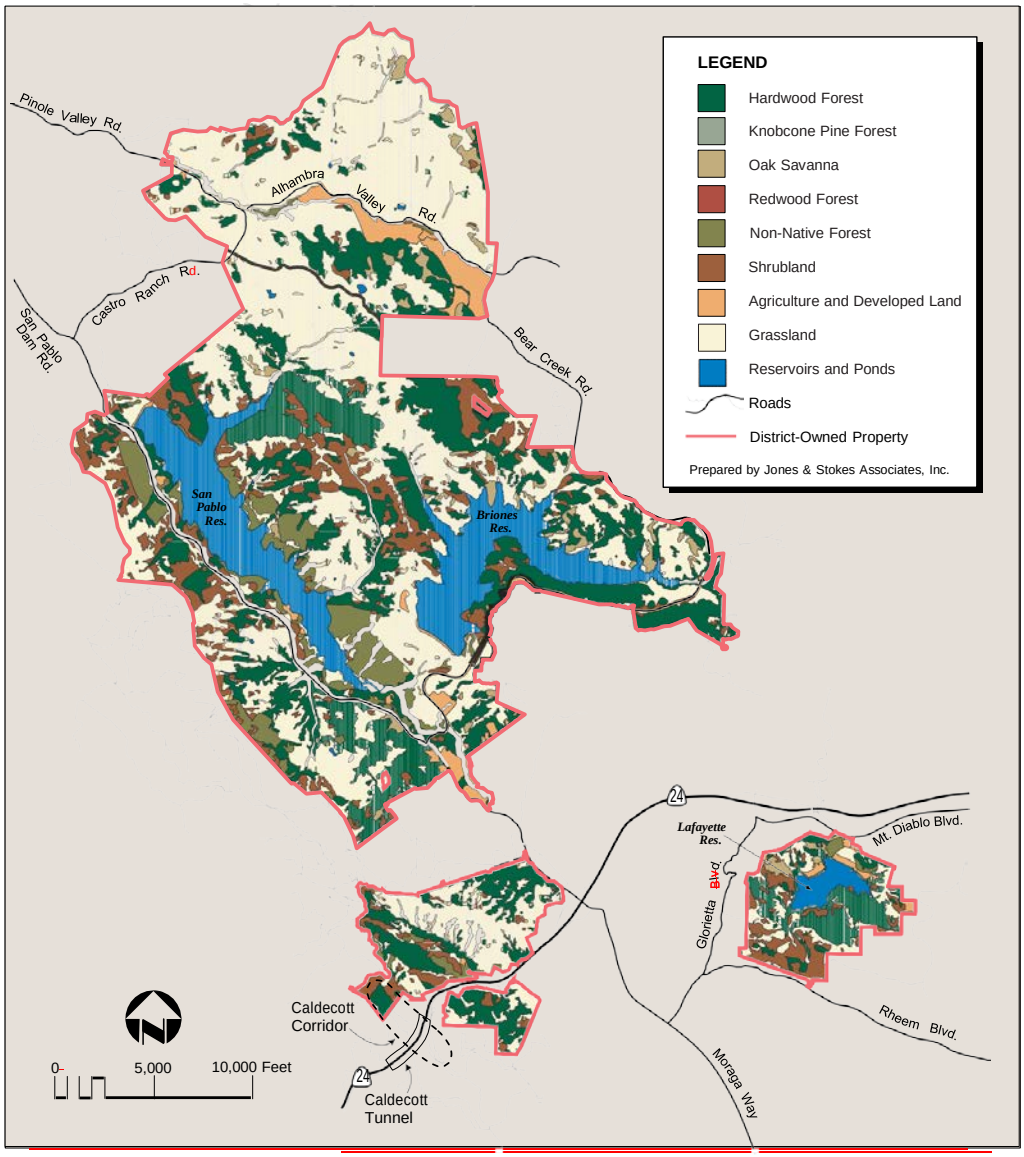


Figure 2-4 (North)
Distribution of Vegetation on East Bay Watershed Lands

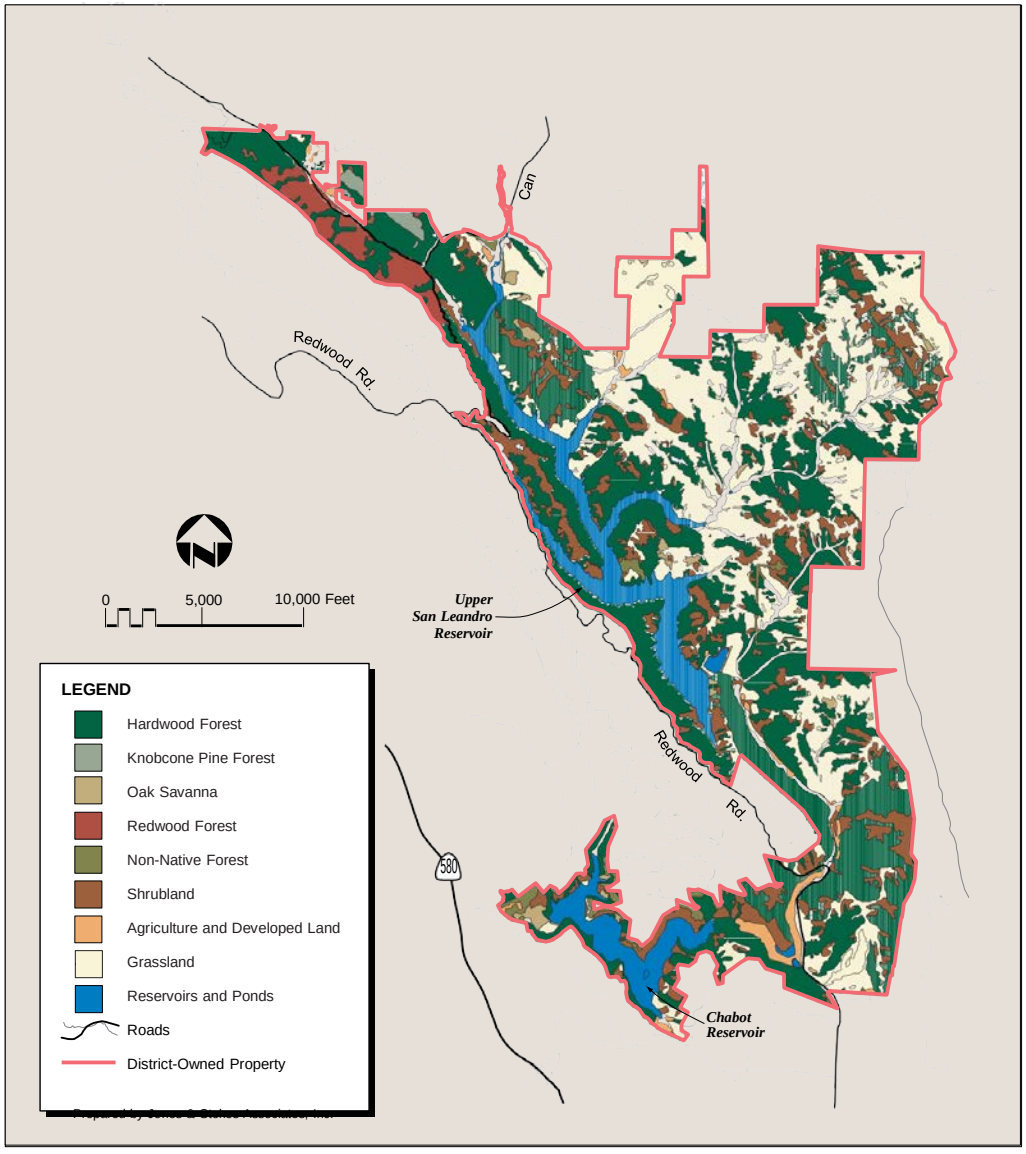


Figure 2-4 (South)
Distribution of Vegetation on East Bay Watershed Lands

Shrublands

A wide variety of natural shrub types occur on watershed lands. The three major types of shrubland are coastal scrub, chamise-black sage chaparral, and manzanita chaparral. Shrublands cover approximately 4,030 acres of watershed lands.

Coastal scrub ~~covers approximately 2,825 acres of watershed lands. This plant~~ community is composed of coyote brush scrub, California sagebrush, and bitter cherry scrub. Coyote brush is the most common subtype in the watershed. California sagebrush is less common but supports the highest biological diversity of the coastal shrub subtypes. Bitter cherry is the most limited subtype and has developed to a substantial degree on only one site in the Upper San Leandro Reservoir watershed.

Chamise-black sage chaparral ~~covers approximately 145 acres of watershed lands. Most of this~~ community is found mostly within the Upper San Leandro Reservoir watershed along Rocky Ridge, but it is also found in the Pinole watershed.

Manzanita chaparral is distributed irregularly throughout the watershed lands. ~~and covers a total area of approximately 21 acres.~~ The largest stands are located in the Briones and Upper San Leandro Reservoir watersheds.

Shrubland habitats provide nesting sites for shrub-nesting birds and a dense substrate for small mammals and reptiles. Shrublands are considered core habitat for the Alameda whipsnake.

Grasslands

Three types of grassland, covering approximately 9,440 ~~9,800~~ acres, are found on watershed lands: non-native grassland, coastal prairie, and perennial bunchgrass.

Non-native grassland is the dominant annual plant species on watershed lands. Most of these species are native to the Mediterranean region.

Coastal prairie is found in areas where the influence of coastal fog is strong. Most known localities of coastal prairie are along San Pablo Ridge.

Native perennial bunchgrass is scattered throughout the annual grasslands and as understory patches in shrublands and woodlands. Most of these patches are only a few meters in diameter. Several dozen locations in the watershed that have geographical protection from disturbance, such as cliffs, some roadsides, and ravines, support larger patches of this community.

Grasslands are used by a variety of wildlife species. Small mammals and birds forage on grass seeds and find cover in the denser grass stands. Carnivores such as coyotes, foxes and bobcats, and hawks and owls prey on these small mammals. Insects inhabiting grasslands are eaten by birds, including shrikes and swallows. Scavengers, such as turkey vultures, forage in open grasslands.

Riparian and Wetland Vegetation

Riparian and wetland vegetation are important components of watershed lands and account for approximately 800 acres of that area. This vegetation community is composed of mixed deciduous riparian woodland, coast live oak, California bay, and willow riparian woodland, willow riparian scrub, herbaceous and bare cover, freshwater marsh, and seep and spring wetlands.

Mixed deciduous riparian woodland ~~covers approximately 220 acres and is scattered throughout the watershed. This riparian woodland type~~ occurs along minimally disturbed segments of perennial streams in the Pinole, San Pablo, Upper San Leandro, and Chabot Reservoir watersheds. Streamside woodlands consist of broadleaved deciduous trees, especially white alder and black cottonwood. This community typically occurs as a narrow ribbon winding through upland communities. The presence of water, moist soils, and a moist litter layer provided by this habitat type is important for amphibians such as frogs and newts.

Coast live oak, California bay, and willow riparian woodland occurs along small, intermittent tributaries on moderate to steep slopes. This community covers ~~377 acres and~~ is found in all watersheds except that of Lafayette Reservoir, with the greatest acreage found in the San Pablo and Upper San Leandro Reservoir watersheds.

Willow riparian scrub occurs ~~on 59 acres~~ in scattered patches throughout the watershed area. This community occurs along perennial and intermittent streams and is characterized by streamside thickets. It occurs in all watersheds, with the greatest concentration being in the San Pablo and Upper San Leandro Reservoir and Pinole watersheds.

Herbaceous and bare (unvegetated) riparian areas account for nearly ~~140 acres~~ and encompass all riparian areas not dominated by trees or shrubs. These areas are found in all the watersheds except that of Lafayette Reservoir. The community occurs naturally along small intermittent and ephemeral streams. In some cases, herbaceous and bare riparian areas are created as a result of disturbance by livestock grazing.

Freshwater marsh is uncommon on watershed lands and is found primarily around the five reservoirs. The largest freshwater marsh ~~(18 acres)~~ occurs along the edges of Upper San Leandro Reservoir. Dense emergent vegetation provides nesting habitat and cover for waterfowl, wading birds, and passerine birds. Standing water and saturated soils provide drinking water and moist habitat for various mammals, reptiles, and amphibians.

Seep and spring wetlands are scattered throughout the watershed~~, covering approximately 180 acres~~. Vegetation typically occurs in small patches around water sources and consists of freshwater marsh, herbaceous or bare riparian areas, and willow scrub. More than 130 herbaceous plant species and 20 species of woody plants have been identified in these areas.

Jurisdictional wetlands are protected under Sections 401 and 404 of the Clean Water Act and Sections 1600–1616 of the California Fish and Game Code. EBMUD consults with and obtains permits from the U.S. Army Corps of Engineers, the Regional Water Quality Control Board and the California Department of Fish and Wildlife prior to conducting activities that may impact jurisdictional wetlands.

Special-Status Species

The watershed supports many plant and animal species that have been identified by state and federal agencies and scientific organizations as uncommon or declining regionally or statewide (Table 2-3, on pages 38-42). Collectively, these species are referred to as special-status species. Special status species are protected by the California Environmental Quality Act, the Federal Endangered Species Act, the California Endangered Species Act and the Migratory Bird Treaty Act.

Under the Federal Endangered Species Act (ESA), the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as threatened or endangered (16 United States Code [USC] 1533[c]). The purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend. The ESA is administered by the U.S. Fish and Wildlife Service and the Commerce Department's National Marine Fisheries Service (NMFS). EBMUD adopted the East Bay Low Effect Habitat Conservation Plan (HCP) in 2008 to protect ESA listed species and their habitats on watershed lands. Seven special-status species are covered for incidental take under the plan including: California red-legged frog, rainbow trout, Alameda whipsnake, pallid manzanita, Santa Cruz tarplant, western pond turtle and pallid bat. The HCP establishes biological goals and objectives for each of the covered species and outlines avoidance and minimization measures designed to reduce or eliminate take of species from watershed activities. The HCP also requires monitoring and enhancement of habitat for these species on the watershed.

The California Endangered Species Act (CESA) protects and preserves all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction or significant decline. The CDFW has the responsibility for maintaining a list of threatened or endangered species. The CDFW also maintains a list of candidate species, which are species that the CDFW has formally noticed as under review for addition to the threatened or endangered species lists. Additionally, CDFW maintains lists of species of special concern~~s~~, fully protected species and special plants or animals, which receive consideration by CDFW and under CEQA. EBMUD consults with CDFW for all projects that have the potential to impact sensitive species under the CESA.

California Environmental Quality Act (CEQA) Guidelines (Section 15065(a)) indicate that impacts to state and federally listed rare, threatened, or endangered plants or animals are significant. Impacts to species that meet certain criteria but are not officially listed by CDFW may be considered significant. This includes ranks 1A, 1B, and 2 of the California Native Plant Society Inventory of Rare and Endangered Vascular Plants of California, which qualify for listing by CDFW.

The Migratory Bird Treaty Act prohibits killing, possessing, or trading in

migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. EBMUD has adopted best management practices to protect nesting birds in compliance with the Migratory Bird Treaty Act.

EBMUD has established a conservation bank in the Pinole watershed with conservation/preservation credits associated with California red-legged frog and Alameda whipsnake. The CDFW and USFWS approved the bank in January 2017.

Visual Resources

The visual environment of the District's East Bay watershed lands is defined primarily by the five reservoirs and the surrounding uplands, which provide the central visual element in each reservoir watershed. Visual resources in Pinole Valley are distinguished by the valley floor and its surrounding uplands. The water levels of three of the five reservoirs do not fluctuate substantially (Chabot, Lafayette, and, to a lesser extent, Briones), so their shorelines maintain a more natural character than is typical at most reservoirs. San Pablo and Upper San Leandro Reservoirs experience substantial annual drawdown.

The visual character of the watershed lands changes dramatically throughout the year. In winter and early spring, they are green and lush as annual grasses grow in response to seasonal rains and cool temperatures. During spring, wildflowers cover portions of watershed lands, providing a colorful display. In summer, the annual grasses dry and turn golden brown until seasonal rainfall begins in late fall and winter.

Watershed lands are primarily steep to rolling hillsides that contrast sharply with the level water surfaces of the reservoirs themselves. The expanse of these lands is visually impressive, particularly when combined with the substantial

parklands that adjoin a large portion of the watershed, including EBRPD lands, the open space areas outside nearby cities, and the public open space and undeveloped areas within adjoining communities. This landscape stretches across a significant portion of the East Bay area and forms a unified, high-quality visual landscape.

Cultural Resources

A total of 47 archaeologic and historic resource sites have been mapped within the District's East Bay watershed lands (EA Engineering, Science, and Technology 1994a). The primary issues related to cultural resources on District lands are:

- the potential for disturbance of presently unknown cultural resources during the implementation of management activities and
- the need for close coordination with representatives of the Native American community regarding implementation of the EBWMP.

The San Pablo Reservoir watershed has 19 known cultural resource sites. Nine are prehistoric archaeologic sites, of which five also have a historic component. Nine are historic archaeologic sites, two of which also have associated structures, and one of which is a historic structure with no known or suspected archaeologic component. This historic structure is the Orinda Filter Plant and has been identified as a significant historic resource. In addition to this significant site, eight archaeologic sites (both prehistoric and historic) have been determined not to be significant resources, and the significance of 10 sites is unknown.

Three known cultural resources are located in the Briones Reservoir watershed. One is a prehistoric archaeologic site that appears to have little research potential and is not considered significant. Another site is the historic Hampton's Grave site, the significance of which has not been determined. The third site is the Felipe Briones Adobe, a historic archaeologic site that is considered a significant resource.

Five cultural resources are located in the Pinole watershed. Three are prehistoric sites: One is a well-documented midden site with good depositional integrity and research potential, the second consists of isolated artifacts, and the third is a possible site where shell fragments have been observed. The significance of these resources has not been determined. The other two resources (Mohring Homestead and Tormey Homestead) are historic sites.

One cultural resource is known to be present in the Lafayette Reservoir watershed. The Lafayette Reservoir dam is a historic feature but is not considered to be a significant resource.

A total of 12 known cultural resource sites are located in the Upper San Leandro Reservoir watershed. Nine are historic archaeologic sites, one of which has a prehistoric component. Eight of the sites have associated structures or

features. Two sites are historic structures and one is a prehistoric site. Four of the sites are considered not to be significant, and the significance of eight sites is unknown.

Seven known cultural resources are present in the Chabot Reservoir watershed. One is a prehistoric archaeologic site, the significance of which is unknown. Four of the sites are historic structures or features, one of which has a historic archaeologic component. One of the sites is considered not to be significant, and the significance of the other sites is unknown.

Recreation and Facilities

The District's East Bay watershed is a large and unique resource of semi-wild, open land that is located in one of the most densely populated areas in the country. -District lands provide wildland recreational opportunities for Bay Area residents while serving as a biological preserve containing rich and diverse plant and animal habitats. The proximity of this semi-wilderness to a major urban area is rare. With the District's commitment to the two primary goals of protecting water quality and biodiversity, it will remain a priority to preserve the more remote, interior areas of the watershed as a refuge for special status species and to limit human access as needed to these ends.

Watershed lands and reservoirs are an important recreation resource because they provide opportunities for appropriate use of unique terrestrial features, reservoir water bodies, and open space areas adjacent to District property **(Figure 2-5)**. Watershed lands offer recreation that is oriented toward enjoyment of a natural landscape with few artificial artifacts and a sense of remoteness. The lands provide expansive open space views, wildlife viewing opportunities, hiking and equestrian trails, and limited vehicular access.

District-owned reservoirs also provide varying degrees of water-dependent and water-enhanced recreational opportunities. San Pablo Reservoir provides opportunities for shoreline and boat fishing and other forms of motorized and nonmotorized boating. Briones Reservoir allows only limited water-dependent use for college crew team practice. Lafayette Reservoir allows only use of "cartop" boats (sailboats, canoes, row boats, paddle boats, and electric motor boats) and fishing from docks and the shoreline. The Upper San Leandro Reservoir is located in a pristine setting with no water-dependent use allowed on or near the reservoir. Lake Chabot is located in the Anthony Chabot Regional Park and is operated by EBRPD under a long-term lease with the District. Water-dependent uses allowed at the lake include fishing and many types of nonmotorized boating.

District lands also offer a unique regional recreational opportunity by virtue of their geographic position. They are surrounded by large land parcels belonging to EBRPD and are reached from paved roads and trails that connect regional open space lands. The watershed provides experiences of greater solitude and quiet that complement those of adjacent regional parks where more general access and a wider variety of recreational opp~~p~~ortunities are available.

Within District lands, three developed regional recreation areas were

designed to serve large numbers of people at San Pablo, Lafayette, and Chabot

Reservoirs. Although facilities vary at each recreation area, they generally include marinas, boat docks, boat launch ramps, fishing docks, picnic areas, informal play areas, parking, and supporting facilities (e.g., restrooms, bait and tackle shops, and food services). Substantial facilities exist at all of these recreation areas to serve the disabled community. A recreational trail system also provides controlled public access to a large portion of the watershed. A detailed description of recreation facilities on East Bay watershed lands is provided in the East Bay Watershed Master Plan Recreation Inventory (EA Engineering, Science, and Technology 1994b).

Description of Watershed Planning Zones

Five watershed planning zones are used to identify District lands that have similar site conditions and require similar management direction **(Figure 2-6)**. Planning zones are designated only for watershed property and are intended to help watershed staff implement management guidelines and watershed land use programs.

Conditions Used to Define Watershed Planning Zones

Specific conditions used to define and map planning zones are watershed status, development status of adjacent lands, and development status of District property.

Watershed Status of District Lands

The location of District-owned watershed lands in relation to the basin boundaries for each District reservoir is the primary consideration in designating planning zones. District property outside a reservoir basin is recognized as a separate zone because water quality protection is not as high a priority for that property.

Development Status of Adjacent Basin Lands

The land use and development status of land adjacent to District property is used to identify interface zones, in which public safety (especially fire protection), water quality management (including urban runoff problems), and urban encroachment are high-priority issues. Two levels of interface zones are recognized where adjacent lands are developed. These zones differ based on whether adjacent lands are within or outside District reservoir basins.

Development Status of Watershed Property

Watershed lands contain a variety of facilities for water service operations, recreation, and maintenance. The operation and management requirements of these differ from those of undeveloped, open space lands. Therefore, these developed watershed assets are recognized as a separate zone.

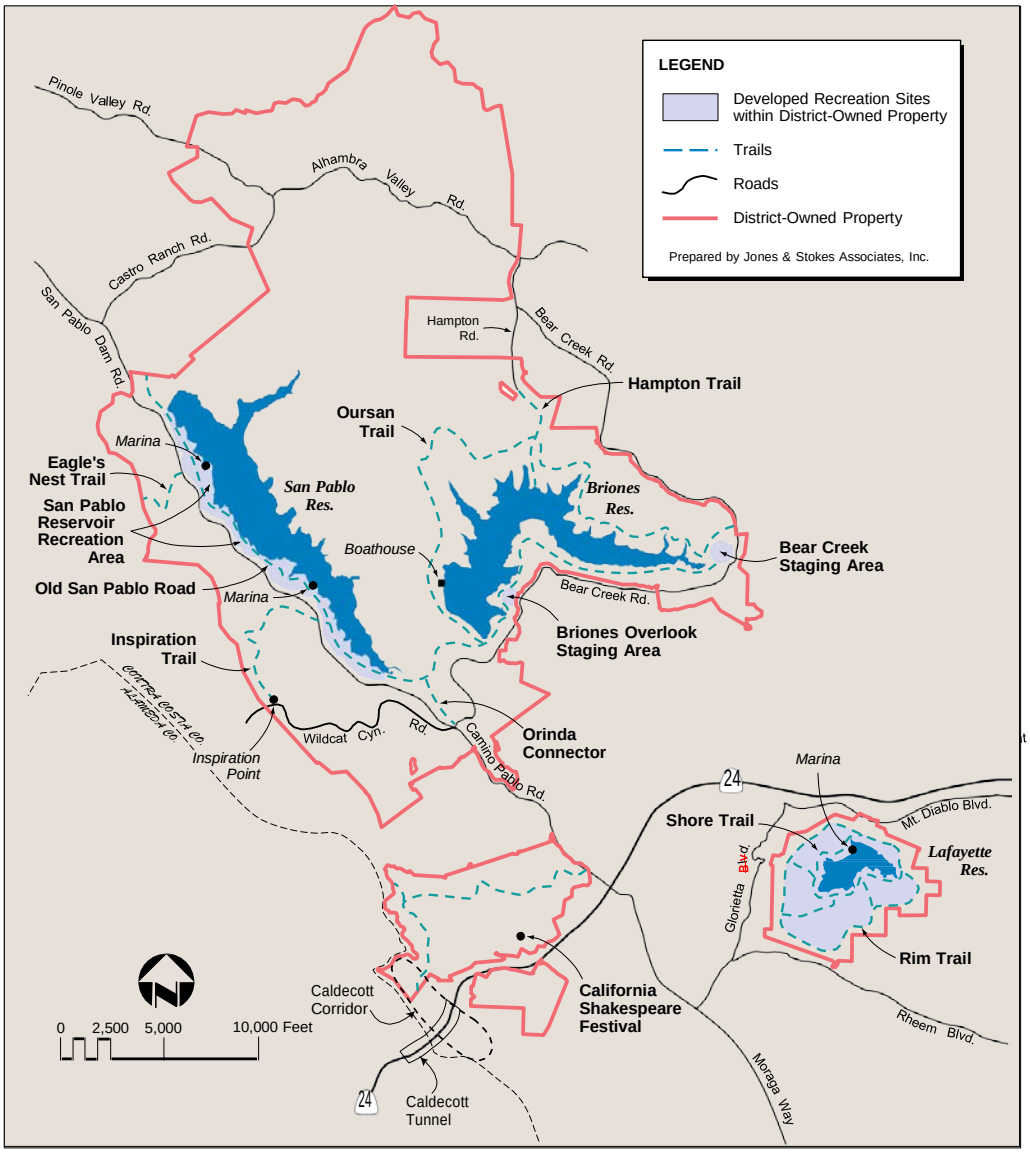


Figure 2-5 (North)
Major Recreation Sites and Trails

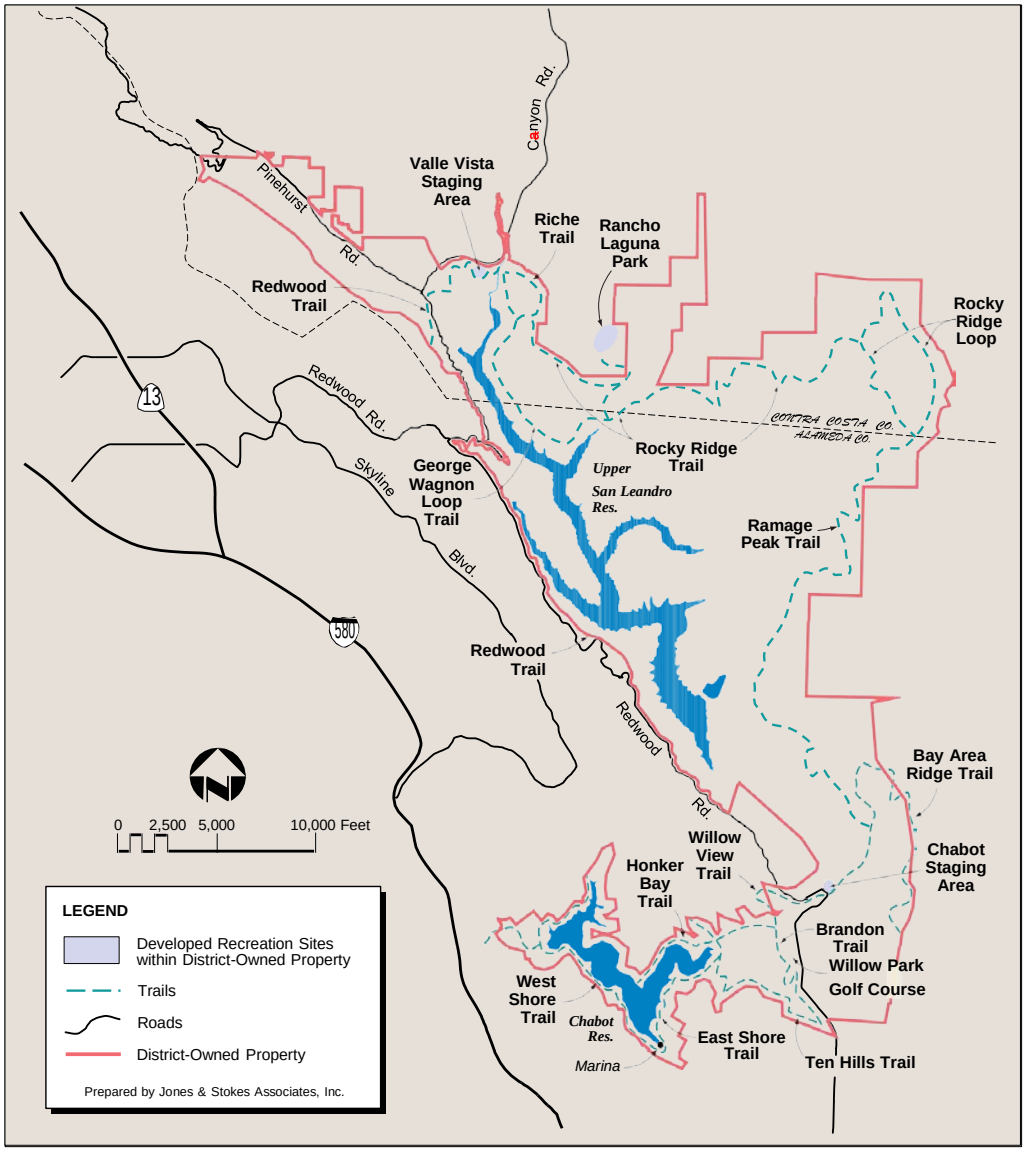


Figure 2-5 (South)
Major Recreation Sites and Trails

Section 2

DISTRICT LANDS AND RESOURCES

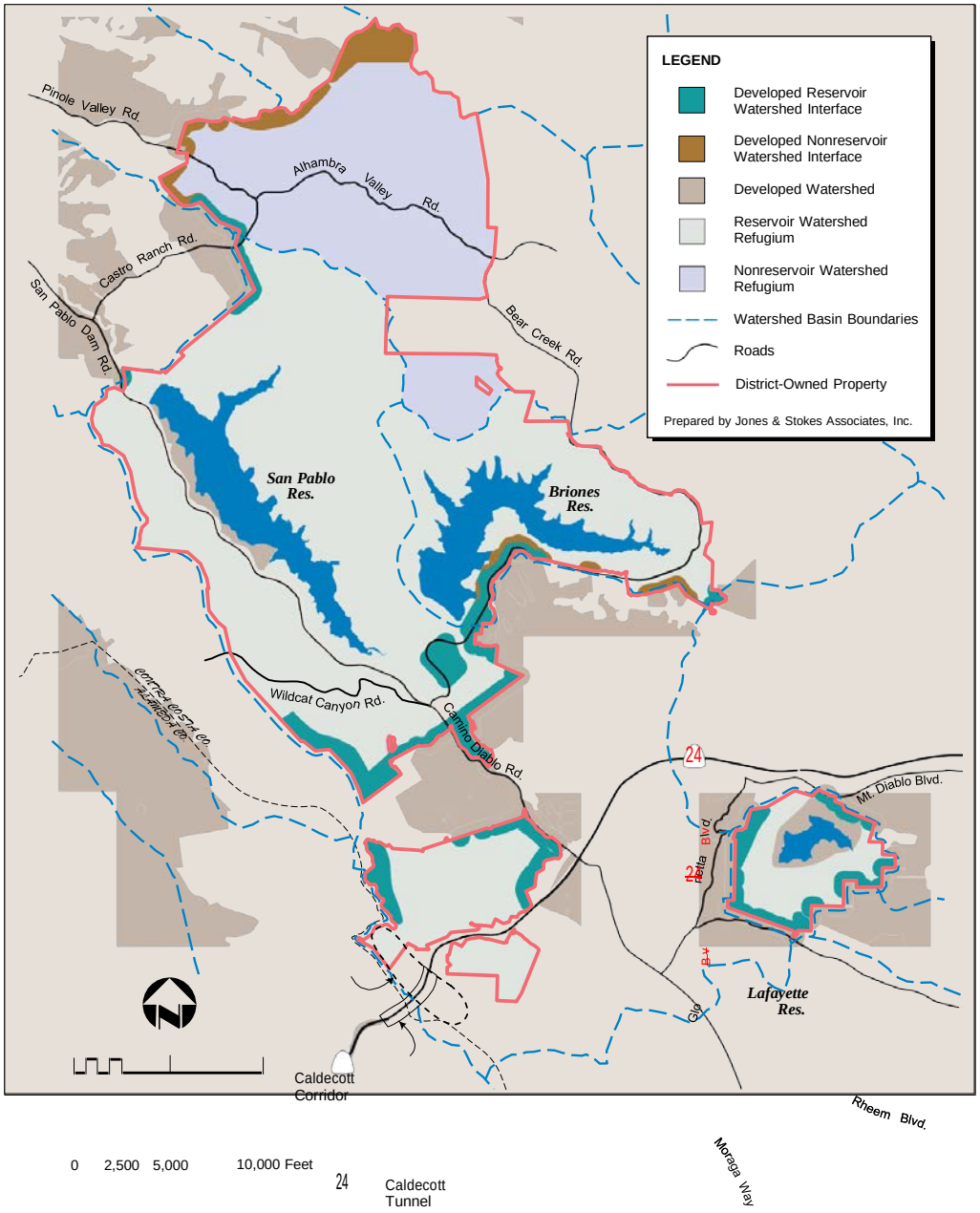


Figure 2-6 (North)

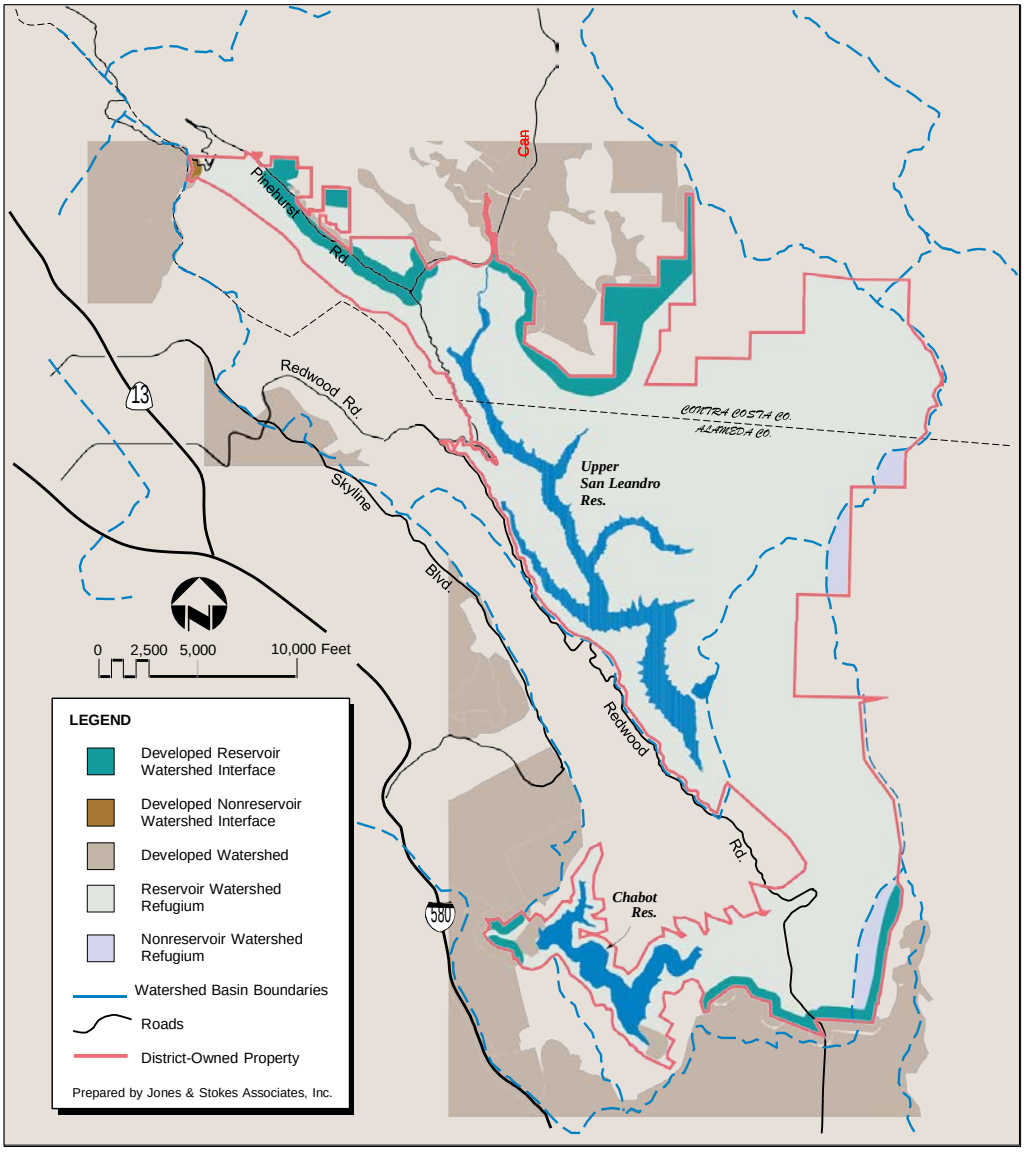


Figure 2-6 (South)
Watershed Planning Zones

Definition of Watershed Planning Zones

The characteristics of the five watershed planning zones are described below.

Developed Watershed Interface

Reservoir. -The developed reservoir watershed interface zone is a buffer zone designated to protect District property in watershed areas that are bounded by urban development, where that development occurs within the reservoir basin boundary. The management priorities in this zone are to:

- mitigate fire hazard and water quality degradation at the urban interface and
- monitor urban encroachment with particular attention to public safety considerations, water quality degradation, recreation conflicts, and trespass issues.

Nonreservoir. The developed nonreservoir watershed interface zone is a buffer zone designated to protect District property in watershed areas that are bounded by urban development, where that development occurs outside the reservoir basin boundary. The management priorities in this zone are to:

- mitigate fire hazard and
- monitor urban encroachment with particular attention to safety considerations, recreation conflicts, and trespass issues.

Watershed Refugium

Reservoir. The reservoir watershed refugium zone consists of all land owned by the District within the physical basin boundary of a District reservoir, except for areas identified as interface zones or developed District watershed lands. The management priority in the watershed refugium zone is to:

- protect reservoir water quality and watershed natural resources (i.e., maintain biodiversity).

Nonreservoir. The nonreservoir watershed refugium zone consists of District property, primarily in Pinole Valley and small portions of the Upper San Leandro, San Pablo, and Chabot Reservoir watersheds, that is located outside the basin boundary of existing reservoirs and adjacent to undeveloped land. The management priorities for this land are to:

- protect natural resources,
- provide a buffer for watershed refugium lands, and
- monitor District property for urban encroachment, safety considerations, recreation conflicts, and trespass issues.

Developed Watershed

The developed watershed zone consists of property that is developed or designated for recreation or water service operations. The management priorities for developed land within District-owned property are to provide recreation opportunities for the general public that are consistent with the District's water quality protection and resource management goals and to provide for the operational needs of District reservoirs. Management of developed facilities includes assessing impacts on the watershed from existing and anticipated operational functions. Management direction will assist in identifying practices to reduce impacts on adjacent watershed resources and reservoir water quality.

Figure 2-6 identifies developed areas adjacent to District property that are within the reservoir watershed.

Table 2-3
Special-Status Plant and Animal Species Known to Occur on East Bay Watershed Lands

Common Name	Scientific Name	Status Federal/State/CNPS	Preferred Habitat	Occurrence on Watershed
Plants				
Box elder	*Acer negundo var. interius*	-/-/A2	Prefers bright sunlight, growing on floodplains and riparian habitats	Grows in San Leandro Creek near Redwood and Pinehurst Rd (USL)
Five-fingered fern	*Adiantum aleuticum*	-/-/A2	Prefers fertile, moist soil in rock crevices near streams. It tolerates serpentinite rock well, and is confined to this mineral-rich rock in some areas.	Found in Huckleberrry Preserve along creek near Pinehurst Rd and in Siesta Valley (SP, USL)
Hall's bentgrass	*Agrostris hallii*	-/-/A2	Open woodland and forests of the coastal mountain ranges	San Pablo Ridge, 1.6 mile N of Inspiration Point (SP)
California amaranth	*Amaranthus californicus*	-/-/A2	Moist flats and near bodies of water	Found near Briones and San Pablo Reservoirs (B, SP)
Bent-flowered fiddleneck	*Amsinckia lunaris*	-/-/1B.2	Open woods and valley and foothill grasslands; 50-100 m	Found in many locations throughout the watersheds (B, SP, L, USL)
California androsace	*Androsace elongata ssp. Acuta*	-/-/4.2	Grows in a variety of habitats, including chaparral, scrub, and woodland	Found on Vollmer Peak and in Siesta Valley (SP)
Woodland madia	*Anisocarpus madioides*	-/-/A2	Forests and woodlands in the coastal range	Flicker Ridge in Canyon (USL)
Pallid manzanita	*Arctostaphylos pallida*	FT/SE/1B.1	Broadleaved upland forest, chaparral, and open woods on siliceous shales of slopes and ridges in the Berkeley-Oakland Hills; 200-350 m	One population on former Goldberg property in Canyon adjacent to Pinehurst Road (USL)
Wild ginger	*Asarum caudatum*	-/-/A2	Rich moist habitats	Grows on Flicker Ridge, Gateway, and near Tilden on Wildcat Canyon Rd (SP, USL)
Milkweed	*Asclepias speciosa*	-/-/A2	Well drained soils in near full to full sun, pastures, meadows, etc.	Grows near Kaiser Creek, Rimer Creek, and near Miller Canyon (USL)
California ground-cone	*Boschniakia strobilacea*	-/-/A2	Parasite of Madrone and manzanita. Grows in chaparral and woodlands	Flicker Ridge and Briones Reservoir (B, USL)

Table 2-3
Special-Status Plant and Animal Species Known to Occur on East Bay Watershed Lands

Common Name	Scientific Name	Status Federal/State/CNPS	Preferred Habitat	Occurrence on Watershed
Mt. Diablo fairy lantern	*Calochortus pulchellus*	-/-/1B.2	Wooded slopes, chaparral, and valley and foothill grasslands; 200-800 m	Grows on Rocky Ridge, Cull Hill Ridge, and Mendonca Ranch (USL)
Oakland star-tulip	*Calochortus umbellatus*	-/-/4.2	Chaparral, broadleaved upland forests, and valley and foothill grasslands; 100-700 m	Grows on Rocky Ridge, Kaiser Creek, Eureka Peak, and Ramage Peak, as well as Gateway, and San Pablo Creek (SP, USL)
Hill sun cup	*Camissonia graciliflora*	-/-/A2	Valley grassland and foothill woodland habitats	Grows on Skyline Trail in Siesta Valley (SP)
Dense sedge	*Carex densa*	-/-/A2	Wetland species that grows in meadows and on slopes with wetland habitat	Grows at San Leandro Reservoir and Siesta Valley (USL, SP)
Dudley's sedge	*Carex dudleyi*	-/-/A1	Grows on hillsides, usually in wetland habitats	Grows in streambanks near head of Siesta Valley (SP)
Few-ribbed sedge	*Carex lenticularis*	-/-/A1	Riparian habitats and wetlands	NW end of San Pablo Reservoir (SP)
Franciscan Indian paintbrush	*Castilleja subinclusa ssp. Franciscana*	-/-/A2	Grows in a variety of habitats including chaparral	Grows on Flicker Ridge (USL)
California lilac	*Ceanothus thyrsiflorus var. thyrsiflorus*	-/-/A2	Typically found in chaparral habitats	Grows on San Pablo Ridge (SP)
Golden chinquapin	*Chrysolepis chrysophylla var. minor*	-/-/A2	Typically found in woodland habitats in the coastal ranges	Grows on Flicker Ridge (USL)
Franciscan thistle	*Cirsium andrewsii*	-/-/1B.2	Broadleaved upland forests and coastal scrub; <100 m	Grows at Lily Spring on San Pablo Ridge (SP)
Brownie thistle	*Cirsium quercetorum*		Coastal grasslands and open woodlands	Grows in Gateway and Vollmer Peak areas (SP)
Purple clarkia	*Clarkia purpurea ssp. Purpurea*	-/-/A2	Grows in many habitat types throughout the coast ranges	Found in Hampton Preserve and Pinole Peak (P)
Coast range montia	*Claytonia gypsophiloides*	-/-/A2	Typically found in moist areas with rocky soils, often in serpentine soils	Flicker Ridge (USL)
Torrey's cryptantha	*Cryptantha torreyana*	-/-/A2	Dry to moist, sparsely vegetated soil of open forests at low to mid-elevations.	Siesta Valley (SP)

Table 2-3
Special-Status Plant and Animal Species Known to Occur on East Bay Watershed Lands

Common Name	Scientific Name	Status Federal/State/CNPS	Preferred Habitat	Occurrence on Watershed
California dodder	*Cuscuta californica var. californica*	-/-/A2	Usually found in grassland or chaparral habitats	Grows along south end of San Pablo Reservoir (SP)
Bush poppy	*Dendromecon rigida*	-/-/A2	Dry slopes and washes, prefer areas that have been burned	Grows near Briones Reservoir and on Flicker Ridge (B, USL)
Tufted hairgrass	*Deschampsia cespitosa ssp. holciformis*	-/-/A2	Wetland and riprian habitats	Grows on Flicker Ridge, Lily Spring and San Pablo Ridge (SP, USL)
Bleeding heart	*Dicentra formosa*	-/-/A2	Moist woodland, forest, and streambanks	Grows in Canyon and near San Pablo Reservoir (SP, USL)
Western leatherwood	*Dirca occidentalis*	-/-/1B.2	Moist, partially shaded slopes; broadleaved upland forests, closed-cone conifer forests, riparian habitats, and chaparral; 50-300 m	Grows near San Pablo Creek and in Gateway Valley (SP)
Burhead	*Echinodorus berteroi*	-/-/A2	Aquatic plant	Grows in San Leandro Reservoir (USL)
Waterwort	*Elatine brachysperma*	-/-/A1	Found in muddy shores and shallow pools	Grows in San Pablo Reservoir (SP)
Blue wildrye	*Elymus glaucus spp. jepsonii*	-/-/A2	Foothill grasslands	Found on Flicker Ridge (USL)
Hansen squirreltail	*Elymus X hansenii*	-/-/A2	Open exposed grasslands	Found at Briones Reservoir (B) and San Pablo Ridge (SP)
Coast coyote-thistle	*Eryngium armatum*	-/-/A2	Typically grows along beaches and coastal bluffs	Found at Briones Reservoir (B)
Trifid bedstraw	*Galium trifidim var. pacificum*	-/-/A2	Found in forested habitats, often in wetlands	Grows on Flicker Ridge (USL)
Western manna grass	*Glyceria occidentalis*	-/-/A2	Found in freshwater marsh habitats	Grows in ponds near Briones Reservoir (B)
Diablo sunflower, or helianthella	*Helianthella castanea*	-/-/1B.2	Open, grassy areas, often associated with broadleaved upland forests, riparian woodland, chaparral, and coastal scrub; 200-1,300 m	Grows at several locations on San Pablo Ridge, Rocky Ridge, Lafayette Reservoir, Siesta Valley,and in Pinole Valley (L, P, SP, USL)
Santa Cruz tarplant	*Holocarpha macradenia*	FT/SE/1B.1	Coastal prairie and valley and foothill grasslands; prefers sandy clay soil; < 100 m	A planted species on the watershed; not found during recent surveys, likely extirpated
Douglas iris	*Iris douglasiana*	-/-/A2	Typically found in grasslands	Siesta Valley (SP)

Table 2-3
Special-Status Plant and Animal Species Known to Occur on East Bay Watershed Lands

Common Name	Scientific Name	Status Federal/State/CNPS	Preferred Habitat	Occurrence on Watershed
Northern California black walnut	*Juglans hindsii*	-/-/1B.1	Riparian forests and woodlands; requires deep alluvial soil associated with a creek or stream; 50-200 m	Known at Kaiser Creek just upstream of Upper San Leandro Reservoir (USL)
Woodland layia	*Layia gaillardioides*	-/-/A2	Grows in a variety of habitats, including woodlands	Grows near Hampton Rd, San Pablo Ridge, and Sobrante Ridge (P, SP)
Tall layia	*Layia hieracioides*	-/-/A2	Found in chaparral, scrub, and woodland habitats	Grows at Lafayette Reservoir, San Pablo Ridge , and Vollmer Peak (L, SP)
Pacific lovage	*Ligusticuma apiifolium*	-/-/A1	Grows in meadows and shaded forests	Found near the boundary of Sibley Regional Park (SP)
Leopard lily	*Lilium pardalinum ssp. pardalinum*	-/-/A2	Typically found along streamsides and wetland habitats	Flicker Ridge, Lily Spring, and San Pablo Ridge (SP, USL)
Rush lotus	*Lotus junceus var. bioletti*	-/-/A1x	Typically grows in coastal sand and chaparral habitats	Historic find at Flicker Ridge (USL)
Yellow bush lupine	*Lupinus arboreus*	-/-/A2	Found in coastal scrub and dune habitats	Grows on San Pablo Ridge (SP)
Wooly malacothrix	*Malacothrix floccifera*	-/-/A2	Occurs in forest, woodland, and chaparral habitats	Grows on Flicker Ridge (SP) and at Hampton Rd (P)
California meconella	*Meconella oregona*	-/-/1B.1	Occurs on sandy bluffs, meadows, and streambanks	Grows on San Pablo Ridge and near Sibley Regional Park (SP)
California sandwort	*Minuartia californica*	-/-/A2	Grows in chaparral, vernal pools, and roadside habitats, among others	Found at Hampton Rd and possibly Flicker Ridge (P, SP)
San Antonio monardella	*Monardella antonina ssp. antonina*	-/-/3	Open rocky slopes in chaparral and open woods; 500-900 m	Reported from South Hampton Road on the watershed (P)
Wax myrtle	*Morella californica*	-/-/A2	Grows in coastal forests	Found at Lily Spring and near the southwest end of San Pablo Reservoir (SP)
California broom-rape	*Orobanche vallicola*	-/-/A2	Found in forests and woodlands	Found on Sobrante Ridge (SP)
Fire poppy	*Papaver californicum*	-/-/A2	Grows in chaparral, oak woodlands, and other habitats, usually following fires	Found in Siesta Valley (SP)
Foothill penstemon	*Penstemon heterophyllus var.*	-/-/A2	Dry rocky habitats	Found in Siesta Valley (SP)

Table 2-3
Special-Status Plant and Animal Species Known to Occur on East Bay Watershed Lands

Common Name	Scientific Name	Status Federal/State/CNPS	Preferred Habitat	Occurrence on Watershed
	purdyi			
Pentachaeta alsinoides	*Pentachaeta alsinoides*	-/-/A1	Typically occurs in scrub and grassland habitats	Grows on Rocky Ridge Trail (USL)
Coltsfoot	*Petasites frigidus var. palmatus*	-/-/A1	Prefers moist shaded ground, typically along streambanks and seeps	Grows in Canyon, along San Leandro Creek (USL)
Phacelia	*Phacelia egena*	-/-/A1x	Grows on slopes, streambanks, flats, chaparral, woodland	Historical record along Hampton Rd. (P)
Stinging phacelia	*Phacelia malvifolia*	-/-/A2	Grows in forest and scrub habitats	Found on Rocky Ridge (USL)
Knobcone pine	*Pinus attenuata*	-/-/A2	Prefers dry rocky soils, often found on ridgetops	Grows on Flicker Ridge (USL)
Elongate piperia	*Piperia elongata*	-/-/A2	Typically found in mountain forests and scrub habitat	Found near San Pablo Reservoir (SP)
Michael's rein orchid	*Piperia michaelii*	-/-/4.2	Coastal plains, hills and mountains	Grows at Briones Reservoir and Ramage Peak (B, USL)
California milkwort	*Polygala californica*	-/-/A1	Grows in woodlands and chaparral habitat	Found in Canyon and on Flicker Ridge (USL)
Selfheal	*Prunella vulgaris var. lanceolata*	-/-/A1	Typically grows in wetland and riparian habitat	Found at Gateway (SP)
Round wooly-marbles	*Psilocarphus chilensis*	-/-/A1	Usually found in dune, vernal pool and coastal habitat	Growing in the fire road on San Pablo Ridge (SP)
Lobb's aquatic buttercup	*Ranunculus lobbii*	-/-/4.2	Aqutic plant found in shallow water habitat	Found in a small pond on Rocky Ridge Trail (USL)
Curvepod yellowcress	*Rorippa curvisiliqua*	-/-/A2	Found along lakeshores and riverbanks, meadows, roadsides, and mudflats	Grows at Briones and San Pablo Reservoirs (B, SP)
Marsh yellowcress	*Rorippa palustris var. occidentalis*	-/-/A2	Found along lakeshores and riverbanks, meadows, roadsides, and mudflats	Grows at Briones and San Pablo Reservoirs (B, SP)
Golden dock	*Rumex maritimus*	-/-/A2	Typically occurs in wetland and wet habitats	Found at San Pablo Reservoir (SP)
Scouler's willow	*Salix scouleriana*	-/-/A2	Grows in recently disturbed areas, also called fire willow	Grows in Canyon (USL)

Table 2-3
Special-Status Plant and Animal Species Known to Occur on East Bay Watershed Lands

Common Name	Scientific Name	Status Federal/State/CNPS	Preferred Habitat	Occurrence on Watershed
Coast sanicle	*Sanicula laciniata*	-/-/A2	Typically occurs in closed cone pine forest and mixed evergreen forest	Found on Flicker Ridge and near San Leandro Reservoir (USL)
Califoria skullcap	*Scutellaria californica*	-/-/A2	Grows in a variety of habitats, including scrub, mixed evergreen and pine forests	Grows in Siesta Valley, near San Pablo Reservoir, and near San Leandro Reservoir (SP, USL)
Golden-eyed grass	*Sisyrinchium californicum*	-/-/A1	Typically grows in wet areas, including freshwater marsh habitat	Grows at Lily Spring and in Siesta Valley (SP)
Stephanomeria	*Stephanomeria elata*	-/-/A2	Occurs in a variety of habitat types , including chaparral, grassland, and woodland	Grows on Flicker Ridge (USL)
White trillium	*Trillium ovatum ssp. ovatum*	-/-/A2	Typically found in cool woodland habitat (i.e., redwood forest)	Grows in Canyon (USL)
Venus looking-glass	*Triodanis biflora*	-/-/A2	Occurs in a variety of habitat types , including chaparral, grassland, and woodland	Grows on Pinole Peak and near San Leandro Reservoir (P, USL)
Stream violet	*Viola glabella*	-/-/A2	Found along streams and in moist wooded areas	Grows in Canyon (USL)
Invertebrates				
Bridges' Coast Range shoulderband snail	*Helminthoglypta nickliniana bridgesi*	-/CSC/-	Typically found in moist, often riparian areas under rocks, logs, woody debris, and leaf litter	Found in various locations throughout the watershed (B, P, SP, USL, C)
Mammals				
Pallid bat	*Antrozous pallidus*	-/CSC/-	Typically found in arid to semi-arid areas. Roosts in buildings and rock crevices.	Known to occur within the watershed at one location only (April Creek Barn (P)
Western mastiff bat	*Eumops perotis*	-/CSC/-	Mostly a desert species. Require large vertical faces with at least 20 feet of drop from roost site	May occur anywhere on the watershed
Big free-tailed bat	*Nyctinomops macrotis*	-/CSC/-	Frequents rocky or canyon country where it roosts in crevices	May occur anywhere on the watershed

Table 2-3
Special-Status Plant and Animal Species Known to Occur on East Bay Watershed Lands

Common Name	Scientific Name	Status Federal/State/CNPS	Preferred Habitat	Occurrence on Watershed
Townsend's big-eared bat	*Corynorhinus townsendii*	-/CSC/-	Typically found near rocky areas with caves or abandoned mines are present. Occassionally use old buildings	May occur anywhere on the watershed
Western red bat	*Lasiurus blossevillii*	-/CSC/-	Typically roost in trees, hanging off branches.	May occur anywhere on the watershed
Ringtail	*Bassariscus astutus*	-/SP/-	Inhabits chaparral and foothill canyons, preferring riparian areas	Occurs on the watershed (SP, USL)
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectens*	-/CSC/-	Prefers moderate canopy cover in a variety of habitats. Typically found in woodlands and riparian habitat.	Occurs throughout the watershed (B, C, L, P, SP, USL)
Birds				
Common loon	*Gavia immer*	-/CSC/-	Requires deep freshwater lakes with sufficient food; needs at least 18 m (60 ft) of water for running take- off from water	A winter migrant on the watershed (SP, B, USL, C)
California brown pelican	*Pelecanus occidentalis*	-/SP/-	Nesting colonies and communal roosts are protected. Winters on large lakes and estuaries. Similar to white pelican	A winter migrant on the watershed(B, C, P, SP, USL)
American white pelican	*Pelecanus erythrorhynchos*	-/CSC/-	Winters on salt ponds, large lakes, and estuaries; loafs on open water during the day; roosts at night along the water's edge on beaches, sandbars, or driftwood	A winter migrant on the watershed (P, SP, B, USL)
Double-crested cormorant	*Phalacrocorax auritus*	-/CSC/-	Found along the coast in estuaries and salt ponds; also frequents reservoirs and lacustrine habitats in the coastal slope lowlands and Central Valley	Occurs on the watershed (B, C, L, P, SP, USL)
White-tailed kite	*Elanus leucurus*	-/SP/-	Inhabits herbaceous lowlands with variable tree growth	Occurs on the watershed (B)

Table 2-3
Special-Status Plant and Animal Species Known to Occur on East Bay Watershed Lands

Common Name	Scientific Name	Status Federal/State/CNPS	Preferred Habitat	Occurrence on Watershed
Bald eagle	*Haliaeetus leucocephalus*	-/SE, SP/-	Nests and winters along ocean shorelines, lake margins, and river courses; roosts communally in winter	A winter resident on the watershed (SP, B, L, USL)
Northern harrier	*Circus cyaneus*	-/CSC/-	Inhabits coastal and freshwater marshes; nests on ground in shrubby vegetation and grasslands; forages in grasslands	Occurs on the watershed (P, SP, B, USL)
Golden eagle	*Aquila chrysaetos*	-/CSC/-	Nests usually found on cliff ledges; prefers nesting in trees in hilly areas	Breeds and winters on the watershed (P, SP, B, USL)
American peregrine falcon	*Falco peregrinus anatum*	-/CSC, SP/-	Inhabits riparian areas and coastal and inland wetlands throughout the year	Occurs as a migrant on the watershed (SP, B, USL)
Long-eared owl	*Asio otus*	-/CSC/-	Frequents dense, riparian and live oak thickets near meadows; requires riparian or other thickets with small, densely canopied trees for nesting or roosting	Winters on the watershed (SP, B)
Short-eared owl	*Asio flammeus*	-/CSC/-	Frequents open, treeless areas with elevated perches and dense vegetation for roosting and nesting	Winters on the watershed (B)
Loggerhead shrike	*Lanius ludovicianus*	-/CSC/-	Inhabits open brushy areas with lookout posts (e.g., wires, trees, and scrub)	Breeds and winters on the watershed (P, SP, B, L, USL, C)
Yellow warbler	*Setophaga petechia*	-/CSC/-	In breeding season, frequents open to medium-density ripraian zones, woodlands, and forests with a brushy understory; in migration, found in a variety of sparse to dense woodland and forest habitats	Occurs on the watershed during migration (SP, USL); may breed, migratory habitat available; breeding habitat limited.
Tricolored blackbird	*Agelaius tricoilor*	-/SE/-	Frequents fresh emergent wetlands; roosts in large flocks in emergent vegetation or trees	Winters on watershed (P, SP); limited marginal breeding habitat available
Reptiles				

Table 2-3
Special-Status Plant and Animal Species Known to Occur on East Bay Watershed Lands

Common Name	Scientific Name	Status Federal/State/CNPS	Preferred Habitat	Occurrence on Watershed
Western pond turtle	*Emys marmorata*	-/CSC/-	Inhabits permanent or nearly permanent bodies of water in many habitat types at <6,000 feet elevation; requires basking sites such as partially submerged logs, vegetation mats, or open mud banks	Western pond turtle is known to breed on the watershed; northwestern and southwestern subspecies intergrade in the watershed region (P, SB, B, L, USL, C)
Coast horned lizard	*Phrynosoma coronatum frontale*	-/CSC/-	Frequents a wide variety of habitats; most common in lowlands along sandy washes with scattered low bushes; requires open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects	Collected on Hampton Road in 1992 by R. Nuzum; occurred in the late 1960's in the Berkeley Hills (B)
Alameda whipsnake	*Masticophis lateralis euryxanthus*	FT/ST/-	Restrict to valley-foothill hardwood habitat of the Coast Ranges; inhabits south-facing slopes and ravines where shrubs form a vegetative mosaic with oak trees and grasses	Many documented occurrences in the watershed (P, SP, B, USL)
Amphibians				
California red-legged frog	*Rana draytonii*	FT/CSC/-	Inhabits marshes, ponds, streams, lakes, and reservoirs; prefers permanent sources of water with cattails or other plants to provide cover	Breeds on the watershed (P, SP, USL); several documented occurrences
Fishes				
Steelhead -central California coast DPS	*Oncorhynchus mykiss*	FT/-/-	Inhabits streams and rivers with cool, clean water; requires appropriate gravels and hydrology for spawning habitat and cool pools or riffles with cover for juvenile rearing	Known to occur within the watershed (P)
Resident rainbow trout	*Oncorhynchus mykiss*	-/-/-	Landlocked resident rainbow trout occur in USL Reservoir and its upstream tributaries. While this species has no legal protection, it is treated as protected under the HCP	Found in Upper San Leandro Reservoir, Redwood Creek, and other tributaries to USL

Table 2.3
Status explanations

[a] Federal

FE	listed as endangered under the federal Endangered Species
FT	listed as threatened under the federal Endangered Species
FPE	proposed for listing as endangered under the federal Endangered Species Act.
C1	Category 1 candidate for federal listing. Category 1 includes species for which the U.S. Fish and Wildlife Service (USFWS) has on file enough substantial information on biological vulnerability and threat to support proposals to list them.
C2	Category 2 candidate for federal listing. Category 2 includes species for which USFWS has some biological information indicating that listing may be appropriate but for which further biological research and field study are usually needed to clarify the most appropriate status. Category 2 species are not necessarily less rare, threatened, or endangered than Category 1 species or listed species; the distinction relates to the amount of data available and is therefore administrative, not biological.
C3C	no longer a candidate for federal listing. Category 3C species have been dropped from the candidate list because they are too widespread or not threatened at this time.

State

SE	listed as endangered under the California Endangered Species Act.
ST	listed as threatened under the California Endangered Species Act.
SP	fully protected under the California Fish and Game Code.
CSC	species of special concern.

California Native Plant Society

1B	List 1B species: rare, threatened, or endangered in California and elsewhere.
A1	CNPS A1 species
A2	CNPS A2 species
3	CNPS list 3 species
4	CNPS list 4 species

[b] Watersheds:

P	Pinole
SP	San Pablo
B	Briones
L	Lafayette
USL	Upper San Leandro
C	Chabot

Source: EA Engineering, Science, and Technology 1994a; updated based on Federal Register 219: 58982-59028.

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Introduction

This section provides a general level of management guidance for the EBWMP. The goals, objectives, and guidelines listed below for each watershed management program describe management practices that are generally applicable to all watershed lands. In addition, this section describes the needs for coordination with other management programs that may affect the same resources or have overlapping goals.

Table 3-1 shows the program categories included in this plan, the management programs in each category, and the page on which each management program can be found.

Table 3-1
Management Program Categories Discussed in the EBWMP

~~Program~~	Issue Areas	Guideline Acronym	Page
~~Natural Resource Management Programs~~	Water Quality	WQ	46
	Biodiversity and	BIO	52
	Forestry	FOR	56
	Livestock Grazing	LG	59
	Fire and Fuels	FF	62
~~Community Use Management Programs~~	Developed Recreation and Trails	DRT	71
	Environmental Education	EE	78
	Cultural Resources	CR	81
	Visual Resources	VR	83
~~Assets Management Programs~~	Land Ownership	LO	86
	Entitlements	ENT	89
	~~Geographic Information System~~	~~GIS~~	~~91~~

The District's water quality goal is to maximize reservoir water quality to comply with current and anticipated future drinking water regulations.

Natural Resource Management Programs

Water Quality

The water quality management program involves activities that the District will undertake to maximize drinking water quality ~~by encouraging natural sediment control, biofiltration processes, and source control. Key elements of this program are identification and prompt repair of erosion problems related to land use activities and coordination with other agencies.~~

Drinking water quality is affected by the quality of original supply, how the geographic basin is managed, and what treatment techniques are used. Aggressive protection and management of water quality is necessary to control treatment costs and to comply with drinking water regulations. The water quality management program includes assessing how human activities and land and water uses may affect water quality, and implementing measures, when necessary, to maintain water quality.

Program Direction

Goal

Maximize reservoir water quality to comply with current and anticipated future drinking water regulations to provide the best possible source of supply to EBMUD customers.

Objectives

- Maintain the high quality of water stored in District reservoirs.
- ~~Ensure that surface runoff from District lands meets state water quality standards.~~
- Restore degraded areas on the watershed that are a source of excessive sediment.
- Address existing and potential water quality impacts for lands within the reservoir basins that are not owned by the District.

Management Guidelines

General Guidelines

WQ.1 Identify and quantify contaminant sources before developing management and control strategies and prioritizing implementation. Monitoring programs should identify sources of the following water quality constituents: particulates, microorganisms, general minerals, metals, DBP precursors, nutrients, and synthetic organic compounds (including volatile organic compounds [VOCs], pesticides, and herbicides). Patrol watershed lands to identify potential sources of contamination and take action to minimize pollutant impacts on watershed lands and source water quality.

WQ.2 Assess water quality impacts of various management practices before developing comprehensive management strategies (e.g., water quality impacts of different grazing regimes or vegetation management/fuel reduction techniques).

WQ.3 Establish or continue the following prohibitions to protect public water supplies:

- Prohibit body-contact recreation in reservoirs and tributary streams.
- Prohibit untreated sewage from entering reservoirs or tributary streams, through either surface or subsurface flow.
- Prohibit new easements or rights-of-way for pipelines and/or conveyances transmitting hazardous substances through District watershed lands.
- Prohibit the use of motorboat engines on reservoirs that have the potential to discharge fuel pollutants into the water in quantities of concern for human consumption or the environment. ~~Prohibit the use of high emission motorboat engines on San Pablo~~ Reservoir, ~~effective January 1, 2000; and prohibit the use of motorboat~~ engines at San Pablo Reservoir that ~~discharge any fuel e into the~~ water, ~~effective January 1, 2002 in accordance with Resolution No. 33088-98, effective March 10, 1998.~~
- Prohibit watercraft not inspected for invasive species, e.g., quagga and zebra mussels, from launching in District water bodies.
- Prohibit the disposal of materials (bait and aquaria) that may contain invasive species into District reservoirs.

WQ.4 ~~Develop design criteria~~ Implement management measures, standard plans and specifications, and best management practices (BMPs) as appropriate for land uses, activities, and District watershed control and management techniques that provide water quality protection guidelines for livestock

grazing, equestrian stables, and other concentrated animal facilities, fishing, boating, and marina management, golf courses, residential neighborhoods, onsite waste systems, stormwater runoff from roads and parking lots, commercial zones, hazardous materials storage and transfer facilities, erosion control, fire road and hiking trail routing, construction, and maintenance, vegetation management, forestry, and fire and fuels management. Relevant BMPs are identified in the Range Resource Management Plan, Fire Management Plan, and Low Effect HCP.

WQ.5 Maintain an updated list of ~~Identify and~~ prioritized parcels for water quality protection (e.g., potential sites for stormwater management, wetland treatment , protection from development) that are candidates for restrictions (via conservation easements) ~~protection~~ or land acquisition because of the soils, slope, and/or location within the hydrologic system.

WQ.6 Review pet access policy and conditions on watershed trails to ensure ~~that they are consistent with livestock and equestrian management practices related to~~ water quality protection.

Erosion Control

WQ.7 Implement erosion control standards and BMPs to reduce soil erosion, sedimentation, and nutrient impacts throughout the watershed. Standards and BMPs should be adhered to by all staff, contractors, researchers, recreationists, visitors, and others performing construction, maintenance, or other activities on watershed lands.

WQ.8 Conduct erosion control analysis and planning before initiating construction or other land disturbance activities.

WQ.9 Identify sediment sources and their contribution to the reservoirs and watercourses on District lands (e.g., active landslides and debris flows). Prepare a sediment budget, develop BMPs, set priorities for remediation, and implement measures. Give priority to Briones, San Pablo, and Upper San Leandro Reservoirs and their tributaries, and then Chabot and Lafayette Reservoirs. Identify management strategies and BMPs to minimize pollutant loading to tributary streams and reservoirs.

WQ.10 Inspect erosion-prone sites within the watershed annually and implement erosion control measures when and where necessary. Locate existing landslides, gullies, trail damage, or other sources of excessive sediment. Stabilize and vegetate streambanks and floodplains. Use drainage structures, grading, planting, or other site-specific methods to control erosion when needed.

WQ.11 Prevent construction-related water quality impacts such as erosion from exposed soil and pollutants from equipment.

Nonpoint-Source Pollution Control

WQ.12~~6~~ Coordinate as necessary with other land use management agencies, the National Pollution Discharge Elimination System stormwater permittee, and the Regional Water Quality Control Board to ensure proper selection and implementation of nonpoint-source control management practices on non-District lands in reservoir basins.

Grazing

WQ.13~~7~~ Under the guidance of the Range Resource Management Plan (2001), implement annual grazing plans and specific BMPs for all livestock leases, including horse pastures, which include provisions for protection of water quality and supply. Integrate equestrian use practices with other range management practices. Conduct a census of the number of horses stabled in the watershed and the number of equestrian users.

WQ.14~~8~~ Eliminate livestock grazing from unstable streambanks and protect unstable streambanks from other land-disturbing activities.

WQ.15~~9~~ Ensure, where the watershed interface zones are grazed (e.g., for fire management), that animal waste and erosion control measures are implemented to prevent water quality impacts.

WQ.16~~20~~ Ensure that grazing animals (e.g., cattle, horses, goats, and llamas) are managed to prevent overgrazing, direct access to water bodies, and erosion.

Fire and Fuels

WQ.17~~21~~ Under the guidance of the Fire Management Plan (2000), evaluate water quality impacts of fire and fuels management practices such as prescribed burning, equipment use, and firebreaks. Identify BMPs to minimize and mitigate water quality impacts. Prioritize and implement selected measures and include a water quality specialist in fire and fuels management planning.

WQ.18~~22~~ Consider alternatives to plowing firebreaks, including use of existing roads, mowing, spot-grazing, controlled burning, or natural firebreaks. Firebreak lines will be plowed along, rather than across, contour lines where feasible, and drainage structures will be installed where necessary to prevent gully formation.

WQ. 19 Evaluate the impacts of fuel breaks on sensitive natural communities and habitats. Where feasible, adjust fuels management practices to conserve ecologically sensitive areas.

WQ.2023 Restore vegetation (using native vegetation where feasible) whenever possible in burn areas and timber harvest areas throughout the reservoir watershed to provide erosion control and habitat enhancement.

Recreation, Roads, and Trails

WQ.214 Identify and evaluate the effects of recreational activities such as hiking, horseback riding, boating, shoreline fishing, and water-based recreation on water quality. Implement measures to reduce water quality impacts.

WQ.2215 Provide adequate safeguards to reduce water quality impacts from facilities developed for recreational users of the watershed. Appropriate monitoring and pollution prevention measures should be implemented at parking areas, picnic grounds, restrooms, boat launches, stables, and other facilities.

WQ.236 Inventory and evaluate unsurfaced fire roads and trails and eliminate those that are not necessary to management objectives or requirements. Develop design criteria for fire roads, trails, and stream crossings, and implement BMPs and standard maintenance practices to minimize erosion and other water quality impacts.

WQ.247 Evaluate stream crossings with respect to water quality. Identify and implement measures to control sediment, pollutants, or other sources of water quality degradation from entering watercourses.

WQ.258 Design and construct roads, trails, and fire roads to minimize disruption of natural hydrology.

WQ.269 Revegetate permanently closed roads with ecologically suitable vegetation.

WQ.2730 Implement management practices on trails to minimize erosion and runoff containing animal waste. Curtail access to trails during wet weather and in areas vulnerable to erosion and runoff.

WQ.2831 Monitor water quality impacts from trail use. Erosion may result on trails from use by hikers and horses. Sediment loads from trail erosion are greatest during the first rains of the wet season and continue to impair water quality throughout the season.

Buffer Areas

WQ.2932 Establish buffer zones or setbacks from watershed margins along sensitive urban interface areas to ease the encroaching development pressures on the watershed core and to protect the watershed, tributary streams, and reservoirs. Identify areas that are likely to be developed and consider alternative protection strategies.

WQ.3033 Review alternatives and establish standards to protect land/water interface areas. Develop a program for protecting riparian corridors, wetlands, seeps, springs, ponds, banks of reservoirs, tributary streams and corridors, and other water bodies.

WQ.314 Identify activities adjacent to the developed watershed interface that may affect water quality, such as agriculture, construction, recreation, and rights-of-way. Implement pollution prevention practices (e.g., improving the vegetative buffer between District lands and urban development).

WQ.325 Protect riparian corridors from direct and indirect water quality impacts. Direct impacts include cattle access, trail crossings, and loss of vegetation. Indirect impacts may include overgrazing, runoff from prescribed burns, animal waste, and runoff from trails and roads.

Coordination Requirements for Other Resource Management Programs

Ensure that the following coordination guidelines for other resource programs are met during project planning and implementation under the water quality management program:

Program	Guideline
Biodiversity	BIO.19, 21, 22, 23, and 24
Fire and Fuels	FF.5, 7, 8, and 13
Environmental Education	EE.2
Cultural Resources	CR.5, 6, 7, 10, and 11
Visual Resources	VR.1
Geographic Information System	GIS.

~~Program~~	~~Guideline~~
~~Biodiversity~~	~~BIO.19, 21, 22, 23, and 24~~
~~Fire and Fuels~~	~~FF.5, 7, 8, and 13~~
~~Environmental Education~~	~~EE.2~~
~~Cultural Resources~~	~~CR.5, 6, 7, 10, and 11~~
~~Visual Resources~~	~~VR.1~~
~~Geographic Information System~~	~~GIS.~~

The District's biodiversity goal is to maintain and enhance biological resource values on District lands through active management and careful coordination with other resource management programs.

Biodiversity and Ecological Management

The biodiversity management program involves activities that the District will undertake to protect and enhance habitats and species. The District's commit~~—~~ment to maintain and enhance biodiversity will be achieved by actively maintaining natural ecosystem processes, especially those that also protect or enhance water quality. The East Bay Municipal Utility District Low Effect East Bay Habitat Conservation Plan enhances watershed biodiversity through the protection and enhancement of threatened and endangered species habitat.

Program Direction

Goal

Maintain and enhance biological resource values on District lands through active management, HCP compliance and careful coordination with other resource management programs.

Objectives

- Maintain, protect, enhance, and where feasible, restore plant and animal communities, populations, and species.
- Implement an ecosystem management approach that maintains and enhances natural ecological processes.
- Apply an adaptive management strategy using inventory, management, monitoring, and research.
- Coordinate all resource management programs to ensure that biological resources are protected.
- Seek opportunities to develop mitigation banks or conservation areas on watershed lands, consistent with maintaining biodiversity and other resource values.

Guidelines

Threatened, Endangered, and Other Special-Status Species

BIO.1 Enhance habitat for threatened and endangered species ~~as financially feasible.~~

BIO.2 Regularly update species lists ~~Table 2-3 to incorporate new information~~

~~from monitoring and legal~~ with conservation status changes for use in project planning.

BIO.3 Monitor listed species populations and conduct site surveys using established ~~monitor- ing methods identified in the District's *Biological Survey Studies* program (Stebbins 1996).~~protocols.~~-~~ Incorporate survey results into the District's GIS database.

Habitats and Vegetation Types of High Biological Value

BIO.4 Adaptively manage sensitive species and their habitat utilizing data from species monitoring and research projects on the East Bay watershed.

BIO.5~~4~~ Design and control management activities to limit fragmentation of common vegetation types.

BIO.6~~5~~ Protect heritage native trees and trees with outstanding characteristics, and ensure that grazing does not prevent sustainable growth of new trees in the grazed areas. .

BIO.7~~6~~ Maintain and, where necessary, enhance habitat suitability for wildlife movement in key corridors.

BIO.8~~7~~ Participate in coordinated resource management planning efforts with other local land management agencies to conserve regional biodiversity by maintaining regional movement corridors (e.g., the Caldecott Tunnel corridor) and management of large landscape units. ~~Include a water quality specialist during coordinated resource management planning.~~

BIO.9~~8~~ Identify high priority sites for habitat restoration based primarily on water quality protection and on the value of restored habitats ~~and location relative to important wildlife use areas and corridors.~~for sensitive fish and wildlife species.

BIO.10~~9~~ Identify key habitat areas necessary for protection and management of special-status plants and animals. Provide buffer areas to reduce disruption of nesting and roosting areas for raptors, herons, egrets, and other sensitive wildlife species.

BIO.11~~0~~ Recognize the ecological value and likely permanence of certain non-native species and habitats (e.g., annual grassland), and incorporate the management of these species and habitats into biodiversity planning efforts.

BIO.12~~1~~ Where annual grazing has been eliminated from grassland habitats and grassland retention is a biodiversity priority, use prescribed fire, periodic grazing, or other means to discourage invasive species~~shrub~~ encroachment and maintain grassland conditions.

BIO.13~~2~~ Introduce prescribed fire under carefully controlled conditions to maintain and enhance biodiversity values in fire-dependent plant communities (e.g., knobcone pine, chamise-black sage chaparral, and manzanita chaparral).

BIO.14~~3~~ During revegetation of areas burned by wildfire or prescribed fire, emphasize maintenance and enhancement of biodiversity, commensurate with other critical resource needs (e.g., water quality protection).

Noxious Weeds, Invasive Plants, and Feral Animals

BIO.154 As required by law, control noxious weeds and pest animal species using the most conservative, least toxic, but effective methods available (BIO.187).

BIO.165 Prepare and periodically update a list of noxious weeds, other invasive, non-native plant species, and feral animals that warrant control on District lands.

BIO.176 Emphasize control of noxious weeds, invasive plants, and feral animals in or near important wildlife areas, corridors, or other sensitive habitats.

BIO.187 Apply integrated pest management (IPM) strategies, eliminating pesticides where feasible, ensuring that have negligible impacts on water quality, biodiversity, and other resources and do not without increasinge fire risk.

BIO.198 Control, using approved methods, rodent populations at dams, recreation facilities, and other areas where burrowing and disease could pose threats to human safety, or con--taminate the water supply, or where control is mandated by a regulating agency.

BIO.2019 Avoid use of non-native species for erosion control and other revegetation efforts that are invasive or that inhibit recovery of native habitats.

BIO.210 Identify and cooperatively obtain change in those procedures implemented by other agencies on District land that have a known deleterious effect on biodiversity (e.g., vegetation management near PG&E infrastructure), introduction of mosquito fish by mosquito abatement districts).

Management Coordination Procedures

BIO.221 While planning and implementing resource management actions, apply the following coordination guidelines to meet state and federal legal requirements for threatened and endangered species:

- if listed species are likely to be affected, consult with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) as required; and
- implement measures in the EBMUD Low Effect East Bay Habitat Conservation Plan and watershed streambed alteration agreements to minimize and avoid take of special-status species and their habitat.
- implement measures required by USFWS and DFG to avoid take and other financially feasible measures to protect other special-status species.

BIO.232 In conducting management activities, evaluate effects on species (prioritized according to guideline BIO.1) of proposed management activities

(e.g., changes to water system operations, watershed management activities, construction of new facilities and public access) according to the following guidelines:

- ~~query GIS for information on known occurrences of listed and other special-status species and special communities and general habitat types in the project area~~,
- identify ~~potential~~ species or sensitive habitats that could potentially be affected by the proposed action based on known species' occurrences, the habitat type within which the project occurs, and the habitats used by the species (see Table 2-3 for habitat occurrences of species), and
- ~~assess impact occurrence using the District's Biological Survey Studies protocols (Stebbins 1996), and~~
- evaluate project impacts and identify opportunities to avoid, mitigate, or compensate for impacts, including species- and project-specific buffers to protect plant and animal species from adverse effects of management activities~~;;;.; evaluate consistency with other EBWMP direction.~~

BIO.2~~4~~3 Ensure that all District projects that affect wetlands or waters of the United States as defined under Section 404 of the Clean Water Act receive appropriate permits prior to disturbance.

BIO.2~~5~~4 Ensure that all District projects that directly impinge on ~~blue line~~ streams, as defined under California Fish and Game Code Sections 1601 and 1603, receive appropriate permits from CDFW~~DFG~~ prior to disturbance.

Coordination Requirements for Other Resource Management Programs

Ensure that the following coordination guidelines for other resource programs are met during project planning and implementation under the biodiversity program:

Program	Guideline
Water Quality	WQ.2, 7, 8, 23, and 33
Cultural Resources	CR.5, 6, 7, 10, and 11
Visual Resources	VR.1
Geographic Information System	GIS.

~~Program~~	~~Guideline~~
~~Water Quality~~	~~WQ.2, 7, 8, 23, and 33~~
~~Cultural Resources~~	~~CR.5, 6, 7, 10, and 11~~
~~Visual Resources~~	~~VR.1~~
~~Geographic Information System~~	~~GIS.~~

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The District's forestry goal is to develop and implement a long-term management program for non-native forests to maintain and enhance other environmental resources, including water quality, fire protection, biodiversity, visual quality, and recreation use.

Forestry

The District's lands support a substantial area of native and non-native forest habitats. Native forest communities include redwood, knobcone pine, and several hardwood-dominated forest types, and represent one of the most valuable natural resource assets on the watershed. Most of the non-native forest stands consist of monocultures (i.e., even-aged, single-species stands) of Monterey pines and eucalyptus planted during the 1930s and 1940s to provide stability to watershed soils.

Forest management is defined in this plan as activity undertaken to manage vegetation in non-native forest stands (i.e., Monterey pine and eucalyptus) on District watershed lands. Management of the native forests is provided for under "Biodiversity".

Forest management will be achieved through selective management of the non-native forests, where necessary and financially feasible, to maintain and increase the vigor of the stands and to encourage the replacement of non-native forests with native species over the long term. ~~This conversion is anticipated to take place within the next 10-30 years, with p~~Priorities for conversion will be based on the need to reduce fire risks, maintain and enhance biological values, and protect water quality. Native forests will be managed to encourage natural regeneration processes and maintain and enhance biological values. Management for native forests is provided under "Biodiversity".

Program Direction

Goal

Continue the ongoing ~~Develop and implement a~~ long-term management program for non-native forests to maintain and enhance other environmental resources, including water quality, fire protection, biodiversity, visual quality, and recreational use.

Objectives

- ~~Develop and i~~Implement a long-term plan for managing non-native forest species that includes maintenance of stand health and vigor and phased conversion of selected stands of non-native forests to native forests or other ecologically suitable habitats.
- Use forest management as a tool to achieve strategic fire management goals, biodiversity goals, and other resource goals.
- Protect water quality, biodiversity, and other resource values during forest management program implementation.

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- Manage trees in areas of high public use to ensure visitor safety and maintain aesthetic values.

Guidelines

FOR.1 Discourage or prevent establishment of new stands of non-native woody vegetation and the expansion of existing stands.

FOR.2 Establish priorities for implementing non-native forest management based on fire risk to public safety and water quality degradation, stand vigor, opportunities for habitat enhancement, and visual impacts.

FOR.3 Avoid clear-cutting and other even-aged harvest techniques for areas greater than 2 acres in size to reduce impacts on water quality and other resources.

FOR.4 Follow standard practices and BMPs for forest management to reduce resource damage during harvest and subsequent management and to protect water quality (i.e., minimize sediments, nutrients, and organic matter in runoff).

FOR.5 Follow management measures outlined in the HCP for non-native forest areas that support special-status wildlife species and manage these areas to avoid disturbing associated special- status species.

FOR.6 Consider minimum management prescriptions, including retaining non-native forests, in areas where stands cannot be removed without significant impacts on water quality, biodiversity, visual quality, or other resource values.

FOR.7 Where replacement of non-native forest (Monterey pine and eucalyptus) with native forest is not feasible because of site conditions, habitat value, impacts on water quality or biodiversity, or fire risk, establish site-specific management objectives to restore other native habitats or continue managing non-native forest.

FOR.8 Evaluate the fire risk of immediate harvest and resulting long-term stand modifications when developing silvicultural prescriptions and management plans for individual forest stands. Ensure consistency with management directions for other resources in forest management plans.

FOR.9 Retain dead and downed material for use by special-status wildlife species, except where removal is required for strategic fuels management, fire control, water quality protection, habitat regeneration, public safety, or for other justified reasons.

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Eucalyptus Management

FOR.10 ~~Develop and i~~Implement a long-term phased program to remove eucalyptus stands and restore native woodland or other natural habitats to reduce fire hazards in areas where eucalyptus poses a significant fire risk.

FOR.11 Prior to any harvest activities, ensure that adequate stump-sprouting control methods are available to reduce fire hazards and protect water quality.

Monterey Pine Management

FOR.12 ~~Plan and i~~Implement silvicultural treatments necessary to maintain the short-term vigor of Monterey pine forest stands and to meet long-term stand management objectives.

FOR.13 Where feasible and appropriate, implement long-term management to replace Monterey pine forest with native species to ~~improve~~ reduce fire ~~protec- tion~~hazards, enhance biological values, and maintain water quality.

Coordination Requirements for Other Resource Management Programs

Ensure that the following coordination guidelines for other resource programs are met during project planning and implementation under the forest management program:

Program	Guideline
Water Quality	WQ.4, 7, 8, 11, 23, 33, and 35
Biodiversity	BIO.5, 10, 21, 22, 23, and 24
Cultural Resources	CR.5, 6, 7, 10, and 11
Visual Resources	VR.1 and 7
Geographic Information System	GIS.

Program	Guideline
Water Quality	WQ.4, 7, 8, 11, 23, 33, and 35
Biodiversity	BIO.5, 10, 21, 22, 23, and 24
Cultural Resources	CR.5, 6, 7, 10, and 11
Visual Resources	VR.1 and 7
Geographic Information System	GIS.

Livestock Grazing

Conducting livestock grazing to help achieve other resource management goals is a goal of the District.

Much of the District's land supports annual grassland vegetation. Grasslands stabilize soils from erosion that can degrade water quality and reduce reservoir capacity. They provide important habitat for wildlife and plant species. Grasslands also produce more runoff than any other vegetation type.

Many District grasslands have been grazed by livestock for 100 years or more. Grazing has been managed to prevent brush encroachment, reduce fire hazard, provide leasing revenue to the District, and increase runoff. ~~Grazing on watershed lands has raised concern regarding introduction of pathogens (e.g., cryptosporidium and giardia), nutrients, and sediment into reservoir water above baseline amounts. Also, continuous, year-round grazing has degraded biological resource values by damaging wetland, riparian, and other sensitive habitats; eliminating sensitive plant species; and encouraging the spread of noxious weeds.~~

The livestock grazing program focuses on reducing impacts on water quality and biodiversity and using grazing selectively to reduce fire risk, promote biodiversity, increase runoff, and provide revenues to the District. The Range Resource Management Plan (East Bay Municipal Utility District 2001) incorporated the goals and objectives identified in the EBWMP. ~~The livestock grazing program will be refocused to reduce impacts on water quality and biodiversity and use grazing selectively to reduce fire risk, promote biodiversity, increase runoff, and provide revenues to the District. Overall livestock numbers will be reduced from historical levels to protect water quality and enhance biodiversity on watershed lands.~~

Program Direction

Goal

Conduct livestock grazing to help achieve other resource management goals.

Objectives

- Use grazing by domestic livestock (e.g., horses, cattle, llamas, and goats) as a tool to manage vegetation for other resource needs.
- Eliminate or restrict grazing in areas where substantial impacts on water quality, biodiversity, fire control, or other management objectives may result.
- ~~Retain current levels of runoff.~~
- Generate livestock grazing revenue for the District where consistent with other resource values.

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Guidelines

LG.1 Establish grazing units to exclude use within buffer zones established around sensitive species locations, riparian zones, other sensitive habitats, reservoirs, and sensitive cultural resource areas. Grazing should occur in these areas only when fully compatible with management priorities for each area.

LG.2 Over time and as funding and staff resources are available, modify the grazing program to reduce the grazing extent over the watershed as a whole, while ensuring continued use where needed to meet fire and fuels, biodiversity, and other resource management objectives.

LG.3 Preferentially use controlled grazing as a cost-effective technique to reduce fuels in the urban/watershed interface.

LG.4 Prepare annual grazing plans for each lease area to ensure that land will be grazed consistent with EBWMP goals. The grazing plans should specify annual stocking rates, required management actions, and monitoring to evaluate adherence to lease conditions.

LG.5 As a general standard, establish livestock stocking rates (in animal unit-months [AUMs]) to maintain approximately 140% of minimal residual dry-matter standards (modified U.S. Soil Conservation Service Standards). Stocking rates for individual areas may vary significantly from this standard to meet site-specific management objectives and may need to be higher or lower in strategic fuels management areas.

LG.6 Monitor effects of different grazing regimes on water quality and biodiversity and adjust grazing intensity, timing, and species as needed to meet resource objectives.

LG.7 Reduce grazing levels or eliminate grazing from areas that generate acute water quality impacts, including elevated levels of sediments, pathogens, nutrients, or other contaminants.

LG.8 Designate "banked" (i.e., typically ungrazed) areas available for use during years of low forage production to relieve pressure on areas that are grazed annually.

LG.9 Maintain leases on a 5-year renewable basis to allow the District flexibility in modifying grazing to meet watershed management objectives. Incorporate substantial penalties, including ~~remediation, into~~ termination of the lease~~s~~ for violations of lease terms.

~~LG.10 Maintain the prohibition against sheep and pig grazing on local District lands due to fecal contamination until data are collected and methods are available to fully mitigate impacts.~~

LG.10~~1~~ Identify standard practices, BMPs, and other measures in annual grazing plans to resolve grazing conflicts with other resources, such as:

- erosion on highly erodible sites,
- discharge of nutrients, pathogens, sediments, and other contaminants into reservoirs and tributaries,
- interference with vegetation recovery following prescribed fire or wildfire,
- damage to or destruction of sensitive plant species and communities,
- excessive impact to fish and wildlife habitat, and
- damage to roads, trails, and recreation areas.

LG.11~~2~~ Ensure that developed water sources are designed or modified to permit use by wildlife.

LG.12~~3~~ Develop BMPs for concentrated animal facilities such as paddocks, corrals, and riding arenas and incorporate them into annual grazing plans or leases as appropriate.

Coordination Requirements for Other Resource Management Programs

Ensure that the following coordination guidelines for other resource programs are met during project planning and implementation under the livestock grazing management program:

Program	Guideline
Water Quality	WQ.4, 7, 8, 17, 18, 19, 20, 33, and 35
Biodiversity	BIO.10, 11, 21, 22, 23, and 24
Fire and Fuels	FF.7 and 8
Cultural Resources	CR.5, 6, 7, 10, and 11
Visual Resources	VR.1
Geographic Information System	GIS.

Program	Guideline
Water Quality	WQ.4, 7, 8, 17, 18, 19, 20, 33, and 35
Biodiversity	BIO.10, 11, 21, 22, 23, and 24
Fire and Fuels	FF.7 and 8
Cultural Resources	CR.5, 6, 7, 10, and 11
Visual Resources	VR.1
Geographic Information System	GIS.

Fire and Fuels

The District's goal for fire and fuels management is to protect human life and property and provide for public safety, and protect and enhance water quality, other natural resources, and watershed land uses.

The fire and fuels management program involves activities conducted to protect lives and property on and adjacent to District lands and to manage natural resources. The District has a wide range of land management responsibilities and must make decisions that balance fire prevention considerations with water quality, natural resource, and recreation program considerations on a case-by-case basis. ~~To ensure regional coordination in fire and fuels management planning, the EBWMP program incorporates those elements of the Vegetation Management Consortium's (VMC's) Fire Hazard Mitigation Program and Fuel Management Plan for the East Bay Hills (Amphion Environmental 1995) that are consistent with the District's water quality and natural resource management goals.~~ The Fire Management Plan (East Bay Municipal Utility District, 2000) incorporates the goals and objectives identified in the EBWMP. Fire management activities to be undertaken in the EBWMP include:

- conducting fire management planning,
- treating vegetative fuels to reduce fire hazards,
- conducting fire prevention and suppression activities, and
- using prescribed fire to manage other resources.

The following key assumptions were used in developing fire and fuels management direction:

- Fire hazards occur throughout the watershed area; therefore, the primary fire management strategy is to locate fires as soon as possible after ignition and suppress and contain wildfire within designated fire management units.

- Although wildfire can occur and cause damage anywhere, the risk is highest in wildland/urban interface areas **(Figure 3-1)** during periods of extreme fire danger and hazardous weather conditions (e.g., dry, windy summer and fall days, particularly from hot east winds).

- Fire and fuels must be managed strategically to provide adequate fire protection while reducing impacts of fire prevention, fuels management, and fire suppression activities.

- Firefighting response times and effectiveness can be improved by establishing "firesafe" access routes associated with strategic fuelbreak networks and managing areas to provide defensible open space.

The District alone cannot feasibly prevent all wildfires that occur on or spread through watershed lands from reaching adjacent properties. Providing adequate fire protection, therefore, depends on implementing prevention activities to contain fires within watershed boundaries. The spread of wildfire across shared property boundaries can be minimized through cooperative planning and issues in the interface area are considered in local land use planning

implementation with other landowners in each reservoir watershed. This strategic planning approach will improve fire management efficiency and effectiveness by setting priorities that reflect key fire management goals and available fire suppression resources.

In many areas, urban encroachment near the District's property boundary is occurring without adequate consideration for fire risks and fire protection needs. These conditions have placed a substantial burden on the District and must be corrected. Protecting life, public safety, and property at this interface requires a combination of coordinated resource management and planning, public education, and strategic fuel management. Increased communication between the District and local planning agencies is required to ensure that fire management issues in the interface area are considered in local land use planning.

Program Direction

Goal

Protect human life and property and provide for public safety, and protect and enhance water quality, other natural resources, and watershed land uses.

Objectives

- Provide an appropriate level of fire protection for all watershed lands, emphasizing protection of life, public safety, and property values in interface areas.
- Implement measures to reduce fire hazard to protect water quality from wildfire-related soil erosion, sedimentation, and nutrient impacts.
- Use a strategic planning approach to fire management that ensures fire and fuels management activities are consistent with the objectives for other resources to the extent practicable.
- Recognize the importance of fire as a natural ecological process and use prescribed burning and other techniques to reduce hazardous fuel loads under carefully selected conditions to achieve long-term fire safety, water quality protection, and biodiversity management objectives.
- Cooperate with other agencies, adjacent property owners, and homeowner groups and participate actively in planning processes to develop coordinated resource management plans (CRMPs) and other cooperative multiagency agreements for fire hazard reduction and fire incident management.

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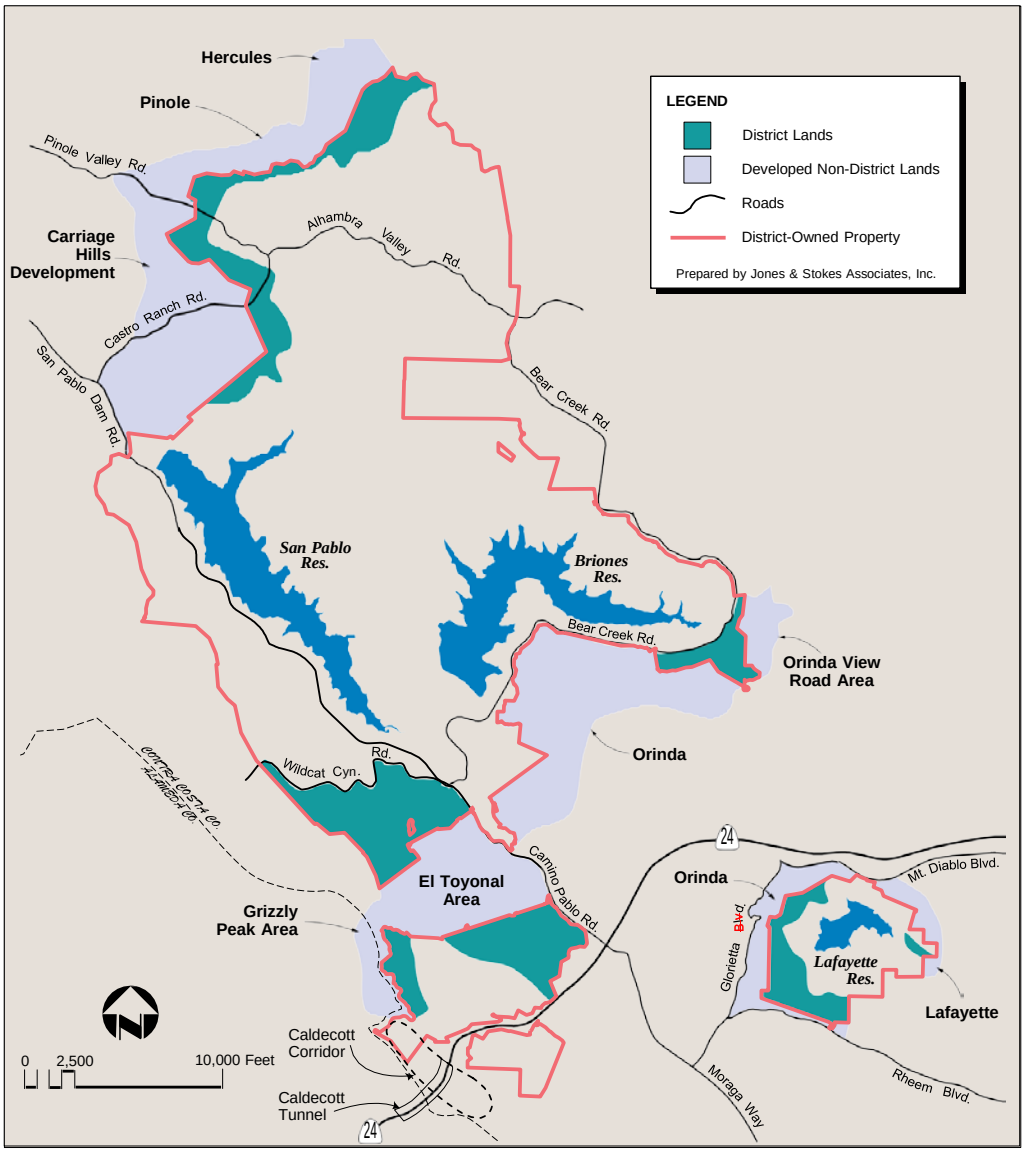

Figure 3-1 (North)
Interface Lands with High Priority for Fires and Fuels Management

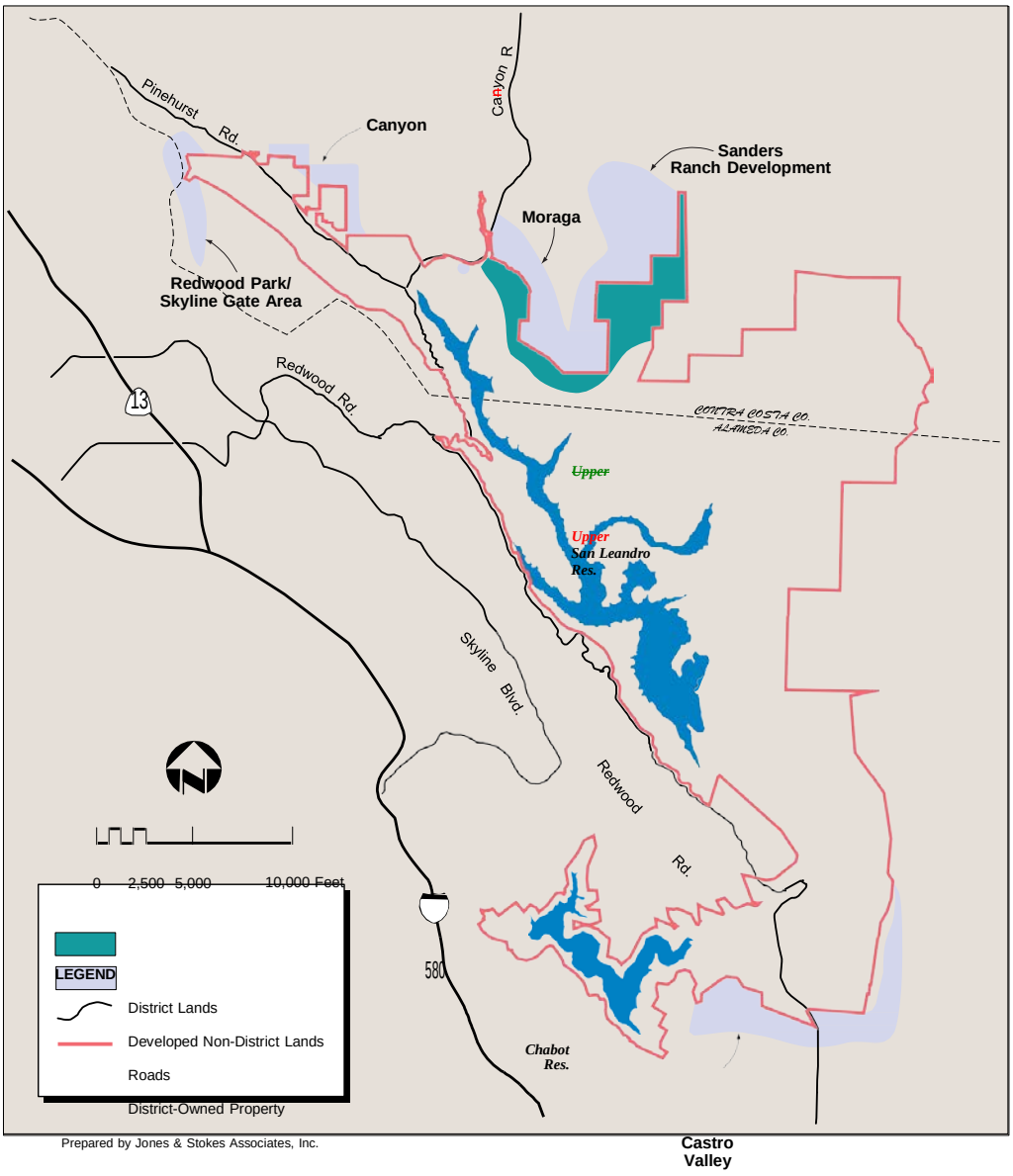

Figure 3-1 (South)
Interface Lands with High Priority for Fires and Fuels Management

Providing adequate fire protection depends on implementing prevention activities to contain fires within watershed boundaries.

- Maintain fire management program funding that supports implementation of adopted plan elements.
- Maintain firefighting capability, equipment, and patrols to retain the basic level of fire safety and initial response necessary.

Guidelines

Prescribed Burning

FF.1 Continue to develop~~e~~ and implement appropriate prescribed burning procedures to safely and cost-effectively meet fuel reduction and other management objectives. Test approaches such as burning during the growing and nongrowing seasons, varying fire intensities, and using varied prescription cycles, and follow California Department of Forestry and Fire Protection (Cal Fire~~DF~~) regulations and standards for prescribed burning when and where applicable.

FF.2 Conduct site-specific interdisciplinary resource planning and prepare an environmental analysis document for all prescribed burns. Involve appropriate watershed, recreation, and fisheries and wildlife management staff in these planning efforts.

FF.3 As part of the annual fire management plan update (see FF.32), prepare a description of the annual burn program including individual plans for each proposed prescribed burn.

FF.4 Comply with federal, state, and local air pollution laws and regulations in developing and implementing fire management plans.

FF.5 Develop and implement a monitoring program to evaluate impacts of prescribed burning on water quality and other resources.

Fuels Management

FF.6 Utilize fire management units (FMUs) established in the Fire Management Plan for presuppression fire and fuels management planning, strategic fuelbreak networks, firebreaks, road access, and predicted containment areas for wildfires that may ignite in each FMU.

FF.7 Continue to use livestock in all grassland interface areas where fuel reduction is necessary. In areas of natural resource conflict, construct additional fencing to confine grazing to key fuel reduction areas.

FF.8 Identify barriers (e.g., reservoirs, grazed areas, greenbelts, roadways, trails, oak woodlands, and riparian areas) that help retard wildfire spread and use them as baselines in establishing a strategic fuelbreak network to protect water quality and reduce environmental impacts and fuel treatment costs. Incorporate information in the GIS database.

FF.9 Design and construct new fuel modification areas of the strategic fuelbreak network to meet other resource constraints.

FF.10 Recognize prescribed fire, vegetation management, grazing, manual and mechanical fuels treatments, and possibly minimal or limited chemical treatment of vegetation as effective tools for reducing fire hazards. The most appropriate method or combination of methods will be selected based on consistency with public safety, natural resource management objectives, priorities for each land management zone, and cost. Utilize appropriate guidelines from the *Fire Management Plan (2000).* ~~*VMC's Fuel Management Plan* (Amphion Environmental 1995).~~

FF.11 Maintain strategic fuel treatment areas, fuelbreaks, firebreaks, and other vegetative manipulations in high-risk areas where funding is available.

FF.12 Identify environmentally sensitive areas and develop site-specific fuel treatments to address fire hazard and wildfire risk in these areas. Identify areas where mechanical treatments (e.g., bulldozing, plowing, disking, and mowing) are inappropriate.

FF.13 ~~Based on the fire management strategy presented in the EBWMP, modify or seek a variance from the Contra Costa County Fire Protection District's 5-acre firebreak grid pattern concept for all grassland and light brush areas not currently being grazed. Work with the Contra Costa County Board of Supervisors to modify the 5-acre plowing requirements. Implement~~ Follow Fire Plan guidelines for a strategic grazing and plowing program that addresses the need to protect sensitive wetlands and wildlife refugia.

*Plowed Control Line*s

FF.14 ~~Evaluate~~ Consider the strategic value of plowed control lines and firebreaks for fire suppression activity and fire control. Strategic value is higher when plowed control lines are linked with the fuelbreak network and areas with firesafe road access. Balance strategic value with environmental sensitivity of the surrounding area in determining use of this technique.

FF.15 Locate plowed control lines where they can function effectively in fire control and reduce surface disturbance and erosion potential. Existing plowed control lines should be retained unless substantial water quality or other resource damage is occurring.

FF.16 Existing trails and fire roads should be maintained and used as control lines whenever possible to reduce the need for additional site disturbance.

FF.17 Coordinate with the District's Fisheries and Wildlife Division and other qualified District staff for sensitive species before constructing and maintaining plowed fire lines within 300 feet of sensitive habitats or species.

FF.18 Avoid locating plowed fire lines within cultural or archaeologic sites. Relocate plowed lines outside designated sites or use alternative methods of securing control (e.g., handline construction or hose lays).

FF.19 Locate plowed fire lines outside riparian buffer zones around streams, wetlands, or springs and seeps unless connecting to such areas at designated points is essential and can be done with minimal disturbance.

Fire Prevention

FF.20 Actively address arson on watershed lands (through direct District watershed fire patrols) and continued coordination with the East Bay Fire Chiefs' Consortium.

FF.21 Implement strategic firesafe treatments along roadways, public access routes, and trails in areas of high fuel hazard to reduce the potential for wildfires to ignite and spread.

FF.22 ~~Develop and adopt~~ Utilize a fire danger rating system based on weather and fuel moisture conditions and implement use restrictions on roadways, trails, and other District facilities during extreme hazard conditions. Work with adjacent jurisdictions to plan strategic closures of public roadways and trails during periods of extreme fire hazard.

Fire Protection

FF.23 Participate in cooperative multiagency education programs (with EBRPD, local fire departments and districts, and homeowner associations) to educate homeowners in the urban/wildland interface on how to reduce fire hazard and risk in those areas. Provide the District's booklet "Firescape - Landscaping to Reduce Fire Hazard" to interested landowners.

FF.24 In conjunction with ~~the Water Planning Department~~ other District departments, evaluate the feasibility of developing dedicated water supply systems for fire suppression in urban/ watershed interface areas.

FF.25 Continue annual maintenance of all necessary fire roads (refer also to guideline FF.6). Assign strategic values to roads based on linkage with the strategic fuelbreak network, and base the annual road maintenance schedule on these strategic values. Consider firesafe vegetation treatments along the highest priority fire roads.

FF.26 Annually assess the safety program for staff participating in prescribed burning and wildland fire suppression and revise as necessary.

Cooperative Fire Protection and Presuppression Planning

FF.27 Coordinate with other local fire suppression organizations, especially in areas of mutual jurisdiction. Continue District participation in the Hills Emergency Forum, VMC, and East Bay Fire Chiefs' Consortium.

FF.28 Review and update, as necessary, memoranda of agreement for cooperative wildland fire suppression with Cal Fire~~DF~~ and local fire control agencies.

FF.29 Annually review the training program for the District's Natural Resource Department field staff regarding response to wildland fire incidents, and continue active participation in emergency interagency wildfire suppression assistance (mutual aid).

FF.30 Continue to develop and implement cross-training with cooperative fire suppression organizations (i.e., Cal Fire~~DF~~, EBRPD, and local fire control agencies).

FF.31 Annually provide a fire response plan for all East Bay watershed lands and operational units. Coordinate with participating fire suppression organizations to select and adopt design criteria, standards, and BMPs for strategic fuelbreak networks, firebreaks, road access, and predicted containment areas for wildfire to minimize erosion and protect water quality.

Fire Suppression

FF.32 Maintain District watershed headquarters access to regional fire information sources, annually review and update, as needed, a comprehensive fire management plan including the procedures for red flag operation and fire response. Annually review and update, if needed, a comprehensive fire management plan.

FF.33 Use contain-and-control strategies to suppress wildfires consistent with personnel safety, land and resource management objectives, and fire and fuels management objectives.

FF.34 During fire suppression activities, emphasize indirect attack strategies that use existing breaks, barriers, and burn-out procedures when feasible. Use automatic, direct attack, and plow operations for fire suppression when required by specific burning conditions.

FF.35 Achieve appropriate mop-up standards and patrol procedures as established by the Incident Commander before a wildfire is declared out and suppression crews are permitted to leave the site.

FF.36 Coordinate with other resource programs to ensure that fire and fuels management program direction is achieved during project work (e.g., fuels treatment in forest management, achieving required fuels reduction through livestock grazing).

FF.37 Coordinate closely with District resource staff to ensure that water quality and resource values are protected during planning and implementation of fire and fuels management strategies.

FF.38 Review any chemicals used in fire suppression for ultimate impacts on water quality. Substitute fire suppression chemicals that minimize water quality impacts, if possible.

Coordination Requirements for Other Resource Management Programs

Ensure that the following coordination guidelines for other resource programs are met during project planning and implementation under the fire and fuels management program:

Program	Guideline
Water Quality	WQ.4, 7, 8, 11, 15, 21, 22, 23, and 35
Biodiversity	BIO.4, 6, 7, 11, 12, 13, 19, 21, 22, 23, and 24
Forestry	FOR.11
Environmental Education	EE.6 and 7
Cultural Resources	CR.5, 6, 7, 10, and 11
Visual Resources	VR.1, 7, 8, and 9
Geographic Information System	GIS.

Program	Guideline
Water Quality	WQ.4, 7, 8, 11, 15, 21, 22, 23, and 35
Biodiversity	BIO.4, 6, 7, 11, 12, 13, 19, 21, 22, 23, and 24
Forestry	FOR.11
Environmental Education	EE.6 and 7
Cultural Resources	CR.5, 6, 7, 10, and 11
Visual Resources	VR.1, 7, 8, and 9
Geographic Information System	GIS.

Community Use Management Programs

Developed Recreation and Trails

Recreation on East Bay watershed lands is provided at developed recreation areas and on the recreational trail system. Recreation areas serve large numbers of people and are used extensively. Trail use occurs at a low intensity, and user numbers are relatively small (currently, there are ~~approximately~~ nearly 8,000~~4,500~~ trail permit holders).

The District's developed recreation and trails management program addresses recreational uses of watershed lands that are consistent with the District's water quality and biodiversity protection goals. The program defines the types of recreational experiences that are compatible with watershed resources and describes the ongoing uses that will be allowed to continue as well as the types of new uses that the District will consider.

Developed recreation under this program includes all activities associated with developed facilities and use areas currently operated by the District or its concessionaires. Trails management applies only to established or proposed trails and staging areas on District-owned property.

Since the adoption of the original master plan, a new concern about invasive *Dreissenid* mussels has emerged, affecting reservoir operations throughout California and many states. Quagga and zebra mussels are invasive freshwater bivalves that encrust hard surfaces, attaching to boats, trailers, and motors. If a boat has been in infested waters it can transport invasive mussels to non-infested waters. An adult female zebra mussel can release up to one million eggs in a year. Invasive mussels can ruin boats, motors, and equipment. When mussels invade a reservoir they can clog water intakes and pipes causing extensive damage. To prevent the spread of zebra/quagga mussels the District has implemented a vessel inspection program at the terminal storage reservoirs. Prior to launching boats are subject to a two-part inspection that includes a history survey and a physical inspection. Boats failing the inspection are not allowed to launch.

Program Direction

Goals

Continue to provide a high-quality recreational experience to users of watershed lands that does not compromise the District's goals for water quality, biodiversity, and watershed management protection. Provide reasonable access routes between watershed lands and adjacent open space areas consistent with all District resource management goals. Provide equal access to recreational opportunities for users from a wide range of socioeconomic backgrounds and physical abilities where feasible and practical. Ensure that the continuation or modification of recreational use creates as little financial burden on the District and its ratepayers as is practical.

Objectives

The District's goal for developed recreation and trails is to provide a high-quality recreation experi- ence to users of watershed lands that does not compromise the District's goals for water quality and watershed management protection.

- Offer recreational experiences that complement and are consistent with the protection of District watershed lands and water bodies. Provide opportunities for reasonable use of natural watershed attributes.
- Ensure a high quality of recreational experience on District lands by reducing user conflicts, promoting safety and courtesy, and controlling overcrowding.

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- Promote environmental values in recreational use and management.
- Ensure that currently permitted or new recreational activities do not increase the potential for additional soil erosion, landscape modification, or pollutant loading, or adversely affect other watershed or reservoir resources.
- Where feasible, provide trail links to the surrounding regional open space network that do not conflict with resource protection priorities.
- Give priority to those recreational uses that serve the broadest spectrum of the population while maintaining consistency with water quality, biodiversity, fiscal responsibility, and public safety goals.
- Assess the comprehensive financial consequences associated with recreational proposals. Evaluate cost parameters related to initial capital expenditure, District staffing and administration requirements, initial program development costs, and long-term operation and maintenance costs.
- Ensure that no net increase in adverse environmental effects will result from additions to or modifications of District recreation management programs, and prioritize protection of the interior watershed areas that serve as a refuge for plants and animals

General Recreation and Trails Guidelines

DRT.1 Maintain consistency in evaluating recreational proposals. Reject uses that require undesirable or substantial visible alteration of the natural character of the lands or create excessive nuisances that could affect other recreationists, resource values, or neighboring residential areas (e.g., intrusive noise levels or overcrowding). Allow nonintrusive uses and activities (e.g., day use events, llama use), subject to individual permit, that would have minimal impact on the watershed environment.

DRT.2 Where feasible and practical, review and update development and management standards to ~~Implement an ongoing program to review and update development and management standards for recreational facilities. E~~ensure that recreational facilities and activities are in compliance with current codes and standards.

DRT.3 ~~Establish the carrying capacity of each major~~ Avoid overutilization in the developed -recreation areas~~.~~ Monitor use levels and modify as necessary.

DRT.4 Close recreational facilities and trails as needed to protect sensitive wildlife species (e.g., nesting birds) and special-status species, curtail soil erosion, protect water quality, reduce fire hazards, and address other public safety concerns.

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DRT.5 Coordinate recreational programs with environmental education programs to provide recreationists with information about protecting public water supplies, source control and pollution prevention, watershed and natural resource management, and related water delivery system operations.

DRT.6 Incorporate the standards of the Americans with Disabilities Act (ADA) in all facility upgrades and new developments as required by law. Incorporate the requirements of whole-access trails for persons with disabilities as required by law.

DRT.7 Evaluate the personnel and maintenance requirements for administering, operating, patrolling, and supporting proposed new recreational uses or related infrastructure. Proposals that would require increases in District staff or maintenance costs will be given a low priority.

DRT.8 Identify potential risks related to new recreational use of watershed lands, and exercise caution when considering new development or modifications to lease agreements. Recreational proposals that would result in water quality deterioration or excessive safety or financial risks will not be approved.

DRT.9 Evaluate existing recreational use and trails development according to the same criteria used to evaluate new proposals for recreational use. Review uses periodically and consider modifications to reduce or eliminate adverse effects, if found, and protect water quality.

Developed Recreation Guidelines

DRT.10 Separate potentially conflicting uses in recreation areas wherever possible to enhance recreational experiences among users. Prohibit use of firearms, sport hunting weapons, or fishing weapons on District property.

DRT.11 Evaluate proposals for special events on District lands and reservoirs, such as music, theater, races, and boating, on a case-by-case basis. Give priority to those events that are temporary, use existing facilities, impose minimal conflicts with normal use, and have minimal impact on staffing and District resources. Events that could create intrusive noise levels, major traffic and parking conflicts, water quality deterioration, or increased fire risk should be considered carefully and be subject to special nuisance abatement conditions.

DRT.12 Evaluate the cost of personnel and maintenance needs to administer special events on District property. Organizations requesting use of District property for special events should incur the total direct and indirect costs of event administration, law enforcement, equipment use, cleanup, and any additional related activities.

DRT.13 Prohibit swimming or other forms of human or domestic-animal body contact in reservoir waters.

DRT.14 Prohibit new recreational facilities and uses on District-owned land that would require grading or paving (including graveling) areas of the natural landscape larger than 1/2 acre, unless appropriate CEQA documentation is completed and concludes that no significant impacts would exist after mitigation.

DRT.15 Ensure that group uses of District recreational facilities ~~that~~ are based on nondiscrimination in selection of participants, equity in and equal access to the approval process, recovery of all District staff costs associated with the use, and fair economic return to the District. Uses that preclude or disrupt public access to park facilities that are normally designated "nonreservable" will not be permitted unless authorized by the Board of Directors.

DRT.~~16 Continue to correct~~ Ensure reasonable accessibility ~~deficiencies~~ for major public facilities, including the visitor centers, restroom facilities, parking, marina and launching areas, group picnic areas, and main trails.

DRT.17 Consider initial capital costs and long-term maintenance costs when evaluating new public or private recreational development proposals. Appraise the potential restitution, grant reimbursement, or settlement that could be required if approved recreational uses were to be suspended in the future. Carefully review recreational uses that involve high initial capital costs that may eventually create financial risk for the District.

DRT.18 Require preparation of ~~detailed~~ feasibility and environmental analyses for recreational proposals related to modification or expansion of existing or new facilities or uses. The applicant will have responsibility for providing adequate information required for these analyses.

Trails Guidelines

DRT.19 ~~Provide~~ Support regional trail linkages in District-designated trail corridors that would be accessible to the regional trail use community ~~(i.e., planned Hercules/Pinole Ridge Trail connections to the Bay Area Ridge Trail)~~ and that are consistent with District trail use rules, regulations, rates, and charges (**Figure 3-2)**.

DRT.20 Where feasible, offer opportunities for volunteers to participate in maintaining watershed trails.~~Explore the feasibility of establishing a volunteer program for trail maintenance.~~

DRT.21 Retain the current trail permit system and identify opportunities to provide wider accessibility of permits for regional trail users.

~~DRT.22 Consider expanding the current trail permit system to include single-day use permits and fees that are made available for regional trail users entering District land from other jurisdictions. Single-day use permits could be purchased at all recreation areas and business offices.~~

DRT.22~~3~~ Conform to trail maintenance standards to ensure that public safety is optimized and safety hazards are minimized. Grade multipurpose trails only as required to ensure safety. Require annual review of all trails and trail uses on District property, and correct eroded areas and eliminate hazardous trail segments or uses.

DRT.23 Minimize public access and recreational facilities in areas where potential for trespass from and fire hazards on adjacent private lands are substantial. Do not allow entry to District lands from adjacent private residences, except at Lafayette Reservoir.

DRT.24~~5~~ Allow community access points (staging areas) to the Bay Area Ridge Trail where such access is not precluded by environmental, operational, political, or fiscal constraints.

DRT.25~~6~~ ~~Prohibit recreational use of conveyances with wheels, tracks, or skids on unpaved roads or trails except in those portions of the Lake Chabot watershed that are leased to EBRPD or as required under the ADA.~~ Use of designated unpaved roads or trails shall be limited to hiking and equestrians with restrictions as provided in the watershed rules and regulations and by signage at trailheads, except in those portions of the Lake Chabot watershed that are leased to EBRPD or as required under the ADA. Bicycle access shall be allowed only on designated portions of the Pinole Valley and Eagle's Nest trails consisting of service roads. The EBMUD Board of Directors reserves the right to revoke bicycle access on these trails at any time and for any reason.

Coordination Requirements for Other Resource Management Programs

Ensure that the following coordination guidelines for other resource programs are met during project planning and implementation under the developed recreation and trails management program:

Program	Guideline
Water Quality	WQ.3, 4, 7, 8, 11, 15, 24, 25, 30, 31, and 35
Biodiversity	BIO.19, 21, 22, 23, and 24
Cultural Resources	CR.5, 6, 7, 10, and 11
Visual Resources	VR.1, 2, 3, 4, 5, 6, and 9
Geographic Information System	GIS.

~~Program~~	~~Guideline~~
~~Water Quality~~	~~WQ.3, 4, 7, 8, 11, 15, 24, 25, 30, 31, and 35~~
~~Biodiversity~~	~~BIO.19, 21, 22, 23, and 24~~
~~Cultural Resources~~	~~CR.5, 6, 7, 10, and 11~~
~~Visual Resources~~	~~VR.1, 2, 3, 4, 5, 6, and 9~~
~~Geographic Information System~~	~~GIS.~~

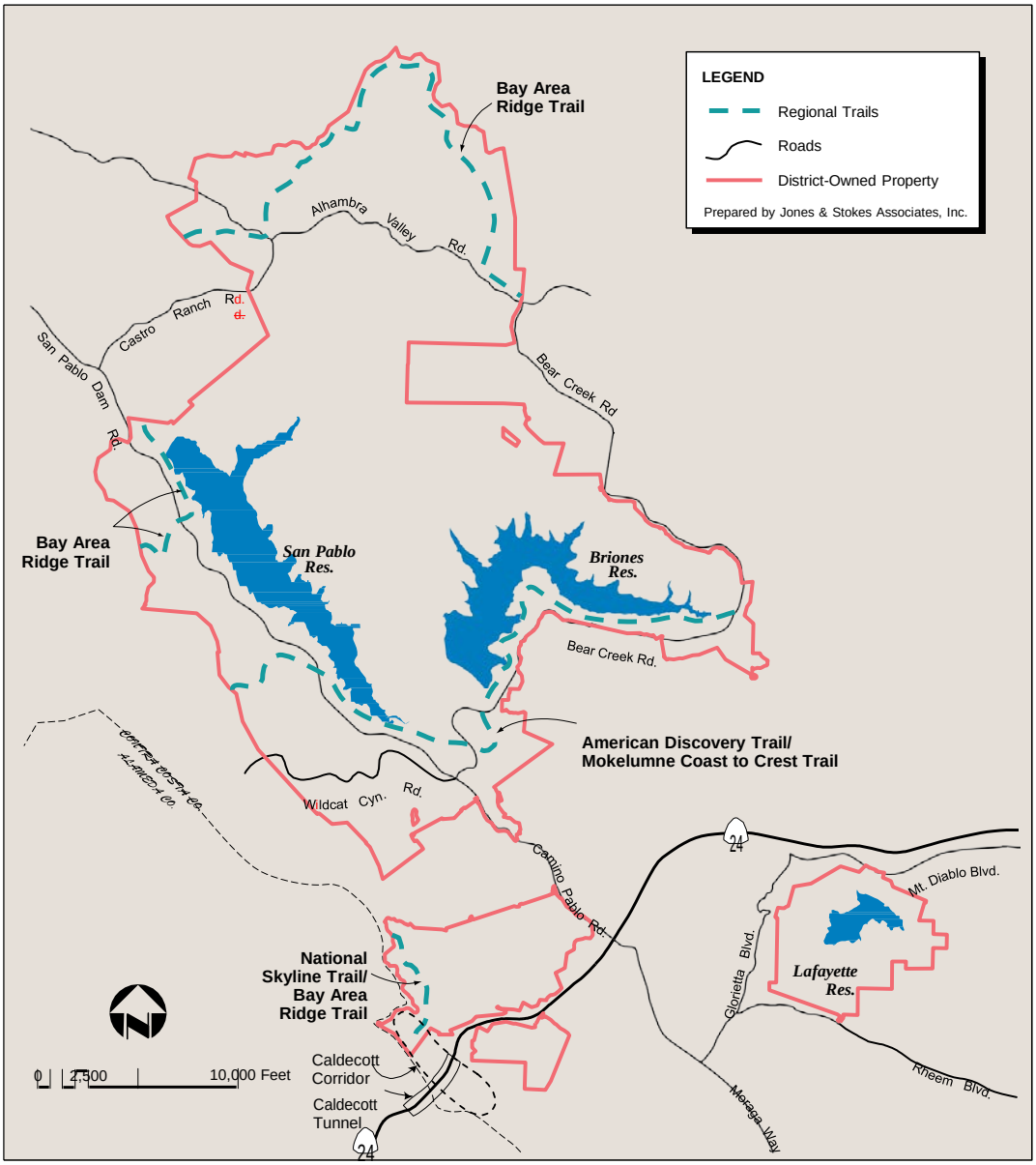

Figure 3-2 (North)
Regional Trail Connectors Proposed or in Place on District Property

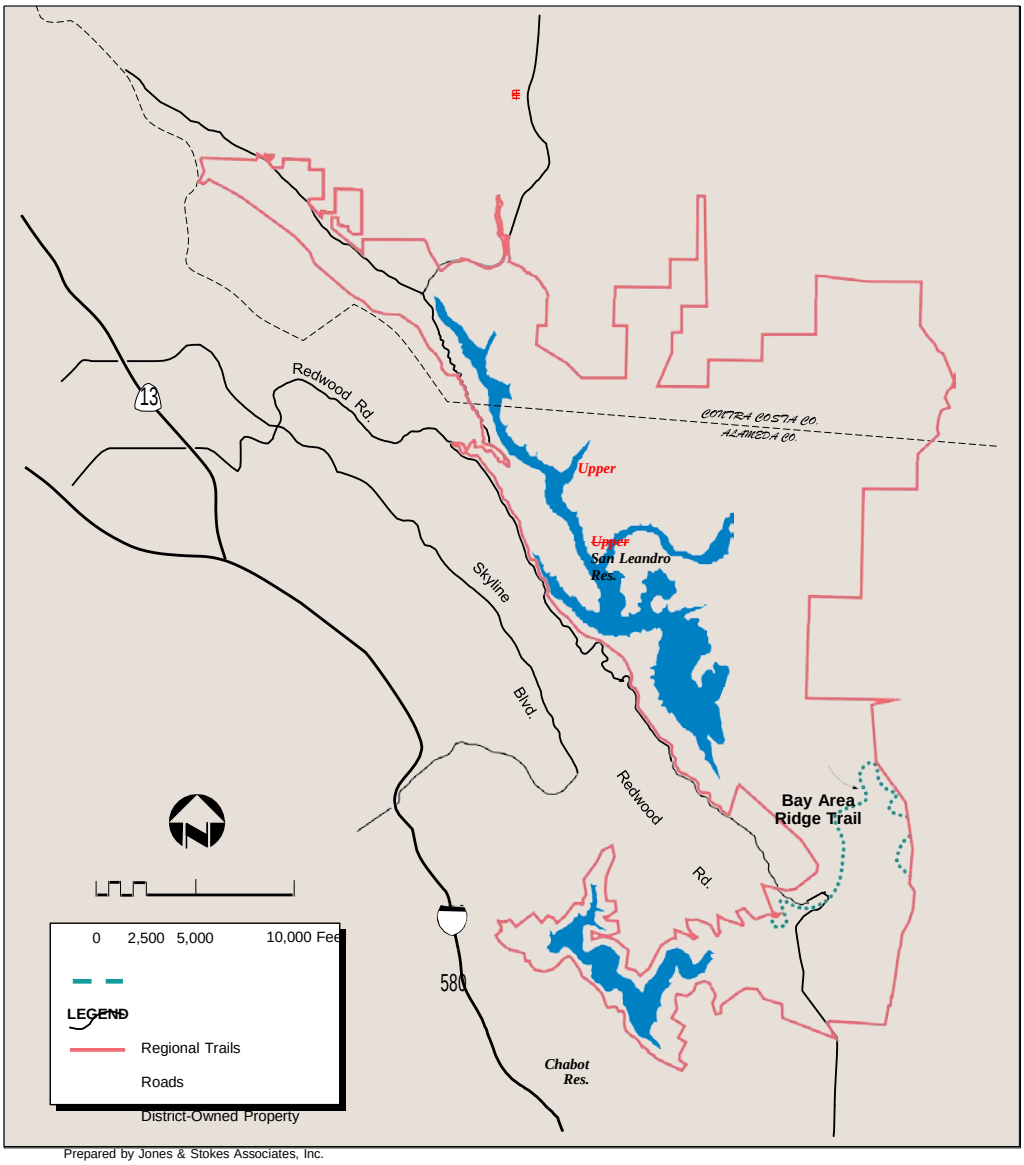

Figure 3-2 (South)
Regional Trail Connectors Proposed or in Place on District Property

The District's goal for environmental education is to encourage educational uses of District watershed lands and to identify lands suitable for environmental education uses.

Environmental Education

The environmental education program encompasses education, interpretation, and research uses of watershed lands. Public education programs sponsored by the District are informal, and specific sites for these activities are considered in the EBWMP. The program promotes activities that contribute to the District's basic understanding and knowledge of watershed resources and educates the public regarding the importance of protecting water quality and the importance of watershed lands, resources, and management activities.

Program Direction

Goal

Encourage educational uses of District watershed lands and identify lands suitable for environmental education uses.

Objectives

- ~~Reclassify 2,500 acres designated under the 1970 Land Use Master Plan as Educational Use Areas as Sensitive Habitats designated for use in environmental education.~~
- Provide an educational ~~outreach~~ program to inform the public about the importance of protecting water quality and the purpose of the District's watershed lands, resource management practices, and water conservation.
- Promote research on watershed lands and resources that will be used in the District's management practices and add to the District's watershed resource database.
- ~~Formalize those environmental education programs that are currently conducted informally by District staff.~~
- Incorporate environmental education into appropriate District actions and activities.

Guidelines

EE.1 ~~Develop and c~~Conduct an environmental education program that is focused on water quality protection, watershed management, resource protection, ~~management challenges,~~ and water conservation.

EE.2 Conduct an outreach and educational program that emphasizes school participation in watershed restoration projects. Elements of the outreach program may also include visits by District staff to or placement of public information displays in adjacent communities and local classrooms.

EE.3 ~~Explore the feasibility of developing~~ Consider a "docent" volunteer program to supplement and support District staff in conducting environmental education programs. Such a volunteer program should not increase overall program costs. Consider developing a newsletter to educate residents, neighbors, friends, and the general public on issues of concern in the East Bay watersheds.

EE.4 Incorporate interpretive information, on signs or by other appropriate means, and place this information where the public is likely to encounter it on District lands, to describe District management practices, interpret special watershed resources, or point out special management challenges.

EE.5 Develop and distribute public information materials that inform visitors using watershed lands about the potential effects of their activities on watershed resources and ways to avoid or reduce adverse effects (i.e., appropriate disposal of human and pet wastes, reduction of trail erosion, and introduction of exotic species). Require the distribution of such materials by staff and concessionaires.

EE.6 Prepare public information materials on special management issues facing the District (e.g., urban runoff and sewage overflow problems, soil erosion, the encroachment of development into viewsheds, and the impacts of development on wildfire and risks of wildfire), and use this information in public outreach, especially in communities that share these management challenges because of their urban/wildland interface with District lands.

EE.7 Prepare public information materials on gains made and agreements reached with surrounding communities on special management issues facing the District, and use these materials for public outreach, especially within communities that share these issues because of their location near District lands.

EE.8 Develop and conduct a research monitoring program that promotes college and university research on District watershed lands, and ensure that the District obtains the data and results of this research.

EE.9 Utilize the Internet to enhance environmental education and outreach to the public. Provide content over the Web and interactive opportunities for instruction about the local watershed.

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Coordination Requirements for Other Resource Management Programs

Ensure that the following coordination guidelines for other resource programs are met during project planning and implementation under the environmental education program:

Program	Guideline
Water Quality	WQ.7 and 8
Biodiversity	BIO.19, 21, 22, 23, and 24
Developed Recreation and Trails	DRT.5
Cultural Resources	CR.5, 6, 7, 10, and 11
Visual Resources	VR.1 and 4
Geographic Information System	GIS.

~~Program~~	~~Guideline~~
~~Water Quality~~	~~WQ.7 and 8~~
~~Biodiversity~~	~~BIO.19, 21, 22, 23, and 24~~
~~Developed Recreation and Trails~~	~~DRT.5~~
~~Cultural Resources~~	~~CR.5, 6, 7, 10, and 11~~
~~Visual Resources~~	~~VR.1 and 4~~
~~Geographic Information System~~	~~GIS.~~

Cultural Resources

The District's watershed lands contain numerous archaeologic and historic resources. In addition, as-yet-undiscovered cultural resources may be present. These resources include remnants of Native American occupation and historic ranching and farming operations. Cultural resources will be protected by policies requiring review of existing documentation before undertaking management actions and by complying with existing laws and regulations.

The District's goal for cultural resources is to avoid adversely affecting sensitive cultural resources while implementing District activities on watershed lands and to establish relationships with local Native American groups.

Program Direction

Goal

Avoid adversely affecting sensitive cultural resources while implementing District activities on watershed lands, and establish relationships with local Native American groups.

Objectives

- Identify, preserve, and protect significant cultural resources.
- Provide for appropriate research and educational uses of District lands with respect to cultural resources.
- Maintain an ongoing relationship with Native Americans who have ancestral ties to District lands.

Guidelines

CR.1 Designate staff contact persons to act as liaisons with the Native American community. The contact persons' roles are to convey to District employees the need to protect the cultural resources of District watershed lands and to determine the appropriate level and timing of further coordination with interested Native Americans.

CR.2 Negotiate, as needed, with local Native American groups regarding the disposition of Native American artifacts and remains, should any be discovered.

CR.3 Include cultural resource protection and management into the District's training program for Natural Resource Department staff.

CR.4 Identify resources that have a high potential for vandalism and ensure that they are protected.

CR.5 Avoid disturbing significant cultural resource sites and sites of unknown significance, where feasible. Require fire management and other watershed personnel to protect known cultural resource sites during management activities.

CR.6 Follow the requirements of CEQA Section 21083.2 when undertaking or approving watershed activities.

CR.7 Conduct records searches and surveys before beginning ground-disturbing activities.

CR.8 Maintain an inventory of cultural resources in compliance with applicable laws and regulations, including confidentiality requirements.

CR.9 Document the procedures to be used if potentially significant cultural resources or human remains are discovered accidentally.

CR.10 Designate areas that are sensitive because of their potential to contain buried cultural resources and ensure that these areas are monitored during surface-disturbing activities.

CR.11 If sites cannot be avoided or if the boundaries of a site are unknown, consult a qualified archaeologist (including tribal experts designated by the tribe) for recommendations. Recommendations may include covering or "capping" sites with a protective layer of material, recovering data through research and excavation, performing subsurface testing to determine the extent of a site, and relocating or reconstructing historic structures.

CR.12 Continue to maintain vestiges of early county settlement on District-owned property, especially where land deeds require protection.

Coordination Requirements for Other Resource Management Programs

There are no coordination requirements for the other resource management programs.

Visual Resources

The District's goal for visual resources is to limit the negative visual effects of District activities on watershed lands by ensuring that valuable and rare visual resources are protected from degradation during other management activities.

The natural features of the District's watershed lands provide a valuable visual resource to people who use those lands, as well as to people who pass through them or who reside, work, and recreate on adjacent lands. Vegetation removal, facility construction, operational activities, road placement, utility easements, fuelbreak construction, and erosion are all activities that can have negative visual effects on District watershed resources.

The visual resource management program addresses important, sensitive visual areas and prescribes management of those key resources. This program also addresses the development of consistent and systematic methods to ensure consistency in structures, signs, and other improvements on watershed lands.

Program Direction

Goal

Limit the negative visual effects of District activities on watershed lands by ensuring that valuable and rare visual resources are protected from degradation during other management activities.

Objectives

- Maintain and protect the general character and visual qualities of watershed lands.
- Maintain and protect the visual qualities experienced from reservoir surfaces on which public access is permitted.
- Maintain and protect the visual qualities viewed from specific public use areas, public trails, and public roads within watershed lands.
- Maintain and protect the visual qualities viewed from key public viewpoints located adjacent to District lands.
- Maintain and develop a unified visual quality and unity in structures, signs, and other improvements on watershed lands.

Guidelines

VR.1 Review new land use proposals to ensure that they are consistent with the watershed's visual character, outside of important viewing areas, or screened from important views from reservoir surfaces, shoreline locations, public trails, roads, and key public viewing areas.

VR.2 Retain viable shoreline vegetation where it occurs on reservoirs.

VR.3 Control public access along reservoir edges to designated use areas or facilities as needed to prevent visual degradation of important shoreline resources.

VR.4 Ensure that all facility construction or modifications meet District design standards, or an acceptable alternative, and all regulatory requirements. ~~Develop design standards for all development, including recreational facilities, District buildings, watershed signs, and other physical improvements to reflect a strong, unified visual character. Design standards should specify general architectural character, material types, acceptable colors, structure heights, roof configurations and overhangs, uniform site furnishings (e.g., benches, trash receptacles, bicycle racks, and bollards), and uniform sign treatment. Require all proposed new development to conform to design standards. Retrofit existing development, to the extent feasible, to conform to design standards.~~

VR.5 Specify the use of natives in plant restoration standards, where available and appropriate.~~Develop native plant restoration standards and apply these to all development as appropriate. Plant restoration standards should specify the use of natives where available for all site restoration and the replacement of non-native plant materials with native plant materials to the extent feasible and compatible with fire protection needs. Non-natives may be used where site natives are unavailable for a specific application.~~

VR.6 Cluster watershed development and uses to reduce visual intrusions into natural watershed lands and to reduce adverse visual effects on intervening watershed lands.

VR.7 Coordinate with fire management personnel to ensure, to the extent practicable, that fire management needs (e.g., pruning and clearing) and fire management patterns are consistent with visual management guidelines. Avoid the use of "vista pruning" along trails and public roads and around use areas, and avoid the use of firebreaks or the establishment of "fuel cells" as wildfire management techniques except where other mitigation measures are not effective and as a last resort.

VR.8 Avoid controlled burns in developed public use areas during peak use periods (generally June through September). Coordinate the timing of controlled burns with recreation staff.

VR.9 Coordinate with EBRPD, Alameda and Contra Costa Counties, and other adjacent jurisdictions that have significant open space resources to develop common goals and guidelines for preserving and strengthening the regional visual landscape.

VR.10 Consider installation of renewable energy facilities that are consistent with the District's Strategic Plan and with the overall management direction of the East Bay Watershed Master Plan. Consistency with the EBWMP shall be assessed in the project-level CEQA document for any such facility.

Coordination Requirements for Other Resource Management Programs

Ensure that the following coordination guidelines for other resource programs are met during project planning and implementation under the visual resources management program:

Program	Guideline
Water Quality	WQ.8
Biodiversity	BIO.19, 21, 22, 23, and 24
Fire and Fuels	FF.10
Cultural Resources	CR.5, 6, 7, 10, and 11

~~Program~~	~~Guideline~~
~~Water Quality~~	~~WQ.8~~
~~Biodiversity~~	~~BIO.19, 21, 22, 23, and 24~~
~~Fire and Fuels~~	~~FF.10~~
~~Cultural Resources~~	~~CR.5, 6, 7, 10, and 11~~

The District's goal for land ownership is to apply a consistent procedure for identifying and evaluating potential watershed land acquisitions, consistent with the District's goal of protecting water quality and natural resource values.

~~Assets~~Property Management Programs

Land Ownership

The District's Real Estate Services Division is responsible for acquiring lands identified as critical to the operation of the District and for the sale of District property identified as surplus. Private holdings within the reservoir watersheds are acquired on a priority basis designed to protect water quality.

Program Direction

Goal

Apply a consistent procedure for identifying and evaluating potential watershed land acquisitions to protect water quality and for evaluating the current and future need to dispose of District property, consistent with the District's goals of protecting water quality and natural resource values.

Objectives

- Ensure long-term protection of District-owned watershed lands through a systematic program of land retention, acquisition, and disposal.
- Identify high-priority basin parcels not currently in District ownership that should be acquired by purchase, trade, or sale to ensure protection of watershed lands, reservoir water quality, wildland fire protection, and biodiversity.
- Increase revenues generated by the use of District facilities and land, consistent with water quality and natural resource protection priorities.

Guidelines

LO.1 Consider the use of land gifts, cooperative protection agreements by local jurisdictions, acquisition by other groups, and conservation easements for water quality and watershed protection when considering acquisition.

LO.2 Develop a watershed classification system that clearly outlines property characteristics important to the District for maximizing water quality protection and water supply operations and for optimizing biodiversity.

LO.3 Use the watershed classification system to evaluate lands that are being considered for acquisition or disposal. Set as high priorities the protection of watershed lands that:

- contribute important hydrologic and water quality functions to reservoir waters (e.g., parcels suited for stormwater management or that contain important water bodies),
- are important to protect from urban encroachment,
- contain pristine resources that are important to the continued health of watershed lands, including "connectivity" to protect biodiversity,
- are strategically important for fire and fuels management, and
- have a high probability of general strategic District use in the future.

LO.4 Develop a watershed protection program that provides the following options:

- coordinate a broad regional program of land protection and acquisition that supports the District's resource management priorities, in cooperation with EBRPD, other public agencies, and nonprofit land trusts,
- identify key watershed parcels that could be protected consistent with District watershed management goals by local jurisdictions as open space in lieu of purchase by the District,
- identify resource protection measures that could be implemented by adjacent jurisdictions to protect high-priority watershed areas adjacent to District-owned property,
- coordinate with owners of land adjacent to District-owned property to obtain land donations or to designate conservation easements in strategic watershed locations,
- analyze the feasibility of preserving strategically important lands by acquiring easements and using other resource protection mechanisms, and
- attempt first to purchase strategically important lands in fee title. If that is not possible, attempt other forms of protection, including donation or "less-than-fee" acquisition.

LO.5 Perform a systematic review of District-owned properties that are not tributary to a reservoir to determine their value with respect to watershed protection, including consideration of a "take line" approximately 80 feet on the other side of the ridgetop to prevent physical and visual encroachment on watershed property.

LO.6 District watershed lands are generally not sold. However, in those instances where sale may be in the District's best interest, the following guidelines shall be adhered to:

- Rank District-owned properties that could be disposed of to generate funds to acquire watershed lands that are within the reservoir basins *and* that are important for protecting water quality, biodiversity, fire and fuels management, or other critical issues.
- Do not allow permanent rights-of-way across District watershed property except for necessary utilities.
- Evaluate lands that are appropriately considered for disposal to ensure that they are not strategically important for water operations, water quality, biodiversity, or fire and fuels management now or in the future.
- Segregate the proceeds from any sale of District watershed lands and subsequently use those proceeds for the sole purpose of acquiring similar watershed lands that are necessary or desirable to protect water quality, biodiversity, and other related District interests.
- Watershed land that is sold must be sold at fair market value.

LO.7 District watershed lands may be used for the purpose of environmental mitigation or conservation banking. Mitigation areas are improved and held in perpetuity under conservation easements. Mitigation parcels have been enhanced and preserved within the Pinole, San Pablo, Lafayette and Upper San Leandro Watersheds.

- Mitigation sites should enhance the ecological integrity and biodiversity of the area
- Conservation banking agreements will promote the biodiversity objectives identified within the East Bay Watershed Master Plan and the East Bay Low Effect Habitat Conservation Plan

Coordination Requirements for Other Resource Management Programs

There are no coordination requirements for the other resource management programs.

Entitlements

The entitlements program allows for formal agreements where desirable to allow other entities to maintain, continue, or conduct appropriate activities on District watershed lands and reservoirs.

The entitlements program allows for review and modification of lease agreements and permits when these entitlements are to be renewed. It also allows for formal agreements where desirable to allow other entities to maintain, continue, or conduct appropriate activities on District watershed lands and reservoirs.

Program Direction

Goal

Provide administrative flexibility for natural resource managers while ensuring that leases and permits do not create excessive management costs, conflict with reservoir operations or other high-priority management programs, or create unacceptable watershed conditions.

Objectives

- Administer current and proposed lease agreements and access, research, and land use permits to ensure that lessees/permittees are complying with District priorities to maintain reservoir water quality and protect sensitive natural resources.
- Ensure that all lease agreements and land use permits consider potential public safety or nuisance issues that could result from lessee/permittee operations.
- Ensure that the District receives an appropriate percentage of revenues generated from entitlements for use of District watershed property.

Guidelines

ENT.1 Limit discretionary right-of-way leases, other lease proposals, and land use permits on watershed lands that could adversely affect watershed resources such as reservoir water quality, sensitive habitat areas, sensitive visual resources, or ongoing District management programs.

ENT.2 Require mitigation of all adverse effects that result from nondiscretionary right-of-way actions (e.g., construction of transmission lines) on District lands.

ENT.3 Prohibit or restrict lease agreements or land use permits that are proposed near populated watershed areas to reduce conflicts, nuisances, or trespass complaints with uses on District lands, except those intended to address urban interface problems (e.g., cattle and goat grazing for fire hazard reduction).

ENT.4 Review all lease agreements and land use permits at the time of renewal and modify agreements as necessary to correct problems identified during the lease/permit period. All lease agreements should require conformance with standard District practices, such as erosion control, vegetation management, and fire and fuels management. Leases should include operation plans that are updated annually and allow modification of required management practices, as needed.

ENT.5 Ensure that an appropriate application fee schedule, approved by the Board of Directors, is implemented to offset staff costs for processing entitlement applications.

ENT.6 Ensure that all leases contain provisions stipulating that the District receives an appropriate percentage of any revenues generated from use of District property.

Coordination Requirements for Other Resource Management Programs

There are no coordination needs for other resource management programs.

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Geographic Information System

The District's goal for GIS is to provide geographically based data for watershed managers' use in implementing EBWMP programs.

The District's GIS management program addresses the development, maintenance, and use of an integrated database and mapping system to aid in managing District resources and assets. The District's GIS will provide managers with information to help assess constraints and identify assets or opportunities needed to implement EBWMP management programs.

Program Direction

Goal

Provide geographically based data for watershed managers' use in implementing EBWMP programs.

Objectives

- Develop and maintain a regularly updated GIS that reflects current reservoir and nonreservoir watershed conditions.
- Use the GIS as a resource for watershed managers in planning for and implementing watershed management programs.
- Use the GIS as a tool to assess the appropriateness of new watershed actions, especially land-disturbing actions in potentially sensitive areas.

Guidelines

GIS.1 Maintain an updated GIS by requiring that water quality resource, assets, water operations, and adjacent land use data are collected annually and integrated into the GIS database.

GIS.2 Periodically review the GIS data categories to ensure that the GIS appropriately reflects watershed conditions and that useful information is collected for the database.

GIS.3 Ensure that adequate District staffing is allocated to ensure that the GIS database is updated, maintained, and implemented in a manner that is most useful to watershed managers.

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~~GIS.4 Require use of the GIS to assess the appropriateness of proposed management programs or land-disturbing actions on portions of the watershed that could affect reservoir water quality, reservoir operations, sensitive habitat or wildlife areas, cultural resources, established watershed land uses, and land uses immediately adjacent to District-owned lands.~~

~~**Coordination Requirements for Other Resource Management Programs**~~

~~Implementing a successful and useful GIS database will require coordination and data-gathering activities in cooperation with all the EBWMP management programs and watershed managers.~~

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~~GIS shaded relief model~~

Introduction

Watershed management area guidelines are provided in recognition that issues, sensitivities, and land management practices differ for each watershed.

Watershed management areas are defined as District-owned lands within each reservoir basin boundary (Figure 2-1). Reservoir basins encompass both the District-owned watershed lands and basin lands not owned by the District. Watershed management areas on District lands are addressed in this section. Section 5 contains a discussion of management direction for basin lands not owned by the District.

Watershed management areas consist of portions of the basins of San Pablo, Briones, Upper San Leandro, Chabot, and Lafayette Reservoirs. The Pinole watershed, which is not tributary to a District reservoir, is also addressed as a watershed management area.

Watershed management area guidelines are provided because issues, sensitivities, and land management practices differ for each watershed. Specific management area direction is consistent with the broader guidance provided for management programs described in Section 3. The watershed management area for each reservoir has been assigned a relative sensitivity based on the ~~current~~ quality of water ~~at~~ in the ~~applicable~~ terminal reservoir, the ~~current~~ watershed ~~and basin~~ conditions, and the water treatment facilities available for each reservoir. Sensitivities are used to identify specific management area guidelines for each reservoir basin.

Management Direction

~~Watershed Management Area~~	Water Quality	Biodiversity	Fire and Fuels	Developed Recreation	Visual Resources	Land Ownership and Trails	Entitlements
San Pablo Reservoir (SP, page 95)	✓	✓	✓	✓	✓		
Briones Reservoir (B, page 99)	✓	✓	✓	✓	✓		
Upper San Leandro Reservoir (USL, page 102)	✓	✓	✓	✓	✓	✓	✓
Chabot Reservoir (C, page 105)	✓	✓	✓	✓	✓		
Lafayette Reservoir (L, page 107)		✓	✓	✓	✓		
Pinole (PW, page 109)	✓	✓	✓	✓	✓		✓

Section 4

WATERSHED MANAGEMENT AREA DIRECTION

The watershed management areas are important for maintaining or enhancing natural resource conditions and water quality. Some management areas have high sensitivities related to water quality while others have sensitivities related to sensitive species and their habitat. ~~The Pinole watershed property is considered the least sensitive watershed because it does not contribute runoff to a District reservoir. Sensitivities are highest for Briones, San Pablo, and Upper San Leandro Reservoirs and lower for Chabot and Lafayette Reservoirs.~~

The Briones Reservoir basin is considered the most sensitive watershed for water quality because of its relatively pristine condition, its status as a high-quality source of water, its small watershed area, the cost of pumping water up to it, its regular use at the Orinda Water Treatment Plant,~~, the lack of downstream water treatment facilities~~, and its ability to gravity-feed the District's water supply system. The Briones management area has good species diversity. Species management efforts in this basin focus on control of invasive species such as bullfrogs.

The San Pablo and Upper San Leandro Reservoir basins are also sensitive for water quality because these facilities ~~are the District's primary on-line~~regularly serve as water supply reservoirs. Water quality is somewhat lower in these reservoirs, requiring more extensive treatment because of runoff they receive from large urban areas. Despite this urban influence, these watersheds provide considerable habitat for sensitive species and are a high priority for species management.

The Pinole Valley watershed ~~-~~is sensitive for water quality due to the presence of steelhead /rainbow trout in Pinole Creek but the watershed does not contribute to the District's water supply. The Pinole watershed has high biodiversity and supports the most threatened and endangered species of EBMUD's watersheds. Thus, Pinole Valley is a high priority for sensitive species - management and habitat enhancement under the EBMUD HCP.

The Chabot and Lafayette Reservoir basins are considered the least sensitive for water quality because these reservoirs are emergency standby sources of water to be available only during extreme droughts. However, Chabot Reservoir is used seasonally for irrigation at nearby golf courses and thus reduces the need for water from other sources.~~has a high potential for use if a seismic event were to close the water tunnel from Upper San Leandro Reservoir to the San Leandro Filter Plant~~. These reservoir watersheds are a priority for biodiversity despite the urban influences in these watersheds.

San Pablo Reservoir Watershed

Management Direction

Water Quality

SP.1 Collect data on water quality impacts of horse stables and other concentrated animal facilities within the watershed. Coordinate with agencies and other responsible entities to develop, select, and implement BMPs.

~~SP.2 Assess potential water quality and supply concerns at the PG&E substation.~~

~~SP.3 Monitor the amount and quality of runoff after heavy rainfall from historic quarries near the east portal of the Caldecott Tunnel and the Gateway area.~~

Biodiversity

SP.~~4~~2 Coordinate fire and fuels management activities with other agencies in the Caldecott Tunnel corridor to maintain the biological viability and integrity of the corridor for wildlife movement, especially for large mammals.

SP.3~~5~~ ~~SP.5~~ Continue watershed monitoring and habitat restoration as guided by the EBMUD Low Effect East Bay Habitat Conservation Plan. ~~-~~Ensure the long-term protection of sensitive fish and wildlife species through wise management that meets the species conservation goals of state and federal recovery plans.~~Continue annual monitoring of the population size and location of the Aleutian Canada goose in the Oursan Valley and San Pablo Reservoir in coordination with the USFWS. Continue the current grazing management regime in the areas of the upper Oursan Valley utilized by the Aleutian Canada goose. Continue to prohibit public access, including trails (except for valid scientific research), in the Oursan Valley to ensure the long-term protection of the Aleutian Canada goose.~~

SP.~~6~~4 ~~In cooperation with universities and other agencies, evaluate adequacy of~~Monitor oak regeneration in oak woodland habitats and identify those factors that limit oak regeneration; initiate restoration if necessary and financially feasible.

Fire and Fuels

~~SP.7 Explore the possibilities of entering into a CRMP for roadside vegetation management activities within the San Pablo Reservoir watershed. Consider water quality and other resource protection measures during the planning process. Other participants (and suggested roles) include:~~

- ~~EBRPD and Richmond Fire Department (San Pablo Dam Road/~~

Kennedy Grove area),

- Moraga-Orinda Fire Protection District (enforcement and leadership role), and

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- ~~Contra Costa County Public Works Department (vegetation treatment along San Pablo Dam, Camino Pablo, Bear Creek, and Wildcat Canyon Roads).~~

SP.~~85~~ ~~Explore opportunities for the District and~~Collaborate with the Moraga-Orinda Fire Protection District to conduct homeowner training in defensible space ~~self- protection~~ to increase awareness, involvement, and support from home owner associations and individual homeowners in the El Toyonal interface areas. ~~Encourage homeowners to extend their defensible space zones into the grassy, low fuel volume vegetation adjacent to interface areas.~~

SP.~~96~~ Continue livestock grazing in and adjacent to the El Toyonal Road interface areas. Where compatible with natural resource objectives, continue to mow grass to a 4-inch height (or disc) within a 30-foot-wide strip along all District property lines adjacent to the urban interface development (e.g., Mistletoe Fire Road area).

SP.~~107~~ Continue District participation in cooperative interagency efforts to develop a fuels management network along the west boundary of the watershed that maintains important biological and other resource values.

SP.~~118~~ Continue livestock grazing on the grassy slopes and in the light brush fuels located in the northwestern portion of the watershed (Eagle's Nest and Woodchopper areas).

SP.~~129~~ Continue to allow grazing of the grassy slopes and light brush fuels adjacent to Fish Ranch Road and Highway 24 to link this low fuel-volume vegetation to fuel modification activities ~~proposed in the VMC's fuelb~~break in the area of Highway 24 near the Caldecott Tunnel ~~corridor (Amphion Environmental 1995)~~. Fuel treatment in this area should support the management objectives of the wildlife corridor, and adequately protect water quality.

SP.10~~3~~ ~~Conduct a comprehensive assessment of~~Continue to assess fire management needs within the Caldecott Tunnel corridor area to evaluate wildfire control issues and explore opportunities for and constraints on the use of a mosaic pattern of prescribed fire treatments as a fuel reduction tool and to enhance natural resource habitat. ~~Fuel treatment in this area should support the management objectives of the wildlife corridor and adequately protect water quality.~~

SP.11~~4~~ Continue to participate in cooperative planning efforts ~~and encourage formation of, and participation in, a natural resource and fuels management CRMP~~ for the entire Caldecott Tunnel corridor area to reduce fire hazard and protect biological integrity. Other participants should include EBRPD, California Department of Transportation (Caltrans), Contra Costa County, fire districts, the Cities of Oakland and Berkeley, University of California, Berkeley, water quality specialists, and private landowners. Fire and fuels manage ment treatments to be considered should include:

- treatment by Caltrans of the fuels ~~within 50 feet~~ on both sides of Highway 24,
- treatment by Caltrans or appropriate landowners of the fuels immediately over the east tunnel opening, and roadside fuels ~~30 feet~~ on each side of Old Tunnel Road, and
- continuation of the ~~30 foot~~ road treatment along each side of the road connecting Old Tunnel Road to Skyline Boulevard.

Roadside fuel treatment should involve a combination of goat grazing, hand pruning and thinning of vegetation, and roadside mechanical brushing. The rest of the open space area can be left in its natural state.

SP.12~~5~~ ~~Work with responsible agencies to implement~~ Consider strategic closure of Fish Ranch Road, Wildcat Canyon Road, Upper Grizzly Peak Boulevard, and Lomas Cantadas Road during extreme fire weather.

SP.13~~6~~ Evaluate opportunities to reduce fire ignitions and risks by partially or completely closing portions of the watershed to public use during very high to extreme fire weather conditions.

SP.14~~7~~ Prohibit public access on the east side of San Pablo Reservoir beyond the shoreline fishing boundary to reduce the likelihood of accidental wildfire ignition.

Developed Recreation and Trails

SP.15~~8~~ Maintain shoreline fishing control at the San Pablo Reservoir recreation area to reduce trespass in restricted shoreline areas. Control measures include posting signs and installing barriers to clearly delineate the appropriate area available for shoreline fishing. Consider measures to stabilize and revegetate eroded areas.

SP.16~~9~~ Locate picnic areas away from steep shorelines in wooded settings. Plan the circulation in picnic areas carefully to provide relatively direct access to destination points (e.g., fishing docks and cleaning facilities, restrooms, and open-play meadows). Locate picnic pads away from shoreline to discourage uncontrolled traffic down steep shoreline embankments.

SP.~~20~~17Maintain and enforce a 25-mph boat wake zone and a 5-mph no-wake zone currently designated at San Pablo Reservoir.

SP.~~21~~18~~Modify~~ Ensure that concessionaire contracts ~~as needed to correct practices that may be in~~are consistent with the District's water quality and natural resource protection goals.

SP.~~22~~19 Provide direct District management oversight of concessionaire staff to ensure adequate contract compliance with quality and quantity control, retail pricing, operation standards, and District water quality and natural resource management priorities.

SP.20~~3~~ Maintain the District recreational trail system in the current configuration and with the current use rules and regulations and a permit system.

~~SP.24 Develop a Bay Area Ridge Trail connector that crosses District property approximately west and north of San Pablo Reservoir.~~

~~SP.25 Designate the Inspiration Trail and Bear Creek Trail system that crosses south of San Pablo Reservoir as a District-controlled portion of the American Discovery Trail and Mokelumne Coast to Crest Trail. The operation and types of uses permitted on these trails will be consistent with District rules and regulations.~~

~~SP.26 Develop a multiuse community facility at the upper parking lot of the San Pablo Recreation Area after adequate environmental review.~~

~~SP.27 Develop permanent facilities to replace modular temporary launch ramp facilities at the San Pablo Recreation Area.~~

SP.21~~8~~ Prohibit the use of ~~high-emission~~ motorboat engines ~~on San Pablo Reservoir, effective January 1, 2000; and prohibit the use of motorboat engines at San Pablo Reservoir~~ that have the potential to discharge ~~any~~ fuel pollut~~a~~ents into the water in quantities of concern for human consumption or the environment~~, effec tive January 1, 2002 in accordance with Resolution No. 33088-98, effective March 10, 1998~~.

SP.22 Coordinate with the county public health department to maintain up to date postings regarding any health risks posed by consumption of fish caught in the reservoirs or body contact with the water.

Visual Resources

SP.23~~8~~ Prohibit management practices, with the exception of the phased elimination of the Monterey pines surrounding the reservoir, or development proposals that would require large-scale modifications to portions of the San Pablo watershed landscape that are highly visible from San Pablo Dam Road, the San Pablo Dam recreation area, Old San Pablo Dam Road, Inspiration Trail, proposed regional trail connectors, and the reservoir surface.

SP.24~~9~~ Consider effects on visual quality when proposing watershed management activities in high-priority visual resource areas on Sobrante and San Pablo Ridges.

SP.~~30~~29 When feasible, ~~F~~formalize visual quality guidelines with EBRPD that

emphasize protection of visually sensitive areas on San Pablo Ridge at Tilden Regional Park/ Nature Area, Wildcat Canyon Regional Park, and Kennedy Grove Park.

Briones Reservoir Watershed

Management Direction

Water Quality

~~B.1 Assess potential water quality impacts and supply concerns at the University of California, Berkeley, Russell Reservation.~~

~~B.2~~B.1 Consider restoration of Bear Creek upstream of Briones Reservoir to reduce livestock impacts and accelerated erosion.

~~B.3~~B.2 Prohibit use of the Briones trench ~~s~~spoils site except for those uses specifically approved by the Board of Directors under the Trench S~~s~~poils Management Plan. To ensure that the trench ~~s~~spoils site will continue to meet and support District water quality objectives and regulatory requirements, site operation will require a security plan that will allow only authorized access to the site, including the crest and spillway of Briones Dam, and will prohibit any unauthorized dumping.

~~B.4 Coordinate with the Contra Costa County Public Works Department to develop roadside vegetation management techniques that protect water quality by minimizing herbicide and pesticide application and erosion and sediments in runoff.~~

Biodiversity

B.3 ~~In cooperation~~ Cooperate with universities and other agencies~~,~~ to evaluate adequacy of oak regeneration in oak woodland habitats and identify those factors that limit oak regeneration. Initiate restoration if necessary and financially feasible.

~~Continue efforts to control bullfrog populations in ponds surrounding the reservoir to protect California red-legged frog and other native species populations.~~

B.4 Continue watershed monitoring and habitat restoration as guided by the EBMUD Low Effect East Bay Habitat Conservation Plan. Ensure the long-term protection of sensitive fish and wildlife species through wise management that meets the species conservation goals of state and federal recovery plans.

Fire and Fuels

B.5 Encourage and participate in ~~a CRMP~~ collaborate efforts for fire and fuels management activities along Bear Creek Road (from San Pablo Dam Road to Hampton Road), which surrounds much of the Briones Reservoir

watershed. The Black Hills/Happy Valley homeowners should be encouraged to link their self-protection (defensible space and roadside fuel reduction) efforts into the Bear Creek Road fuel treatment program. These efforts will provide a regional strategic fuel reduction zone around the critical fire hazard areas within the watershed, as well as provide protection for the Black Hills/ Happy Valley interface area. Other potential participants (and their roles) include:

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- Contra Costa County Road Department (proposed Bear Creek Road fuel treatment),
- Moraga-Orinda Fire Protection District (enforcement and leadership roles),
- Contra Costa County Fire Protection District (CCCFPD) (coordination and leadership role),
- Black Hills/Happy Valley homeowners association(s) and individual homeowners (defensible space and access roadside fuel treatment), and
- EBRPD (fuels treatment) at Bear Creek Road/Briones Regional Park.

B.6 Explore opportunities for District, EBRPD, CCCFPD, and Moraga-Orinda Fire Protection District to conduct seminars for homeowners about defen sible space self-protection to increase public awareness and elicit involve ment and support from homeowner associations and individual homeowners in the Black Hills/Happy Valley interface area and surrounding areas.

B.7 Seek opportunities to ~~use methods to~~ reduce fuels in the Sobrante Ridge area in the northern and western portions of the Briones Reservoir water-shed, especially along Oursan Fire Road. Vegetation here consists mostly of grass and short, light, brushy fuels. When linked with additional road side clearance along Oursan Fire Road (western flank), this treatment would provide a fuel reduction zone extending from Boy Scout Creek (northern section) through Sobrante Hill (western flank) to Bear Creek Road (southern, eastern, and northeastern portions) of the Briones Reser-voir watershed.

~~Implementing t~~This fuel reduction approach ~~would~~ provides a strategic wildfire containment zone completely around the reservoir. The Sobrante Ridge/Oursan Fire Road fuel reduction zone could be the principal area for suppressing large, east wind-driven wildfires originating east of Briones Reservoir.

B.8 ~~Link~~ Continue Bear Creek Road fuel reduction efforts to the San Pablo Dam Road fuel treatment to ~~extend~~ maintain the strategic regional fuel treatment network into the San Pablo Reservoir watershed.

B.9 Evaluate opportunities to reduce fire ignitions and risks by partially or com-pletely closing portions of the watershed to public use during very high to extreme fire weather conditions.

~~B.10 Work with responsible agencies to implement strategic closure of Upper Happy Valley Road during extreme fire weather.~~

Developed Recreation and Trails

~~B.11~~B.10 Maintain or reduce current levels of recreational access to the Briones Reservoir water surface consistent with water quality and natural resource protection priorities.

~~B.12~~B.11 Review and modify, if appropriate, lease agreements with college crew teams for use of Briones Reservoir. Review of leases must focus on ensur~~—~~ing that current activities do not create adverse water quality, soil erosion, team safety, or other detrimental effects on watershed lands or the reservoir or compromise team safety.

Visual Resources

~~B.13~~B.12 Prohibit management practices, with the exception of the phased elimina~~—~~tion of the Briones Overlook Monterey pine grove, that would require large- scale modification of portions of the Briones Reservoir watershed landscape that are highly visible from the Bear Creek Road, the Bear Creek Trail, or the Oursan Trail, public use areas near the reservoir shoreline, and other public viewpoints.

~~B.14~~B.13 Consider effects on visual quality when proposing watershed management activities in high-priority visual resource areas on hillsides and ridgelines surrounding Briones Reservoir.

~~B.15 Establish visual quality guidelines in coordination with the Cities of Orinda and Lafayette to ensure that high-priority visual resources located near the urban interface areas (e.g., Black Hills interface area) are protected. Encourage visual resource policy to be incorporated into the general plans of each city. Guidelines should:~~

- ~~establish, through use of a memorandum of understanding or similar document, the intent of the District and adjacent jurisdictions to protect portions of the watershed that exhibit high visual resource qualities,~~
- ~~identify the types of uses, if any, that could be allowed in visually sensitive or high-quality portions of the watershed,~~
- ~~establish or formalize design guidance for development of portions of the watershed that cannot be completely protected (i.e., height limitations, ridgeline restrictions, and density/scale limitations), and~~
- ~~formalize the planning review process between Orinda, Lafayette, and District planning bodies.~~

Upper San Leandro Reservoir Watershed

Management Direction

Water Quality

~~USL.1 Monitor the amount and quality of runoff after heavy rainfall from historic quarries near the south end of Gudde Ridge. Develop and implement BMPs and mitigation measures, if needed.~~

USL.1~~2~~ Monitor surface runoff and groundwater water quality of the abandoned spoils disposal site at the north end of the reservoir. Develop and implement BMPs, if appropriate.

USL.2~~3~~ Develop and stipulate BMPs for horse stables and other concentrated animal facilities if needed.

Biodiversity

USL.3~~4~~ Continue to prohibit stocking of fish and any type of angling, and actively control poaching in Upper San Leandro Reservoir and all of its tributaries to protect the native land-locked steelhead rainbow trout.

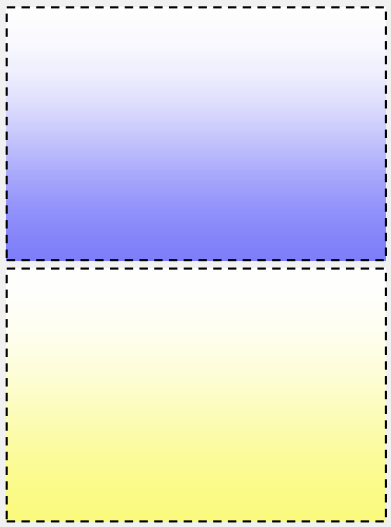
USL.4~~5~~ Continue HCP ~~Cooperate with DFG in~~ monitoring of spawning and rearing habitat for the historically unique land-locked steelhead rainbow trout, and ~~cooperate in~~ monitor~~ing~~ road crossings of spawning streams to ensure that adequate fish passage is provided.

USL.5~~6~~ Rank streams suitable for habitat restoration based on their contribution to water quality, biodiversity, and steelhead rainbow trout management goals, and conduct restoration in cooperation with resource agencies~~DFG~~ and other interested groups as financially feasible.

USL.6~~7~~ Develop a long-term strategy for managing the knobcone pine forest on Flicker Ridge, emphasizing the use of all available tools to promote ecosystem health while improving fire safety in the community of Canyon.

USL.7~~8~~ In cooperation with universities and other agencies, evaluate adequacy of oak regeneration in oak woodland habitats and identify those factors that limit oak regeneration. Initiate restoration if necessary and financially feasible.

USL 8. Continue watershed monitoring and habitat restoration as guided by the EBMUD Low Effect East Bay Habitat Conservation Plan. Ensure the long-term protection of sensitive fish and wildlife species through wise management that meets the species conservation goals of state and federal recovery plans.



Fire and Fuels

USL.9 Evaluate management needs in the forest west of Miller Road, between Upper San Leandro Reservoir and the Chabot Staging Area. This stand has high biological value and supports high fuel loadings. A fire under infrequent extreme fire weather conditions could drastically alter biological values in this stand.

Additional analysis should include fuel moisture and loading studies (to more precisely determine potential fire intensity and risk), assessment of risk to water quality and adjacent lands, and documentation of biological values and potential effects of hazard reduction. The analysis would provide guidance for a site-specific management option, including restricting human access to reduce fire ignition risk, fuel modification within the stand, increased suppression capability, or treatment of fuel hazards on adjacent lands.

USL.10 Collaborate with stakeholders ~~Explore the possibility of the District entering into a CRMP~~ for fire and fuels management activities along Camino Pablo Road to protect the Old Moraga Ranch and Rancho Laguna Park/King Canyon interface areas.
Other potential participants (and their roles) are:

- Town of Moraga Park and Recreation Department, which manages Rancho Laguna Park (maintaining defensible space),
- area homeowner associations (defensible space),
- Moraga-Orinda Fire Protection District (enforcement and leadership role),
- individual homeowners (defensible space), and
- the District (continue strategic area grazing, mowing, or discing along the interface and lower King Canyon drainage).

USL.11 ~~Pursue~~ Participate in opportunities to conduct homeowner training on defensible space self-protection with the Moraga-Orinda Fire Protection District. Training should be designed to increase public awareness and to encourage involvement by homeowner associations and individual homeowners in the Old Moraga Ranch, Rancho Laguna Park, and King Canyon areas within the Town of Moraga.

USL.12 Work with responsible agencies, if requested, to implement strategic closures of portions of Pinehurst Road and Redwood Road during extreme fire weather.

USL.13 Continue efforts to treat fuels along Skyline Road at Pine Hills Court in cooperation with EBRPD and the City of Oakland.

USL.14 Evaluate opportunities to reduce fire ignitions and risks by partially or completely closing portions of the watershed to public use during very high to extreme fire weather conditions.

Developed Recreation and Trails

USL.15 Maintain current limitations on recreational access to the reservoir and maintain the District recreational trail system in the current general configuration with current use rules and regulations and a permit system.

USL.16 Provide annual maintenance of trails to ensure that trail hazards are minimized.

Visual Resources

USL.17 Prohibit management practices or development proposals that would require large-scale modification of the Upper San Leandro Reservoir watershed landscape, especially in areas that are highly visible from Redwood Road, Anthony Chabot Regional Park, and other public viewpoints.

USL.18 Minimize the effects on visual quality when proposing watershed management activities in high-priority visual resource areas on Rocky Ridge.

Land Ownership

USL.19 Pursue opportunities to consolidate ownership in the Canyon area to improve fire management effectiveness and water quality protection through land exchange, acquisition, and disposal.

Entitlements

~~USL.20 Phase out Christmas tree production on the watershed.~~

USL.20~~1~~ Prohibit introduction of other types of agricultural production on the watershed, except those that meet EBMUD's mission, vision, and values for providing public education about the importance of protecting water quality and how EBMUD's resource management practices preserve the watershed and advance water conservation.

Chabot Reservoir Watershed

Management Direction

Chabot Reservoir and portions of the watershed are managed by EBRPD under a lease with the District. The District will work with EBRPD to incorporate the relevant guidance from this plan into the lease.

Water Quality

C.1 Prohibit use of the Miller Road trench ~~spoils~~ soils site except for those uses specifically approved by the Board of Directors under the Trench Soils ~~Spoils~~ Management Plan. To ensure that the trench soils ~~spoils~~ site will continue to meet and support District water quality objectives and regulatory requirements, site operations will include controlled access to permit ~~require a security plan that will allow~~ authorized ~~access to~~ use of the site via Miller Road and will prohibit any unauthorized dumping. Monitor surface water runoff ~~and groundwater quality~~ downgradient of the trench ~~spoils~~ soils site as required by stormwater regulations, and develop BMPs, if appropriate.

~~C.2 Investigate and monitor residual water quality impacts at the World War II-era, 50-caliber machine gunnery range located off Miller Road. Develop BMPs to clean up the site, if warranted.~~

C.2 Collaborate with EBRPD to evaluate and implement actions to minimize the production of algal toxins, and ensure that EBRPD takes all measures necessary to ensure that recreational users of the watershed are adequately informed and protected from algal toxins.

Biodiversity

C. 3 Continue watershed monitoring and habitat restoration as guided by the EBMUD Low Effect East Bay Habitat Conservation Plan. Ensure the long-term protection of sensitive fish and wildlife species through wise management that meets the species conservation goals of state and federal recovery plans.

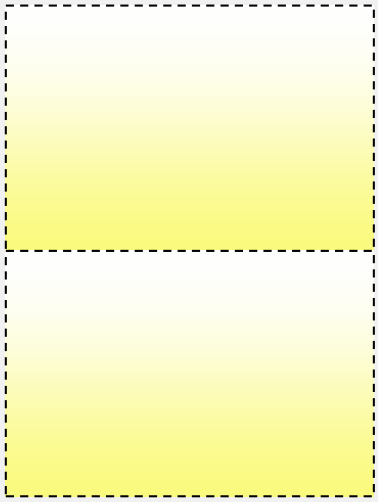
Fire and Fuels

C. 4 Participate when appropriate with ~~Explore opportunities for the District,~~ EBRPD~~,~~ and Alameda County Fire Department ~~to~~ in conducting homeowner training in defensible space self-protection to increase awareness, involvement, and support from homeowner associations and individual homeowners in the Lake Chabot area.

C.5 Explore opportunities for a joint venture with EBRPD to conduct fuel hazard reduction along Redwood Road from Proctor Staging Area north- ward, using Willow Park Golf Course, to Chabot Staging Area. This effort will link with the Upper San Leandro Reservoir fuel modification zones.

Developed Recreation and Trails

C. 6. Any future amendments to the Lake Chabot lease or subsequent subleases should be consistent with District priorities for reservoir water quality and watershed natural resource protection and public health and safety standards.



C. 7 ~~Establish~~ Conduct an annual mid-management tour and review of Lake Chabot operations with EBRPD that addresses water quality, trails, fire and fuels management, public safety, and lease compliance~~sublessee operations~~.

C. 8 ~~Modify the lease agreement for the Chabot Park property. Should the District determine that no alternative use for Chabot Park is available,~~ Future amendments to the lease agreement with the City of San Leandro for Chabot Park should be modified to improve safety for park users and the adjacent residential area, , and be consistent with District priorities for watershed natural resource protection and public health and safety standards.
.

Visual Resources

C. 9 Coordinate with EBRPD to identify priority visual resources in Chabot Reservoir watershed and work in partnership to establish appropriate restrictions on development or use of the watershed that is consistent with guidelines implemented on other District lands.

Lafayette Reservoir Watershed

Management Direction

Water Quality

L.1 Evaluate and implement actions to minimize the production of algal toxins, and take all measures necessary to ensure that recreational users of the watershed are adequately informed and protected from algal toxins.

Fire and Fuels

L.2 Continue to modify as necessary and implement the Lafayette Reservoir watershed fire management plan, which has been approved by CCCFD.

L.3 Continue to maintain fire access roads in the watershed. Lafayette Reservoir has a very good road system that fully surrounds the reservoir, and most adjacent spur ridges provide road access for fire equipment.

L. 4 Continue to assess fire management needs in the areas of heavier fuels in the Lafayette Reservoir watershed to evaluate wildfire control issues, and explore opportunities and constraints for the use of prescribed fire and other techniques for fuel reduction and natural resource habitat enhancement. The western and southwestern portions of the watershed are the highest priority areas.

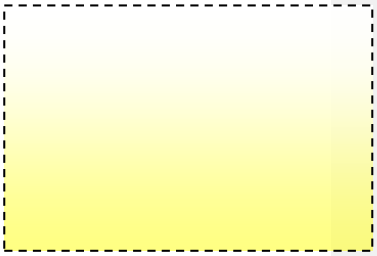
L.5 Explore opportunities for the District, Co~~u~~ntra Costa County, and Moraga-Orinda Fire Protection Districts to conduct homeowner training in defensible space self-protection to increase awareness, involvement, and support from homeowner associations and individual homeowners. Encourage homeowners to link their defensible space zones into the grassy, low-fuel-volume vegetation adjacent to the urban/wildland interface areas.

L.6 ~~Evaluate opportunities~~ Implement restrictions or closure of the recreation area, when warranted, to reduce fire ignitions and risks, ~~by partially or completely closing of the recreation area,~~ especially the areas above the paved surface road, to public use during very high to extreme fire weather conditions.

Developed Recreation and Trails

L.7 Monitor use levels and changes in use patterns to minimize user conflicts~~establish carrying capaci- ties for existing facilities~~.

~~Complete the designed food service facilities adjacent to the Visitor Center building and operate these facilities with a private concessionaire. Aside from this additional food service facility, no further facility expansion is planned.~~



L.8 Review use of the recreation area for day camps. Consider conflicts among users and impacts from large day-camp user groups, and permit such use only within the facility's carrying capacity. Evaluate District costs for administration, operation, and maintenance of day camp events compared to the revenue generated by the events, and ensure that District permit fees are commensurate with incurred direct and indirect costs. (See guideline DRT.15 in Section 3.)

L.9 Permit special events only in strict accordance with general recreation guidelines. Screen event proposals to reduce their impacts on adjacent residential areas and other general recreation area users. Avoid events that close the areas to the general public. (See guideline DRT.15 in Section 3.)

L.10 Consider developing a daily and annual use fee and permit for dogs or other means to encourage compliance with requirements for keeping dogs on leash and picking up fecal matter.

L.11 Coordinate with the county public health department to maintain up to date postings regarding any health risks posed by consumption of fish caught in the reservoirs or body contact with the water.

Visual Resources

~~L.10~~L.12 Maintain the current visual character of the Lafayette Reservoir watershed by restricting additional recreational development (with the exception of the food service facilities), maintaining and improving existing watershed facilities and signs to reflect a unified recreation area design~~, and develop- ing a cooperative agreement with the Cities of Orinda and Lafayette to avoid additional development encroachment near the current looped trail system~~.

L.13 Use California "site natives" in any supplemental plantings of woody species in the undeveloped areas of the park. Use appropriate District-recommended drought-tolerant species in the developed areas. Give highest priority to fire-resistant species.

L.14 Consider installation of water conservation demonstration gardens in locations that will have high visibility with the public but not significantly impact the natural character of the park.

Pinole Watershed

Management Direction

Water Quality

PW.1 ~~Establish~~ Maintain appropriate creek buffers in agricultural use areas as time and resources allow.

PW.2 ~~Develop~~ Where appropriate, implement corrective measures on Pinole Creek to rectify streambank instability as time and resources allow.

Biodiversity

PW.3 ~~Monitor the recolonization of the Pinole watershed by the California ground squirrel.~~

PW.~~4~~3 ~~Evaluate opportunities to reintroduce the California tiger salamander into suitable habitats in coordination with DFG.~~ Continue watershed monitoring and habitat restoration as guided by the EBMUD Low Effect East Bay Habitat Conservation Plan. Ensure the long-term protection of sensitive fish and wildlife species through wise management that meets the species conservation goals of state and federal recovery plans.

PW.~~5~~4 Continue ongoing efforts to protect and restore riparian stream ecosystems.

PW.~~6~~5 Prohibit use of pesticides in the watershed, except for those herbicides specifically approved for spot treatment of pest plant species according to District IPM guidelines and where other methods of pest control are not feasible.

PW.7 Use the watershed for mitigation projects/banks which are consistent with the HCP and further enhance habitat for sensitive species while generating revenue and offsetting impacts from District projects in other areas.

Fire and Fuels

PW.~~7~~8 Follow the fuel treatment guidelines for Pinole Valley established in the Fire Management Plan (October 2000). ~~Develop and implement a fire management plan for the Pinole watershed in consultation with CDF and CCCFPD that clearly demonstrates adequate fire protection.~~

PW.~~9~~8 Continue livestock grazing in the less sensitive portions of the Pinole watershed. Where compatible with natural resource objectives, graze or

mow grass to a 4-inch height (or disc) within a 30-foot-wide strip along all District property lines adjacent to the urban/wildland interface.

PW.109 ~~Explore~~ Where appropriate, consider opportunities for the District, the City of Richmond and Pinole Fire Departments, the Rodeo-Hercules Fire Protection Dis~~r~~trict, and CCCFPD to conduct homeowner training in defensible space self-protec- tion to increase awareness, involvement, and support from homeowner associations and individual homeowners. Encourage homeowners to link their defensible space zones into the grassy, low fuel-volume vegetation adjacent to the interface areas.

Developed Recreation and Trails

PW.110 In addition to the alignment selected for the Bay Area Ridge Trail, ~~permit~~ consider recreational use of watershed lands in Pinole Valley on a case-by-case basis consistent with the water quality, biodiversity, fiscal responsibility, and public safety goals of the EBWMP.

Visual Resources

PW.121 Maintain or improve the current visual quality in areas visible from Castro Ranch, Alhambra Valley, and Pinole Valley Roads by limiting new struc- tures and providing appropriate levels of agriculture and grazing use near these public roads.

PW.132 Prohibit development or structures near the Bay Area Ridge Trail regional connector to preserve current open space views of Pinole Valley.

PW.143 ~~Establish~~ Consider visual quality guidelines ~~in~~ when coordinating~~on~~ with the Cities of Pinole, Hercules, and El Sobrante to ensure that high-priority visual resources located near the current or planned urban interface are protected.
Encourage visual resource policies to be incorporated into the general plans of each city.

Entitlements

PW.154 Initiate organic farming in the Pinole Valley for vegetable or flower produc- tion if farming practices are consistent with IPM practices that provide for water quality and other environmental protection. In the interim, current agricultural uses will continue under strict controls.

~~PW.15 Continue the phased elimination of the former Christmas tree farming area along Pinole Creek, including phased elimination of the Monterey pine grove and replacement with native forest species.~~

MANAGEMENT DIRECTION FOR INTERJURISDICTIONAL COORDINATION

Introduction

Some land uses in the areas that surround District-owned East Bay watershed lands can have substantial adverse impacts on District water quality and watershed management. Development and use of these adjacent lands require special management consideration because the jurisdictions involved have differing land use goals and objectives. In addition, allowable uses of District-owned watershed lands are influenced by the local land use policies of jurisdictions whose planning boundaries coincide with District ownership. District watershed lands are located primarily in unincorporated portions of Alameda and Contra Costa Counties. Small portions are located within the Cities of Orinda, Lafayette, and Oakland and adjoin the incorporated Cities of Hercules, Lafayette, Moraga, Oakland, Orinda, Pinole, Richmond, and San Leandro and the unincorporated communities of Castro Valley and El Sobrante. In addition, substantial portions of District land are bordered by EBRPD lands **(Figures 5-1 and 5-2)**.

Each of the eight incorporated cities and both counties set their local land use and development policies through the general plan process. County land use and development policies apply to unincorporated areas, just as city policies apply to incorporated areas.

In addition to these local jurisdictions, regional agencies can also affect management of District lands. The California Department of Transportation (Caltrans) and the Metropolitan Transportation Commission enact the plans and policies of the state and federal governments. The Regional Water Quality Control Board, the Bay Area Air Quality Management District, and Cal Fire ~~DF~~ set policy for fire management throughout the state. EBRPD also has numerous parklands that adjoin the District's watershed lands. Because EBRPD is the largest adjacent landowner, its actions can have a substantial effect on management of District watershed lands. The history of cooperation and coordination between the District and EBRPD has been important in addressing issues of concern.

Major Management Issues

Management direction for lands adjacent to District-owned watershed lands recognizes that some of these areas are within the hydrologic basins of District reservoirs and drain into them and that others do not. Issues related to the use and development of adjacent lands extend well beyond land use, but these issues can be addressed nonetheless through a land use and management coordination program involving the District and the various agencies responsible for adjacent jurisdictions. The major management issues resulting from the use and development of adjacent lands are the following:

Section 5

MANAGEMENT DIRECTION FOR INTERJURISDICTIONAL COORDINATION

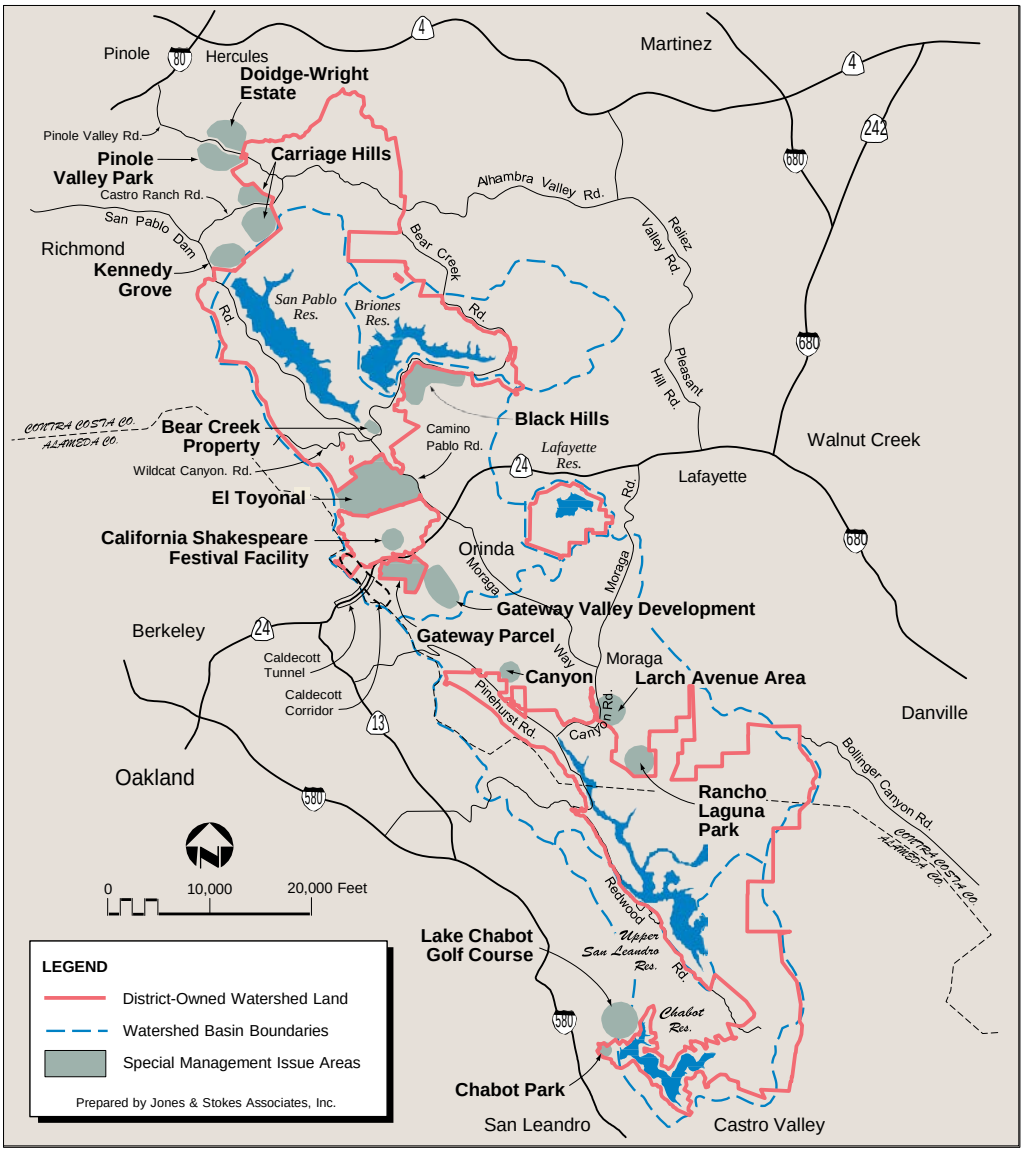


Figure 5-1
Adjacent Jurisdictions and Special Management Issue Areas

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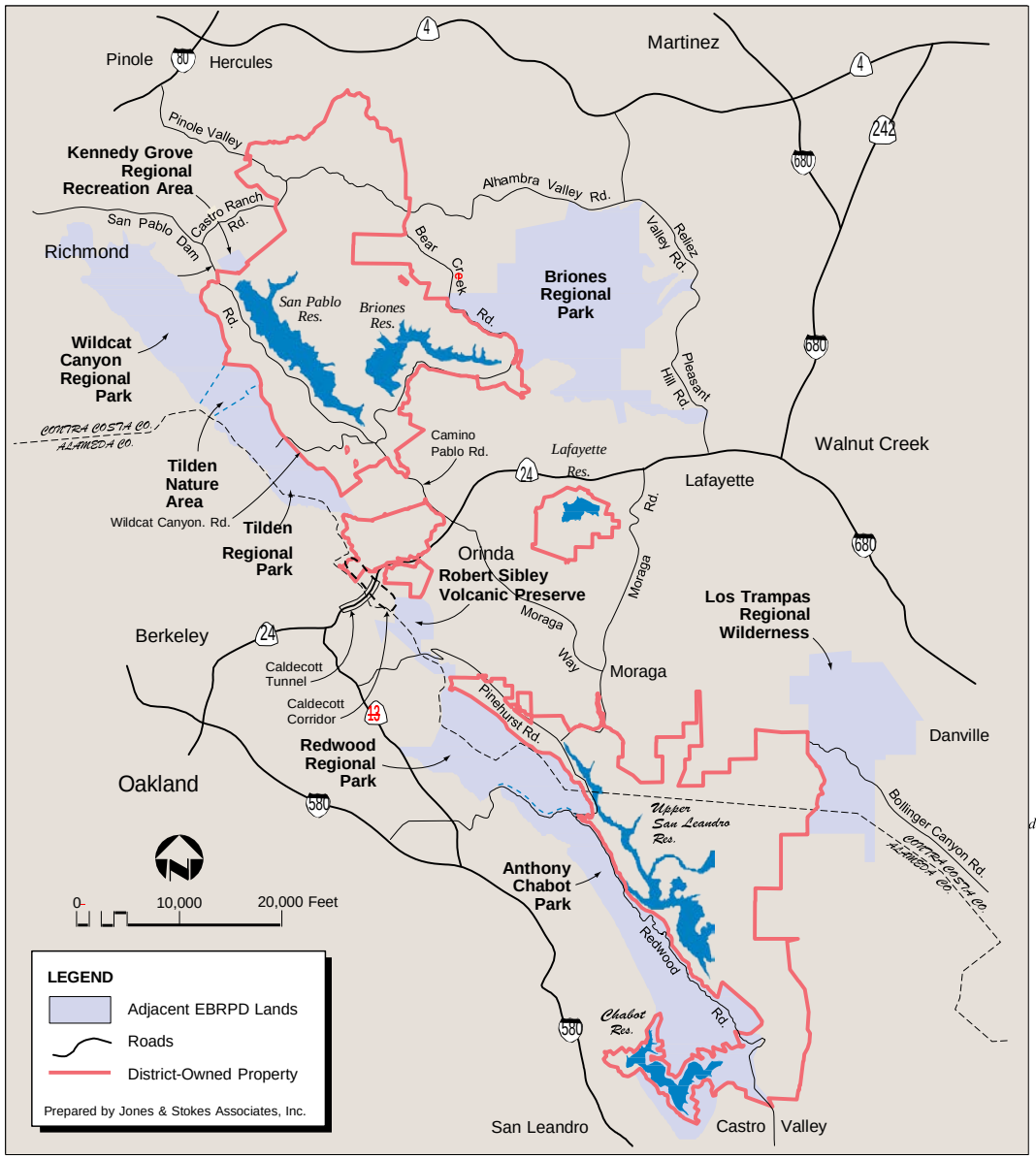

Figure 5-2
Adjacent EBRPD Lands

Section 5

MANAGEMENT DIRECTION FOR INTERJURISDICTIONAL COORDINATION

- ***Water Quality Protection:*** Protection of water quality is foremost among management considerations. Land use and development have been shown in District studies to adversely affect the quality of water draining onto District watershed lands and into District reservoirs (see the water quality management discussion in Section 3).

- ***Wildfire and Public Safety:*** Use of adjacent lands raises significant concerns regarding the risk of wildfire. The pattern of adjacent development affects the District's ability to manage the risk of wildfire or its spread onto or off from District watershed lands.

- ***Public Encroachment:*** Use of adjacent lands, particularly for residential development, could substantially increase public encroachment onto watershed lands. Public encroachment can lead to violations of District management objectives, adverse effects on sensitive watershed habitats, increased incidence of trespass and vandalism, and increased degradation of the environment and views along the urban/wildland interface.

- ***Viewshed Protection:*** Locally approved urban encroachment on adjacent lands could disrupt or degrade the visual qualities of District watershed lands and the regional visual environment.

- ***Biodiversity:*** Because plants and animals do not recognize political or planning boundaries, biodiversity planning must occur between adjacent public and private landowners to maintain connectivity between large patches of habitat and avoid maintenance practices that result in inadvertent mortality of species. Close coordination between landowners to discuss the offsite impacts of maintenance activities and projects, both within and outside the context of the CEQA process, is essential to preserve regional biodiversity.

These major issues also apply to the management of adjacent lands not tributary to a reservoir. On those lands, however, water quality issues, although still important, are not emphasized as heavily as they are on basin lands that are tributary to District reservoirs.

Summary of Land Use Conditions on Adjacent Lands

Land use conditions, particularly those relating to water quality, public safety, and watershed protection, are summarized in this section for each jurisdiction having property adjacent to District-owned watershed lands. The relationship between land use conditions and issues of concern to the District has been developed through focused studies conducted by the District and the evaluation conducted specifically to support the EBWMP.

Adjacent Basin Lands

Contra Costa County

Lafayette

Except for very small areas at the extreme western edge of the city that drain into San Pablo Reservoir, the City of Lafayette does not include lands that drain into District reservoirs. The Lafayette Reservoir watershed is essentially self-contained. The watershed is within the jurisdiction of the City of Lafayette but is entirely under District ownership and management.

Moraga

Much of the western half of the Town of Moraga is within the Upper San Leandro Reservoir basin. King Canyon, Moraga, and Rimer Creeks and their tributaries flow southward to Upper San Leandro Reservoir. Las Trampas Creek and its tributaries in the eastern part of town flow northward to join Lafayette and Walnut Creeks and finally discharge into Suisun Bay.

According to the Moraga general plan, much of the town consists of steep, undevelopable slopes whose "open space characteristics contribute to the Town's high quality environment". The community maintains its small-town character through one- and two-story structures that incorporate landscaping and open space into their design. Much of the town is designated for open space, and most of the remaining areas are developed with single-family residential units. Together, these uses make up nearly 90% of the land use in Moraga. Cluster housing is permitted in areas designated for open space or residential uses, but the town's goal is "to permit a limited amount of cluster housing where it does not impinge upon or adversely affect existing detached single-family environments".

Most of the growth planned in Moraga is on lands that are already designated for residential uses. Much of the land available for residential development is on steep slopes or in areas within 100-year floodplains. Streambank erosion is acknowledged as a long-term problem. Moraga does not allow industrial uses, and only about 100 acres of land are zoned for office and commercial activities, with much of that land remaining vacant. The general plan does not designate land uses for District watershed lands, which are outside of the city limits.

Although the potential for development anywhere along the watershed interface has implications for managing water quality, fire and fuels, public encroachment, and visual quality of District lands, several areas of the interface involve special land use management issues.

Palos Colorados. A proposal exists for development of ~~188~~ 123 single-family dwelling units ~~and an 18-hole golf course~~ on 476 acres of land southeast of Lafayette Reservoir. Approximately 100 acres in the northwestern portion of the

According to the Moraga general plan, much of the town consists of steep, undevelopable slopes whose "open space characteristics contribute to the Town's high quality environment".

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development area are within the Moraga Creek basin, which drains to the Upper San Leandro Reservoir. The portion of the proposed development that would be located on District watershed lands would accommodate approximately 27 dwelling units, and a portion of a school site~~, and a small portion of the golf course.~~ It is understood that grading of the project site for development will direct drainage away from Upper San Leandro Reservoir and thereby eliminate water quality conflicts. This proposed grading modification should be approved by the city and county to protect water quality. The development is also an important wildlife corridor into Lafayette Reservoir, and buildout may curtail wildlife movements in the Lafayette Reservoir watershed.

Larch Avenue Area. A 65-acre vacant parcel located between Larch Avenue and Sanders Drive near Canyon Road~~. is being considered for possible development.~~A conceptual development plan exists to subdivide 58.2 acres of the propertyinto six single family residential lots ranging in size from .96 acre to 1.38 acre plus one remainder 51.45 acre common parcel. ~~Most of the area is zoned for open space, but a small portion is designated for residential uses in the general plan.~~ The Larch Avenue area is in the drainage of Moraga Creek, which drains to Upper San Leandro Reservoir~~. Develop- ment of this area with 12-25 dwelling units is possible within the next several years.~~

Orinda

Almost the entire city of Orinda lies either within the San Pablo Reservoir or Upper San Leandro Reservoir basin. According to its general plan, Orinda is a nearly built-out semi-rural~~residential~~ community~~ that has almost reached buildout. Some development is possible on the western edge of the city, particularly in Gateway Valley, southeast of the District's Gateway parcel~~.

Orinda's general plan seeks to preserve the semirural character of the city by keeping development densities low, limiting development on highly visible, undeveloped ridges and hillsides, retaining vegetation during project construction; limiting site grading, preserving creeks and creekbeds, clustering development, and protecting the open space north and west of the city. Much of this open space is District-owned watershed land.

The District watershed lands adjacent to Orinda are outside of the city limits but within the planning area boundary. The general plan designates these lands for "utility" uses, defined as being appropriate for utility, watershed, open space, and public recreation and for cultural uses where specifically designated. The California Shakespeare Festival site on District-owned land in Siesta Valley is one such use. The general plan designates most development adjacent to watershed lands for very low-density to low-density single-family housing (e.g., a maximum of one to two units per acre).

Although the potential for development anywhere along the watershed interface has implications for managing water quality, fire and fuels, public encroachment, and visual quality of District lands, several areas present special management issues.

El Toyonal Interface. A portion of the City of Orinda extends into the area generally between El Toyonal Road (to the north) and the District's deLaveaga Fire Road (to the south). This area ~~is developed with residential uses and has minimal new residential development.~~could accommodate new residential development and the construction of approximately 47 single-family dwelling units on 30 acres of residentially zoned land. Access to this area is very limited because of a road closure at the north end of El Toyonal Road. Land configuration, limited access, narrow roadway, vegetative cover, and fire risks associated with this area and with urban development in general make management of this area extremely important.

Orinda's general plan seeks to preserve the semirural character of the city by keeping development densities low; limiting development on highly visible, undeveloped ridges and hillsides; and protecting the open space north and west of the city.

In addition, the general plan stipulates that no major subdivision in the El Toyonal area shall be developed prior to completion of an extension of El Toyonal road to Camino Pablo or Wildcat Canyon Road.~~designates a proposed collector street in this area to connect El Toyonal Road to Wagner Ranch School. This proposed collector street has not yet been constructed and its location is not defined, but it appears to bisect a District-owned parcel~~. Construction of the proposed collector street ~~has~~ may have serious implications for managing the District-owned property~~, and the acquisition will be strongly opposed~~.

California Shakespeare Festival Facility. The California Shakespeare Festival leases a portion of the District's watershed lands in Siesta Valley (north of the Gateway Boulevard interchange on Highway 24) as a site for the California Shakespeare Festival and Bruns Amphitheatre. This permanent facility (reconstructed in 2010) is currently used for performances primarily during the summer months. Management activities required under the lease address wildfire ignition and public encroachment onto adjacent District watershed lands.

~~***Gateway Property.*** The District-owned Gateway property is located south of Highway 24 at the Gateway Boulevard interchange and is within the San Pablo Reservoir basin. This property has and continues to be associated with the City of Orinda's infrastructure and residential the Wilder development. plans for the area directly to the south.~~

~~The Gateway property also is contiguous with the Caldecott Tunnel corridor, an undeveloped strip of land that serves as a critical avenue for wildlife movement between large, publicly owned open space areas north and south of Highway 24.~~

~~The Caldecott Tunnel corridor and environs also form an important visual backdrop for the considerable number of people traveling west toward the Caldecott Tunnel on Highway 24, and they provide motorists a dramatic last view of the eastern slopes of the Oakland Hills before they enter the tunnel.~~

~~Any proposals submitted to the District for use of the Gateway property should be reviewed carefully. This review should comprehensively address potential effects on water quality, the functioning of this area as it relates to the Caldecott Tunnel corridor, and urban/wildland interface issues (e.g., fire and fuels management). Any potential future fire mitigation must be borne by the Gateway developer.~~

Section 5

MANAGEMENT DIRECTION FOR INTERJURISDICTIONAL COORDINATION

The Contra Costa County General Plan designates District watershed lands as "watershed", a designation intended to safeguard the public water supplies stored in District reservoirs.

~~***Bear Creek Property.*** The Bear Creek property (also known as the Duffel property) is a 43-acre site owned by the District that is located on Bear Creek Road adjacent to San Pablo Creek. Because of its location near San Pablo Creek and San Pablo Reservoir, protection of water quality is the primary concern associated with use of the site. In 2005 the City of Orinda amended its General Plan to change the land use designation of the Bear Creek property, precluding it from use as recreational ball fields.~~

~~In 1990, the City of Orinda expressed interest in the use of the Bear Creek property for sports fields. As with proposals for use of other District-owned property, environmental concerns and appropriateness of use should be considered regarding this site in coordination with city representatives.~~

~~***Castlegate.*** Approximately 40 acres of land south of Gateway Valley near Stein Way has been subdivided into 25 1/2-acre lots. The parcel is being developed and has required the implementation of extensive erosion control measures.~~

Black Hills. Residential development on the northern edge of Orinda ~~is~~ has occurred along ~~encroaching on~~ the ridge of the Black Hills, ~~moving closer~~ close to Bear Creek Road~~,~~ and encroaching into the Briones Reservoir viewshed where it has crested this ridge. Development in these areas already has serious implications for wildfire hazard and visual resource impacts on District lands. Any further development in this area must meet strict fire and fuels management requirements to fully mitigate the potential impact. This area is currently under construction. Encroachment on District land by occupants will need to be monitored regularly.

Unincorporated Area

Contra Costa County has jurisdiction over all lands located outside incorporated areas, including District watershed and EBRPD lands.

The District watershed lands north of Orinda are within the Briones Hills planning area, which is subject to the Briones Hills Agricultural Preserve Area Compact. The compact was made in 1988 between the county and the Cities of Martinez, Pleasant Hill, Walnut Creek, Lafayette, Orinda, Richmond, Pinole, and Hercules. The county's general plan strongly supports the intent of this agreement, in which the signatories agree not to annex lands in the Briones Hills planning area for urban development. This area also includes EBRPD lands and large tracts of agricultural land east of District watershed lands.

The Contra Costa County General Plan designates District watershed lands as "watershed", a designation intended to safeguard the public water supplies stored in District reservoirs. Permitted on lands designated as "watershed" by the county are agricultural uses that do not rely on pesticides or chemical fertilizers, such as grazing and Christmas tree farming, passive, low-intensity recreational uses, such as hiking and biking, and small-scale commercial uses that support picnicking, boating, and fishing activities on adjacent reservoirs.

MANAGEMENT DIRECTION FOR INTERJURISDICTIONAL COORDINATION

The general plan specifies that the county shall cooperate with other regulatory agencies to control point and nonpoint water pollution sources to protect adopted beneficial uses of water.

Although the potential for development anywhere along the northern and northwestern urban/wildland interface between Contra Costa County and District lands could have implications for managing water quality, fire and fuels, public encroachment, and visual quality of District watershed lands, several areas of the interface present special land use management issues.

Community of Canyon. Development in the unincorporated community of Canyon consists primarily of houses, a school, and a post office. District watershed lands surround this small community and the District owns many small parcels within the community. Critical wildland management issues of land configuration, septic tanks and leach fields, limited access, narrow roadways, dead- end roads, and fire and fuels associated with the interface of wildlands and rural residential use must be addressed. Potential development of the McCosker Ranch property could intensify wildland interface issues and concerns.

Indian Valley Area. Most of the private, unincorporated land that borders the eastern edge of District watershed lands around Canyon is in open space use (i.e., Indian Valley). Management of the District-owned interface focuses on the cooperative actions needed to reduce the potential risk and damage from wildfire. Scattered among these lands are residences and other development that could be damaged by wildfires and could also be considered potential sources of wildfire. In addition, these lands could be rezoned for more intensive uses in the future, which would intensify urban/wildland interface issues and concerns.

Alameda County

Castro Valley

A small portion of the unincorporated community of Castro Valley immediately adjacent to Chabot Reservoir drains into Chabot Reservoir. According to the Castro Valley Plan (part of the Alameda County General Plan), Castro Valley is extensively developed, with relatively little vacant land remaining. Castro Valley consists predominantly of single-family housing. Most of the District's watershed lands in Alameda County are within the Castro Valley planning area, but none are within the community's urban area. The Castro Valley Plan designates District lands in its planning area as "appropriate open space", as defined by the Alameda County General Plan.

Future development anywhere along the northern and northwestern urban/wildland interface between Castro Valley and District watershed lands could have adverse implications for managing water quality, fire and fuels, public encroachment, and visual quality of watershed lands. This area should be monitored carefully for future actions even though no significant problems exist at present.

Section 5

MANAGEMENT DIRECTION FOR INTERJURISDICTIONAL COORDINATION

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Oakland

Essentially all of the City of Oakland is west of the ridgeline of the Oakland Hills and drains into San Francisco Bay. A portion of the north shoreline of Chabot Reservoir and a portion of the reservoir itself are within the city limits, however. This land is occupied by the City of Oakland's Lake Chabot Municipal Golf Course, portions of which drain into Chabot Reservoir. Because it drains directly into the reservoir, the golf course presents water quality issues for management of Chabot Reservoir, especially regarding the use of pesticides and fertilizers. Also, the Grizzly Peak Estates area above the Caldecott Tunnel east portal presents difficult fire hazard mitigation challenges to downhill agencies, including the District and EBRPD. It is important that Oakland prohibit further development in this ridgetop location.

Unincorporated Area

Alameda County has land use jurisdiction over unincorporated areas of the county. The Alameda County General Plan strongly encourages that development remain within existing urban boundaries. For incorporated areas, the plan promotes efficient use of suitable vacant and infill land. For unincorporated areas, the plan establishes a limit to urban development to reduce the impacts of development on open space and the environment.

Although the potential for development anywhere along the northern and northwestern interface between Alameda County and District watershed lands has implications for managing water quality, fire and fuels, public encroachment, and visual quality of District watershed lands, one general area of the interface presents special issues.

Cull Canyon Area. Most of the private, unincorporated land that borders the eastern edge of District watershed lands in Alameda County is in open space use. Management of the District-owned interface focuses primarily on cooperative actions to reduce the potential risk and damage from wildfire. Possible future rezoning of these lands for more intensive uses could create issues typical of an urban interface. Any significant change of use could also affect the visual quality of District watershed lands and the visual character of the region.

East Bay Regional Park District

Other than the District, EBRPD is the largest single landowner within the basins of the District reservoirs. Because management activities on those lands have the potential to affect water quality and other District programs, the District retains an ongoing interest in land use modifications and proposed new uses. The District supports providing timely technical feedback on any proposed change.

MANAGEMENT DIRECTION FOR INTERJURISDICTIONAL COORDINATION

The policy of EBRPD is to cooperate with other public agencies in acquiring, preserving, and managing nonpark open space lands and ecosystems and in fostering sound stewardship practices.

Almost the entire western edge of District watershed lands is bordered by EBRPD property, with the exception of the areas near the Caldecott Tunnel at Highway 24 and immediately northwest of Chabot Reservoir **(Figure 5-2)**. Properties owned or operated by EBRPD drain into Briones, Chabot, San Pablo, and Upper San Leandro Reservoirs. The specific parks and their relative sizes within the drainages are listed below:

San Pablo Reservoir Basin

Sibley Volcanic Preserve partial area ~~(large)~~
Tilden Regional Park ~~(very small)~~
Wildcat Canyon Regional Park ~~(very small)~~
National Skyline Trail ~~(small)~~

Briones Reservoir Basin

Briones Regional Park ~~(large)~~

Upper San Leandro Reservoir Basin

Redwood Regional Park ~~(large)~~
Roberts Regional Recreation Area ~~(small)~~
Sibley Volcanic Regional Preserve partial area ~~(medium)~~
Huckleberry Botanic Regional Preserve ~~(small)~~
Lafayette-Moraga Regional Trail ~~(small)~~
Old Moraga Ranch Trail ~~(very small)~~

Chabot Reservoir Basin

Anthony Chabot Regional Park ~~(large)~~
Fairmont Ridge Regional Park ~~(large)~~

In addition to the parklands within the basins, the following EBRPD parks adjoin District watershed property but are outside of the basins:

Las Trampas,
Kennedy Grove Regional Recreation Area,
Sobrante Regional Preserve, and
Claremont Canyon Regional Preserve.

The policy of EBRPD is to cooperate with other public agencies in acquiring, preserving, and managing non-park open space lands and ecosystems and in fostering sound stewardship practices. EBRPD also acts as a "good neighbor" to adjacent owners by managing its resources and planning, developing, and operating its parks in a manner that does not conflict with adjacent management practices or that reduces impacts to the greatest extent possible. The District intends to work in partnership with EBRPD, much as it has with the City of Orinda, Town

of Moraga, and Alameda and Contra Costa Counties, to develop and implement BMPs that mitigate impacts on reservoir water quality that may occur from parkland runoff. An important mechanism for ensuring ongoing coordination with EBRPD is the District/EBRPD Liaison Committee, a Board-level joint committee that regularly reviews broad issues of mutual concern.

Briones Regional Park. The western half of Briones Park drains directly into Briones Reservoir via Bear Creek and several smaller drainages. Land use practices in the park can affect water quality in the reservoir. Road and trail use and maintenance, recreational development, grazing, and herbicide use are activities of concern that ~~will~~ require monitoring. ~~Mitigation measures for a recent recreational change of use in the park have been coordinated with the District and will become more important in the future.~~

Redwood Regional Park. Redwood Regional Park is tributary to Upper San Leandro Reservoir, and land use practices in the park can affect water quality in the reservoir. Road and trail use and maintenance, herbicide use, and vegetation management ~~(particularly timber harvesting practices)~~ are activities that will require water quality monitoring. ~~In addition,~~Mountain bike trespass onto the District's Redwood Trail from EBRPD's East Ridge Trail ~~is increasing~~ and trail damage in this sensitive area has already been documented. ~~The District will take the lead in working with EBRPD to address this growing problem.~~

~~***Gateway Valley.*** The developers of Gateway Valley in Orinda plan to deed 442 acres of open space, adjacent to Sibley Volcanic Preserve and the District's Gateway parcel, to EBRPD in the near future. Preliminary plans for this parcel involve a major loop trail that crosses District watershed property over much of its length. No other firm plans are known at this time; however, a number of urban interface issues can be expected to emerge in the near future. Because this new acquisition will bring EBRPD ownership significantly closer to San Pablo Reservoir, it is important that EBRPD management plans are discussed with District staff at an early stage. In addition to urban interface issues, the District has continuing concerns about changes of use in the greater Gateway Valley area because of the potential for water quality impacts on San Pablo Reservoir. The District will take a lead role in working with EBRPD to address these concerns.~~

Lake Chabot. EBRPD plans, manages, and operates the Lake Chabot Recreation Area under a long-term agreement with the District. Use of the reservoir and the recreational development surrounding it are managed in accordance with the terms and conditions of the Park and Recreation Lease (2550-year term initiated in 2016~~5~~)~~initiated in 1964)~~ and according to the Provisions and Conditions of the District's Revised Domestic Water Supply Permit. ~~The strategic importance of Lake Chabot in the District's water supply system was reviewed in 1994. As a result, interest in the potential role of Lake Chabot as an emergency water supply during a major earth- quake has been renewed.~~Lake Chabot provides emergency standby supply and is alos used extensively for recreation.

~~Recently, EBRPD has implemented an extensive eucalyptus harvest program in Anthony Chabot Regional Park within the Grass Valley Creek basin, which drains into Lake Chabot. This program has used clear-cutting as the primary silvicultural technique to manage the vast eucalyptus stands in this area. This type of activity can degrade water quality from increased sedimentation, herbicide runoff, and nutrient release into Lake Chabot and will require monitoring. In addition, EBRPD is responsible for addressing fire and fuels management issues from the reservoir south to the urban/wildland boundary.~~

~~***Willow Park*** ***Redwood Canyon*** ***Golf Course***~~. The District leases land upstream of Chabot Reservoir to EBRPD to operate ~~Willow Park~~ Redwood Canyon Golf Course~~,~~ which consists of an 18-hole regulation golf course, golf practice range (using floating golf balls), clubhouse, event center, and other support facilities. EBRPD leases the property as part of the Lake Chabot Master Lease from EBMUD and subleases the property to a concessionaire. EBMUD will continue to own and operate the lake Chabot Reservoir and Dam as part of its water supply system..~~, which, in turn, is leased to a concessionaire.~~ The District's primary issue of concern with the management of ~~Willow Park~~ Redwood Canyon Golf Course is the potential for pesticides and fertilizers, used for turf management, to affect the water quality of Lake Chabot. ~~Provisions were added to the Sixth Amendment to the Park and Recreation Lease in 1994 that improved control and monitoring of pesticide and fertilizer use at the golf course. These~~ The lease provisions ~~will~~ require compliance with the Audubon Guidelines for Golf Course Management which minimize impacts to birds, fish and wildlife. EBMUD, in coordination with EBRPD, will ~~monitoring in coordination with EBRPD to~~ ensure compliance by the concessionaire.

Regional Trails System. The District has cooperated with EBRPD in the development of regional trails that link the lands of the two districts, especially the National Skyline Trail. Additional opportunities, including the Bay Area Ridge Trail, American Discovery Trail, and Mokelumne Coast to Crest Trail are in progress. These trails provide the public with an opportunity to enjoy a high-quality trail experience while meeting the land use constraints of both agencies. All future trail plans for either agency must be developed with early input from the other to identify the impacts of proposed alignments, the alternate alignments that may be required, and specific trail use conflicts requiring mitigation or prohibition.

Adjacent Lands Not Tributary to a Reservoir

The following jurisdictions are located within adjacent nontributary lands.

Contra Costa County

Hercules

The City of Hercules is within the Refugio Creek basin. District watershed lands do not drain into Hercules, and lands within the jurisdiction of Hercules do not drain into District watershed lands.

Northeast of Refugio Creek, high-density residential development adjoins District property, and some of this development abuts District property directly with no setbacks at the urban/wildland interface. Other residential developments in the area provide open space buffers adjacent to District-owned lands. Southwest of

The District has cooperated with EBRPD in the development of regional trails that link the lands of the two districts. These trails provide the public with an opportu- nity to enjoy a high-quality trail experience while meet- ing the land use constraints of both agencies.

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Refugio Creek, open space and low-density residential land within the City of Hercules adjoin District land. Most of these areas are essentially built out, with only a few scattered lots remaining to be developed.

~~Although the potential for development anywhere along the urban/wildland interface could have implications for managing fire and fuel safety issues, public encroachment, and visual quality of District watershed lands, only one area of the interface presents special land use management issues.~~

Hanna Ranch Development. The Hanna Ranch Development directly abuts District property at the northwestern corner of Simas Valley. Because of the absence of law enforcement in this area, a variety of urban/wildland interface effects ~~are being noted~~ have occurred, including poaching, trespassing, vandalism, and mountain bike access. In addition, the District has been forced to adopt fire hazard mitigation measures on its own property because of the proximity of residential development to District watershed property. This area will require an increased level of monitoring and District presence.~~in the near future.~~

Pinole

The City of Pinole is in the Pinole basin, but it is located downstream of District-owned lands.

Pinole is essentially a built-out residential community. North of Pinole Creek, the city adjoins District property primarily with low-density residential development, much of which directly abuts District watershed lands with no set-backs at the urban/wildland interface. Much of this area is undeveloped and is one of the major remaining areas in the city that are designated for residential development. South of Pinole Creek, the city's Pinole Valley Park abuts District watershed lands.

~~The City of Pinole Draft General Plan acknowledges the importance of working in coordination with the District to address water quality issues. The draft general plan also designates District lands as providing trail connections into District property and to connected portions of the city at the interface.~~

~~Although the potential for d~~Development ~~anywhere~~ along the Pinole/District watershed interface has implications for managing water quality, wildfire hazard, public encroachment, and visual quality of District watershed lands, two specific areas present special land use management issues.

Doidge-Wright Estate. The largest parcel of land likely to undergo development is the Doidge-Wright Estate on the southern end of Pinole Valley Road, located on the Pinole side of the ridge that separates Pinole and Hercules. Development of this 185-acre parcel could affect District watershed land by increasing urban interface effects.

Richmond

Pinole Valley Park. Pinole Valley Park, which consists of a sports field complex and surrounding open space with trail use, adjoins District watershed lands. This park is owned and operated by the City of Pinole and primarily presents fire and fuels management and public encroachment management issues. The portion of the City of Richmond adjacent to District property is in the San Pablo Creek basin. Most of the interface is downstream from watershed lands and does not drain onto them. A small area of the city northwest of the San Pablo Reservoir drains into the reservoir. The reservoir and the District watershed lands below it drain into San Pablo Creek, which flows into Richmond.

~~Although the potential for d~~Development ~~anywhere~~ along the Richmond/District watershed interface has implications for managing water quality, fire and fuels, public encroachment, and visual quality of District watershed lands, several areas present special land use management issues.

Carriage Hills. The Carriage Hills area on the eastern edge of Richmond has been permitted to develop to the District property boundary without setbacks at the urban/wildland interface. This development pattern has fire and fuels, public encroachment, wildlife, and visual quality management implications for watershed lands. The area is essentially built out, and no other new development is planned for the area.

Castro Ranch. A development proposal, circa 1996, for 149 dwelling units on 33 acres south of Castro Ranch Road near Amend Road was ~~recently~~ denied. Development at this location could occur in the future, however. The form this development takes could have significant implications for fire and fuels management and other facets of interface management (including wildlife habitat and trail alignments).

East of Carriage Hills. The area east of Carriage Hills is designated in the general plan for low-density residential development. Several proposals for the development of this area have been submitted, but none have been approved. Development of this area can be expected in the future, however. As with Castro Ranch, the form this development takes could have ~~significant~~ implications for fire and fuels management and other facets of interface management (including wildlife habitat and trail alignments).

Alameda County

San Leandro

Only a very small portion of the City of San Leandro is in the Chabot Reservoir basin. Most of the city drains into San Leandro Creek and San Francisco Bay. This includes Chabot Park (downstream from Chabot Dam), which is owned

by the District but leased to the City of San Leandro for a day-use park. Residents of neighboring areas have complained about the negative effect park users have on the neighborhood, including late-night activities and disturbances.~~for the past 30 years.~~ The city is looked upon as the responsible land management agency in this case.

East Bay Regional Park District

Kennedy Grove Regional Park. Kennedy Grove Regional Park adjoins District watershed lands just northeast of San Pablo Dam. Kennedy Grove is well managed by EBRPD for fire and fuels. Kennedy Grove is a source of some public ~~encroachment~~ trespass onto District watershed lands.

General Management Direction

This section describes the general objectives and guidelines for interagency coordination needed to manage the interface between District watershed lands and those of adjacent jurisdictions. (General direction for District watershed lands themselves is provided in Section 3.)

Management of District lands requires coordination with adjacent jurisdictions primarily for protection of water quality and fire and fuels management. Other management issues, such as providing management coordination on adjacent lands for biodiversity protection, visual resource protection, recreation, and property acquisition and disposal, are desirable secondary goals. District-sponsored interagency coordination will take place at three levels: policy, plan implementation, and development proposal and environmental review.

Objectives

- Encourage policy discussions between local jurisdictions to resolve common interface issues, advocate policies ~~work on revisions to local general plans~~ that address interface issues important to the District, formalize District review and comment on ~~general plan revisions,~~ specific development proposals, ~~and~~ environmental review actions, and promote District participation in overall land use planning and the decision-making processes of adjacent jurisdictions.

- Strengthen the understanding of District staff and staff of adjacent jurisdictions regarding important interface issues.

- Develop mutually agreed-upon interface guidelines that could be incorporated into the planning documents of adjacent jurisdictions, primarily for protection of water quality, emergency response, and fire and fuels management.

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MANAGEMENT DIRECTION FOR INTERJURISDICTIONAL COORDINATION

Management Guidelines

1. Establish and formalize a central point of contact for adjacent jurisdictions wishing to contact the District and for District contacts to adjacent jurisdictions and

2. Formalize an internal procedure for:

   - District staff communication with adjacent jurisdictions and
   - coordinated staff review and comment on planning actions, development proposals, and environmental review in adjacent jurisdictions.

3. Designate key contact individuals as liaisons between the District and adjacent jurisdictions regarding watershed management issues.

4. Establish policy-level contacts with adjacent jurisdictions (e.g., District/EBRPD Liaison Committee) to establish lines of communication, discuss common interface management issues, and determine actions that could be undertaken to address joint management concerns.

5. Establish staff-level contacts with adjacent jurisdictions to review and refine District interface guidelines and to work toward incorporating these guidelines into local ~~general plans~~decision making.

6. Coordinate with adjacent jurisdictions on the use of the land bridge across Highway 24 (Caldecott Tunnel corridor) to preserve its function as a wildlife corridor.

7. Continue coordination with adjacent jurisdictions and participation in coordinated efforts to maintain communication among agencies with water quality interests related to District-owned watershed lands.

Management of District lands requires coordination with adjacent jurisdictions primarily for protection of water quality and fire and fuels management. District-sponsored interagency coordination will take place at three levels: policy, plan implementation, and development proposal and environmental review.

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Area-Specific Management Direction

Contra Costa County - Within Basin

Unincorporated

CC.1 Work with Contra Costa County to define a mutually agreeable process for review of planning and land use proposals on District watershed lands that are within the county's jurisdiction.

CC.2 In coordination with the Community of Canyon and Contra Costa County agencies, develop a coordinated process for ~~land use planning and management and land tenure adjustment to improve the effectiveness of~~ fire protection and other resource management programs.

~~CC.3 Review the lease for the California Shakespeare Festival facility when it comes up for renewal and evaluate how well it meets the guidelines in this management plan. If the lease is renewed, adjust the terms as necessary to meet management guidelines.~~

CC.~~4~~4 Coordinate with Contra Costa County on future planning and development of the eastern agricultural interface (i.e., Canyon and Indian Valley areas) to limit degradation of water quality, wildfire hazards, public encroachment, and visual resource degradation at the interface with District watershed lands.

CC.~~5~~5 Coordinate with Contra Costa County to address water quality issues related to the county pesticide spraying program on roadsides within District reservoir watersheds, particularly San Pablo Dam Road, Bear Creek Road, and Wildcat Canyon Road.

CC.~~6~~6 Coordinate with nonpoint-source control programs to address water quality concerns.

CC.~~7~~7 Agree to a policy of nonannexation of privately held parcels within the Briones Hills Agricultural Preservation Area (BHAPA). Consistent with the BHAPA, the District may annex parcels owned by the District or other public agencies. This guideline would remain in force as long as the BHAPA is in effect. Consistent with this guideline, the District endorses the BHAPA agreement.

Moraga

M.1 Coordinate with the City of Moraga on the planning and development of the Larch Avenue area to limit water quality effects, risk of wildfire, and degradation of views on the Upper San Leandro Reservoir watershed.

M.2 Coordinate with nonpoint-source control programs to address water quality concerns.

Orinda

OR.1 Coordinate with City of Orinda staff on planning and development within the El Toyonal interface to limit the effects of development on water quality, fire and fuels management, public encroachment, degradation of views, and street extensions and to improve public access and egress and emergency access to this area. Support a coordinated county- and city-sponsored process to provide important transportation improvements in this area.

OR.2 ~~Review proposals for use of the Gateway parcel, parcels adjacent to the Gateway parcel, and Bear Creek parcel based on the District's master plan priorities, and deny or discourage proposals that are not consistent with these guidelines.~~

OR.~~2~~3 Coordinate with the City of Orinda, EBRPD, and other agencies on use of the Caldecott Tunnel land bridge to encourage preservation of its function as an important wildlife corridor.

OR.4 ~~Coordinate with the City of Orinda to ensure that District priorities regarding water quality and fire and fuels management are considered in plans for development of the Castlegate area.~~

OR.~~3~~5 Coordinate with the City of Orinda on the planning and development of ridgeline land uses in the Black Hills and to limit the risk of water quality effects, wildfire hazards, and visual resource degradation in the Briones Reservoir watershed.

OR.~~4~~6 Coordinate with nonpoint-source control programs to address water quality concerns.

Section 5

MANAGEMENT DIRECTION FOR INTERJURISDICTIONAL COORDINATION

Alameda County - Within Basin

Unincorporated

AC.1 Work with Alameda County to define a mutually agreeable process for review and approval of planning and land use proposals on District watershed lands that are within the county's jurisdiction.

AC.2 Coordinate with Alameda County on the planning and development of the eastern agricultural interface (i.e., Cull Canyon area) to limit degradation of water quality, risk of wildfire, public encroachment, and degradation of views on District watershed lands and the regional visual landscape.

AC.3 Coordinate with Alameda County to address water quality issues related to the county pesticide spraying program on roadsides within District reservoir watersheds, particularly Redwood Road and Lake Chabot Road.

AC.4 Coordinate with nonpoint-source control programs to address water quality concerns.

Oakland

O.1 Coordinate with the City of Oakland to ensure that the Lake Chabot Municipal Golf Course is managed to minimize all water quality effects on Chabot Reservoir.

O.2 Coordinate with the City of Oakland regarding any future development along Grizzly Peak Boulevard that would require fire hazard mitigation on District watershed land inside the Caldecott Tunnel corridor.

East Bay Regional Park District

EB.1 Coordinate with EBRPD on the planning and management of all regional parks that are within or coincident with District reservoir watersheds to address issues pertaining to water quality, wildfire, public encroachment, viewshed, and wildlife movement in the Caldecott Tunnel corridor.

EB.2 Review the leases for Chabot Reservoir and Willow Park Golf Course when they are to be renewed, and evaluate them in the context of District priorities. If the leases are renewed, adjust the terms as necessary to be consistent with management plan guidelines. Resolve any outstanding issues related to facility ownership.

EB.3 Coordinate with nonpoint-source control programs to address water quality concerns.

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Contra Costa County - Outside Basin

~~Hercules~~

~~H.1 Coordinate with the City of Hercules on the development of neighborhood connectors to the Bay Area Ridge Trail.~~

Pinole

P.1 Coordinate with the City of Pinole to ensure that District interests are protected in plans for the Doidge-Wright Estate and when development proposals for the area are being formulated (including urban/wildland interface setbacks on private land).

~~P2 Coordinate with Pinole on the planning and management of Pinole Valley Park to limit the risk of wildfire, public encroachment, and degradation of views in the area.~~

~~P.3~~P2 Coordinate with the City of Pinole on the development of neighborhood connectors to the Bay Area Ridge Trail.

Richmond

R.1 Coordinate with the City of Richmond to develop methods for reducing the potential wildfire hazard in the Carriage Hills area.

R.2 Coordinate with the City of Richmond to ensure that District interests are protected in planning for development of the Castro Ranch area and an area east of the Carriage Hills development (including urban/wildland interface setbacks on private land).

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Photographs and GIS Mapping Credits

Pat Solo - pp. 3, 7, 9, 15, 17, 21, 27, 31, 36, 45, 47, 55, 57, 61, 67, 69, 73, 75, 85, 95, 107, 111, 119, 126, 130, flower and children on front cover

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Reza Ghezelbash - Figure 2-1 (p. 13), Figure 2-3 (pp. 22-23), Figure 2-4 (pp. 24-25), Figure 2-6 (pp. 34-35), GIS image p. 92

Merritt Smith - Figure 2-2 (p. 18)

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