



San Francisco Planning Department

**ALAMEDA WATERSHED
MANAGEMENT PLAN**

Final Environmental Impact Report

Draft EIR Publication Date: December 11, 1999

**Draft EIR Public Hearing Date: January 25, 2000 (in Pleasanton) and
January 27, 2000 (in San Francisco)**

**Draft EIR Public Comment Period: December 11, 1999 through
January 31, 2000**

EIR Certification Date: August 3, 2000

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TABLE OF CONTENTS

ALAMEDA WATERSHED MANAGEMENT PLAN EIR

	<u>Page</u>
I. SUMMARY	I-1
A. Management Plan Description	I-1
B. Principal Environmental Effects	I-2
C. Mitigation Measures	I-7
D. Management Plan Alternatives	I-9
E. Unresolved Issues and Areas of Controversy	I-9
II. PROJECT DESCRIPTION	II-1
A. Alameda Watershed Management Plan	II-1
B. Management Plan Background	II-17
C. Related Projects and Studies	II-21
D. Approach and Organization of the EIR	II-22
E. Environmental Review Process	II-23
III. ENVIRONMENTAL SETTING AND IMPACTS	III.A-1
A. Existing Plans and Policies	III.A-1
B. Land Use	III.B-1
C. Geology and Soils	III.C-1
D. Hydrology and Water Quality	III.D-1
E. Natural Resources	III.E-1
F. Air Quality	III.F-1
G. Fire Management	III.G-1
H. Cultural Resources	III.H-1
I. Aesthetics	III.I-1
J. Transportation and Access	III.J-1
K. Utilities and Public Services	III.K-1
L. Noise	III.L-1
M. Hazardous Materials and Hazardous Waste	III.M-1
N. Energy	III.N-1
O. Growth Inducement	III.O-1
P. Cumulative Analysis	III.P-1
IV. MITIGATION MEASURES	IV-1
A. Existing Plans and Policies	IV-1
B. Land Use	IV-1
C. Geology and Soils	IV-2
D. Hydrology and Water Quality	IV-2
E. Natural Resources	IV-3
F. Air Quality	IV-4
G. Fire Management	IV-5
H. Cultural Resources	IV-5

	<u>Page</u>
IV. MITIGATION MEASURES (Continued)	
I. Aesthetics	IV-6
J. Transportation and Access	IV-6
K. Utilities and Public Services	IV-6
L. Noise	IV-7
M. Hazardous Materials and Hazardous Waste	IV-7
N. Energy	IV-8
O. Growth Inducement	IV-8
V. SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL EFFECTS	V-1
VI. SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES	VI-1
VII. ALTERNATIVES	VII-1
A. Methodology	VII-1
B. No Action Alternative	VII-2
C. Management Plan Alternative A: Ecological Resource Enhancement	VII-7
D. Management Plan Alternative B: Ecological Resources/Access	VII-16
E. Management Plan Alternative C: Increased Activities	VII-17
F. Sunol Valley Resources Management Element Options (for Mining)	VII-18
VIII. DRAFT EIR DISTRIBUTION LIST	VIII-1
IX. APPENDICES	IX-1
A. Notice of Preparation	IX.A-1
B. Special-Status Species Tables	IX.B-1
X. LIST OF ACRONYMS	X-1
XI. EIR AUTHORS AND CONSULTANTS; ORGANIZATIONS AND PERSONS CONSULTED	XI-1
● XII. SUMMARY OF COMMENTS AND RESPONSES	

LIST OF FIGURES

II-1	Project Location	II-3
II-2	SFPUC-owned Alameda Watershed Lands, Primary and Secondary Watersheds	II-5
II-3	Alameda Watershed, Topographic Base	II-6
II-4	Overall SFPUC Water System	II-18
III.B-1	Alameda Watershed Area Map	III.B-2
III.B-2	Existing Mining Permits and Activities in Sunol Valley	III.B-5
III.B-3	Proposed Sunol Valley Reclamation Plan	III.B-8
III.C-1	Principal Active Regional Faults of the San Francisco Bay Area	III.C-4
III.D-1	Alameda Watershed Facilities and System	III.D-2
III.G-1	Alameda Watershed Wildfire Severity	III.G-3

LIST OF TABLES

II-1	Summary of Alameda Watershed Management Actions	II-26
III.B-1	Information on Current Mining Permits in the Sunol Valley	III.B-6
III.C-1	Faults in the Vicinity of the Alameda Watershed	III.C-3
III.C-2	Management Actions That Could Result in Significant Physical Effects to Geology and Soils Through Increases in Soil Erosion	III.C-9
III.C-3	Management Actions That Could Result in Significant Physical Effects to Geology and Soils Due to Reduced Slope Stability	III.C-12
III.D-1	Summary of Management Policies Related to Water Quality Protection	III.D-10
III.D-2	Summary of Potentially Significant Water Quality Impacts Due to Increased Public Access and Use	III.D-16
III.D-3	Summary of Potentially Significant Water Quality Impacts Due to Development of New Facilities	III.D-20
III.D-4	Summary of Potentially Significant Water Quality Impacts Due to Watershed Operations and Maintenance Activities	III.D-25
III.D-5	Summary of Potentially Significant Water Quality Impacts Due to Changes to Gravel Mining Operations	III.D-29
III.D-6	Summary of Potentially Significant Water Quality Impacts Due to Nursery Operations	III.D-31
III.D-7	Summary of Potentially Significant Water Quality Impacts Due to Expansion of Golf Course Uses	III.D-33
III.D-8	Management Actions That Could Result in Potential Physical Effects Due to Build-Up of Sediments	III.D-36
III.E-1	Special-Status Plant Species Potentially Occurring in the Alameda Watershed	III.E-8
III.E-2	Alameda Watershed Wildlife Habitats	III.E-12
III.E-3	Special-Status Animal Species Potentially Occurring in the Alameda Watershed	III.E-18
III.E-4	Management Actions That Could Result in Significant Physical Effects to Natural Resources from Watershed Operations, Maintenance and Construction Activities	III.E-26
III.E-5	Management Actions That Could Result in Significant Physical Effects to Natural Resources from an Increase in Public Access and Use	III.E-32
III.E-6	Management Actions That Could Result in Significant Physical Effects from an Increase in Invasive Plant Species	III.E-34
III.E-7	Management Actions That Could Result in Significant Physical Effects from Implementation of the Grazing Resources Management Element	III.E-36
III.E-8	Management Actions That Could Result in Significant Physical Effects from Implementation of the Sunol Valley Resources Management Element	III.E-39
III.F-1	State and National Ambient Air Quality Standards	III.F-3
III.F-2	Criteria Air Pollutant Concentrations at the Fremont Air Quality Monitoring Station, 1993-1997	III.F-6
III.F-3	Management Actions That Could Result in Significant Physical Effects to Air Quality Through Increases in Construction-related Air Pollutant Emissions	III.F-11
III.G-1	Management Actions That Could Result in Significant Physical Effects from Reduction of Existing Fuel Breaks	III.G-9

LIST OF TABLES (Continued)

III.G-2	Management Actions That Could Result in Significant Physical Effects to Fire Management from Increased Public Access and Use	III.G-11
III.G-3	Management Actions That Could Result in Significant Physical Effects from Use of Prescribed Burns	III.G-13
III.H-1	Known Cultural Resources of the Alameda Watershed	III.H-4
III.H-2	Management Actions That Could Result In Significant Physical Effects to Cultural Resources from Increased Public Access and Use	III.H-9
III.H-3	Management Actions That Could Result in Significant Physical Effects to Cultural Resources from Operations, Maintenance, and Construction Activities	III.H-12
III.I-1	Management Actions That Could Result in Significant Physical Effects to Aesthetic Quality Through Installation of New Facilities	III.I-6
III.I-2	Management Actions That Could Result in Significant Physical Effects to Aesthetics Through Vegetation Clearing Activities	III.I-10
III.I-3	Management Actions That Could Result in Significant Physical Effects to Aesthetics Through Increased Public Access and Use	III.I-12
III.J-1	Management Actions That Could Result in Significant Physical Effects to Traffic and Access Through Development of Sunol Valley Facilities	III.J-4
III.L-1	Management Actions That Could Result in Significant Physical Effects on Noise Levels Through Construction Activities	III.L-5
III.M-1	Management Actions That Could Result in Significant Physical Effects Through Construction-Related Exposure of Hazardous Materials	III.M-5
III.M-2	Management Actions That Could Result in Significant Physical Effects Through Operation-Related Exposure of Hazardous Materials	III.M-11
VII-1	Comparative Description of Alameda Watershed Management Plan Alternatives	VII-3
VII-2	Comparison of Impacts of Alameda Watershed Management Plan Alternatives	VII-8
VII-3	Comparison of Proposed Facilities And Permitted Activities Under Sunol Valley Management Element Alternatives	VII-20

CHAPTER I

SUMMARY

A. MANAGEMENT PLAN DESCRIPTION

The mission of the San Francisco Public Utilities Commission (SFPUC) is to serve San Francisco and its Bay Area customers with reliable, high quality, and affordable water and wastewater treatment while maximizing benefits from power operations and responsibly managing the resources—human, physical, and natural—entrusted to its care. The 36,000 acre Alameda Watershed (Watershed) encompasses two reservoirs that store water from the Sierra Nevada mountains and local runoff and includes water transmission facilities that are part of a system that delivers water to about 2.4 million customers in the Bay Area. The Watershed is managed to primarily protect the quality of this water and existing land uses on the Watershed include grazing, recreation, mining, utilities, and landscape nurseries. The SFPUC has developed a mission statement to guide management of the Watershed. This mission statement includes the following:

- to provide the best environment for the production, collection, and storage of the highest quality water for the City and County of San Francisco and suburban customers;
- to develop, implement, and monitor a resource management program which addresses all Watershed activities; and
- to apply best management practices for the protection of water and natural resources and their conservation, enhancement, restoration, and maintenance while balancing financial costs and benefits.

In response to this mission statement, and because existing SFPUC policies do not address the management of Watershed lands in a comprehensive or integrated manner, the *Alameda Watershed Management Plan* (Management Plan) has been prepared.¹

The purpose of the Management Plan is to provide a policy framework for the SFPUC to make consistent decisions about the activities, practices, and procedures that are appropriate on the Watershed lands. To aid the SFPUC in their decision-making, the Management Plan provides a

¹ The Draft Alameda Watershed Management Plan is available for review at the following locations: The Main Branch of the San Francisco Public Library at 100 Larkin Street (Civic Center) in San Francisco, California; the Pleasanton Public Library at 400 Old Bernal Avenue, Pleasanton; the Main Branch of the San Mateo Public Library at 55 West Third Avenue, San Mateo; and San Francisco Planning Department, 1660 Mission Street, San Francisco, California. In addition, a copy of the Draft Alameda Watershed Management Plan is posted on the LRMS web page at www.ci.sf.ca.us/puc/lrms or available for purchase from BPS Reprographic Services at the following locations: 149 Second Street, San Francisco, California, (415) 495-8700; and 2182 Rheem Drive, Pleasanton, California, (925) 426-3170.

comprehensive set of goals, policies, and management actions that address all Watershed activities and reflect the unique qualities of the Watershed.

In addition to serving as a long-term regulatory framework for decision-making by the SFPUC, the Management Plan is also intended to be used as a Watershed management implementation guide by the SFPUC's Land and Resource Management Section (LRMS) staff. The Management Plan provides the LRMS manager and staff with management actions designed to implement the established goals and policies for water quality, water supply, ecological and cultural resource protection, fire safety management, Watershed activities, public awareness, and financial management. The Management Plan also enables LRMS staff to address and plan for future management issues such as fire management, erosion control, public access, security, development encroachment, construction and maintenance of utility facilities, and ecological resource management. Although the Management Plan has been developed with an effort to design realistic policies and actions, it may be that due to funding realities or changed circumstances, some actions may not be implemented or may be implemented at a later phase. In such cases the status quo would prevail.

The *Alameda Watershed Management Plan* is presented in six chapters. An Introduction (Chapter 1.0) is followed by a discussion of Existing Conditions and Resource Sensitivity (Chapter 2.0). Chapter 3.0 briefly describes the major Watershed Management Issues. Chapter 4.0 takes the major management issue areas (established in Chapter 3.0) and describes Watershed Management Goals and Policies for each of these management issue areas. Chapter 5.0 presents the actions and guidelines that form the basis of the *Alameda Watershed Management Plan*. Chapter 6.0 provides a discussion of Phasing and Implementation.

The *Alameda Watershed Management Plan* was designed to improve the SFPUC's ability to protect its overall Watershed in general, and in particular the specific resources that make up that Watershed. Given the intention behind the Management Plan design, the overall environmental impacts of the Management Plan are beneficial. However, some actions also have the potential to have significant adverse physical impacts on the environment. These management actions are described in Chapter II, and the analysis of these actions forms the core of this Environmental Impact Report (EIR).

B. PRINCIPAL ENVIRONMENTAL EFFECTS

Principal among the issues addressed in this environmental impact report for the Management Plan are the issues of increased public access and use, the expansion and extended timing of mining north and south of Interstate 680 (I-680), ongoing operations and maintenance activities, and construction of new facilities. The impacts associated with the expansion and extended timing of mining north and south of I-680 were found to be significant and unavoidable with respect to loss of prime agricultural land. The impacts associated with increased public access and use and implementation of other management actions of the Management Plan were found to be at a less than significant level or to be mitigated to a less than significant level with mitigation measures to be implemented by the SFPUC.

1.0 INCREASED PUBLIC ACCESS AND USE

Under the Management Plan, several new public recreation facilities could be developed on the Watershed, including a Watershed Visitor Education Center, public recreation area, commercial site, overnight nature study area, and new recreation trails. Most of the facilities would be located in the Sunol Valley. These uses are designed generally as low intensity recreation. Operation of these facilities could result in potentially significant physical effects to Watershed resources, as summarized below.

Geology and Soils. Increased use of existing hiking, bicycle, and horse trails can lead to deepening of existing trails and the development of “shortcut” trails that, over time and with sufficient surface water runoff, can become erosional channels. The experience of other open space managers has shown that more serious degradation occurs on property where bicycles are allowed. Establishing new trails can also increase erosion. In addition, increased public use of the Watershed could lead to reduced slope stability in some areas. Management actions included in the Management Plan would reduce these potential impacts to a less than significant level.

Hydrology and Water Quality. Increased and more extensive public use of the Watershed could indirectly affect water quality as a result of inadequate sanitation facilities, unauthorized body-contact with reservoir or creek waters, unauthorized use by domestic animals, unauthorized fishing in reservoirs and creeks, littering, and increased potential for fire hazard. Depending on the specific activity, public use could inadvertently result in degradation of water quality, either by adding contaminants to surface runoff or to seepage that eventually reaches groundwater. In addition, public use has the potential to adversely affect vegetation and soil, which could lead to increased erosion and sedimentation, and indirectly affect water quality. Management actions included in the Management Plan would reduce these potential impacts to a less than significant level.

Natural Resources. Increased human disturbance, such as littering, excessive noise, or vegetation trampling, could result in wildlife harassment if the disturbance were intense and/or prolonged, the species sensitive, or the disturbance led to changes in wildlife or plant community composition. In addition, increased public access and use could increase the density and distribution of invasive plant species on the Watershed. Management actions included in the Management Plan would reduce these potential impacts to a less than significant level.

Fire Management. Increased public visitation of the Watershed could lead to increased incidences of unauthorized uses, such as smoking and campfires/cooking fires. In addition, high-volume off-trail activity and other uses that occur outside designated areas could damage vegetation, resulting in an increase in dry litter that is easily ignitable. Management actions included in the Management Plan would reduce these potential impacts to a less than significant level.

Cultural Resources. Increased public access to and use of the Watershed could result in an increase in disturbance of both known and unknown cultural resources. Depending on the location of new trails and facilities, this could include significant disturbance to resources during

construction of facilities, vandalism, or inadvertent damage to cultural resources during long-term use. Management actions included in the Management Plan would reduce these potential impacts to a less than significant level.

Aesthetics. Increased public access and use would not necessarily result in adverse aesthetic impacts. However, trespassing and improper use of public access areas could lead to litter, disturbed vegetation, and damage to Watershed facilities and resources, detracting from the aesthetic quality of the Watershed. Litter, disturbed vegetation, and damage to facilities and resources would constitute a significant effect if the degradation of aesthetic quality were substantial. Management actions included in the Management Plan would reduce these potential impacts to a less than significant level.

Transportation and Access. The effect of new vehicular traffic associated with new recreation facilities on parking conditions, and the potential for unmet parking demand that leads to hazardous pedestrian and traffic conditions (e.g., people could choose to park improperly on walkways or roadways, forcing pedestrians and vehicles to make potentially dangerous maneuvers), would be contingent on the supply of parking spaces at and near the recreation facilities, and could be significant. A mitigation measure included in this EIR would reduce these potential impacts to a less than significant level.

Other Topics. Increased public use of the Watershed would not have a significant impact on land use, air quality, public services and utilities, noise, hazardous materials and hazardous waste, or energy resources.

2.0 CHANGES IN GRAVEL MINING OPERATIONS

The *Alameda Watershed Management Plan* includes the *Sunol Valley Resources Management Element* (Sunol Valley Element), which provides a conceptual program for the future of the entire valley within the SFPUC-owned Watershed lands. In terms of mining, this Element largely corresponds with plans to complete mining that have been previously permitted and reviewed under the California Environmental Quality Act (CEQA) by Alameda County, and proposes reclamation of the mining pits for water storage. Mining options south of I-680 include potential increases in depths mined and maximization of the mining footprint within the leased area. Maximization of the mining footprint (horizontal expansion) could cause an unavoidable significant impact of loss of agricultural land. Variations in mining operations such as these would require amendment of the existing permits. These permit amendments would be subject to project-level environmental review by the County of Alameda. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent to those applied to Surface Mining Permit (SMP) 24, SMP-30, and more recent permits such as SMP-32 to mitigate significant effects of mining.

- Actions proposed in the Management Plan for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in Alameda County's conditions of approval for SMP-32. The Management Plan incorporates the SMP-32 conditions of approval and proposes modifications in the timing and sequencing of mining (shortening the completion

date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new impacts beyond those disclosed in the Environmental Impact Report (EIR) certified for SMP-32. As described in that EIR, permitted mining under SMP-32 would bring about the loss of 140 acres of prime agricultural lands. The EIR for SMP-32 found this loss of prime agricultural land to be an unavoidable significant impact of that project, and implementation of the Management Plan would include approval of a new lease between SFPUC (as land owner) and the mining operator, entitling mining that would also lead to the unavoidable significant impact.

The environmental analysis for Mission Valley Rock Company Surface Mining Permit and Reclamation Plan SMP-32 was conducted in 1994, environmental analysis for RMC Pacific Materials SMP-30 was conducted in 1992, and environmental analysis for Mission Valley Rock Company SMP-24 conducted in 1986. Since that time, several species have been listed as sensitive-species, and therefore, the potential for sensitive-species to occur at the proposed mining area has been restudied. California red-legged frog and California tiger salamander may colonize the proposed mining area after project implementation, if mining operations result in the creation of rainwater pits or other ephemeral pools. Either species is likely to migrate to standing pools of water near upland retreat areas. The loss or disturbance of these species during mining operations would be considered a significant impact. Management actions included in the Management Plan and mitigation measures included in this EIR would reduce these potential impacts to a less than significant level.

3.0 OPERATIONS, MAINTENANCE, AND CONSTRUCTION ACTIVITIES

Implementation of the Management Plan could generate construction projects associated with new recreation facilities, as well as facilities and improvements associated with water supply facilities. Implementation of the Management Plan would also result in some changes to existing Watershed operations and maintenance procedures. These activities could result in physical effects to Watershed resources, as summarized below.

Geology and Soils. Development of new Watershed facilities and improvements, as well as other activities that could remove vegetative cover, could increase direct exposure of dirt to erosional forces, particularly if increased use occurs on high use roads that are sources of erosion and sedimentation. Management actions included in the Management Plan would reduce these potential impacts to a less than significant level.

Hydrology and Water Quality. Construction activities typically involve grading and other earthmoving activities that can lead to excess sedimentation and erosion, which would impact water quality and could exacerbate natural sedimentation processes, alter stream channels, and result in cumulative build-up of sediments, gradually reducing the water storage capacity of reservoirs. Long-term facility operations would typically increase the area of impervious surfaces as well as introduce man-made chemicals and other materials into the Watershed. These erosion by-products could in turn enter stormwater runoff and affect the quality of receiving waters.

Operations and maintenance activities include stormwater control, hazardous materials management, facility maintenance, road maintenance, vegetation and pest control, slide repair, controlled burning, etc. Unless appropriate precautions were employed, any of these activities could result in inadvertent impacts to water quality and Watershed resources. Improper management of nursery operations and golf course maintenance could result in the presence of pesticides and fertilizers in runoff draining to Alameda Creek, which would be a significant water quality impact. Management actions included in the Management Plan would reduce these potential impacts to a less than significant level.

Natural Resources. Operations, maintenance, and construction activities could directly disturb native plant communities as a result of trampling, removing, or continued or repeated disruption of vegetation. Such disturbance could modify the structure, composition, and diversity of the plant community. These activities could also lead to an increase in invasive plant species. In addition, construction could disturb trees (either through damage or removal) that provide potential roosting and nesting sites for various raptors and other birds that are protected by CDFG Code 3503 and 3503.5 and the Migratory Bird Treaty Act. If grazing is not properly managed, grazing could damage vegetation, increase invasive plant species, and increase erosion. Management actions included in the Management Plan would reduce these potential impacts to a less than significant level.

Air Quality. Construction projects would generate fugitive² dust (including PM-10) and other criteria air pollutants primarily through excavation activities, exhaust from construction equipment and haul truck trips, and exhaust from construction-worker commute trips. Management actions included in the Management Plan would reduce these potential impacts to a less than significant level.

Fire Management. Implementation of some road management actions could result in revegetation of roads and may lead to herbaceous fuel loading and an increase in wildfire risk. This increase in wildfire risk could substantially interfere with emergency response plans and expose people or structures to a substantial risk of loss. The Management Plan calls for use of prescribed burns. The risks of using fire to modify fuels are primarily from smoke production, exposure of visitors to fire outbreak under difficult rescue conditions, and potential escape of the fire from prescribed burn boundaries. Thus, prescribed burns would pose a potentially significant safety risk to SFPUC staff, visitors, adjacent landowners, and occupants. Management actions included in the Management Plan would reduce these potential impacts to a less than significant level.

Cultural Resources. Watershed operations, maintenance, and construction activities could result in potentially significant damage to both known or unknown cultural resources. Activities involving surface disturbance, such as ground clearing, discing, grading, and prescribed burns, or excavation within identified zones of cultural sensitivity, would have the greatest potential for disturbance of previously unidentified cultural resources. Management actions included in the

² "Fugitive" emissions generally refer to those emissions that are released to the atmosphere by some means other than a stack or tailpipe.

Management Plan and mitigation measures included in this EIR would reduce these potential impacts to a less than significant level.

Aesthetics. Installation of new Watershed facilities would constitute a potentially significant aesthetic change, with the degree of aesthetic change dependent on project-specific details to be determined at the time the projects are proposed. The aesthetic change would be significant if the site selection, facility scale, and facility design caused substantial degradation of the scenic quality of the Watershed from public areas. Furthermore, if lighting associated with a facility created substantial glare, the aesthetic impact would be significant. In addition, vegetation clearing activities could result in aesthetic effects depending on the size and location of the disturbed area. Management actions included in the Management Plan would reduce these potential impacts to a less than significant level.

Noise. Many of the facilities proposed under the Management Plan are to be located in the Sunol Valley area, or at locations that are not specified. If the facilities are located in proximity to sensitive receptors in the Town of Sunol, construction of the facilities could result in a significant noise impact. Depending on their location, construction activities could substantially increase noise levels at any nearby sensitive receptors, or could adversely affect the use and enjoyment of nearby recreation areas. Management actions included in the Management Plan and mitigation measures included in this EIR would reduce these potential impacts to a less than significant level.

Hazardous Materials and Hazardous Waste. Construction of the facilities proposed under the Management Plan would require the excavation and disturbance of soils and groundwater that may be contaminated. Dewatering of contaminated groundwater from trenches and other excavations could expose individuals and the environment to hazardous levels of contaminants. Similarly, body contact with contaminated soil or groundwater could lead to inadvertent exposure to contaminated materials. Furthermore, dust composed of contaminated soil particles could be inhaled. Expansion of the Sunol Valley Golf Course would increase the use of hazardous materials within the Watershed and would increase the risk of hazardous materials release. Other facilities proposed under the Management Plan are not likely to involve the use or storage of significant amounts of hazardous materials. Management actions included in the Management Plan and a mitigation measure included in this EIR would reduce these potential impacts to a less than significant level.

Other Topics. Operations, maintenance, and construction activities would not have a significant impact on land use, public services and utilities, or energy resources.

C. MITIGATION MEASURES

Chapter IV, Mitigation Measures, proposes mitigation measures for the potentially significant environmental impacts discussed in Chapter III of this EIR. Mitigation measures proposed as part of the project are designed to ensure that all applicable Management Plan management actions are implemented that are necessary to reduce the impact of implementation of other

management actions. Additional mitigation measures identified in this report are proposed for two categories of impacts:

- Impacts for which the *Alameda Watershed Management Plan* does not include management actions that would reduce the impacts.
- Impacts for which the *Management Plan* does include management actions that would reduce the impacts, but not to a less than significant level.

1.0 INCREASED PUBLIC ACCESS AND USE

While the Management Plan proposes certain management actions that could bring about physical effects, the Management Plan also includes actions that would reduce these potential effects. Some of the actions may be essential to reduce potential impacts. These essential actions, as well as the other actions that would further reduce potential physical effects, would reduce potential impacts to geology and soils, water quality, natural resources, fire management, cultural resources, and aesthetics associated with public access and use to a less than significant level.

Section IV.J includes a mitigation measure that would reduce potential hazardous traffic conditions to a less than significant level through provision of sufficient parking spaces and monitoring parking adjacent to public use areas.

2.0 CHANGES TO GRAVEL MINING OPERATIONS

Section IV.E includes mitigation measures that would reduce potential effects on sensitive species during mining activities to a less than significant level.

3.0 OPERATIONS, MAINTENANCE, AND CONSTRUCTION ACTIVITIES

While the Management Plan proposes certain management actions that could bring about physical effects, the Management Plan also includes actions that would reduce these potential effects. Some of the actions may be essential to reduce potential significant impacts. These essential actions, as well as the other actions that would reduce potential physical effects, would reduce potential impacts to geology and soils, water quality, natural resources, air quality, fire management, and aesthetics associated with operations, maintenance, and construction activities to a less than significant level.

Section IV.H identifies mitigation measures that would reduce potential impacts to historic resources to a less than significant level by requiring that alteration of historic resources be in accordance with required standards and prohibiting demolition or removal of historic structures. Section IV.L includes several mitigation measures that would reduce potential noise impacts associated with construction activities to a less than significant level through limits on construction hours and locations. Section IV.M includes a mitigation measure that would reduce

potential impacts associated with construction-related hazardous materials and hazardous waste to a less than significant level through remediation requirements.

D. MANAGEMENT PLAN ALTERNATIVES

Prior to preparation of the *Alameda Watershed Management Plan*, the SFPUC conducted an extensive analysis of water quality, natural resources, cultural resources, and fire hazard data and conducted a series of public and agency workshops. This analysis resulted in a set of resource vulnerability/sensitivity maps and defined areas of the Watershed where resources are most sensitive to disturbance. The analysis of data was combined with public comments and public survey results to form three watershed management alternatives. Alternative A provides for the highest improvement in water quality and emphasizes ecological resource protection and enhancement. Public access would be very limited under Alternative A. Alternative B provides for moderate improvement in water quality and balanced ecological resource protection and public access and activity. Alternative C provides a slight improvement in water quality and emphasizes increased public access and activity. Based on input from the public, agencies, the project consultant team, and the SFPUC Watershed Planning Committee, the SFPUC developed the preferred alternative. The preferred alternative combines Alternative B with some components of Alternative A. Alternative A is the environmentally superior alternative and avoids mining north of I-680 and mining of San Antonio Creek.

As part of the planning process, the SFPUC prepared the *Sunol Valley Resources Management Element*. The element addresses the management of water resources, mineral resources, SFPUC facilities, cultural resources, agriculture, economic resources, recreation and park facilities, and fisheries in the Alameda Creek corridor within the SFPUC-owned Watershed lands. Based on the goals and subgoals of the element and the results of public and agency workshops, seven alternatives (Alternatives A through F and Alternative S) for the management of Sunol Valley resources were formulated. From these alternatives, a preferred alternative that includes two options relative to mining south of I-680 was included in the Management Plan.

Chapter VII of this EIR provides a comparison between the impacts of the preferred alternative and those of the No Action Alternative, Alternatives A, B, and C, and the Sunol Valley alternatives.

E. UNRESOLVED ISSUES AND AREAS OF CONTROVERSY

The primary area of controversy involves the Sunol Valley Element's preferred alternative that calls for mining north of I-680, in the area covered by Alameda County's SMP-32, approved in December 1994. To date, all mining in the Valley has occurred south of I-680. Mining north of I-680 would be closer to the town of Sunol, the Sunol Glen School, and the historic Sunol Water Temple. Residents of Sunol are concerned that quarrying north of I-680 could cause significant impacts involving noise, dust, biotic resources, visual quality, and historic resources, and would be inconsistent with the County's General Plan. Alameda County found that potentially significant effects in all of the above listed areas of concern had been avoided or mitigated by

limits and mitigations set forth in Alameda County's conditions of approval for SMP-32, and that mining under SMP-32 would be consistent with their General Plan. In 1997, the findings were upheld in Superior Court and on appeal by the Court of Appeal, after being challenged by a Sunol citizens group. Upon re-examination in light of modifications to the timing and sequence of mining and mining reclamation, and changed circumstances with respect to listed sensitive species, this EIR finds that, with additional mitigation measures identified in this EIR, there would be no unavoidable significant impacts associated with mining north of I-680 beyond that found by Alameda County in the certified SMP-32 EIR and CEQA Findings (loss of 140 acres of prime agricultural land). Many Sunol residents are expected to disagree.

Another area of controversy involves the appropriate level of public access and use of the Watershed for recreational activities. Increased public access and use increases the risk of fire, water quality degradation, natural resource, and other impacts. The Management Plan attempts to balance protection of the water supply with some increase in public access and use of the Watershed. Some persons will likely feel that the proposed amount of public access should be increased. Other persons may feel that the proposed amount of public access is too great to ensure maximum protection of the water supply and natural resources. This EIR analyzes the impacts and suggests mitigation measures for the proposed level of public access and use, and analyzes the impacts of alternatives calling for lesser and greater amounts of public access and use.

This is a program EIR that analyzes, at a general level, the potential environmental impacts of a broad range of policies and management actions proposed by the *Alameda Watershed Management Plan*. For implementation of many proposed policies and management actions, their environmental effects are analyzed in sufficient detail to allow this EIR to fully satisfy CEQA. For example, the impacts of day-to-day management activities that implement the Management Plan are analyzed in this EIR and would generally not be subject to further environmental review. However, implementation of certain management actions could require further environmental review at the time more specific projects are proposed. The San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Generally, further environmental review would be necessary if new significant environmental effects beyond those identified in this EIR would occur as a result of changes in the project or new circumstances or information, or if new mitigation measures or alternatives that would reduce one or more significant effects of the project are found to be feasible but SFPUC declines to adopt the measure or alternative (CEQA Guidelines Section 15162). Table II-1 in the Project Description chapter identifies the specific management actions that are likely to require further environmental review.

CHAPTER II

PROJECT DESCRIPTION

This Environmental Impact Report (EIR) assesses the potential environmental impacts of implementation of the *Alameda Watershed Management Plan* prepared by the San Francisco Public Utilities Commission (SFPUC).¹ This document has been prepared in accordance with the California Environmental Quality Act (CEQA). The SFPUC is the project sponsor, and the San Francisco Planning Department is the Lead Agency for the CEQA process. This chapter of the EIR discusses the following topics:

- A. Alameda Watershed Management Plan
- B. Management Plan Background
- C. Related Projects and Studies
- D. Approach and Organization of the EIR
- E. Environmental Review Process

A. ALAMEDA WATERSHED MANAGEMENT PLAN

1.0 PROJECT OBJECTIVES AND NEED FOR MANAGEMENT PLAN

The predecessors of the SFPUC envisioned protected watershed lands that would provide a pure and reliable water supply for the developing economy of San Francisco. In the last half of the 19th century, the Spring Valley Water Works and the Spring Valley Water Company began purchasing the watershed lands that are now managed by the SFPUC. Since the City of San Francisco's purchase and management of these watershed lands, beginning in the late 1920's, the Alameda Watershed (Watershed) remains largely protected and continues to serve its primary purpose – to collect and store a reliable supply of high quality water for the homes and businesses in the San Francisco Bay Area.

The mission of the SFPUC is to serve San Francisco and its Bay Area customers with reliable, high quality, and affordable water and wastewater treatment while maximizing benefits from power operations and responsibly managing the resources—human, physical, and natural—entrusted to its care. In addition, the SFPUC has developed a mission statement to guide management of the Watershed. This mission statement includes the following:

¹ The *Draft Alameda Watershed Management Plan* is available for review at the following locations: The Main Branch of the San Francisco Public Library at 100 Larkin Street (Civic Center) in San Francisco, California; the Pleasanton Public Library at 400 Old Bernal Avenue, Pleasanton; the Main Branch of the San Mateo Public Library at 55 West Third Avenue, San Mateo; and San Francisco Planning Department, 1660 Mission Street, San Francisco, California. In addition, a copy of the *Draft Alameda Watershed Management Plan* is posted on the LRMS web page at www.ci.sf.ca.us/puc/lrms or available for purchase from BPS Reprographic Services at the following locations: 149 Second Street, San Francisco, California, (415) 495-8700; and 2182 Rheem Drive, Pleasanton, California, (925) 426-3170.

- to provide the best environment for the production, collection, and storage of the highest quality water for the City and County of San Francisco and suburban customers;
- to develop, implement, and monitor a resource management program which addresses all Watershed activities; and
- to apply best management practices for the protection of water and natural resources and their conservation, enhancement, restoration, and maintenance while balancing financial costs and benefits.

In response to this mission statement, and because existing SFPUC policies do not address the management of Watershed lands in a comprehensive or integrated manner, the *Alameda Watershed Management Plan* (Management Plan) has been prepared.

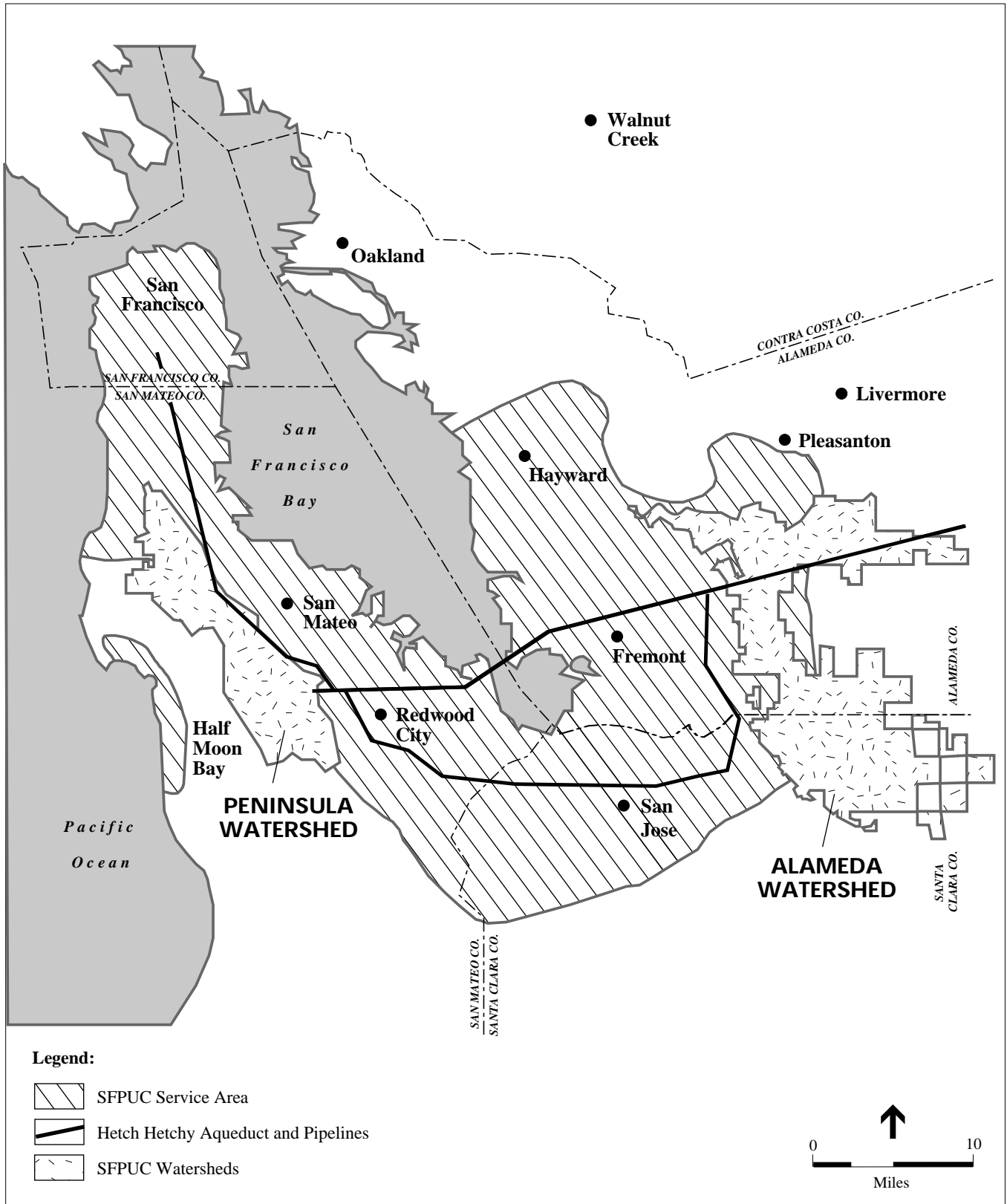
The purpose of the Management Plan is to provide a policy framework for the SFPUC to make consistent decisions about the activities, practices, and procedures that are appropriate on the Watershed lands. To aid the SFPUC in their decision-making, the Management Plan provides a comprehensive set of goals, policies, and management actions that address all Watershed activities and reflect the unique qualities of the Watershed.

In addition to serving as a long-term regulatory framework for decision-making by the SFPUC, the Management Plan is also intended to be used as a Watershed management implementation guide by the SFPUC's Land and Resource Management Section (LRMS) staff. The Management Plan provides the LRMS manager and staff with management actions designed to implement the established goals and policies for water quality, water supply, ecological and cultural resource protection, fire safety management, Watershed activities, public awareness, and financial management. The Management Plan also enables LRMS staff to address and plan for future management issues such as fire management, erosion control, public access, security, development encroachment, construction and maintenance of utility facilities, and ecological resource management. Although the Management Plan intends to provide realistic policies and actions, it may be that due to funding realities or changed circumstances, some actions may not be implemented or may be implemented at a later phase. In such cases the status quo would prevail.

The Management Plan stresses long-term balanced management of the Watershed and looks beyond the immediate desires of the present generation to the needs of future generations. Paramount to maintaining high quality water and protecting water supplies in the long term is control over Watershed activities and preservation of Watershed resources. Furthermore, the Management Plan recognizes that to be effective, Watershed management must treat all of the Watershed's natural and manmade resources—vegetation, wildlife, soils, streams, and cultural resources—as an integrated whole of interdependent parts. Integrated management ensures that maintenance of high quality water is the primary long-term function of the Watershed.

2.0 LOCATION AND STUDY AREA

The Alameda Watershed is located in the East Bay, 30 miles southeast of the City and County of San Francisco (see Figure II-1). The entire hydrologic Watershed, referred to as the greater



SOURCE: EDAW, Inc., 1998, Environmental Science Associates.

Alameda Watershed Management Plan EIR / 930385 ■

Figure II-1
Project Location

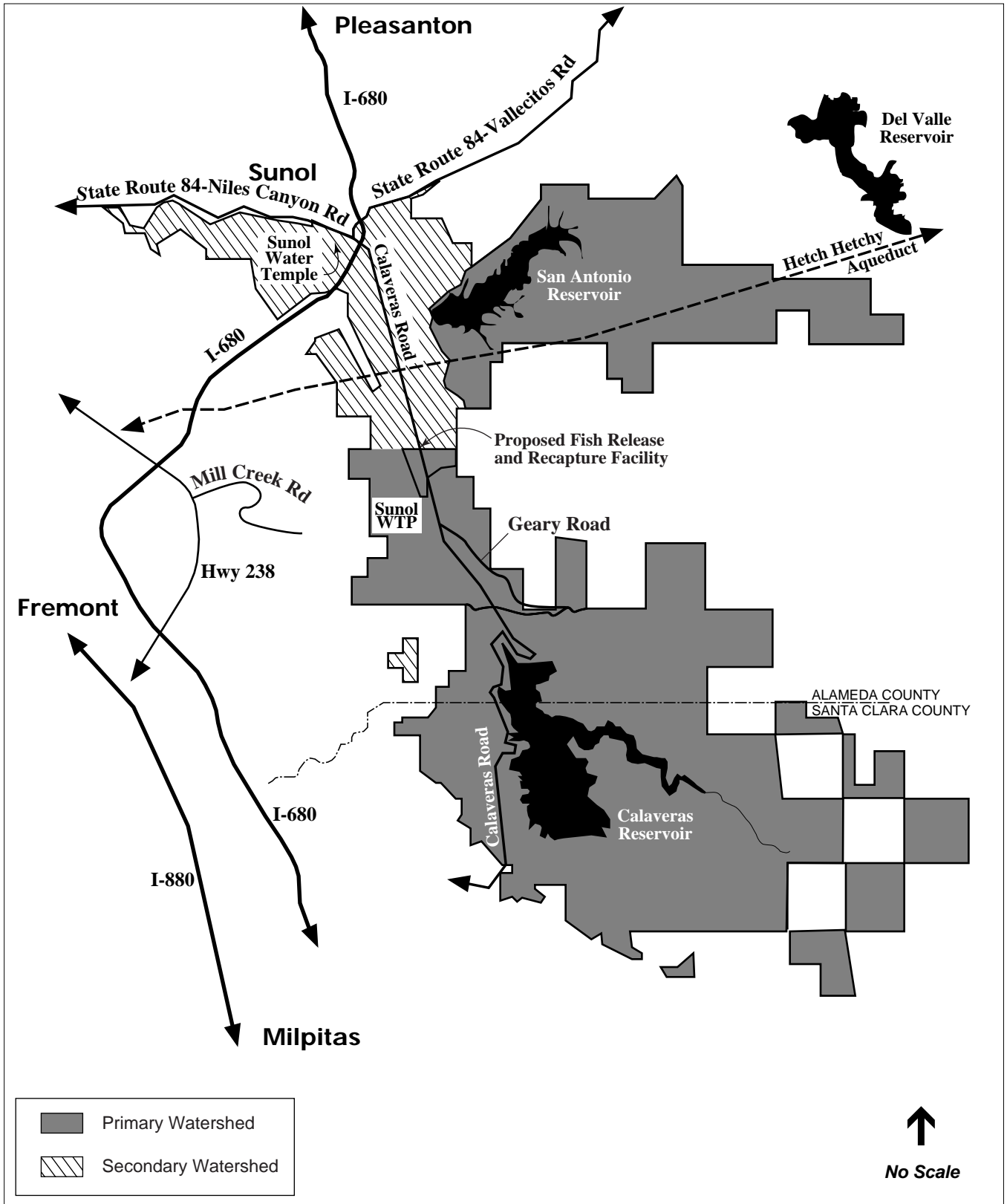
- southern Alameda Creek watershed, encompasses 175 square miles, of which 36,000 acres, or approximately one-third, are owned by the SFPUC.² SFPUC's Alameda Watershed holdings are split between Alameda (23,000 acres) and Santa Clara (13,000 acres) Counties. The SFPUC-owned lands contain two reservoirs – the San Antonio Reservoir to the north and the Calaveras Reservoir to the south. Interstate 680 (I-680) and State Route (SR 84) meet in the northern portion of the Alameda Watershed, and Calaveras Road extends in a north-south direction down the center of the Alameda Watershed. Milpitas and Fremont lie to the west, and Pleasanton and Livermore are located to the northeast. Figure II-2 provides a schematic delineation of the Alameda Watershed, while Figure II-3 shows the Watershed on a topographic base. For purposes of the Management Plan, the Alameda Watershed is divided into “primary and “secondary” Watershed lands (see Figure II-2). The primary Watershed lands are defined as the areas where local drainage is collected, treated, and used as part of the SFPUC water supply system. Under existing conditions, the primary Watershed lands drain directly to San Antonio and Calaveras Reservoirs. In the Management Plan, the primary Watershed also includes drainage to Alameda Creek just downstream of the Sunol Valley Water Treatment Plant (WTP) to the site of a proposed water release and recapture facility that would be used for fisheries enhancement (see Section II.C.1.0). Secondary Watershed lands are defined as SFPUC-owned lands that do not drain into the SFPUC water supply system for drinking water uses. Under existing conditions, these areas drain to Alameda Creek downstream of the two reservoirs. In the Management Plan, the secondary Watershed lands are identified as Alameda Creek drainage areas downstream from the proposed water release and recapture facility. Section III.D, Hydrology and Water Quality, includes a more detailed description of the hydrologic system and the primary and secondary Watershed areas of the SFPUC-owned lands.

3.0 MANAGEMENT PLAN OVERVIEW

The *Alameda Watershed Management Plan* is presented in six chapters. An Introduction (Chapter 1.0) is followed by a discussion of Existing Conditions and Resource Sensitivity (Chapter 2.0). Chapter 3.0 briefly describes the major Watershed Management Issues. Chapter 4.0 takes the major management issue areas (established in Chapter 3.0) and describes Watershed Management Goals and Policies for each of these issue areas. Chapter 5.0 presents the actions and guidelines that form the basis of the Management Plan. Chapter 6.0 provides a discussion of Phasing and Implementation.

The Management Plan was designed to improve the SFPUC's ability to protect its overall Watershed in general, and in particular the specific resources that make up that Watershed. Given the intention behind the Management Plan design, the overall environmental impacts of the Management Plan are beneficial. However, some actions also have the potential to cause physical impacts on the environment. These management actions are described in Table II-1 (at the end of this chapter). Analysis of these actions forms the core of this EIR.

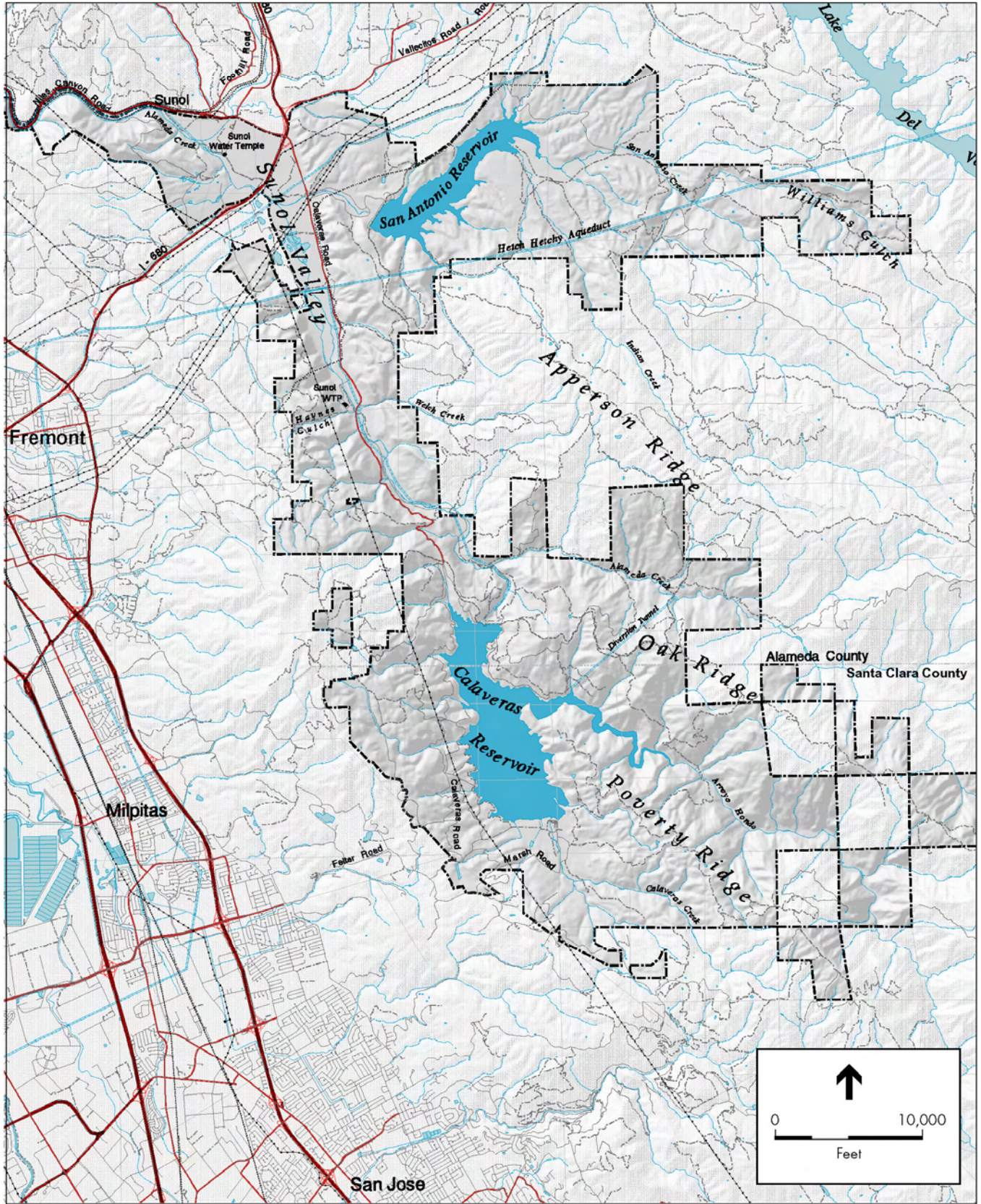
² This 36,000 acres does not include Sheep Camp, Bernal Property, and Arroyo de La Laguna, also owned by the SFPUC. It does include SFPUC-owned land leased to East Bay Regional Park District (EBRPD).



SOURCE: EDAW, Inc., 1998; Environmental Science Associates.

Alameda Watershed Management Plan EIR / 930385 ■

Figure II-2
SFPUC-Owned Alameda Watershed Lands,
Primary and Secondary Watersheds



SOURCE: EDAW Inc. 1999, Environmental Science Associates.

Alameda Watershed Management Plan / 930385 ■

Figure II-3
Alameda Watershed
Topographic Base

4.0 MANAGEMENT PLAN GOALS AND POLICIES

Watershed Management Goals and Policies (identified in Chapter 4.0 of the Management Plan) provide the foundation for the actions and guidelines that will shape SFPUC's future management of Watershed lands. The goals were articulated during the planning process, and the policies were designed to guide ongoing decision-making by the SFPUC and other responsible parties. The Watershed Management Goals include a primary goal and six secondary, supporting goals and are listed below.

Primary Goal: Maintain and improve source water quality to protect public health and safety.

Secondary Goals:

- Maximize water supply;
- Preserve and enhance the ecological and cultural resources of the Watershed;
- Protect the Watershed, adjacent urban areas, and the public from fire and other hazards;
- Continue existing compatible uses and provide opportunities for potential compatible uses on Watershed lands, including educational, recreational, and scientific uses;
- Provide a fiscal framework that balances financial resources, revenue-generating activities, and overall benefits and an administrative framework that allows implementation of the Watershed Management Plans; and
- Enhance public awareness of water quality, water supply, conservation, and Watershed protection issues.

The policies of the Management Plan are organized into 11 major topics, as follows. These topics are briefly listed below and are discussed in further detail in Chapter 4.0 of the Management Plan.

- Water Quality
- Water Supply
- Vegetation
- Wildlife
- Aquatic Resources
- Cultural Resources
- Fire
- Safety and Security
- Watershed Activities
- Public Awareness
- Administrative and Finance

4.1 PRIMARY GOAL AND POLICIES

Maintain and Improve Source Water Quality to Protect Public Health and Safety

Policies focused on water quality and designed to support the primary goal are organized in seven subtopics. These subtopics are shown in bold in the discussion below.

Physical, chemical, and biological considerations are addressed in Water Quality Policies WQ1 through WQ9. They include policies that would prevent the introduction of pesticides and chemicals into the water supply by controlling the use of these constituents. These policies call for implementing alternative methods for pest control where possible, restricting aerial broadcast of chemical pesticides, and controlling the use and transport of other hazardous chemicals. Policies in this subtopic call for protecting the water supply by preventing the introduction of a variety of pollutants, such as nutrients, disinfection by-products, leaching metals, asbestos fibers, and pathogens. This subtopic also includes policies regarding the minimization of runoff into Watershed reservoirs.

With regard to **roads, trails, and rights-of-way**, Management Plan Policies WQ10 through WQ14.1 concentrate on limiting and minimizing the construction of any new kind of access onto the Watershed and on controlling Watershed roadway use. Where new roads or trails are required, policies call for design that would avoid stream crossings and that would prevent increased erosion and runoff.

Policies WQ15 through WQ18 prohibit land uses and activities that have the potential to cause **erosion, sediment generation, and increased runoff**. Specific policies of this subtopic call for controlling runoff and contaminants in runoff through minimizing generation of vehicle-related contaminants, limiting the creation of impervious surfaces, and the use of sedimentation basins.

Policies WQ19 through 24 within this subtopic describe **coordination, collaboration, and land management** procedures that would protect water quality. These range from restrictions on construction and development (including water treatment facilities) within primary and secondary Watershed lands to prescriptions for participation and coordination with local and regional governing agencies. This subtopic also describes policies that would protect Watershed resources both by new land acquisition within the hydrologic Watershed and prohibition of the sale or exchange of SFPUC-owned lands that are within the primary Watershed.

Policies WQ25 and WQ26 call for the protection of **wetlands, riparian areas, and stream channels**. These policies also prohibit unauthorized fill or excavation activities in these areas.

Policies WQ27 through WQ29 address **access restrictions and enforcement** with regards to water quality. These policies call for strictly controlling public access to minimize adverse effects to water quality. More specifically, they prohibit swimming, boating, windsurfing, and other body-contact activities in all water bodies. The final policy in this subtopic describes actively enforcing penalties and other standard enforcement procedures for activities that could adversely affect water quality.

Policies WQ30 and WQ31 call for intensive management and ongoing **monitoring** of land uses and activities that could introduce pathogens into the water supply. Specific policies call for ongoing water quality monitoring of reservoirs and tributaries to record water quality conditions as related to Watershed activities.

4.2 SECONDARY GOALS AND POLICIES

The secondary goals of the *Alameda Watershed Management Plan* are summarized below under the 11 policy topics set forth in the Management Plan.

Maximize Water Supply

From this secondary goal, water supply policies have been developed that focus on a number of objectives. These include maximizing reservoir and groundwater storage (Policies WS1 and WS2), preventing interruptions to water supply, minimizing water use within the Watershed through conservation and reclamation (Policies WS3 and WS4), and enhancing and protecting the water supply and yield of the Watershed (Policies WS5 through WS7). Finally, Policy WS8 calls for minimizing the release of water that cannot be recaptured.

Preserve and Enhance the Ecological and Cultural Resources of the Watershed

Vegetation. Vegetation Policy V1 addresses vegetation management and references the City and County of San Francisco's City Pesticide Management Plan Ordinance, which requires an Integrated Pest Management Program. In keeping with this ordinance, Policy V2 focuses on chemical use reduction efforts. Policies V3 and V4 call for the control and eradication of invasive plant species (exotics) and noxious weeds. Policies V5 and V6 allow for protection of special-status plant communities. Policies V7 through V14 give guidance and direction regarding the management and protection of special vegetative communities or habitats. Policy V15 notes the requirement of a site-specific environmental analysis for individual proposed facilities and/or infrastructure projects, as prescribed by applicable state and federal law.

Wildlife. Wildlife Policies W1 through W6 focus on the protection and enhancement of Watershed wildlife resources and habitats. These policies include protection of habitat as well as the actual wildlife populations within the Watershed. Policy W3 specifically addresses preserving the biodiversity and genetic integrity of local wildlife populations. Policy W7 addresses the eradication of pest species, including harmful, feral, or introduced animals. Policy W8 restricts access to ecologically sensitive zones to minimize human disturbance. Policies W9 and W10 give specific requirements regarding future project impact assessments, particularly with regard to wildlife resources. Policy W11 discusses the need to achieve appropriate compliance with relevant regulations affecting protected species. Policies W12 and W13 encourage wildlife studies and the monitoring of wildlife management policies for effectiveness.

Aquatic Resources. Aquatic Resources Policies AR1 through AR4 address the protection and enhancement of aquatic resources and habitat through adherence to applicable regulations and broad guidance regarding conserving biodiversity and control of exotic aquatic species.

Policy AR5 calls for the minimization and, where possible, the elimination of the introduction of chemicals into streams and reservoirs. Policy AR6 prohibits artificial stocking or other introduction of non-native fish into Watershed aquatic habitats. Policy AR7 specifies requirements for future project impact assessments, particularly with regard to aquatic resources. Policies AR8 and AR9 describe management strategies for coordination with local, regional, and state agencies and other organizations. Policy AR10 prohibits some land uses and/or classes of activities within high water quality vulnerability zones. Policy AR11 promotes the use of wetland mitigation banking to offset any impacts that may occur from SFPUC activities.

Cultural Resources. Cultural Resources Policies in this subsection address cultural resource management. Policies CR1 through CR4 address preservation and protection of cultural resources (including submerged cultural resources), particularly those eligible or listed on the National Register of Historic Places or the California Register of Historic Places. Policies CR5 through CR7 call for coordination and consultation with Native American organizations regarding cultural resources. Policy CR8 encourages the evaluation and monitoring of known cultural resource sites. Finally, Policy CR9 gives specific requirements regarding future project impact assessments, particularly with regard to cultural resources.

Protect the Watersheds, Adjacent Urban Areas, and the Public from Fire and Other Safety Hazards

Fire. Because the Watershed is near populated urban areas, an accumulation of fuels can pose a risk to public safety due to the potential for wildfires. A wildfire could also affect water quality, water supply, and ecological and cultural resources within the Watershed and in adjacent areas. Fire Policies F1 through F10 address the protection of Watershed resources in terms of fire prevention, including restricting access as a fire suppression tool. Policies F11 through F14 address the use of prescribed fire for vegetation management and enhancement.

Safety and Security. Safety and Security Policies S1 through S3 address safety concerns resulting from public exposure to risks during recreational activities. Policies S4 through S8 concentrate on minimizing particular risks from hazardous seismic and geologic conditions and from hazardous materials. Policies S9 through S11 address the role of SFPUC staff as both a security force and an emergency response team. The management of liability is addressed in Policies S12 through S14.

Continue Existing Compatible Uses and Provide Opportunities for Potential Compatible Uses on Watershed Lands, Including Educational, Recreational, and Scientific Uses

Prohibitions and Restrictions on New Activities/Development. Watershed Activities Policy WA1 lists specific activities that would be prohibited because they are deemed detrimental to Watershed resources. These prohibited activities include:

- unauthorized take or possession of wildlife (including fish);
- unauthorized take of vegetation;
- swimming and body contact with the water;

- walking of domestic pets;
- boating, with the exception of authorized personnel;
- activities that result in direct public access to reservoirs and tributaries;
- smoking, campfires, and fireworks;
- dumping and littering;
- use of motorized vehicles, with the exception of authorized personnel;
- use of septic systems on SFPUC lands;
- use of the Watershed during periods of extreme fire weather conditions;
- hunting;
- all alcoholic beverages;
- unauthorized release and feeding of all animals;
- use of unauthorized firearms, and bows and arrows;
- fishing, with the exception of on Alameda Creek within the Sunol Regional Wilderness;
- mobile vendor activities;
- unsupervised public access to all existing internal roads/fire roads and trails;
- camping;
- off-trail use by recreational users;
- unauthorized construction of new trails;
- biking, except on specifically designated trails;
- equestrian use, except on specifically designated trails; and
- new golf courses.

Policies WA2 through WA9 place location and operational limitations on a variety of construction and development projects on the Watershed, including pipelines, instream mining, new utility lines and communication facilities, new waste disposal systems, and private concession sales.

Activities Allowed by Permit. Policy WA10 lists activities that would be allowed in the Watershed by SFPUC permit only. These permits would be issued primarily for day use or one occurrence and could include the following:

- overnight use;
- off-trail activities;
- off-road vehicle use;
- blasting of explosives;
- open fires;
- trapping and release of introduced fish and wildlife;
- collection of plant or animal specimens;
- use of the Sunol Water Temple;
- collection of state game or state protection fishery and wildlife resources;
- collection of federally regulated or protected fish and wildlife species;
- supervised public access to existing internal roads/fire roads and trails;
- research/scientific study by non-SFPUC personnel;
- educational activities;
- hunting for, and control of pest species and feral animals; and
- removal of vegetation, including timber harvest and/or salvage.

Some of the activities allowed by permit, such as off-trail use, are prohibited under Policy WA1 but could be permitted for activities such as scientific research. Policies WA11 and WA12 further define permitted use for scientific research and educational activities.

Recreational Access. Policies WA13 through WA18.1 concentrate on the conditions for recreational access on the Watershed. Policy WA13 would require that proposed recreation activities be compatible with their landscape setting, not adversely affect Watershed resources, and comply with the goals and policies of the Management Plan. Policy WA14 would require that new recreation, and public access activities in the primary Watershed be resource-based, outdoor recreation, or educational activities only. Resource-based recreation includes uses that are integrally dependent upon the inherent natural, scenic, and/or cultural resources present but that do not adversely affect those resources. For the Alameda Watershed such uses include hiking, nature study, wildlife viewing, sightseeing, and visiting educational centers. Policy WA15 limits open public access to recreational trails on the periphery of the Watershed to minimize disturbance to sensitive wildlife and vegetation communities, reduce the chance of fire ignition, minimize the spread of weeds, and cause the least disruption to wildlife movement resulting from trailside fencing. Policy WA15.1 calls for continuing use of existing public trails without a permit, except where a permit is currently required. Policy WA15.2 calls for consideration of new trails in zones of lesser vulnerability and risk, where consistent with the goals and policies of the Management Plan. Policy WA15.3 calls for retaining existing public trails and the activities allowed upon them and encouraging the most active trail use upon these trails. Policy WA15.4 calls for support of new trail connections that link to adjacent communities and to the trail facilities of other agencies. Policy WA16 would require that all individuals allowed entrance into the Watershed, either by permit or open access, be informed of the Watershed's primary purpose and the rules and regulations governing Watershed activities. Policy WA17 would require that all individuals and groups granted permits to Watershed lands be charged user fees to cover the operational costs of the Watershed Information and Permit Reservation System and other SFPUC costs associated with the use of SFPUC facilities and backcountry. Policy WA18 would require management of a volunteer docent program to accommodate supervised access to the Watershed. Policy WA18.1 calls for considering expansion of the existing golf course in zones of low vulnerability/sensitivity.

Review Process for Proposed Plans and Projects. Policies WA19 through WA21 provide a review procedure for assessing future projects on the Watershed. Policies WA22 through WA32 describe the criteria that new facilities, projects, activities, and development must meet. Policy WA19 specifies that in order to ensure all future land management decisions and uses remain consistent with the goals and policies set forth in the Management Plan, all proposed plans and projects on the Watershed shall be reviewed according to the process illustrated in Management Plan Figure 4-1. All proposed plans and projects shall be analyzed for compliance with the goals and policies of the Management Plan and must undergo this review process prior to being approved or denied. The SFPUC is responsible for making final determination as to whether a particular plan or project is compatible with the goals and policies of the Management Plan and should proceed through the environmental review process. LRMS staff are responsible for making recommendations to aid the SFPUC decision-making process. Policy WA20 specifies that should the SFPUC determine that a proposed plan or project would not comply with the Watershed goals and policies, LRMS staff shall make appropriate comments so that the applicant may bring the proposed plan or project into compliance with the Management Plan. Policy WA21 would require that all costs associated with reviewing, analyzing, and making

decisions related to future plans and projects proposed on the Watershed shall be borne by the plan/project applicant.

SFPUC Operations and Maintenance Activities. Policies WA33 and WA34 provide procedural guidelines for SFPUC staff regarding everyday activities. These include road maintenance, mowing, road grading, slide repair, controlled burning, etc. Policies WA35 and WA36 address evaluation and coordination of ongoing projects for compatibility with the goals of the Management Plan.

Sunol Valley. Specific management policies (Policies WA37 through WA40) are provided for the Sunol Valley based on the *Sunol Valley Resources Management Element*. These policies broadly address the timing and location of mining in the Sunol Valley to expedite the creation of water storage facilities, while minimizing environmental impacts and maximizing revenues. They also address the development and the enhancement of recreational activities in this area, with an emphasis on water recreation.

Provide a Fiscal Framework that Balances Financial Resources, Revenue-Generating Activities, and Overall Benefits, and an Administrative Framework that Allows Implementation of the Alameda Watershed Management Plan

The Management Plan includes several policies relating to administration and finance. According to CEQA Guidelines, Section 15131, regarding economic or financial impacts, the analysis of these policies is outside the scope of this EIR. However, it is worth noting that Policy AF7 states that "funding for the administration and management of Watershed activities (i.e., leases, permits, and public use) that are not related to water quality, water supply, and responsible Watershed management and protection shall be borne by the parties benefiting from the uses specific to those activities." Further, Policy AF7.1 specifies that the SFPUC water system ratepayers would not fund the cost of providing recreational facilities and docents. In addition, the of SFPUC water system ratepayers would not fund the implementation of mitigation measures needed to reduce the impacts of increased public access, as proposed in the Management Plan.

Enhance Public Awareness of Water Quality, Water Supply, Conservation, and Watershed Protection Issues

The Management Plan addresses opportunities for public awareness and education in Public Awareness and Agency Participation Policies PA1 through PA5. These policies encourage public education and specify a number of types of awareness programs. Policy PA6 calls for encouraging agencies with overlapping jurisdictions to adopt similar regulations and guidelines. Policies PA7 through PA9 provide management guidelines for allowing investigations of natural resources on the Watershed for scientific research and education by qualified professionals and appropriate agencies.

5.0 MANAGEMENT PLAN ACTIONS AND GUIDELINES

Based on the goals and policies described above, Chapter 5.0 of the *Alameda Watershed Management Plan* presents management actions and guidelines that are designed to implement goals and policies. The management actions are intended to guide staff in the day-to-day activities required to manage the Watershed. The guidelines provide additional direction and clarification for selected management actions. Management actions are designed for implementation over the 20 years following Management Plan adoption. Management actions are organized by management action topics (e.g., roads, stormwater, vegetation) within the Watershed.

The management actions for each of these management action topics are broadly discussed below, and each management action is briefly described in Table II-1 (located at the end of this chapter), which is organized by management action topic. As mentioned previously, Table II-1 also indicates those management actions that would have potential adverse physical impacts on the environment. The analysis of potential impacts in this EIR (in subsequent chapters) examines those actions that, although designed to fulfill the goals of the Management Plan, are still deemed to potentially result in adverse physical effects on the environment. As the management actions of this Management Plan were designed to support the Management Plan goals, the effects of these actions are generally protective in nature. Table II-1 differentiates between management actions that have potentially adverse physical impacts (and are thus analyzed in this EIR) and those that have no physical impacts (and thus not analyzed in this EIR). In most cases management actions were designed to reduce impacts that might arise from other management actions. These cases are noted in the analysis of potential impacts in this EIR.

Stormwater actions are designed to manage, monitor, and improve, where necessary, stormwater drainage facilities.

Hazardous Materials and Contamination actions address the proper use and storage of hazardous materials at SFPUC facilities; procedures for spill protection, containment, and response; and measures to convey the requirements for spill containment and response to other agencies conducting activities on the Watershed.

Waste – Human and Animal actions include inspection procedures for SFPUC, lessee, and non-SFPUC facilities; development of surveys to assess the impacts of wildlife excrement on water quality; and coordination with other agencies conducting activities on the Watershed regarding reducing the water quality risks associated with human and animal waste.

Roads actions include assessing the existing road network and developing management techniques to reduce erosion; ongoing inspection of the road network for needed repairs; and developing requirements for new roads.

Conservation and Reclamation of Water actions include evaluating and improving the efficiency of landscaping and irrigation practices; implementing, wherever possible, the use of

raw, untreated, or reclaimed water; and employing methods to manage vegetation to increase the water supply.

Fire Management actions include equipment requirements to prevent accidental fires; installation of fire defense improvements, including hydrants, helispots, and road improvements; specific fuel management projects designed to reduce fire risk; fire response procedures; and establishment of an ongoing monitoring program.

Safety and Security actions include the development of law enforcement procedures; development of a safety and security program that includes periodic inspection and maintenance of facilities; development of an emergency response plan and practice drills; daily reservoir patrols; preparation of a Watershed Manual; and coordination with adjacent agencies and lessees regarding enforcement and emergency response.

Vegetation and Soil Management actions include development of a Vegetation Management Plan; procedures to follow prior to conducting new activities that may impact vegetation; restoration of disturbed areas; removal of exotic species; development of forest management prescriptions; soils management requirements; integrated pest management activities; and coordination with other parties regarding vegetation management activities.

Wildlife actions include procedures to follow prior to conducting new activities that may impact wildlife; protection of wildlife movement corridors and habitat; preparation of a Habitat Conservation Plan; prohibition of activities during breeding periods of sensitive rare, threatened, and endangered species; and identification of desirable future studies and monitoring activities.

Aquatic Zone Protection and Fisheries actions include procedures to follow prior to conducting new activities that may impact the aquatic zone or fisheries; measures to protect reservoir shorelines, stream channels and banks, and wetlands; methods to encourage fish migration; development of a sedimentation basin management program; and ongoing monitoring of the sediment levels in the reservoirs.

Cultural Resources actions include procedures to follow prior to conducting new activities that may impact cultural resources; methods for protecting existing resources; and a monitoring program to ensure protection of significant cultural resources.

- **Environmental Compliance** actions include assigning a staff member to assume environmental compliance responsibilities; assessing the impacts of proposed activities; and incorporating the EIR mitigation measures into the Final Management Plan.

Lease and Permit Requirements actions include development of a scientific, educational, and agency permit reservation system; development of a public access permit reservation system; and establishment of new lease and permit requirements in keeping with the goals and policies of the Draft Management Plan.

Public and Agency Outreach actions include development of a public education program; development of public outreach facilities and information; establishment of a docent program; and ongoing collaboration efforts with agencies, educational institutions, and nonprofit groups to develop and disseminate educational programs and materials.

Staffing and Training actions include development of staff responsibilities; assignment of specific duties to staff; enforcement procedures training; Watershed resource and Management Plan training; and fire management and emergency response training.

Fiscal Framework actions include methods to evaluate costs and benefits of Watershed activities; establishment of lease and permit fees; assignment of adequate Watershed management funding; identification of alternative funding sources; procedures for identifying lands for acquisition; and establishment of fines for lease violations.

Information Management actions include establishment of a Watershed Visitor Education Center; requirements for ongoing management of the Geographic Information System (GIS) and GIS database update; and Watershed web page maintenance.

Design and Construction Requirements actions include development and use of a review process for proposed plans and projects to assure compatibility with Draft Management Plan goals and policies; construction fencing requirements; design guidelines for new structures; and requirements for universal access.

Sunol Valley actions include gravel mining requirements for the area north of I-680. Specifically, north of I-680, the Management Plan (within the *Sunol Valley Resources Management Element*) calls for mining of existing permitted areas (SMP-32), with mining to be completed by approximately 2035. Upon completion of the mining, one large water storage pit with 16,100 acre-feet (AF) of storage would remain. Actions also detail mining options for the area south of I-680. South of I-680, two options are proposed. Action sun2a calls for some expansion of mining, which would require amendment of existing permits and leases. This action would increase the mining depth to 200 feet and would expand the mining footprint (beyond the currently permitted area) to provide 47,100 AF of water storage in five pits. Action sun2b calls for staying within the existing permitted footprint but increasing the permitted depth to 200 feet. This would provide 38,800 AF of water storage in four pits. The Sunol Valley actions also include reservoir design considerations for water quality protection and safety; reservoir operations guidelines to protect water quality; water quality monitoring guidelines; improvements to the East Bay operations facility; and guidelines for recreation and related activities north and south of I-680.

Grazing Management actions include an overall strategy for the management of grazing; requirements for grazing leases; definition of Watershed Protection Areas and required physical improvements to each area; development of a monitoring program; and strategies for funding potential improvements.

6.0 PHASING AND IMPLEMENTATION

The *Alameda Watershed Management Plan* would be implemented over a 20-year period after adoption of the Management Plan. The intention of the SFPUC is to review and update the Management Plan periodically, as needed, with a complete review and update required at the end of the 20-year period. The goals and policies are intended to be fixed, while the management actions are intended to be updated and revised as necessary. Within the Management Plan, these management action phases are identified by one or more of the following categories:

- (1) within 5 years of Management Plan adoption;
- (2) within 10 years of Management Plan adoption;
- (3) within 20 years of Management Plan adoption;
- (A) on an as-needed basis; and
- (B) at regular intervals throughout the life of the Management Plan.

Some management actions have been assigned two phasing types. Usually these are actions that require implementation sometime in the near future (Phase 1) and then require updating either as necessary or at regular intervals. Some management actions are ranked solely as (A), and these are generally intended to be conducted prior to any new construction activities either within or adjacent to the Watershed.

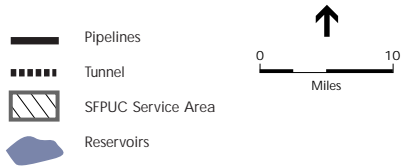
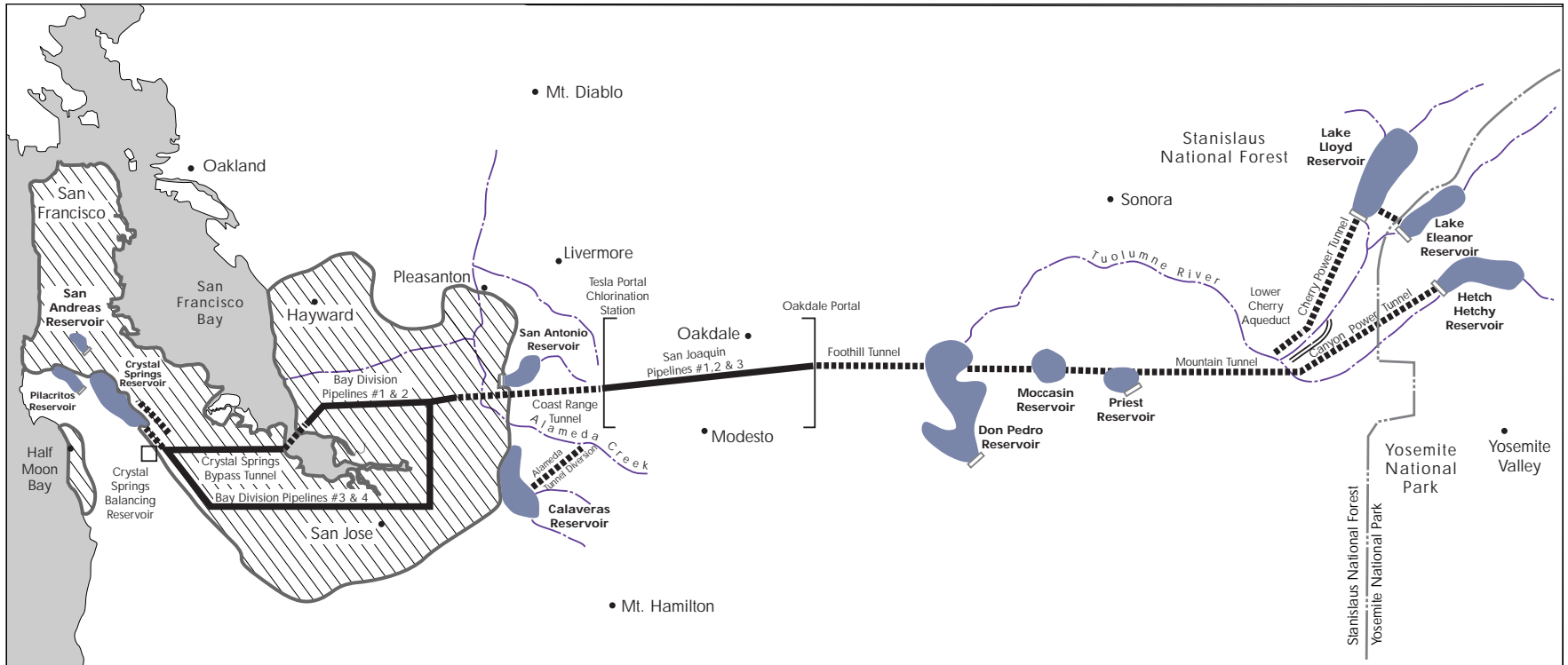
In general, phasing priorities are related to the ability of an action to help achieve the Management Plan's primary goal – maintaining and improving source water quality. Actions that are most critical to meeting this goal are assigned to Phase 1. Phase 2 actions are also integral to maintaining and improving water quality but may have a less far-reaching effect. Phase 3 tasks would either achieve other Watershed management goals or are actions that are not likely to occur for at least 10 years. Table II-1 indicates the phasing assigned to each of the management actions.

B. MANAGEMENT PLAN BACKGROUND

1.0 WATER SYSTEM OVERVIEW

The SFPUC's water system is located in central California and encompasses watersheds in the San Francisco Bay Area and the Sierra Nevada mountains (see Figure II-4). The SFPUC's service area includes 2.4 million customers located in San Francisco and in portions of San Mateo, Santa Clara, and Alameda Counties. An overview of the San Francisco portion of the water system and the Alameda Watershed is provided below. A more detailed description of the components of the San Francisco portion of the water system and SFPUC departments is provided in Section III.K, Utilities and Public Services.

The SFPUC water system obtains water from three sources: (1) Tuolumne River via the Hetch Hetchy Water and Power system in the Sierra Nevada mountains; (2) local runoff in the Calaveras Reservoir and San Antonio Reservoir Watersheds in the greater Alameda Creek watershed; and (3) local runoff in the Crystal Springs, San Andreas, and Pilarcitos Reservoir watersheds within the greater Peninsula Watershed.



SOURCE: EDAW, Inc., 1998, Environmental Science Associates.

Alameda Watershed Management Plan EIR / 930385 ■

Figure II-4
Overall SFPUC Water System

Approximately 85 percent of the potable (drinking) water supply to SFPUC customers is provided through the Hetch Hetchy Water system. Runoff from the Peninsula and Alameda Watersheds contributes approximately 15 percent of the water supply.

There are 11 reservoirs in the overall water system, with primary reservoirs in the Sierra Nevada mountains, Alameda Watershed, and Peninsula Watershed. The three reservoirs in the Sierra Nevada feed the Hetch Hetchy Water and Power system. A portion of the water supply diverted into the Hetch Hetchy system is returned to rivers in the Sierra Nevada to satisfy fisheries requirements and contractual agreements with the Modesto and Turlock Irrigation Districts. Three reservoirs in Stanislaus County (Priest, Moccasin, and Don Pedro) are used for the collection and impoundment of water and to provide hydroelectric power to a large area of Northern California. Although the City of San Francisco does not own or operate the Don Pedro Reservoir, the City uses the downstream storage in that reservoir as part of a water bank account by agreement with the Modesto and Turlock Irrigation Districts. The Hetch Hetchy system delivers up to 300 million gallons daily to the San Francisco Bay Area. This water makes its 150-mile trip from the Sierra Nevada across the San Joaquin Valley to the Bay Area by gravity flow. For most of this distance, the water is enclosed in a series of tunnels and pipelines. In the Sunol Valley, the water enters the greater Bay Area portion of the system.

The greater Bay Area portion of the system includes five primary reservoirs on the Peninsula and Alameda Watersheds and the 59,000 acres of Watershed lands in Alameda, Santa Clara, and San Mateo Counties. These local water sources are blended with Hetch Hetchy water. A portion of the water delivered from the Hetch Hetchy Water and Power system can be stored in the San Antonio Reservoir within the Alameda Watershed. This water may be combined with local runoff collected in Calaveras Reservoir and San Antonio Reservoir and treated at the Sunol Valley WTP. It is then distributed to wholesale customers on its way across the San Francisco Bay. Another portion of Hetch Hetchy water may be stored in Peninsula reservoirs where it can be blended with Peninsula Watershed runoff and treated at the Harry W. Tracy WTP.

Sixty-five percent of the total water system volume is transmitted to 29 Bay Area resellers. These resellers serve 1,630,000 non-San Francisco customers in East Bay and South Bay communities and Peninsula cities. The remaining 35 percent, or 90 million gallons per day (mgd), is transmitted to the City of San Francisco and distributed to 770,000 San Francisco customers. The existing SFPUC water system may prove to be inadequate in the event of an extended drought. Analysis of a design drought shows water demand at about 300 mgd, whereas the firm yield of the entire water system is about 240 mgd. Thus, the SFPUC system could not meet this demand without water rationing, unless additional water supply is developed.

2.0 HISTORY OF MANAGEMENT PLAN DEVELOPMENT

The Watershed management planning process commenced in August 1992. The process addressed planning for both the Peninsula and Alameda Watersheds simultaneously, allowing similar goals and policies to be established for all of the SFPUC's local Watershed lands. One primary and six secondary goals for Watershed management were established at the outset of the project by the Watershed Planning Committee (WPC), a group of SFPUC Division and

Department representatives who assisted the planning team in Management Plan development and review. The goals, described in detail in Section II.A, above, were used by the team throughout the planning process to provide direction for development of the alternatives and the preferred Management Plan. The goals serve as a foundation for the policies and management actions and would also serve as a basis for ongoing evaluation of Management Plan implementation.

Information was gathered regarding water quality, natural resources, cultural resources, and wildfire severity and subsequently mapped using GIS. Each resource type entered into the SFPUC GIS became a separate map (or layer). Selected layers were “sandwiched” together to provide information-rich composite maps, and a set of resource vulnerability/sensitivity maps was created for the Watershed. Together, these maps are referred as the Alameda Watershed Tool Kit, and they define areas of the Watershed where resources are most sensitive to disturbance.

The analysis of water quality, natural resources, cultural resources, and wildfire severity data was considered together, with extensive public comments and public survey results, to form three Watershed management alternatives. The three alternatives provided varying degrees of water quality improvement as well as a focus on ecological resource protection, increased public access and use, and other activities. Alternative A provides the highest improvement in water quality and emphasizes ecological resource protection and enhancement. Public access would be very limited under Alternative A. Alternative B provides a moderate improvement in water quality and a balance between ecological resource protection and public access and other activities. Alternative C provides only a slight improvement in water quality and greatly emphasizes increased public access activity. The alternatives are further described in Chapter VII, Alternatives. The alternatives were also presented at public, agency, and staff workshops.

- The preferred alternative was derived from an evaluation of the three alternatives and was approved through a SFPUC resolution in January 1995. The direction of the SFPUC on the preferred Management Plan was general in nature and applied to both the Alameda and Peninsula Watersheds (with the exception of several Watershed-specific issues, such as grazing and mining). This direction provided the basis for development of the details of the plans. Subsequent elements further refining the *Draft Alameda Watershed Management Plan* include the *Sunol Valley Resources Management Element* (May 1996) and the *Alameda Watershed Grazing Resources Management Element* (adopted July 27, 1997).

The *Sunol Valley Resources Management Element* clarifies future policies and actions within the Sunol Valley, particularly in terms of mining activity. In early 1998, after the Element was completed, the preferred alternative was changed to reflect the policies and actions in the Element. Changes to the preferred alternative with regard to the *Alameda Watershed Grazing Resources Management Element* came about as the result of SFPUC and community concern that grazing activities on the Alameda Watershed could cause severe public health problems, primarily through contamination of water sources by *Cryptosporidium*, a parasite transmitted in the feces of infected humans or animals. During several SFPUC hearings, expert testimony and community concerns helped shape a revised grazing plan (included in the Element).

C. RELATED PROJECTS AND STUDIES

This section describes SFPUC projects and studies involving the Watershed. Other projects (non-SFPUC) affecting the Watershed are described in the Cumulative Impacts section of this EIR (Section III.P).

1.0 ALAMEDA CREEK WATER RESOURCES STUDY

- The *Alameda Creek Water Resources Study* (ACWRS) was developed to investigate the conditions of Alameda Creek, particularly with respect to fisheries enhancement. The ACWRS was completed in January 1995 and was not prepared as part of the *Alameda Watershed Management Plan*. However, the goals of the ACWRS and the Management Plan were coordinated, and the recommendations set forth in the ACWRS were developed to consider the broad goals of the Management Plan. The ACWRS resulted in the establishment of a Memorandum of Understanding (MOU) with the California Department of Fish and Game (CDFG). The MOU obligates the SFPUC to move forward with the recommendations for a establishing a water release and recapture facility for fisheries enhancement along Alameda and Calaveras Creeks between the Calaveras Dam and the vicinity of the Sunol WTP. The project-level description, construction information, and other critical details are being developed. Separate environmental review will be prepared for this project.

2.0 WATER SUPPLY MASTER PLAN AND OTHER PROJECTS

The SFPUC is in the process of preparing an overall Water Supply Master Plan that will address water supply and storage for the entire water system and will result in projects that will undergo separate environmental review. In addition, the SFPUC is undertaking the following projects on the Alameda Watershed. These projects are discussed further in Section III.P of this EIR.

- Minor upgrades, ongoing improvements/repairs and additions/alterations to existing structures
- Alameda Creek Diversion Tunnel Outlet Protection
- Sunol Water Temple and Grounds Restoration
- Sunol Water Temple Landscape and Recreation Plan
- Alameda Creek Diversion Dam – Sluice Gates
- Bridge Across Turner Dam Spillway
- Calaveras Outlet Tower Access Rehabilitation
- Indian Creek Chlorine Monitoring
- Calaveras Pipeline Slope Stabilization
- Sunol Valley Water Treatment Plant Improvement
- Hetch Hetchy Water Treatment Project – Chloramine Conversion
- Sunol Fire Protection System (Town)
- Alameda Creek Discharge for Noncompliant Water
- Potassium Permanganate Feed Building at Calaveras Reservoir
- Alameda Creek Fisheries Enhancement Project
- Aeration Facilities

D. APPROACH AND ORGANIZATION OF THE EIR

The *Alameda Watershed Management Plan* is subject to a Program EIR because the Management Plan constitutes a series of actions that can be characterized as one large project that is related: “a) geographically; b) as logical parts in a chain of contemplated actions; and c) in connection with the issuance of...plans...to govern the conduct of a continuing program...” (CEQA Guidelines 15168[a]).

The Program EIR analyzes, at a general level, the potential environmental impacts of a broad range of policies and management actions. In this way, decision makers and the public can get a sense of the potential physical effects of the whole Management Plan. The Program EIR is designed to focus attention on those aspects of a future project that could bring about adverse physical environmental impacts. In this way, a Program EIR serves as a foundation for subsequent environmental documentation and/or clearance under CEQA. CEQA Guidelines Section 15146 indicates that “the degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR.....” The Program EIR identifies and analyzes the potential physical environmental impacts of the programwide policies and management actions presented in the Management Plan and proposes mitigation measures that would reduce those impacts determined to be significant. With the Program EIR, the SFPUC and the public will be able to consider the Management Plan in its entirety and the cumulative environmental impacts of all the policies and management actions in the Management Plan, some of which might be overlooked if considered on a case-by-case basis. The Program EIR allows for consideration of broad policy alternatives and their possible environmental effects in a more exhaustive manner than would otherwise be possible. Optimally, this process allows for development of programwide mitigation measures at a stage when the agency has greater flexibility to deal with basic problems or cumulative environmental impacts, and also helps to reduce paperwork. Program-level analysis differs from project-level analysis in that project-level analysis benefits from detailed specific plans of a project (i.e., grading, footprint) and usually applies more directly to actual construction.

This Program EIR calls out specific management actions or policies that would probably require further environmental analysis under CEQA, such as expansion of the Sunol Valley Golf Course and construction and operation of new recreational trails. In addition, some SFPUC activities which require approval from other agencies may be subject to subsequent CEQA review. Table II-1 indicates those management actions that could require further environmental analysis.

Chapter III of this EIR presents the environmental setting for the Watershed and an analysis of the potential program-level environmental impacts of implementing the Management Plan. The environmental impacts of implementing the Management Plan are measured against existing conditions. Chapter IV presents program-level mitigation measures that would reduce the potential environmental impacts of implementing the Management Plan. Chapter VII presents a comparison of the impacts of the alternatives described in Section II.B.2.0.

E. ENVIRONMENTAL REVIEW PROCESS

CEQA requires that the *Alameda Watershed Management Plan* be evaluated for potential environmental impacts. Chapter III of this EIR evaluates the potential environmental impacts of Management Plan implementation at a program-level of detail. Under the San Francisco Administrative Code, Chapter 31, the Major Environmental Analysis (MEA) section of the San Francisco Planning Department is responsible for implementing CEQA review of all City and County of San Francisco projects. The Planning Department is the lead agency for this EIR, and the project sponsor is the SFPUC.

MEA determined that an EIR must be prepared for the proposed project prior to any final decision regarding approval of the project. A Notice of Preparation (NOP) was issued in 1996 noting that all CEQA checklist items will be addressed in the EIR. A subsequent notice was issued in 1998 to describe changes that had been made in the preferred alternative since 1996.

The EIR is a public informational document for use by responsible government agencies and the public to identify and evaluate the potential physical environmental consequences of implementing the proposed Management Plan, to present mitigation measures to reduce or avoid potential environmental impacts, and to examine feasible alternatives to the proposed project. Preparation of an EIR does not indicate a decision by the City to approve or disapprove a project. However, prior to making any such decision, the decision-makers must review and consider the information in the EIR. Some actions in the Management Plan have previously undergone environmental review, such as those actions associated with the *Alameda Watershed Grazing Resources Management Element*. Projects described in these actions determined not to have significant impacts may go forward independent of certification of this EIR or adoption of the Management Plan.

1.0 NOTICE OF PREPARATION

As described above, in accordance with Sections 15063 and 15082 of the CEQA Guidelines, MEA issued an NOP for this EIR (presented in Appendix IX.A). The original NOP was circulated to local, state, and federal agencies and other interested parties for 30 days, beginning on October 18, 1996. The NOP provided a description of the proposed Management Plan, the Watershed location, and a preliminary list of potential environmental impacts of implementing the Management Plan.

As previously discussed, in early 1998 the SFPUC made changes to the preferred alternative based on the policies and management actions in the *Alameda Watershed Grazing Resources Management Element*. Given these changes to the preferred alternative, MEA issued a second NOP in August, 1998 to notify the public that the project description for the EIR (the Management Plan) had changed, and that additional time would be necessary to analyze these changes.

2.0 SCOPING

A scoping meeting was held in Alameda County on November 6, 1996. At this meeting, MEA staff presented the Management Plan and solicited early comment from the public. Public comments regarding the NOP were also received by MEA in the 30 days following NOP issuance in 1996 and 1998.

3.0 DRAFT EIR

- The Draft Environmental Impact Report (Draft EIR) contains a description of the Management Plan, description of the environmental setting, identification of program-level Management Plan impacts, mitigation measures for impacts found to be significant, and an analysis of project alternatives. Significance criteria developed for each environmental issue analyzed in this EIR are defined at the beginning of each impact analysis section.

4.0 PUBLIC REVIEW OF DRAFT EIR AND PREPARATION OF THE FINAL EIR

- This Draft EIR underwent a 45-day public review period, including two public hearings; one before the San Francisco Planning Commission in San Francisco and one in Alameda County, during which comments on the accuracy and completeness of the information presented herein were accepted. Following the public review period, responses to written and oral comments received from the public and agencies were prepared. The Draft EIR was revised accordingly, and the Final EIR was presented to a meeting of the San Francisco Planning Commission. The Commission certified the Final EIR as adequate under CEQA, and considers the EIR accurate, objective, and complete. The Final EIR serves as the program-level environmental review document for the entire *Alameda Watershed Management Plan*. Subsequent project proposals may require further environmental analysis under CEQA, as indicated in this document (see Table II-1). If the Management Plan is approved, the SFPUC would reserve the right to implement Management Plan management actions and any associated mitigation measures identified in the EIR at its discretion, as funding and other resources allow.

5.0 MITIGATION MONITORING AND REPORTING

- Section 21081.6 of the Public Resources Code requires lead agencies to adopt a reporting and mitigation monitoring program for changes to a project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment. Mitigation measures that reduce significant impacts of implementing the *Alameda Watershed Management Plan* could be adopted by the SFPUC as conditions of Management Plan approval. Mitigation measures adopted would be included in a Mitigation Monitoring and Reporting Program. The purpose of this program is to ensure implementation of the mitigation measures. The SFPUC will be responsible for implementing the Mitigation Monitoring and Reporting Program.

After the Management Plan is adopted, SFPUC would implement the Management Plan. Day-to-day management activities under the Management Plan are covered in this EIR and would generally not require examination to determine if further CEQA environmental review is required. Specific construction projects or actions pursuant to the Management Plan shown in Table II-1 of this EIR as not requiring project-specific environmental review generally would also not be subject to examination to determine if further CEQA review is required. Specific construction projects or actions pursuant to the Management Plan shown in Table II-1 of this EIR as possibly requiring project-specific environmental review would be examined by the SFPUC and the San Francisco Planning Department Major Environmental Analysis section to determine whether the proposal includes (1) the appropriate combination of actions to mitigate significant impacts, as identified in the various “Management Actions that Could Result in Significant Physical Effects” tables in Chapter III, Environmental Setting and Impacts, and/or (2) the appropriate mitigation measures listed in Chapter IV of this EIR or others that may be adopted by the SFPUC as part of their Management Plan adoption actions. If such examination indicates the potential for any significant effects not described in this EIR, further CEQA environmental review would be necessary at a project-level of detail.

**TABLE II-1
SUMMARY OF ALAMEDA WATERSHED MANAGEMENT ACTIONS**

Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Affects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
Stormwater (sto)				
sto1	Assess on-site stormwater collection and drainage systems for adequate sizing and erosion. Remediate where necessary. (Phase 2A)	Yes	Yes	Yes
Hazardous Materials and Contaminants (haz)				
haz1	Develop hazardous chemical management procedures addressing the type, use, storage, and disposal of hazardous chemicals used in Watershed activities. (Phase 1)	No	No	No
haz2	Inventory and annually monitor all above- and below-ground fuel storage tanks , refueling stations, and vehicle maintenance yards. (Phase 2B)	No	No	No
haz3	Identify and prioritize for removal from SFPUC lands, dump sites that pose a threat to water quality and Watershed resources. (Phase 2)	No	No	Yes
haz4	Conduct regular servicing schedule for SFPUC vehicle fleet and equipment to minimize contaminants (e.g., leaks/drips/spills). (Phase 1)	No	No	No
haz5	Review and standardize SFPUC boating practices . (Phase 1)	No	No	No
haz6	Identify high-risk spill potential areas and implement measures to reduce the risk of hazardous spills. (Phase 1)	Yes	Yes	Yes
haz7	Develop spill response and containment measures for SFPUC vehicles on the Watershed. (Phase 1)	No	No	No
haz8	Train staff in spill response and containment measures for SFPUC vehicles. (Phase 1)	No	No	No
haz9	Maintain a network of hazardous materials clean-up storage lockers at accessible locations on each reservoir and at areas where spill potential is high. (Phase 1)	No	No	No

¹ Inclusion does not ensure that funding, staff, or equipment will be made available to implement these actions, nor does it obligate the SFPUC to implement actions it chooses not to.
² Phasing of the management actions is identified by one or more of the following categories: (1) Phase 1 – within 5 years of Management Plan adoption; (2) Phase 2 – within 10 years of adoption; (3) Phase 3 – within 20 years of adoption; and/or (A) on an as-needed basis, and (B) at regular intervals throughout the life of the Management Plan.
³ MEA would require examination of these actions, when proposed, to determine if further CEQA project-level environmental review of these actions were necessary.

**TABLE II-1 (Continued)
SUMMARY OF ALAMEDA WATERSHED MANAGEMENT ACTIONS**

Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
haz10	Require CalTrans to include spill containment and diversion facilities in new and upgraded facilities along I-680 and Route 84. (Phase A)	No	No	No
haz11	Practice interagency spill response . Where needed, improve elapsed time between spill event and notification of SFPUC staff. (Phase 1B)	No	No	No
haz12	In coordination with Chevron, conduct ongoing monitoring of the pipeline for potential hazards. (Phase 1B)	No	No	No
<u>Waste – Human and Animal (was)</u>				
was1	Inspect all SFPUC facilities to assess conditions of vault, chemical, and composting toilets ; repair/replace as necessary to minimize risk of contamination of water supplies. (Phase 2)	Yes	Yes	No
was2	Inspect sanitation and waste treatment systems at Sunol Valley Golf Course to assess condition, performance, and impacts on surface and groundwater quality. (Phase 2)	No	No	No
was3	Assess the contribution of wildlife excrement to water quality degradation. Based on monitoring, develop management strategy if necessary. (Phase 3)	No	No	No
was4	Consult with Alameda and Santa Clara Counties regarding new residential development . (Phase A)	No	No	No
<u>Roads (roa)</u>				
roa1	Evaluate, rank the importance of, and implement modifications to the existing road system to reduce erosion and sedimentation. (Phase 1)	No	No	No
roa2	Relocate existing high use roads /road segments in proximity to streams that are the primary source of excessive erosion and sedimentation, wherever possible. (Phase 1)	Yes	Yes	Yes

¹ Inclusion does not ensure that funding, staff, or equipment will be made available to implement these actions, nor does it obligate the SFPUC to implement actions it chooses not to.
² Phasing of the management actions is identified by one or more of the following categories: (1) Phase 1 – within 5 years of Management Plan adoption; (2) Phase 2 – within 10 years of adoption; (3) Phase 3 – within 20 years of adoption; and/or (A) on an as-needed basis, and (B) at regular intervals throughout the life of the Management Plan.
³ MEA would require examination of these actions, when proposed, to determine if further CEQA project-level environmental review of these actions were necessary.

**TABLE II-1 (Continued)
SUMMARY OF ALAMEDA WATERSHED MANAGEMENT ACTIONS**

Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
roa3	Modify the grading and drainage of existing high use roads /road segments to reduce the potential for erosion and sedimentation. (Phase 1)	Yes	Yes	Yes
roa4	Close and retire (regrade, revegetate, restore) roads not needed for safety or access and minimize problem areas by paving, installing culverts, or other stabilization methods. (Phase 1)	Yes	Yes	Yes
roa5	Reduce the need for multiple maintenance access roads on infrastructure easements by consolidation. (Phase 2)	Yes	Yes	Yes
roa6	Inspect and manage unpaved roads, stormwater collection systems, unlined stormwater conveyance systems, and other stormwater facilities according to the California Forest Practices Act Rules. (Phase 2A)	Yes	Yes	Yes
roa7	Maintain fire roads to minimize sediment generation through effective installation of waterbars, avoidance of unnecessary grading, and paving short lengths of road. (Phase 1B)	Yes	Yes	Yes
roa8	Restrict access on low use roads by gates or barriers, allow revegetation, and use mowing as the road maintenance, or provide waterbars or broad dips. (Phase 2)	Yes	Yes	Yes
roa9	Periodically inspect closed roads to ensure vegetation stabilization and drainage measures are operating as planned; conduct reseeding and drainage maintenance as needed. (Phase 2B)	No	No	No
roa10	Conduct annual inspections and repairs to reshape roads to conserve material, retain the design cross section and prevent or remove irregularities that retard normal surface runoff. (Phase 2B)	No	No	No
roa11	Monitor road conditions during heavy use periods and/or unfavorable weather conditions; limit use on the basis of road condition; close roads seasonally if warranted. (Phase A)	No	No	No
roa12	Design, site, and construct new roads and trails following guidelines appropriate for wildland conditions. (Phase A)	No	No	No

¹ Inclusion does not ensure that funding, staff, or equipment will be made available to implement these actions, nor does it obligate the SFPUC to implement actions it chooses not to.
² Phasing of the management actions is identified by one or more of the following categories: (1) Phase 1 – within 5 years of Management Plan adoption; (2) Phase 2 – within 10 years of adoption; (3) Phase 3 – within 20 years of adoption; and/or (A) on an as-needed basis, and (B) at regular intervals throughout the life of the Management Plan.
³ MEA would require examination of these actions, when proposed, to determine if further CEQA project-level environmental review of these actions were necessary.

TABLE II-1 (Continued)
SUMMARY OF ALAMEDA WATERSHED MANAGEMENT ACTIONS

Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
<u>Conservation and Reclamation of Water (con)</u>				
con1	Periodically evaluate landscaping and irrigation practices for water efficiency; implement water conservation techniques where necessary. (Phase 1B)	No	No	No
con2	Evaluate the feasibility of, and where possible, use raw untreated water or reclaimed water for roadways, irrigation, sanitation facilities, fire suppression, etc. Continue to use raw, untreated, or reclaimed water at the Sunol Valley Golf Course. (Phase 1)	No	No	No
<u>Fire Management (fir)</u>				
fir1	Prior to authorizing the use of any vehicle or equipment on the Watershed, require that SFPUC vehicle/equipment comply with the fire prevention regulations established by CDF for use in the Watershed. (Phase 1)	No	No	No
fir2	Install nine dry hydrants at specified locations to reduce the complexity of long-distance water shuttle operations. (Phase 1)	Yes	Yes	Yes
fir3	Install and maintain four helispots at specified locations on the Watershed. (Phase 1)	Yes	Yes	Yes
fir4	Install and maintain additional helispots off SFPUC lands at specified locations. (Phase 1)	Yes	Yes	Yes
fir5	Install additional hydrants off SFPUC lands at specified locations on the Watershed. (Phase 1)	Yes	Yes	Yes
fir6	Install one 10,000-gallon water tank and a supporting water collection system at specified location. (Phase 1)	Yes	Yes	Yes
fir7	Identify and construct necessary road improvements to provide better access to enhance fire suppression capabilities. (Phase 1)	Yes	Yes	Yes
fir8	Complete the fuel management projects listed in the Fire Management Element (Appendix A of the Management Plan) to reduce fuels on the Watershed. (Phase 1B)	Yes	Yes	Yes

¹ Inclusion does not ensure that funding, staff, or equipment will be made available to implement these actions, nor does it obligate the SFPUC to implement actions it chooses not to.
² Phasing of the management actions is identified by one or more of the following categories: (1) Phase 1 – within 5 years of Management Plan adoption; (2) Phase 2 – within 10 years of adoption; (3) Phase 3 – within 20 years of adoption; and/or (A) on an as-needed basis, and (B) at regular intervals throughout the life of the Management Plan.
³ MEA would require examination of these actions, when proposed, to determine if further CEQA project-level environmental review of these actions were necessary.

**TABLE II-1 (Continued)
SUMMARY OF ALAMEDA WATERSHED MANAGEMENT ACTIONS**

Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
fir9	Watershed staff shall report and provide preliminary assessment of all fires to Watershed dispatch who will call 911 and notify the Watershed manager. (Phase A)	No	No	No
fir10	Initial response shall be made if a fire appears to be easily suppressed. If the fire is large or intense, evacuate and report situation to Watershed dispatch. (Phase A)	No	No	No
fir11	If an evacuation is necessary, Watershed dispatch shall contact Alameda and Santa Clara County Sheriff Departments, Office of Emergency Services, EBRPD, and CDF. (Phase A)	No	No	No
fir12	Prepare and provide to affected agencies and organizations maps and information showing water quality protection requirements, safe zones, turnout locations, helispots/heliports, fuel break locations, natural barriers, evacuation routes, and areas of limited suppression. (Phase 1)	No	No	No
fir13	Assign the duties of implementation of the Fire Management Plan and incident commander to an existing or new LRMS staff member . (Phase 1)	No	No	No
fir14	Establish permanent transects and vegetation plots in treatment and control areas to determine effects of fuel management treatments. (Phase 2)	No	No	No
<u>Safety and Security (saf)</u>				
saf1	Develop law enforcement procedures for SFPUC and LRMS staff (Phase 1)	No	No	No
saf2	Develop and implement an LRMS safety and security program to address safety and emergency response procedures on the Watershed. (Phase 1)	No	No	No
saf3	Designate and train an LRMS safety coordinator to oversee the safety and security program and train employees in safety and emergency response procedures. (Phase 1)	No	No	No
saf4	Regularly inspect and maintain the facilities and areas used by the public and assign responsibilities for maintenance of these facilities to the appropriate agency. (Phase 1)	No	No	No

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Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
saf5	Conduct regular, on-site risk assessment inspections of SFPUC facilities in conjunction with the safety and security program and other maintenance activities. (Phase 1B)	No	No	No
saf6	Periodically and systematically inspect Watershed perimeter fencing, access gates, and locks and repair/replace as required to minimize trespassing, straying cattle, etc. (Phase 1B)	No	No	No
saf7	Develop and periodically revise an Emergency Response Plan . (Phase 1B)	No	No	No
saf8	Periodically conduct emergency response practice drills . (Phase 1B)	No	No	No
saf9	Periodically evaluate and update the safety and security program . (Phase 1B)	No	No	No
saf10	Conduct daily boat patrols of Calaveras and San Antonio Reservoirs to assess water quality emergencies, trespassing problems, and other emergency situations. (Phase 1B)	No	No	No
saf11	Maintain two LRMS patrol boats for ongoing patrols and emergencies. (Phase 1B)	No	No	No
saf12	Develop, publish, and periodically update a Watershed Manual for operations and maintenance procedures, emergency response procedures, and the safety and security program. (Phase 1B)	No	No	No
saf13	Work with CalTrans and the Counties to install signs and emergency call boxes and emergency response telephone numbers on I-680, Route 84, and Calaveras Road about risk of fires, vehicle accidents, risk of spills. (Phase 2)	No	No	No
saf14	Coordinate with the Alameda and Santa Clara County Sheriff and Fire Departments to develop and periodically update an evacuation plan for disasters. (Phase 1B)	No	No	No
saf15	Review utility emergency response plans for non-SFPUC pipeline failure procedures . (Phase 1)	No	No	No
saf16	Coordinate with the EBRPD in maintaining and enforcing the safety and security program. (Phase 1A)	No	No	No
saf17	Coordinate with Alameda and Santa Clara Counties and EBRPD to develop a schedule of fines and penalties for Watershed infractions.	No	No	No

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Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
Vegetation, Soil, and Pest Management (veg)				
veg1	Prepare and implement a Vegetation Management Plan . (Phase 2)	No	No	Potential
veg2	Prior to initiating any Watershed activity, consult the GIS database for vegetation communities and associated rare, threatened, endangered, and sensitive species. (Phase A)	No	No	No
veg3	Prior to any Watershed activity that may affect an Ecological Sensitivity Zone (ESZ) , survey for special status plants and map observed occurrences on the GIS database. (Phase A)	No	No	No
veg4	Prior to initiating any construction project involving grading, proponent must prepare and implement a grading plan , subject to approval by SFPUC staff. (Phase A)	No	No	No
veg5	Develop an oak planting program in coordination with grazing and fire management activities. (Phase 2)	No	No	No
veg5.1	Develop a native species planting program for implementation in disturbed areas in coordination with grazing and fire management activities. (Phase 2)	No	No	No
veg6	Identify and remove , using IPM practices, invasive exotic plant species . (Phase 2)	Yes	Yes	No
veg6.1	Identify stands of exotic trees that serve as important roosting and nesting sites for various raptors and other protected birds . (Phase 2B)	No	No	No
veg7	Follow erosion control BMPs for protection of wetlands, streams, and shoreline areas. (Phase A)	No	No	No
veg8	Identify areas subject to slope instability and failure based on soils, geology, and landslide data layers in the GIS. Prevent erosion by following the BMPs. (Phase 1)	No	No	No
veg9	Identify and indicate areas where land disturbance has accelerated mass movement or soil erosion processes to unacceptable levels. Stabilize these areas using soil conservation BMPs. (Phase 1)	No	No	No
veg10	Establish and conduct long-term hillslope erosion and sediment control monitoring to evaluate the effectiveness of adopted protection measures. (Phase 2B)	No	No	No

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veg11	Develop and implement an IPM Program for the LRMS, specific to the Watershed and Watershed resources. (Phase 1)	No	No	Yes
veg12	Coordinate with PG&E in clearing vegetation as appropriate around powerlines, transformers, and pole structures. (Phase 2)	Yes	Yes	Yes
veg13	Encourage agencies to minimize disturbance of serpentine bedrock or soils to prevent erosion of asbestos fibers into the water supply. (Phase 1)	No	No	No
<u>Wildlife (wil)</u>				
wil1	Conduct site-specific review of new structures , linear facilities, parking lots, roads, or trails to avoid adverse impacts to wildlife. (Phase A)	No	No	No
wil2	Prior to undertaking any Watershed activity in a high ESZ, survey affected habitat to determine the presence of listed or sensitive taxa and to minimize adverse effects. (Phase A)	No	No	No
wil3	Identify and protect primary wildlife movement corridors , and accommodate wildlife passage when designing fencing, culverts, stream crossings, and underpasses to accommodate wildlife passage. (Phase 3)	No	No	No
wil4	Relocate or eliminate unnecessary infrastructure and facilities to reduce fragmentation and disruption of terrestrial habitat. (Phase 3)	No	No	No
wil5	Remove/relocate unnecessary fencing that may impede wildlife movement. (Phase 3)	Yes	Yes	No
wil6	Establish a standard for number of snags/fallen trees/nesting trees per acre for wildlife use and nutrient cycling. Downwood and brush piles should be left as habitat and cover where safety and fire hazard are not concerns. (Phase 3)	No	No	No
wil7	Create palatable re-sprouting browse through mechanical vegetation treatments or prescribed fire in brush and woodland communities. (Phase 3A)	Yes	Yes	Yes

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Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
wil8	Periodically update an LRMS database on sensitive species within the Watershed. (Phase 1A)	No	No	No
wil9	Develop a comprehensive, multi-species Habitat Conservation Plan to address the effects of SFPUC activities on species of concern within the Alameda Watershed. (Phase 2)	No	No	Yes
wil10	Institute seasonal prohibition of activities during breeding periods and enact appropriate mitigation measures to protect species of concern. (Phase 1)	No	No	No
wil11	Monitor the effects of natural processes that help maintain the variability of the ecosystem, but could negatively affect sensitive wildlife species. (Phase 3)	No	No	No
wil12	Monitor predator-prey relationships to provide a basis for management and control, especially for ground squirrels, golden eagles, mountain lions, coyote, and deer. (Phase 3)	No	No	No
wil13	Monitor road kills to better understand wildlife movement patterns. Design and install wildlife passage structures to minimize losses. (Phase 3B)	Yes	Yes	Yes
wil14	Monitor pest animal populations to evaluate success in meeting population targets. (Phase 3B)	No	No	No
<u>Aquatic Zone Protection (aqu)</u>				
aqu1	Conduct site-specific review to assure that new facilities or activities are not located within a High Water Quality Vulnerability Zone. (Phase A)	No	No	No
aqu2	Manage reservoir water levels according to the Operations Plan to maintain relatively stable water levels, where feasible subject to operational requirements and water availability. (Phase 1)	No	No	No
aqu3	Identify and prioritize for rehabilitation reservoir shoreline areas within the High WQVZ which are providing excessive sedimentation into the reservoirs. (Phase 1)	No	No	No
aqu4	Prohibit or regulate the timing or intensity of land use activities in high risk shoreline areas consistent with other management actions in this Plan. (Phase 1A)	No	No	No

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Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
aqu5	Rehabilitate shoreline areas using structural shoreline protection practices in areas where erosion and sedimentation cannot be adequately controlled by land use restrictions. (Phase 1)	Yes	Yes	Yes
aqu6	Conduct a Sediment Transport Study to identify stream segments with excessive bank erosion or channel sedimentation and prioritize segments for rehabilitation. (Phase 1)	No	No	No
aqu7	Rehabilitate stream segments according to the determined priorities, and return them to a dynamic equilibrium where the channel is stable. (Phase 2)	Yes	Yes	Yes
aqu8	Establish and conduct long-term stream corridor monitoring to evaluate the effectiveness of adopted protection measures and/or rehabilitation projects. (Phase 2B)	No	No	No
aqu9	Create new wetland habitat as part of a wetland mitigation banking system to offset impacts from SFPUC activities. (Phase A)	No	No	Yes
aqu10	Develop a sedimentation basin and stock pond management program in conjunction with preparation of the HCP. (Phase 2)	No	No	No
aqu11	Once sediment detention basins are in place, establish monitoring , cleanup, and dredging guidelines dependent on sediment loading rate. (Phase A)	No	No	No
aqu12	If needed for fire management, install long-term sediment retention basins that can be readily maintained. (Phase A)	Yes	Yes	Yes
aqu13	In conjunction with development of the HCP and sedimentation basin management program, obtain a “blanket” Streambed Alteration Agreement (MOU) from the CDFG for development, operation, and maintenance of sediment detention basins. (Phase 2)	No	No	Yes
aqu14	Periodically update the Bathymetry Study for San Antonio and Calaveras Reservoirs to assess the impacts of stream and sedimentation basin rehabilitation on reduction in sediment transport. (Phase 2B)	No	No	No

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Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
Fisheries (fis)				
fis1	Maintain access for fish species of concern from reservoirs to upstream spawning grounds. (Phase 1)	No	No	No
fis2	Identify all unauthorized stream diversions and remove those that are detrimental to fish passage in adherence to all existing regulations. (Phase 2)	No	No	No
fis3	Ensure that any subimpoundments within perennial or intermittent drainages allow for fish passage. (Phase 3)	No	No	No
fis4	Consult with CDFG regarding the installation of fish screen and/or fish passage structures where stream alteration/diversion cannot be avoided. (Phase 2A)	No	No	No
fis5	In appropriate locations, allow accumulation of woody debris in stream channels, consistent with CDFG recommendations, to create pools and riffles, reduce bank steepness, and provide cover. (Phase 2)	No	No	No
fis6	Identify and adopt alternative non-toxic management practices to protect aquatic resources. (Phase 1)	No	No	Yes
fis7	In conjunction with CDFG, control populations of predaceous exotic game fish. (Phase 3B)	No	No	No
fis8	Conduct annual surveys of fish populations and habitat conditions in conjunction with water temperature and water quality monitoring. (Phase 3B)	No	No	No

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Cultural Resources (cul)				
cul1	Conduct appropriate levels of review prior to undertaking activities involving surface disturbance and/or excavation to avoid damage to buried cultural resources. (Phase A)	No	No	No
cul2	Authorize data recovery by qualified professionals when deposits cannot be preserved through avoidance or protection measures. (Phase A)	No	No	No
cul3	When considering demolition or alteration of an historic structure , consult with an architectural historian to determine the feasibility and suitability of relocation. (Phase A)	No	No	No
cul4	Evaluate and document the significance of cultural resources threatened by demolition or alteration through application of state and federal criteria. (Phase A)	No	No	No
cul5	Employ non-destructive methods of research. Data, objects, and specimens recovered from research sites shall be conserved and curated according to legal requirements. (Phase A)	No	No	No
cul6	Suspend excavation activities in the event that suspected cultural resources are uncovered; consult with a qualified archeologist. (Phase A)	No	No	No
cul7	Suspend excavation activities in the event that human remains are discovered and immediately inform proper authorities. (Phase A)	No	No	No
cul8	When previously unknown cultural resources are discovered, report new findings to the California Historical Resources Information System (Information Centers). (Phase A)	No	No	No
cul9	Implement protective measures to eliminate and minimize effects of public access on cultural resources. (Phase 2)	No	No	No
cul10	Prior to new construction, consider re-use of existing historic structures for departmental uses. (Phase A)	No	No	No

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cul11	Periodically inspect historic structures for pest damage and use IPM techniques to control pests in historic structures. (Phase 2B)	No	No	No
cul12	Periodically monitor known significant cultural resource sites for evidence of disturbance, damage, or vandalism. (Phase 2B)	No	No	No
<u>Environmental Compliance (env)</u>				
env1	Assign environmental compliance duties to an existing or new LRMS staff member to oversee and facilitate all environmental compliance within the Watershed. (Phase 2)	No	No	No
env2	Review new projects or activities to determine if such activities qualify as a “project” as defined by CEQA. If activity is subject to CEQA, determine whether subsequent environmental review is needed. (Phase A)	No	No	No
env3	Require consultation with the LRMS environmental compliance staff member as a condition of all new leases and renewals granted within the Watershed. (Phase A)	No	No	No
env4	Require that SFPUC staff consult and get assistance from environmental compliance staff member prior to implementation of Watershed activities. (Phase A)	No	No	No
env5	Incorporate mitigation measures identified in the program-level EIR into the <i>Alameda Watershed Management Plan</i> . (Phase 1)	No	No	No
env6	Provide comments on environmental documents for projects within the greater hydrologic Watershed to ensure that potential adverse effects on SFPUC lands are mitigated. (Phase A)	No	No	No

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Lease and Permit Requirements (lea)				
lea1	Develop a Scientific, Educational, and Agency Permit Reservation System and assign staff duties to an existing or new LRMS staff member. (Phase 1)	No	No	No
lea2	Develop and staff a Watershed Information and Public Access Permit Reservation System that is informative and easy to use. (Phase 1)	No	No	No
lea3	In coordination with the Bureau of Commercial Land Management, amend leases and easement agreements to include water quality protection measures, required BMPs, emergency response plans, monitoring programs, and IPM policies and practices in compliance with the IPM plan, among others. (Phase 1)	No	No	No
lea4	Develop a water quality protection and monitoring plan for each lease to identify water quality improvements and to quantify potential water quality impacts of lease operations and permitted activities. (Phase 1B)	No	No	No
lea5	Prior to approval of leases and permits requiring the use of pesticides, review the Chemical Application Management Program (CHAMP) prepared by the lessee or permittee, in coordination with the SFPUC IPMP and the LMMS IPM Program. (Phase A)	No	No	No
lea6	Prior to approval of mineral, sand, or gravel leases, review the reclamation plan prepared by the lessee. (Phase A)	No	No	No
lea7	Prior to the approval of any lease or permit conduct a GIS database query to determine presence of significant cultural or natural resources. (Phase A)	No	No	No
lea7.1	Periodically monitor the activities of lessees and permittees on the Watershed to assure that ongoing activities do not exceed the carrying capacity of Watershed resources. (Phase B)	No	No	No
lea8	Assign the duties of lease coordinator to an existing or new LRMS staff member. (Phase 1)	No	No	No

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Public and Agency Outreach (pub)				
pub1	Develop and implement an overall Watershed Public Education Program . (Phase 1)	No	No	No
pub2	Designate an existing or new LRMS staff member to assume the responsibilities of implementing the overall public education program . (Phase 1)	No	No	No
pub3	Establish “gateway” information kiosks at major entryways to the Watershed. (Phase 2)	Yes	Yes	Yes
pub4	Establish a Watershed Visitor Education Center to provide a gathering place for the discussion of water quality/supply concerns, water conservation, ecological resource studies, etc. (Phase 2)	Yes	Yes	Yes
pub5	Develop a coordinated graphics and signage program and supporting manual . (Phase 2)	No	No	No
pub6	Develop a mobile Watershed exhibit to be displayed at popular Bay Area locations and local schools. (Phase 1)	No	No	No
pub7	Develop a public use areas map to be distributed at Watershed kiosks, the Watershed Visitors Education Center, and by docents. (Phase 1)	No	No	No
pub8	Develop brochures and displays to be used at Watershed kiosks and the information center. (Phase 2)	No	No	No
pub9	Publish rules and regulations regarding prohibited and permitted uses, potential hazards, emergency numbers, etc. in brochures, bulletins, water bill inserts, newsletters, etc. (Phase 1)	No	No	No
pub10	Provide and periodically update select Watershed information to the public and other agencies using SFPUC’s Internet website . (Phase 1A)	No	No	No
pub11	Develop a docent program to allow individuals access to select areas of the Watershed that are generally closed to public access. (Phase 1)	No	No	No
pub12	Collaborate with appropriate agencies/groups on the development of educational materials . (Phase A)	No	No	No

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pub13	Develop written agreements with public and private landowners outside of SFPUC-owned Watershed lands to institute voluntary restrictions on land uses and activities that will protect water quality. (Phase 1)	No	No	No
pub14	Coordinate with applicable agencies and organizations in the compilation and maintenance of resource databases . (Phase A)	No	No	No
pub15	Coordinate with federal, state, regional, and local agencies on the development of Watershed educational displays and brochures . (Phase A)	No	No	No
pub16	Coordinate with Bay Area Schools and Universities to develop Watershed-based curriculum/projects. (Phase 1)	No	No	No
pub17	Identify and implement Watershed ecological restoration projects or monitoring studies as part of Watershed-based curriculum in applicable Bay Area school and universities. (Phase 3)	No	No	No
<u>Staffing and Training (sta)</u>				
sta1	Evaluate all existing LRMS and non-LRMS staff responsibilities that are Watershed related to assure there are an adequate number, type and classification of positions. Wherever possible, assign responsibilities to existing staff. (Phase 1)	No	No	No
sta2	Evaluate all Watershed operations and maintenance activities and establish standards for staff and time allocations for each activity. (Phase 1)	No	No	No
sta3	Assign a Watershed management staff member to oversee Watershed maintenance activities . (Phase 1)	No	No	No
sta4	Provide adequate staff to monitor legal and illegal Watershed activities. (Phase 1)	No	No	No

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sta5	Provide additional training for Watershed keepers and LRMS staff in enforcement and safety procedures and identification of activities that could degrade water quality. (Phase 1)	No	No	No
sta6	Conduct water quality and ecological resources training for LRMS staff, operations supervisors and crews, SFPUC UEB engineers, and project managers. (Phase 1)	No	No	No
sta7	Conduct training classes for Watershed managers, Watershed keepers, and crew supervisors on the management and protection of significant cultural resources . (Phase 1)	No	No	No
sta8	Provide mandatory Watershed Management training for all appropriate SFPUC staff to become familiar with this Plan and the required procedures. (Phase 1)	No	No	No
sta9	Train selected staff and docents to provide meaningful interpretation of Watershed resources and to assist with community outreach. (Phase 1)	No	No	No
sta10	Provide fire-related training to select staff members as appropriate. (Phase 1)	No	No	No
sta11	Establish an employee training program for safety and emergency response procedures. (Phase 1)	No	No	No
<u>Fiscal Framework (fic)</u>				
fic1	Evaluate costs and benefits related to leasing, permitting, and public access activities on the Watershed. (Phase 2)	No	No	No
fic2	Continue/authorize or modify/prohibit specific lease and/or permit activities based on the results of the cost and benefit analysis. (Phase 1A)	No	No	No
fic3	Calculate the appropriate charges for lease activities and permit fees using the cost/benefit analysis method discussed under Action fic1. (Phase 2)	No	No	No

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³ MEA would require examination of these actions, when proposed, to determine if further CEQA project-level environmental review of these actions were necessary.

**TABLE II-1 (Continued)
SUMMARY OF ALAMEDA WATERSHED MANAGEMENT ACTIONS**

Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
fic4	Modify existing leases and permit fees , and set future leases and permits fees based on the calculations from Action fic3. (Phase A)	No	No	No
fic5	Target funds for Watershed management activities and staff positions according to Plan priorities, available funding, and the ability to provide funding. (Phase 1A)	No	No	No
fic6	Evaluate costs and benefits associated with specific management activities and tasks prior to authorization of funds. (Phase A)	No	No	No
fic7	Evaluate alternative sources of funding and implementation methods for continuing to provide public use activities on the Watershed. (Phase 1B)	No	No	No
fic8	Evaluate and rank all lands within the hydrologic Watershed outside of SFPUC’s landholdings for potential purchase or establishment of easements . (Phase 1)	No	No	No
fic9	Coordinate with upstream landowners to develop and place a natural and cultural resources conservation easement over non-SFPUC owned Watershed lands. (Phase 1A)	No	No	No
fic10	Develop and implement a schedule of finances and/or penalties for failure to meet lease requirements . (Phase 1)	No	No	No
<u>Information Management (inf)</u>				
inf1	Establish and staff a Watershed Natural Resources Center for use by SFPUC staff and other interested individuals and groups. (Phase 2)	No	No	No
inf2	Assign GIS database operations and maintenance duties to a qualified GIS technician responsible for all resource updates and queries. (Phase 1)	No	No	No
inf3	As new data and findings become known, enter data into the SFPUC GIS database using standard entries. (Phase A)	No	No	No

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**TABLE II-1 (Continued)
SUMMARY OF ALAMEDA WATERSHED MANAGEMENT ACTIONS**

Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
inf4	Prior to any operations and maintenance and/or construction activities, request a database check for any known sensitive ecological or cultural resources. (Phase A)	No	No	No
inf5	Assign the duties of maintaining and updating the Watershed web page to an LRMS staff member trained in web page maintenance. (Phase 1)	No	No	No
inf6	Disseminate and acquire significant information to applicable agencies and local and regional databases (e.g., California Natural Diversity Data Base). (Phase A)	No	No	No
<u>Design and Construction Requirements (des)</u>				
des1	Meet with proponents of new plans and projects prior to detailed design or development to identify requirements of the Alameda Watershed Management Plan which must be met. (Phase 1A)	No	No	No
des2	Evaluate all proposed plans and projects as part of the Review Process for Proposed Plans and Projects using the Watershed Goals and Policies Compliance Checklist . (Phase 1A)	No	No	No
des2.1	Prior to approval of any lease or permit involving construction or the introduction of additional people into the Watershed, conduct a carrying capacity analysis. (Phase A)	No	No	No
des3	Assign an LRMS staff member to be the Proposed Projects Review Coordinator to oversee the Review Process for Proposed Plans and Projects. (Phase 1)	No	No	No
des4	Prior to initiation of any new construction, or renovation/alteration, construct permanent perimeter fencing around the construction zone. (Phase A)	No	No	No
des5	Ensure design guidelines are met prior to approval of new construction activities or renovation/alteration of existing facilities, structures and roads. (Phase A)	No	No	No
des6	Prior to the design and construction of new facilities and trails ensure compliance with all legally mandated accessibility standards . (Phase A)	No	No	No

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**TABLE II-1 (Continued)
SUMMARY OF ALAMEDA WATERSHED MANAGEMENT ACTIONS**

Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
des7	Establish a universal access program to address all Watershed facilities and trails. (Phase 1)	No	No	No
des8	Using the priorities established in Action des7, implement universal access improvements at SFPUC facilities and trails. (Phase 2)	Yes	Yes	Yes
des9	Ensure that a dust abatement program is implemented as part of all construction projects. (Phase A)	No	No	No
<u>Sunol Valley (sun)</u>				
sun1	Mine the existing permitted areas in accordance with SMP-32 with completion of mining by approximately 2035. (Note: The physical environmental impacts of mining under SMP-32 were analyzed in the EIR certified by Alameda County for SMP-32.) (Phase 3)	Yes	Yes	No
sun2a	Work with Alameda County to amend the existing permits south of I-680 to achieve a maximum mining depth of 200 feet and a maximum mining footprint (Option 1). (Alameda County will conduct additional future CEQA environmental review when mining companies apply for amendments to the existing mining permits south of I-680.) (Phase 1)	Yes	Yes	Yes
sun2b	Work with Alameda County to amend the existing mining permits south of I-680 to increase the mining depth of existing permitted areas to 200 feet (Option 2). (Alameda County will conduct additional future CEQA environmental review when mining companies apply for amendments to the existing mining permits south of I-680.) (Phase 1)	Yes	Yes	Yes
sun3	In preparation of the quarry pits for water storage, design the reservoirs to meet the guidelines for maintaining high water quality. (Phase 3)	No	No	No
sun4	Create sideslopes on the pits such that there is a gradual transition to water rather than a drop to water at the uphill edge of each pit. (Phase 3A)	Yes	Yes	Yes
sun5	Reclaim quarries with sideslopes appropriate to their proposed activity. (Phase 3A)	Yes	Yes	Yes

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TABLE II-1 (Continued)
SUMMARY OF ALAMEDA WATERSHED MANAGEMENT ACTIONS

Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program- Level EIR	May Require Project-Specific Environmental Review ³
sun6	To maintain water quality during normal operations, operate the Sunol Valley reservoirs according to the specified guidelines. (Phase 3B)	No	No	Yes
sun7	Suspend public access to any reservoirs in the Sunol Valley which allow public access when the reservoirs are drawn down due to drought or other emergency situation. (Phase 3A)	No	No	No
sun8	As the reservoirs are filled, collect water quality data from the influent water. (Phase 3B)	No	No	No
sun9	Once the reservoirs are full, a sampling program should be followed. (Phase 3B)	No	No	No
sun10	Retain the existing Sunol Maintenance facility as the base for East Bay operations and conduct recommended improvements. (Phase 2)	Yes	Yes	Yes
sun11	Following completion of mining of the module closest to the Sunol Temple, backfill and landscape a ¼ mile buffer zone between that module and the water temple. (Phase 3A)	Yes	Yes	No
sun12	Prepare a conceptual landscape and recreation plan as required by SMP-32 for the restoration and public use of the Sunol Water Temple, its environs and historic entry. (Phase 1)	No	No	No
sun13	Restore the historic entry to the Sunol Water Temple along Paloma Way. (Phase 2)	Yes	Yes	Yes
sun14	Develop a public recreation area around the Sunol Water Temple. (Phase 2)	Yes	Yes	Yes
sun15	Prior to the design of any new or alteration of any existing public access trails, ensure the specified access and safety guidelines are met. (Phase A)	No	No	No
sun16	Explore the feasibility of developing a working farm, a vineyard, nurseries, row crops, aquaculture and or wetlands. (Phase 3)	No	No	No
sun17	Provide for universal access following the guidelines pertaining to accessibility for disabled persons. (Phase 3A)	Yes	Yes	Yes
sun18	Conduct periodic maintenance , as needed, in the Sunol Water Temple such that deterioration and alteration are avoided. (Phase 3B)	No	No	No

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**TABLE II-1 (Continued)
SUMMARY OF ALAMEDA WATERSHED MANAGEMENT ACTIONS**

Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
sun19	Establish a small commercial site near the intersection of I-680 and Route 84 to provide limited supplies for visitors. (Phase 3)	Yes	Yes	Yes
sun20	Establish an overnight study area located in the Sunol Valley South of Hetch Hetchy Aqueduct. (Phase 3)	Yes	Yes	Yes
sun21	Establish trail connections which extend to the Sunol Regional Wilderness and also with trail connections established north of I-680. (Phase 3)	Yes	Yes	Yes
sun22	Contract with a concessionaire , proven to be competent in the development and management of recreation facilities, to construct and operate the Sunol Valley recreation facilities. (Phase 3A)	No	No	No
<u>Grazing Management (gra)</u>				
gra1	Implement grazing management controls to reduce the risk of viable pathogen discharges and maintain and improve ecological resources. (Phase 1)	No	No	No
gra2	Implement structural protection measures to reduce the risk of viable pathogen discharges and maintain and improve ecological resources. (Phase 1)	Yes	Yes	Yes
gra3	Evaluate the feasibility and potential benefits of different types or classes of livestock for achieving fuel reduction goals. (Phase 2)	No	No	No
gra4	Implement specific criteria for lessee selection . (Phase 1)	No	No	No
gra5	Implement a set of lease requirements and terms . (Phase 1)	No	No	No
gra6	Implement improvements for the San Antonio Watershed Protection Area . (Phase 1A)	Yes	Yes	No
gra7	Implement improvements for the Calaveras Watershed Protection Area . (Phase 1A)	Yes	Yes	No
gra8	Implement improvements for the Lower Alameda Creek Watershed Protection Area . (Phase 1)	Yes	Yes	No

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**TABLE II-1 (Continued)
SUMMARY OF ALAMEDA WATERSHED MANAGEMENT ACTIONS**

Management Action Number ¹	Summary of Management Actions ²	Potential Adverse Physical Effects	Analyzed in this Program-Level EIR	May Require Project-Specific Environmental Review ³
gra9	Implement monitoring to insure verification of completion of, or adherence to program plans and activities. (Phase 1B)	No	No	No
gra10	Implement monitoring to assess program(s) effectiveness. (Phase 1B)	No	No	No
gra11	Seek and procure funding for phased improvements Watershed Protection Areas through several existing Watershed protection program funding mechanisms. (Phase 1A)	No	No	No
gra12	Apply for funding of one or more of several State Revolving Fund (SRF) Loans available for source water protection, assessment, and monitoring. (Phase 1A)	No	No	No
gra13	Direct funding to another agency, such as the RCD, for actual installation and construction of improvements. (Phase 1A)	No	No	No
gra14	Identify improvements to be accomplished by the tenants through a work-credit provision in the individual leases. (Phase 1)	No	No	No

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CHAPTER III

ENVIRONMENTAL SETTING AND IMPACTS

A. EXISTING PLANS AND POLICIES

1.0 INTRODUCTION

The *Alameda Watershed Management Plan* is subject to the planning regulations of a variety of public agencies. This section describes those agencies, their relevant policies, and the nature of their purview. In addition, this section identifies existing land use plan requirements as stated in relevant policy documents.

2.0 LOCAL AGENCIES

The City and County of San Francisco, as a chartered city and county, and its SFPUC, as a public utility, receive intergovernmental immunity under California Government Code Sections 53090 et seq. Such immunity exempts the extraterritorial lands owned by City and County of San Francisco through its SFPUC, from the planning and building laws of a city or county in which those lands are located. Thus, the zoning and building codes, general plans, specific plans, and other planning and building policies of Alameda County, Santa Clara County, and the East Bay Regional Park District (EBRPD) do not apply to the *Alameda Watershed Management Plan*. Under Government Code Section 65402(b), Alameda and Santa Clara Counties are entitled to review and determine the consistency of a project on the Watershed with the applicable general plan prior to construction of any structures contemplated under the Management Plan, although the Counties' determinations are not binding on San Francisco. Development of non-SFPUC property surrounding the Watershed, however, would be subject to the planning and building laws of the local jurisdiction. In addition, the SFPUC has control over the management, use, and control of its Watershed lands under the San Francisco City Charter, Section 4.112. San Francisco's planning and building laws, to the extent that they apply to San Francisco's extraterritorial lands, could be applicable to the Watershed lands, as long as they do not conflict with the SFPUC's Charter responsibilities.

In addition, the City leases land in the Sunol Valley to aggregate mining operators. Under the state Surface Mining and Reclamation Act (SMARA), local governments may enact ordinances regulating mining within their jurisdictions. San Francisco has no SMARA ordinance, as there are no mining operations within San Francisco proper. Consequently, the City's Sunol Valley mining lessees have been required to obtain surface mining permits under Alameda County's SMARA ordinance. San Francisco's mining leases incorporate the terms and conditions of the mining permits issued by Alameda County and may impose additional requirements.

The SFPUC seeks to manage its lands in a way that is consistent with San Francisco's planning and building laws and works cooperatively with local jurisdictions to avoid conflicts with local planning and building laws. Nevertheless, the laws of other jurisdictions are nonbinding on the SFPUC's management of its lands. The following excerpts from the general plan of the City and County of San Francisco, general plans of the Counties of Alameda and Santa Clara, and the EBRPD Master Plan are presented in this report for informational purposes only.

2.1 CITY AND COUNTY OF SAN FRANCISCO

City and County of San Francisco General Plan

Developed in accordance with state law, *The San Francisco General Plan* (General Plan) sets forth the comprehensive, long-term land use policy for the City and County of San Francisco. The General Plan contains eight issue-oriented Elements, including: Residence, Commerce and Industry, Recreation and Open Space, Transportation, Urban Design, Environmental Protection, Community Facilities, and Community Safety. The General Plan also includes 10 area plans that were developed as tools for residents and the City to guide development in specific geographic districts. The Alameda Watershed is not included in an area plan and is rarely addressed by the plans and policies of the General Plan directly because it is outside of the City's boundary; consequently, for the reasons stated above, such plans and policies are presented in this report solely for informational purposes. Policies of the General Plan elements that could be applicable to the Management Plan issues are summarized below. Policies of the General Plan are stated as objectives, with more specific policy statements listed under each objective. Four of the eight General Plan elements contain relevant policy issues concerning the Management Plan: Recreation and Open Space, Environmental Protection, Transportation, and Community Safety.

Recreation and Open Space Element

Objective 1: Preserve large areas of open space sufficient to meet the long-range needs of the Bay region.

Policy 1: Protect the natural character of regional open spaces and place high priority on acquiring open spaces noted for unique natural qualities.

Policy 2: Make open space lands already in public ownership accessible to the public for compatible recreational uses.

- Public access should be provided by the San Francisco Water Department to portions of its Watershed lands which have high recreational value, subject to restriction required to protect water quality and water production, rare, and endangered plant and animal species, and preserve wildlife habitats, archaeological, and natural resources.¹

¹ The San Francisco Water Department is now the Water Supply and Treatment Division of the San Francisco Public Utilities Commission.

- Future leases and lease renewals on Watershed lands should be consistent with protection of existing natural values. Watershed lands should be managed to limit potential fire and erosion hazards. Access should be consistent with the legal rights of existing tenants, and with the intent of existing scenic and recreational easements. If San Francisco Water Department property becomes surplus, appropriate land areas should be dedicated for use as public open space.

Policy 13: Preserve and protect significant natural resource areas.

- Once protected from development by public ownership, the natural resources of the site should be protected and enhanced through restrictions on use and appropriate management policies...Natural area management plans should be developed for publicly owned land...[The management plan] should also identify policies governing access and appropriate recreational use and enjoyment of protected natural areas to ensure that the natural resource values are not diminished or impacted by public use.

Regional Policy 3: Increase the accessibility of regional parks by...creating regional bike and hiking trails.

- A regional hiking and bicycle trail system should be developed for the San Francisco Bay Area to increase recreational opportunities throughout the area, and to link parks and public open space of local and regional importance.

Citywide Policy 8: Develop a recreational trail system that links City parks and public open space, ridge lines and hilltops, the Bay and ocean, and neighborhoods, and ties into the regional recreational trails system.

- Trails should be planned and designed to avoid impacting environmentally sensitive areas such as wetlands, and in a manner consistent with the policies of the land management agency through which the trail traverses.

Environmental Protection Element

Objective 1: Achieve a proper balance among the conservation, utilization, and development of San Francisco's natural resources.

Policy 1: Conserve and protect the natural resources of San Francisco.

Policy 2: Improve the quality of natural resources.

Policy 3: Restore and replenish the supply of natural resources.

Objective 2: Implement broad and effective management of natural resources.

Policy 1: Coordinate regional and local management of natural resources.

Policy 2: Promote citizen action as a means of voluntarily conserving natural resources and improving environmental quality.

Policy 3: Provide environmental education programs to increase public understanding and appreciation of our natural surroundings.

Objective 4: Assure that the ambient air of San Francisco and the Bay region is clean, provides maximum visibility, and meets air quality standards.

Objective 5: Assure a permanent and adequate supply of fresh water to meet the present and future needs of San Francisco.

Policy 1: Maintain an adequate water distribution system within San Francisco.

Policy 2: Exercise controls over development to correspond to the capabilities of the water supply and distribution system.

Policy 3: Ensure water purity.

Objective 6: Conserve and protect the fresh water resource.

Objective 7: Assure that the land resources in San Francisco are used in ways that both respect and preserve the natural values of the land and serve the best interests of all the City's citizens.

Policy 1: Preserve and add to public open space in accordance with the objective and policies of the Recreation and Open Space Element.

Policy 2: Protect land from changes that would make it unsafe or unsightly.

Objective 8: Ensure the protection of plant and animal life in the City.

Policy 1: Cooperate with and otherwise support the California Department of Fish and Game and its animal protection programs.

Policy 2: Protect the habitats of known plant and animal species that require a relatively natural environment.

Policy 3: Protect rare and endangered species.

Objective 9: Reduce transportation-related noise.

Policy 1: Enforce noise emission standards for vehicles.

Objective 11: Promote land uses that are compatible with various transportation noise levels.

Transportation Element

Objective 3: Maintain and enhance San Francisco's position as a regional destination without inducing a greater volume of through automobile traffic.

Community Safety Element

Objective 1: Improve the coordination of City programs that mitigate physical hazards, help individuals and organizations prepare for and respond to disasters, and recover from the impacts of disasters.

Policy 1: Improve the coordination of disaster-related programs within City departments.

Policy 2.9: Consider information about geologic hazards whenever City decisions that will influence land use, building density, building configurations or infrastructure are made.

2.2 COUNTY OF ALAMEDA

Alameda County, East County Area Plan

Developed in accordance with state law, the *East County Area Plan* for Alameda County (Area Plan) sets forth the comprehensive, long-term land use policy for the County. The Area Plan contains four policy areas: Land Use, Transportation, Public Services and Facilities, and Environmental Health And Safety. Within these elements are subtopics related to more specific land designations and policies. Policies of the Area Plan elements and subtopics that address the Watershed area are summarized below. The policies of the Area Plan are presented for informational purposes only.

Land Use Element

The Alameda Watershed is designated as “Water Management” land by the Area Plan and is within the County’s unincorporated rural area. This area is part of the South Ridgeland geographic subarea, as specified by the General Plan. The “Water Management” designation includes a protected open space requirement. Located between the two primary Watershed lands surrounding San Antonio and Calaveras Reservoirs are a designated “Major Park” area and a “Resource Management” (Watershed protection) area. The Alameda Watershed is not within the city limits or spheres of influence of any nearby communities and is outside the Urban Growth Boundary of the County.

Definitions

Water Management – Allows for a minimum parcel size of 100 acres and a maximum building intensity of 0.01 floor-area-ratio (FAR). One single-family home per parcel is allowed, provided that all other County standards are met for adequate road access, sewer and water facilities, building location, visual compatibility, and public services. This designation allows for active sand and gravel quarries, reclaimed quarry lakes, Watershed lands, arroyos, and similar compatible uses.

Major Park – Allows for a maximum intensity of 0.02 FAR. This designation provides for existing and planned public parks, open space, and recreational uses including community, subregional, and regional facilities.

Resource Management – Allows for a minimum parcel size of 100 acres and a maximum building intensity of 0.01 FAR, except in areas supporting greenhouses where a maximum building intensity of 0.1 FAR is allowed. One single-family home per parcel is allowed, provided that all other County standards are met for adequate road access, sewer and water facilities, building envelope location, visual compatibility, and public services. This designation provides for agricultural uses; recreational uses; habitat protection; Watershed management; public and quasi-public uses; areas typically unsuitable for human occupation due to public health and safety hazards such as earthquake faults, floodways, unstable soils, or areas containing wildlife habitat and other environmentally sensitive features; secondary residential units, active sand and gravel and other quarries; reclaimed quarry lakes; and similar and compatible uses.

Policies

Policy 58: The County shall approve only open space, park, recreational, agricultural, limited infrastructure, public facilities, and other similar and compatible uses outside the Urban Growth Boundary.

Program 25: The County shall work with the Livermore Area Recreation and Park District (LARPD), the EBRPD, and the San Francisco Water Department to incorporate continuous open space areas outside the Urban Growth Boundary into the Bay Area greenbelt system.

Program 26: The County shall work with the LARPD, the EBRPD, the San Francisco Water Department, California Department of Fish and Game, and cities to identify appropriate public and private uses that should be allowed within various portions of the open space system, including grazing and active and passive recreation.

Watershed Subtopic

Policy 102: The County shall encourage public water management agencies to explore recreational opportunities on Watershed lands, particularly reclaimed quarries, where recreational use would not conflict with Watershed protection objectives.

Policy 103: The County shall encourage the San Francisco Water Department to provide limited public access on trail corridors through the Watershed lands surrounding San Antonio and Calaveras Reservoirs, Sunol Watershed, and the Arroyo de la Laguna. The County shall work with the EBRPD to incorporate these Watershed corridors into the regional trail system, where recreational use would not conflict with Watershed protection objectives.

Policy 104: The County shall designate an area outside of the San Francisco Water Department lands that extends to the limit of the Watershed boundary as “Resource Management.” Within this area, the County shall encourage land use activities to adhere to management guidelines developed for the protection of Watershed lands and shall ensure that subdivisions of lands or quarry operations and reclamation plans within this designation are approved only where such subdivisions or quarry operations would not adversely affect the Watershed protection objectives of the San Francisco Water Department.

Policy 105: The County shall preserve the area located between the Sunol/Ohlone Wilderness and San Francisco's San Antonio and Calaveras Reservoir Watershed lands for uses compatible with Watershed and recreational lands.

Biological Resources Subtopic

Plant communities identified by the Area Plan for the Alameda Watershed include grassland, woodland, and scrub. The California red-legged frog has been identified in areas of the Alameda Watershed.

Definitions

Grassland – Non-native grassland, valley needlegrass grassland.

Woodland – Coast live oak forest, mixed evergreen forest, riparian forest.

Scrub – Diablan sage scrub, coastal scrub.

Policies

Policy 118: The County shall secure open space lands, through acquisition of easements or fee title, specifically for the preservation and protection of indigenous vegetation and wildlife.

Policy 119: The County shall encourage the maintenance of biological diversity in East County by including a variety of plant communities and animal habitats in areas designated for open space.

Hazard Zones Subtopic

Policies

Policy 125: The County shall not approve new development in areas with potential natural hazards unless the County can determine that feasible measures will be implemented to reduce the potential risk to acceptable levels, based on site-specific analysis.

Cultural Resources Subtopic

The Area Plan does not specify any cultural resource areas for the Alameda Watershed. The Area Plan does contain policies consistent with Section 106 of the National Historic Preservation Act for cultural discoveries.

Policy

Policy 127: The County shall identify and preserve significant archaeological and historical resources, including structures and sites that contribute to the heritage of East County.

Special Land Uses Subtopic

Policies

Policy 149: The County shall ensure that where quarry operations are located in areas designated as “Water Management,” extraction of the aggregate resource shall be allowed in the short term. Reclamation of the land for water management and other compatible uses shall occur subject to conditions of Surface Mining Permits and Reclamation Plans and consistent with the *Specific Plan for Livermore-Amador Valley Quarry Area Reclamation* or the comparable plan prepared for the Sunol Valley/San Francisco Water Department Watershed lands pursuant to Policy 150 and Program 66, whichever is applicable.

Policy 150: The County shall participate with the San Francisco Water Department in its planning efforts for Department-owned Watershed lands within the Sunol Valley to ensure that future quarry activity is compatible with Sunol community interests and water management activities.

Program 66: The County shall work with the San Francisco Water Department to develop a land use and reclamation master plan for Department-owned land in the Sunol Valley. The plan shall ensure the compatibility of the quarries with the Sunol Community during active mining and following reclamation. Opportunities for habitat preservation and enhancement and recreational uses should be explored in conjunction with reclaimed uses.

Transportation Element

Policy

Policy 164: The County shall allow development and expansion of transportation facilities in appropriate locations inside and outside the Urban Growth Boundary, consistent with policies and the Land Use Diagram of the *East County Area Plan*.

Public Services and Facilities Element

Park and Recreation Facilities Subtopic

A regional trail exists in the Sunol/Ohlone Wilderness between the primary Watershed lands. A proposed regional trail would be aligned parallel to Calaveras Road and would cross through Sunol Valley, as stated in the Area Plan.

Definition

Regional Trail – Provides nonmotorized, multiple-use, pedestrian, equestrian, and bicycling connections between district parks, thus encouraging alternative modes of transportation and helping to reduce pollution. The trails also link parks with other local parks, open spaces, trails, transportation and employment centers, and urban communities (East Bay Regional Park District, 1997).

Policies

Policy 206: The County shall support expansion of the existing regional park system according to the recreation facility standards contained in the EBRPD Master Plan, the LARPD Master Plan, and applicable County-specific plans.

Policy 207: The County shall require new developments to provide trails consistent with EBRPD and LARPD regional trail plans.

Policy 209: The County shall coordinate provision of regional park facilities and programs among existing special districts.

Water Subtopic

Policies

Policy 234: The County shall work with the Alameda County Flood Control and Conservation District (Zone 7), local water retailers, and cities to develop a comprehensive water plan to assure effective management and long-term allocation of water resources, to develop a contingency plan for potential short-term water shortages, and to develop uniform water conservation programs. The water plan should include a groundwater pump monitoring and cost allocation system in order to facilitate groundwater management and to recover the cost of purchased water stored in the groundwater basin. In developing this plan, the EBRPD shall be consulted regarding potential direct or indirect effects of water use on EBRPD recreation facilities.

Policy 235: The County shall encourage Zone 7 to pursue new water supply sources and storage facilities to serve East County holding-capacity projects.

Storm Drainage and Flood Control Subtopic

Policy

Policy 255: The County shall promote flood control measures that advance the goals of recreation, resource conservation (including water quality and soil conservation), groundwater recharge, preservation of natural riparian vegetation and habitat, and the preservation of scenic values of the County's arroyos and creeks.

Environmental Health and Safety Element

Noise Subtopic

Policy

Policy 266: The County shall limit or appropriately mitigate new noise-sensitive development in areas exposed to projected noise levels exceeding 60Db based on the *California Office of Noise Control Land Use Compatibility Guidelines*.

Air Quality Subtopic

Policy

Policy 268: The County shall strive to meet federal and state air quality standards for local air pollutants of concern. In the event that standards are exceeded, the County shall require appropriate mitigation measures on new development.

Water Quality Subtopic

Policy

Policy 282: The County shall protect surface and groundwater resources by:

- preserving areas with prime percolation capabilities and minimizing placement of potential sources of pollution in such areas;
- minimizing sedimentation and erosion through control of grading, quarrying, cutting of trees, removal of vegetation, placement of roads and bridges, use of off-road vehicles, and animal-related disturbance of the soil;
- not allowing the development of septic systems, automobile dismantlers, waste disposal facilities, industries utilizing toxic chemicals, and other potentially polluting substances in creekside, reservoir, or high groundwater table areas when polluting substances could come in contact with flood waters, permanently or seasonally high groundwaters, flowing stream or creek waters, or reservoir waters; and
- avoiding establishment of excessive concentrations of septic systems over large land areas.

Soil and Slope Stability Subtopic

Policies

Policy 283: The County shall encourage Zone 7, cities, and agricultural groundwater users to limit the withdrawal of groundwater in order to minimize the potential for land subsidence.

Policy 284: The County shall not permit development within any area outside the Urban Growth Boundary exceeding 25 percent slopes to minimize hazards associated with slope stability.

Seismic and Geologic Hazards Subtopic

The Calaveras Fault Zone passes through the Alameda Watershed, specifically through Sunol Valley and Calaveras Reservoir, which places part of the Watershed within the Special Studies Zone as determined by the Alquist-Priolo Act.

Definition

Special Studies Zone – The purpose of the Alquist-Priolo Special Studies Zones Act is to prohibit the location of most structures for human occupancy across the traces of active faults and to mitigate the hazard of fault ruptures. Cities and counties affected by the zones must regulate certain development projects within the zones. The permitting agencies must withhold development permits for sites within the zones until geologic investigations demonstrate that the

sites are not threatened by surface displacement from future faulting (Division of Mines and Geology, 1990).

Policies

Policy 285: The County shall not approve new development in areas with potential for seismic and geologic hazards unless the County can determine that feasible measures will be implemented to reduce the potential risk to acceptable levels, based on site-specific analysis.

Policy 289: The County shall require development in hilly areas to minimize potential erosion and disruption of natural slope stability, which could result from grading, vegetation removal, irrigation and drainage.

Fire Hazards Subtopic

The Alameda Watershed is under a California Department of Forestry and Fire Protection (CDF) contract for fire protection. The San Antonio Watershed is considered to be at a moderate fire hazard level by the Area Plan while the Calaveras Watershed is considered to be both a moderate and high fire hazard area. The rating is based on a fire hazard severity scale developed by the California Department of Forestry for wildland fires, which factors in vegetation and slope as the determinants of the severity of potential fire hazards.

Policy

Policy 295: The County shall adhere to the provisions of the *Alameda County Fire Protection Master Plan* and *Fire Hazard Mitigation Plan*.

2.3 COUNTY OF SANTA CLARA

Santa Clara County General Plan

Developed in accordance with state law, the *Santa Clara County General Plan* (General Plan) sets forth the comprehensive, long-term land use policy for the County. The General Plan contains two booklets. Book A focuses on countywide issues and policies, including growth and development, economic well-being, social well-being, housing, transportation, parks and recreation, resource conservation, health and safety, and governance. Book B focuses on rural and unincorporated area issues and policies, including rural issues (elements) of land use, growth and development, housing, transportation, parks and recreation, resource conservation, and health and safety. The rural elements and subtopics from Book B that address the Watershed area are summarized below. The policies of the *Santa Clara County General Plan* are presented for informational purposes only.

The following discussion of the existing plans and policies of the General Plan focuses on the Alameda Watershed area surrounding Calaveras Reservoir. The Santa Clara County line runs east to west through the northern portion of Calaveras Reservoir. The majority of Calaveras Reservoir and its Watershed lands are located in Santa Clara County.

Land Use Element

The *Santa Clara County General Plan* lists the Calaveras Watershed as “Other Public Open Lands” (Open Space) within a Resource Conservation Area. The Alameda Watershed is outside the Urban Service Area separating urban from rural land designations.

Definitions

Other Public Open Lands – Refers to lands in open space that are owned by various public agencies for purposes other than public parks and general recreational use.

Resource Conservation Areas – Refers to a general category of land uses that consists of the following specific land use designations or classifications: baylands, agriculture, hillsides, ranchlands, open space reserve, regional parks, and other public open space lands.

Policies

Policy R-LU 3: The general intent of each Resource Conservation Area designation is to encourage land uses and densities appropriate to the rural unincorporated areas that also:

- a. help preserve rural character;
- b. conserve natural, scenic, and cultural resources;
- c. protect public health and safety from natural and man-made hazards;
- d. preserve agriculture and prime agricultural soils;
- e. protect watersheds and water quality;
- f. enhance air quality; and
- g. minimize the demand for and cost of public services and facilities.

Policy R-LU 20 (2): Open Space – It is mandatory that no less than 90 percent of the land area shall be preserved permanently as open space through dedication of an open space or conservation easement precluding any future development.

- a. Those portions of the land permanently preserved as open space shall be configured as large, contiguous, and usable areas;
- b. The open space may be dedicated through easements over portions of individually owned parcels or may be configured as separate parcels owned in common or individually;
- c. The open space area shall be privately controlled and not accessible to the public unless the area is deeded to a public agency or entity willing to undertake responsibilities of ownership, maintenance, and public access; and
- d. Land uses allowed within the area dedicated as permanent open space shall be limited to agricultural or other limited resource-related uses, and to non-commercial recreational facilities of an ancillary nature to the cluster residential development and for use by residents only.

Growth and Development Element

Policies

Policy R-GD 1: Strategies and policies for managing land use and development in the rural unincorporated areas include the following:

1. Preserve the resources and rural character of lands outside Urban Service Areas.
2. Develop special area plans for areas that require or would benefit from more detailed planning and policies.

Policy R-GD 3: Land uses and development permitted under County jurisdiction shall be consistent with the following major County policies:

- conservation of natural resources;
- avoidance of natural hazards and the prevention of pollution that could pose a threat to public health, safety, and welfare;
- minimization of demand for public services and costs to the general public of providing and maintaining services;
- preservation of rural character, rural lifestyle opportunities, and scenic resources;
- preservation of agriculture; and
- prevention of unwanted or premature development that would preclude efficient conversion to urban uses and densities in areas suitable and intended for future annexation.

Transportation Element

Policies

Policy R-TR 11: New development that would significantly impact private or public roads should be allowed only when safety hazards and roadway deterioration will be mitigated to a less than significant level.

Policy R-TR 13: Maintain and enhance the scenic quality of county roadways.

Policy R-TR 17: The County should continue to prepare environmental assessments that address but are not limited to natural resource and scenic impact(s) of proposed roadway projects. These assessments should identify mitigation available to reduce any impacts to a less than significant level. Identified mitigation measures should be incorporated into project design.

Parks and Recreation Element

Regional Parks and Public Open Space Lands Subtopic

Policies

Policy R-PR 4: The public open space lands system should:

- preserve visually and environmentally significant open space resources; and
- provide for recreation activities compatible with the enjoyment and preservation of each site's natural resources, with trail linkages to adjacent and nearby regional parklands.

Policy R-PR 5: Water resource facilities, utility corridors, abandoned railroad tracks, and reclaimed solid waste disposal sites should be used for compatible recreation uses, where feasible.

Policy R-PR 7: Opportunities for access to regional parks and public open space lands via public transit, hiking, bicycling, and equestrian trails should be provided. Until public transit service is available, additional parking should be provided where needed.

Policy R-PR 8: Facilities and programs within regional parks and public open space lands should be accessible to all persons, regardless of physical limitations, consistent with available financial resources, the constraints of natural topography, and natural resource conservation.

Fire Management Subtopic

The Alameda Watershed has a range of fire hazard designations ranging from moderate to high to extreme. The area is a designated State Responsibility Area and receives fire protection from the California Department of Forestry and Fire Protection. State Responsibility Areas that are unprotected by service districts receive fire protection services from approximately May through November of each year.

Policy

Policy R-PR 12: Parks and trails in remote areas, fire hazard areas, and areas with inadequate access should be planned to provide the services or improvements necessary for the safety and support of the public using the parks and to avoid negative impacts on the surrounding areas.

Trails and Pathways Subtopic

Policies

Policy R-PR 29: Trail planning, acquisition, development, and management should be coordinated among the various local, regional, state, and federal agencies that provide trails or funding for trails.

Policy R-PR 32: Trails should be located, designed, and developed with sensitivity to the resources and hazards of the areas they traverse and to their potential impacts on adjacent lands and private property.

Scenic Highways Subtopic

Policies

Policy R-PR 37: A system of scenic roads should be designated linking the urban area with the rural and open space areas, with careful consideration of fire risk, hazards, and protection of natural resources.

Policy R-PR 39: The natural scenery along many of Santa Clara's highways should be protected from land uses and other activities that would diminish the aesthetic beauty.

Resource Conservation Element

Policies

Policy R-RC 1: Natural and heritage resources shall be protected and conserved for their ecological, functional, economic, aesthetic, and recreational values.

1. Rural open lands not suitable or intended for urbanization should not be included in cities' current Urban Service Areas or long-term urban growth plans. Urban open lands intended for open space uses, such as parks or conservation, should be protected from adverse environmental impacts.
2. Heritage resources shall be preserved to the maximum extent possible for their scientific, cultural, and "sense of place" values.

Policy R-RC 2: The County shall provide leadership in protecting and restoring valuable natural resources, such as wetlands, riparian areas, and others, for County-owned lands and by means of multi-jurisdictional endeavors.

Policy R-RC 3: Multiple uses of public lands intended for open space and conservation shall be encouraged so long as the uses are consistent with the objectives of resource management and conservation. For resources of critical concern, such as habitat for threatened or endangered species, priority shall be given to conservation of the resource.

Water Supply, Quality, & Watershed Management Subtopic

Policies

Policy R-RC 8: The strategies for assuring water quantity and quality for the rural unincorporated areas shall:

1. Require adequate water quantity and quality as a precondition of development approval.
2. Reduce the water quality impacts of rural land use and development.
3. Develop comprehensive watershed management plans.

Policy R-RC 10: For lands designated as Resource Conservation Areas and for Rural Residential areas, water resources shall be protected by encouraging land uses compatible and consistent with maintenance of surface and ground water quality.

Policy R-RC 13: Sedimentation and erosion shall be minimized through controls over development, including grading, quarrying, vegetation removal, road and bridge construction, and other uses that pose such a threat to water quality.

Habitat & Biodiversity Subtopic

Policies

Policy R-RC 19: Habitat types and biodiversity within Santa Clara County and the region should be maintained and enhanced for their ecological, functional, aesthetic, educational, medicinal, and recreational importance.

Policy R-RC 22: Recreational uses of public lands proposed within areas of natural habitat should be limited to those kinds and intensities of activities that are compatible with preserving natural vegetation and wildlife and which very minimally disturb overall habitat value:

1. Examples of low-intensity activities that may be allowed include limited hiking, horseback riding, picnicking, camping, and interpretative study.
2. For critical habitat areas, uses and activities should not be allowed to create a significant impact; if necessary, facilities for such activities should be limited to those of a very primitive, non-disruptive nature only or precluded from such areas.
3. Nesting and breeding areas potentially affected by such activities should be seasonally closed to recreational use.

Policy R-RC 31: Riparian and freshwater habitats shall be protected through the following general means:

- setback of development from the top of the bank;
- regulation of tree and vegetation removal;
- reduction or elimination of use of herbicides, pesticides, and fertilizers by public agencies;
- control and design of grading, road construction, and bridges to minimize environmental impacts and avoid alteration of the streambed and stream banks; and
- protection of endemic, native vegetation.

Policy R-RC 51: Preservation of habitat linkages and migration corridors should be encouraged where needed to allow for species migration, prevent species isolation, and otherwise compensate for the effects of habitat fragmentation.

Policy R-RC 53: Restoration of habitats should be encouraged and utilized wherever feasible, especially in cases where habitat preservation and flood control, water quality, or other objectives can be successfully combined.

Policy R-RC 57: Agriculture shall be encouraged and prime agricultural lands retained for their value to the overall economy and quality of life of Santa Clara County, including:

- local food production capability;
- productive use of lands not intended or suitable for urban development; and
- preservation of a diminishing natural resource, prime agricultural soils.

Minerals Resources Subtopic

Policies

Policy R-RC 67: Local supplies of mineral resources should be recognized for their importance to the local, regional, and state economy. Strategies for preserving and managing mineral resources include:

- ensuring continued availability of mineral resources to meet long-term demand;
- mitigating environmental impacts of extraction and transportation; and
- reclaiming sites for appropriate subsequent land uses.

Policy R-RC 73: The extraction of mineral resources, including sand and gravel, should be carefully conditioned and regulated to mitigate potential adverse environmental impacts, including mitigation measures for potential increases in siltation and/or pollution of water resources in order to adequately protect the local water supply.

Heritage Resources Subtopic

Policies

Policy R-RC 81: Heritage resources within the rural unincorporated areas of Santa Clara County shall be preserved, restored wherever possible, and commemorated as appropriate for their scientific, cultural, historic, and place values.

Policy R-RC 85: Projects in areas found to have heritage resources shall be conditioned and designed to avoid loss or degradation of the resources. Where conflict with the resource is unavoidable, mitigation measures that offset the impact may be imposed.

Scenic Resources Subtopic

Policy

Policy R-RC 98: Hillsides, ridgelines, scenic transportation corridors, major County entryways, stream, environmental, and other areas designated as being of special scenic significance should receive utmost consideration and protection due to their prominence, visibility, and overall contribution to the quality of life in Santa Clara County.

Health and Safety Element

Noise Subtopic

With the “Open Space” designation, the Alameda Watershed area falls under the rural noise discussion, which does not have specific state policies. In the General Plan, the “Noise Compatibility Standards for Land Use in Santa Clara County” provide an “Open Space” designation, but no critical noise levels are listed. Homes in agricultural areas are not subject to the residential standards. Public buildings in parks and open space areas are required to meet the noise standards listed under “Public or Semi-Public Facilities.” For open space use, the maximum level of noise that a new land use may impose on neighboring open space shall be the upper limit of the “Satisfactory Noise Level.”

Natural Hazards Subtopic

Policies

Policy R-HS 8: Areas of persistent flooding and areas of potential inundation from dam failure shall generally be designated for agricultural land uses or other suitable open space use.

Policy R-HS 10: In all hazard areas, projects shall be designed and conditioned to avoid placement of structures and improvements where they would:

- be directly jeopardized by hazards;
- increase the hazard potential; and/or
- increase risks to neighboring properties.

Geology and Seismicity Subtopic

The Alameda Watershed is designated by the General Plan as having moderate and major relative seismic stability. A moderate relative seismic stability rating requires site investigations for development projects unless waived by the County. A major rating requires a mandatory site investigation, unless detailed information permits the waiver of the investigation.

Policies

Policy R-HS 6: Inventories and mapping of natural hazards shall be adequately maintained for use in planning and decision-making, including:

- a. relative seismic stability map;
- b. composite geologic hazards map;
- c. soil creep;
- d. saturated, unstable soils;
- e. slope maps;
- f. flood hazards maps;
- g. relative fire hazard rating;
- h. dam failure inundation areas maps;
- i. airport safety zones; and
- j. Closed Solid Waste Disposal Sites.

Policy R-HS 7: Areas of significant natural hazards, especially high or extreme fire hazard, shall be designated in the County's General Plan as Resource Conservation Areas, with generally low development densities in order to minimize public exposure to risks associated with natural hazards and limit unplanned public costs to maintain and repair public infrastructure.

Policy R-HS 16: No new building site shall be approved on a hazardous fault trace, active landslide, or other geologic or seismic hazard area that poses a significant risk.

Policy R-HS 19: In areas of high potential for activation of landslides, there shall be no avoidable alteration of the land or hydrology that is likely to increase the hazard potential, including:

- a. saturation due to drainage or septic systems;
- b. removal of vegetative cover; and
- c. steepening of slopes or undercutting the base of a slope.

Policy R-HS 21: Proposals involving potential geologic or seismic hazards shall be referred to the County geologist for review and recommendations.

Waste Water Disposal Subtopic

Policy

Policy R-HS 47: The long-term viability and safety of surface and ground water supplies Countywide shall be protected from contamination to the highest degree feasible.

2.4 EAST BAY REGIONAL PARK DISTRICT

Master Plan

The East Bay Regional Park District (EBRPD or the District) operates several facilities within and near the Alameda Watershed. The Sunol/Ohlone Regional Wilderness is located between the San Antonio and Calaveras Watersheds. Mission Peak Park is located to the west of the Alameda Watershed, and to the east of the San Antonio Watershed is the Del Valle East Bay Regional Park, which surrounds the Del Valle Reservoir. EBRPD has established policies in the *East Bay Regional Park District Master Plan* (EBRPD Master Plan) that pertain to the protection of natural and cultural resources within the established parklands. EBRPD Master Plan is organized by the following elements: Resource Management, Public Access and Services, and Planning and Acquisition. Although the SFPUC and the *Alameda Watershed Management Plan* are not governed by the EBRPD Master Plan, the policies of the EBRPD are presented for informational purposes.

Resource Management Element

Wildland Resource Management

- The District will maintain, manage, conserve, enhance, and restore park wildland resources to protect essential plant and animal habitat within viable, sustainable ecosystems.

- The District will conserve, enhance, and restore biological resources to promote functioning ecosystems. Conservation efforts may involve using controlled grazing, in accordance with Wildland Management Policies and Guidelines, prescribed burning, mechanical treatments, integrated pest management, and/or habitat protection and restoration. Restoration activities may involve the removal of invasive plants and animals or the reintroduction of native or naturalized species adapted to or representative of a given state.

Vegetation Management

- The District will maintain and manage vegetation to conserve, enhance, and restore natural plant communities; to preserve and protect populations of rare, threatened, endangered, and sensitive plant species and their habitats; and, where possible, to protect biodiversity and to achieve a high representation of native plants and animals.

Wildlife Management

- The District will conserve, enhance, and protect native animal species and enhance their habitats to maintain viable wildlife populations within balanced ecosystems. Non-native and feral animals will be managed to minimize conflicts with native wildlife species. The District will cooperate on a regular basis with other public and private land managers and recognized wildlife management experts to address wildlife management issues on a regional scale.

Water Management

- Park water resources will be used for beneficial purposes. Water quality will be monitored to comply with established standards. The District will participate in cooperative efforts to plan comprehensive Watershed management and will adopt “best management practice” guidelines for District land use activities to minimize potential stormwater pollution. The District will monitor land use planning and development activities by other agencies and cities to avoid potential adverse impacts to parkland from pollutants generated by offsite or upstream sources.
- The District will manage riparian and other wetland environments and their buffer zones to preserve and enhance the natural and beneficial values of these important resources and to prevent the destruction, loss, or degradation of habitat. The District will participate in the preservation, restoration, and management of riparian and wetland areas of regional significance and will not initiate any action that could result in a net decrease in park wetlands. The District will encourage public access to the Bay/Delta shoreline, but will control access to riparian and wetland areas, when necessary, to protect natural resources.

Geology, Soils Paleontology Management

- The District will identify existing and potential erosion problems and take corrective measures to repair damage and mitigate causative effects. The District will manage the parks to assure that an adequate cover of vegetation remains on the ground to provide soil protection. Where vegetative cover has been reduced or eliminated, the District will take steps to restore it, using native or naturalized plants adapted to the site. The District will minimize soil disturbance associated with construction and maintenance operations and avoid disruptive activities in areas with unstable soils, whenever possible. The District will arrest the progress of active gully erosion, where practical, and take action to restore these areas to stable conditions. The District will notify adjacent property owners of potential landslide situations on District lands to warn of potential risks and conform with

applicable law, and will protect important geological and paleontological features from vandalism and misuse.

Cultural Resource Management

- The District will maintain a current map and written inventory of all cultural features and sites found on park land and will preserve and protect these cultural features and sites “in situ,” in accordance with Board policy. The District will: evaluate significant cultural and historic sites to determine if they should be nominated for State Historic Landmark status or for the National Register of Historic Places; may acquire cultural and historic resource sites when they are within lands that meet parkland acquisition criteria; and will maintain an active archive of its institutional history and the history of its parklands and trails.

Public Access and Services Element

Public Access

- The District will provide access to parklands and trails to suit the level of expected use. Where feasible, the District will provide alternatives to parking on or use of neighborhood streets. The District will continue to advocate and support service to the regional park system by public transit.

Interpretation and Recreation Services

- The District will offer recreational programs and services that appeal to participants of all ages and backgrounds, in keeping with its vision and mission. The District will create and manage a comprehensive offering of recreational opportunities, tours, and outdoor skills training that will help visitors use and enjoy the parks and trails, and will collaborate with other agencies, organizations, and partners to provide a broad spectrum of regional recreational opportunities.

Planning and Acquisition Element

- The District will continue to acquire, develop, and operate areas and facilities and to provide programs and services with the primary goal of achieving a long-term balance throughout the park system. The District will continue to allocate resources based on the populations projected for the West Metropolitan, South Metropolitan, and Diablo sectors. Eastern Alameda County will be added to the South Metropolitan sector. To make the most efficient use of public funds, the District will evaluate and seek to support and enhance the parks, programs, and services of other agencies.
- The District will participate in efforts to protect scenic or cultural resources, develop larger, multi-agency open space preserves, provide recreational opportunities, protect agricultural use, avoid hazards, and plan for appropriate urban growth boundaries. The District will work with other jurisdictions to develop open space preservation plans and policies that recognize the District’s public interests in open space preservation and that are consistent with Board policy.
- New utility lines will be placed underground on land owned, operated, or managed by the District to retain the optimal visual qualities of the area. Rights-of-way and easements for utilities will not be granted without under-grounding. The District will work in cooperation with the utility companies to place existing overhead utilities underground (unless so doing conflicts with applicable codes) as soon as practical and, will work with other agencies and neighbors to reduce visual impacts on adjacent lands. The District will

seek to avoid the construction of high voltage power lines within the parklands, particularly in areas of sensitive or aesthetically important resources in preserve areas.

- The District will keep its lands, including all ridges and peaks, free of additional communication facilities in order to maintain open viewshed, natural conditions, and public use as well as to limit vehicular and service activities. Communication sites will be regulated by the provisions of the 1994 Communication Site Policy. No new licenses will be granted beyond December 31, 1999, except for efforts that will consolidate sites or improve visual quality. The District will work to reduce the detrimental visual impact of buildings, towers, and access roads at existing sites and will work with other agencies and neighbors to reduce this impact on adjacent lands.

3.0 STATE AGENCIES

3.1 CALIFORNIA DEPARTMENT OF FISH AND GAME

The overall mission of the California Department of Fish and Game' (CDFG) is "to maintain all species of fish and wildlife for their intrinsic and ecological values, as well as for their direct benefits to man." The following section details Streambed Alteration Agreements.

Code Section 1601. Streambed Alteration Agreements.

Under Section 1601 of the California Fish and Game Code, an agency or public utility proposing to substantially divert the natural flow of a stream, substantially alter its bed or bank, or use any material from the streambed, must first enter into a "Streambed Alteration Agreement" (SAA) with CDFG. A SAA will be required for any construction activity that would occur in a streambed or natural drainage. A SAA will only be entered into by the CDFG once all other project permits and certifications have been obtained. Construction cannot be initiated on the site until a SAA is executed. The SAA is applied for by submitting a CDFG Streambed Alteration Notification form and a nonrefundable application fee (for projects costing more than \$25,000) to the CDFG. The SAA can typically be obtained within a few months, provided proposed mitigation (as developed during the environmental review process) is acceptable to the CDFG. The CDFG, while being able to impose reasonable conditions on the agreement, may not decline to enter into an agreement. An SAA would only be required if the proposed project resulted in impacts to waterways.

3.2 CALIFORNIA DEPARTMENT OF FORESTRY

- The Alameda Watershed is designated by the California Department of Forestry and Fire Protection (CDF) as a State Responsibility Area and, as such, is protected by the CDF. Services provided by CDF include emergency fire response, hazardous materials spills response, medical aid, and wildland fire suppression training. The CDF station, located on 11345 Pleasanton-Sunol Road, is less than one-half mile from the main Sunol maintenance yard and can provide an immediate response to fire emergencies on SFPUC Watershed lands. The CDF is the agency responsible for fire suppression.

4.0 IMPACTS

4.1 SIGNIFICANCE CRITERIA

The City has not formally adopted significance standards for plans and policies impacts, but it generally considers that implementation of the *Alameda Watershed Management Plan* would have a significant plan or policy impact if it were to:

- substantially conflict with established regional, state or federal plans, policies, and/or guidelines, and as a consequence of such conflict, potentially result in an adverse physical impact on the environment.

4.2 PROGRAM-LEVEL IMPACTS

Because of the broad nature of the plans and policies of jurisdictions within and adjacent to the Alameda Watershed and the specific nature of the management actions in the *Alameda Watershed Management Plan*, some of the management actions could be perceived to be in conflict with the *City and County of San Francisco General Plan*, Alameda County's *East County Area Plan*, *Santa Clara County General Plan*, and *East Bay Regional Park District Master Plan* and the policies contained therein. However, potential conflict of the Management Plan with the plans and policies of jurisdictions other than the SFPUC is a policy issue and would not be considered a physical environmental impact of implementing the Management Plan.

As stated above, local planning and building laws are not applicable to the Watershed lands owned by the City and County of San Francisco. In general, potential conflicts of a proposed project or program on Watershed lands with the planning laws of other jurisdictions are considered by the decision-makers independently of the environmental review process as a part of the decision to approve, modify, or disapprove a proposed project or program. The EIR analyzes and provides information on the potential environmental impacts of implementing the Management Plan. The information on planning laws of local jurisdictions could be used by the SFPUC and other decision-makers in assessing the extent to which the Management Plan may conflict with such laws and in making the decision to approve the proposed Management Plan or an alternative.

REFERENCES – Existing Plans and Policies

Except where indicated, references are on file at the San Francisco Planning Department.

Alameda County, *East County Area Plan*, 1993. (Available at Alameda County Community Development Agency Planning Department, Hayward California)

City and County of San Francisco, *The San Francisco General Plan*, 1988.

Fault-Rupture Hazard Zones in California, special publication 42, 1990 (revised). (Available at Division of Mines and Geology, California Department of Conservation, San Francisco, California)

East Bay Regional Park District, *East Bay Regional Park District Master Plan*, 1997. (Available at East Bay Regional Park District, Oakland, California)

Santa Clara County, *Santa Clara County General Plan*, 1994. (Available at Santa Clara County Planning Department, San Jose, California)

B. LAND USE

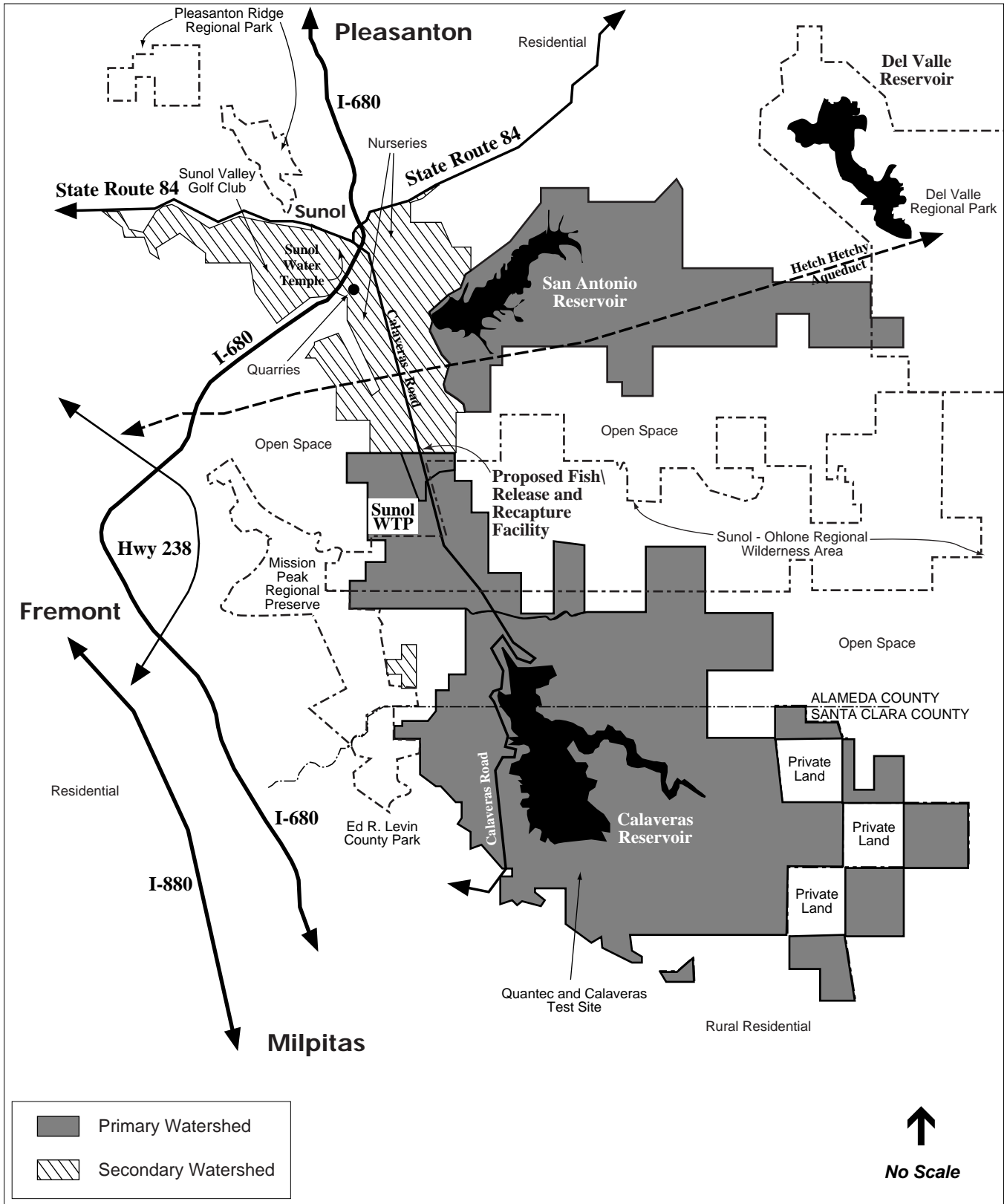
1.0 SETTING

The SFPUC-owned Alameda Watershed lands comprise 36,000 acres, or approximately one-third of the entire 175-square-mile greater Alameda Creek watershed. Land areas within and adjacent to the SFPUC-owned Watershed are indicated in Figure III.B-1. Water storage facilities in the Watershed include two reservoirs, the San Antonio Reservoir to the north and the Calaveras Reservoir to the south. Water transmission facilities include the Hetch Hetchy Aqueduct, which bisects the Alameda Watershed just south of San Antonio Reservoir. Nearly 32,000 acres of the Watershed are currently used for grazing. There are five caretaker cottages on the Alameda Watershed; four are currently occupied by emergency-response Land and Resources Management staff.

Other Watershed uses permitted by the SFPUC include commercial, industrial, utilities, and recreation. The SFPUC currently leases land and provides water to eight commercial nurseries that grow landscape products. The nurseries are located east of the Town of Sunol, along SR 84 and Calaveras Road. Two major gravel-mining operators, Mission Valley Rock and RMC Pacific Materials (formerly known as RMC Lonestar) hold leases for areas both north and south of I-680. Utilities include a high-pressure petroleum pipeline easement held by Chevron, U.S.A. that traverses the northern portion of the Watershed in the vicinity of San Antonio Reservoir, a Southern Pacific Railroad petroleum pipeline that traverses the Sunol Valley Golf Course, PG&E powerlines, and the Hetch Hetchy Aqueduct and powerlines. Recreational uses include two 18-hole courses at the Sunol Valley Golf Course, and trails on Watershed lands leased to the EBRPD as part of the Sunol Regional Wilderness and Ohlone Regional Wilderness. The former Quantec and Calaveras testing site is located at the south end of Calaveras Reservoir.

The I-680 freeway traverses the northern portion of the Watershed. Calaveras Road extends through the entire Watershed in a north-south direction, from the northern Watershed boundary at I-680 to the southern Watershed boundary just west of Calaveras Reservoir. From this point, the road extends westward to Milpitas, Highway 237, I-880, and I-680. SR 84, also known as Niles Canyon Road west of I-680 and Vallecitos Road east of I-680, extends along the northern Watershed boundary.

The remaining two-thirds of the greater Alameda Creek watershed (approximately 76,000 acres not owned by SFPUC) are either used as public open space or are privately owned and used mostly for grazing or overhead PG&E transmission lines. Public open space areas are comprised of EBRPD parklands and other parklands in the greater Alameda Creek watershed in Santa Clara County. To the north of the Watershed is the Town of Sunol, which includes residential and commercial uses. To the south, there are small enclaves of development within the Alameda Creek watershed that are zoned as "Rural Residential." These rural residential areas are located in Santa Clara and Alameda Counties, outside urban service areas and incorporated cities. Residential densities in these areas are generally at least 5 to 20 acres per dwelling.



SOURCE: EDAW, Inc., 1998; Environmental Science Associates.

Alameda Watershed Management Plan EIR / 930385 ■

Figure III.B-1
Alameda Watershed
Area Map

1.1 RECREATIONAL USES

- Individual access to existing internal Watershed roads and fire roads is not permitted. All access to internal roads is by group permit, and groups must be accompanied by volunteer leaders. Existing recreational uses are located primarily in the central and northern portions of the Watershed. SFPUC currently leases approximately 3,800 acres to the East Bay Regional Park District (EBRPD) as part of the 6,858 acre Sunol Regional Wilderness. The Sunol Regional Wilderness includes more than 26 miles of hiking, equestrian, and biking trails. EBRPD facilities include picnic areas, group and backpack camps, a visitor's center, and equestrian facilities. The Ohlone Regional Wilderness is located to the east of the Sunol Regional Wilderness and currently contains 9,736 acres of land and has more than 42 miles of hiking and equestrian trails. EBRPD facilities include backpack camps and Camp Ohlone, a group camp (by reservation). Collectively, the Sunol Regional Wilderness and the Ohlone Regional Wilderness are known as the Sunol-Ohlone Regional Park. Approximately 200,000 persons per year use the combined recreation areas. The intention of the *Alameda Watershed Management Plan* is to provide for the continuation of trail use on the trails managed by EBRPD. Trails on the Watershed are rugged; therefore, the intensity of use is low during the hot, dry summer. The Sunol Valley Golf Course is located in the northern portion of the Alameda Watershed, north of I-680, and is used by approximately 88,000 persons per year.

Recreational uses located adjacent to the Watershed include the following:

- - Pleasanton Ridge Regional Park (3,999 acres) – EBRPD lands located off Foothill Boulevard north of Sunol; developed with 20 miles of hiking, equestrian, and biking trails. Facilities include picnic areas and equestrian facilities.
 - Del Valle Regional Park (4,311 acres) – EBRPD lands located on Del Valle Boulevard, south of Mines Road; developed with camping, swimming, picnic areas, and windsurfing and boating facilities as well as more than 20 miles of hiking, biking, and equestrian trails. This park is contiguous with the Sunol-Ohlone Regional Park.
 - Mission Peak Regional Preserve (2,999 acres) – EBRPD lands located off Mill Creek Road, off Mission Boulevard in Fremont; developed with more than 20 miles of hiking, biking, and equestrian trails. Facilities include picnic areas and equestrian facilities. This preserve is contiguous with the Sunol-Ohlone Regional Park.
 - Ed R. Levin County Park (1,544 acres) – Santa Clara County lands located off Calaveras Road in Milpitas; developed with 15 miles of hiking and equestrian trails as well as boating, fishing, and volleyball facilities. Spring Valley Golf Course is also located within this park.
- EBRPD has proposed a trail segment from Sunol to Pleasanton Ridge as part of the Calaveras Ridge Trail. This trail would connect Pleasanton Ridge Regional Park and the Sunol Regional Wilderness with a hiking trail west of Calaveras Road. This trail would pass through secondary Watershed lands and the Sunol Valley. In addition, EBRPD has a land banked parcel located to the west of the Watershed and the Town of Sunol. This parcel is currently undeveloped and

closed to the public, pending development of a land use plan for multi-use trails, staging areas, and picnic areas, and environmental review of the plan.

1.2 GRAZING

Grazing is currently allowed on the Alameda Watershed. The SFPUC approved the *Alameda Watershed Grazing Resources Management Element* in July 1997, which sets forth specific requirements for implementing future grazing. The goals of this element address protecting water quality, reducing fire hazards, and enhancing native vegetation through managed grazing.

The Grazing Management Plan of the Element was implemented July 1997 and is currently in use.

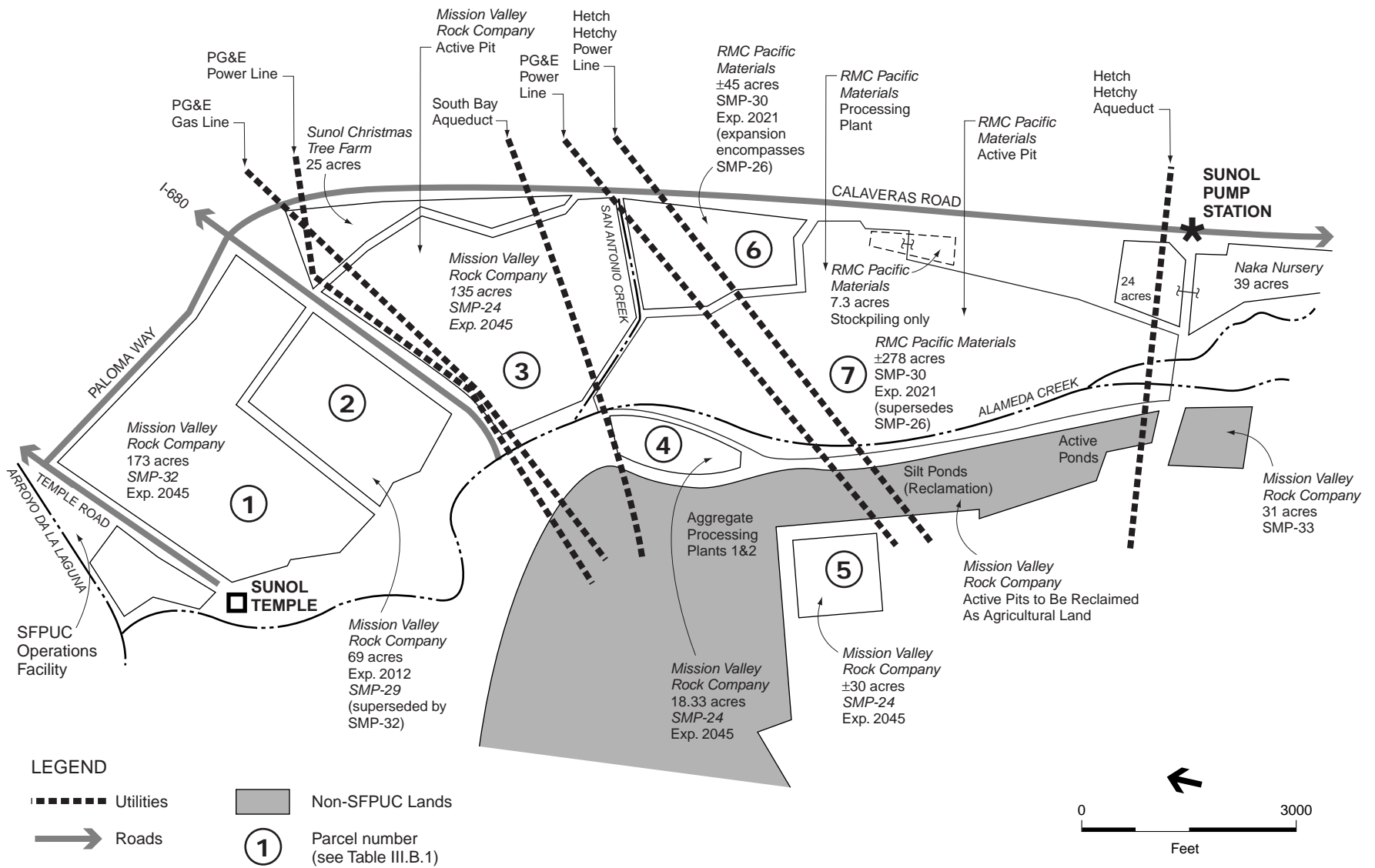
1.3 GRAVEL MINING AND SUBSEQUENT RECLAMATION PLAN

Portions of the SFPUC land in the Sunol Valley are leased for gravel extraction. All gravel mining on SFPUC lands in the Sunol Valley requires a Surface Mining Permit (SMP) from Alameda County and a mining lease from the SFPUC. Alameda County is the lead agency under CEQA for issuance of SMPs. Under the state Surface Mining and Reclamation Act (SMARA), local governments may enact mining ordinances regulating mining within their jurisdictions. San Francisco has no SMARA ordinance, as there are no quarry operations within San Francisco proper. Consequently, the City's Sunol Valley mining lessees have been required to obtain surface mining permits under Alameda County's SMARA ordinance. San Francisco's mining leases incorporate the terms and conditions of the mining permits issued by Alameda County and may impose other requirements over and above those required by Alameda County. Since the 1960s, the SFPUC has leased lands in the Sunol Valley for gravel extraction to two quarry operators: Mission Valley Rock and RMC Pacific Materials (formerly RMC Lonestar). Entitled gravel mining encompasses approximately 500 acres of the Sunol Valley. Figure III.B-2 presents the existing conditions, ownership, acreages, and permits for mining activities in the Sunol Valley.

Lands in the Sunol Valley with current surface mining permits from Alameda County are located north and south of I-680. The majority of the quarry area and all current mining are located south of I-680. Alameda Creek crosses Sunol Valley from south to north and has provided the alluvial deposition on which mining operations are based. Areas within the Sunol Valley not owned by the SFPUC are also used for gravel mining. The Mission Valley Rock Company owns land west of Alameda Creek that is used for mining and processing. Table III.B-1 describes the existing mining permits and ongoing mining activity on SFPUC Watershed lands, as shown in Figure III.B-2. Information is listed in the table according to location, permit jurisdiction, and parcel number for the mining permits.¹

The *Alameda Watershed Management Plan* presents management actions for the ongoing mining activities in the Sunol Valley, as described below. These actions were developed to plan for the eventual reclamation of completely mined gravel quarries and to provide a timeline for completion of mining within Watershed lands. The management actions regarding mining activities include Action sun1 for areas north of I-680 and Action sun2 with Options sun2a and sun2b for areas south of I-680. Action sun1 would allow the mining of permitted areas (north of I-680) in accordance with SMP-32. The environmental impacts of this action were analyzed in the EIR certified by Alameda County for SMP-32. The following environmental analysis documents were reviewed and have been summarized in this EIR, and are incorporated by reference in this EIR, pursuant to CEQA Guidelines 15150. Copies of these documents are

¹ Parcel numbers were created as part of this environment analysis to distinguish mining areas and are not referenced in the actual mining permits or any other environmental document.



SOURCE: EDAW, Inc., 1998, Environmental Science Associates.

Alameda Watershed Management Plan EIR / 930385 ■

Figure III.B-2
Existing Mining Permits and
Activities in Sunol Valley
(as of April 1996)

**TABLE III.B-1
INFORMATION ON CURRENT MINING PERMITS IN THE SUNOL VALLEY**

	Area North of I-680		Area South of I-680				
Surface Mining Permit (SMP):^a	SMP-32		SMP-24			SMP-30	
Parcel Number ^b	Parcel 1	Parcel 2	Parcel 3	Parcel 4	Parcel 5	Parcel 6	Parcel 7
Prior Permits	SMP-32 supersedes SMP-29		SMP-24 supersedes SMP-5			SMP-30 supersedes SMP-26	
Date of Permit	1994	1991	1986			1993	
CEQA Document (Certification Date)	Mission Valley Rock Company Surface Mining Permit and Reclamation Plan SMP-32 EIR (November 1994)		Mission Valley Rock Company Surface Mining Permit and Reclamation Plan SMP-24 Negative Declaration (1986)			Mitigated Negative Declaration, Santa Clara Sand & Gravel Expanded Initial Study, SMP-30 (September 1992)	
Permit Expiration Date	2045		2045			2021	
Active Pit	No	No	Yes	No (being reclaimed)	Yes	Yes	No
Total Area in acres under permit	241		183.33			325	
Mining Footprint at build-out (acres)	139 (Parcels 1 and 2 combined)		104	15 (silt pond)	10	NK	NK
SFPUC Lease No.	L-3666A (Agricultural Lease)	L-3555A (Mining Lease)	L-3555A	L-3292 (Parcel B)	L-3292 (Parcel A)	L-3430A	L-3430
Land Owner	SFPUC		SFPUC			SFPUC	
Mining Operator and Lessee	Mission Valley Rock Company		Mission Valley Rock Company			RMC Pacific Materials	
Allowable Depth	200 feet	140 feet	140 feet	140 feet	140 feet	140 feet	140 feet
Gravel Transport	Excavated raw aggregate will be transported to the processing plant at the SMP-24 permit area by way of an overland conveyor belt to be built and connected with the existing conveyor belt as part of SMP-24.		Aggregate is transported by conveyor belt to the processing plant within the SMP-24 permit area.			Similar set-up as Mission Valley Rock, but less use of conveyor belts and more truck hauling. Processing plant is located in the Sunol Valley adjacent to process material from the mining pit. This plant will be able to accommodate the new pit when it opens.	
Mining Phases	SMP-32 is the successor to SMP-24. The existing processing plant would remain on the SMP-24 permit area.		Parcel 3 tends to be mined during the summer due to water levels in the pit during winter months. The upper level of parcel 3 is typically mined in wet weather due to good drainage in the pit.			Currently, a geotechnical study is being completed to examine the potential expansion of mining to greater depths as proposed by the SFPUC, plus the opening of the new pit on Parcel 7.	

^a Surface mining permits are issued and environmental review conducted by the Alameda County Planning Department. Each of the above permit applications underwent environmental review prior to issuance of the mining permit.

^b Parcel numbers were created solely for this environmental analysis to distinguish mining areas and are not referenced in the actual mining permits or any other environmental document. NK = not known.

SOURCE: Alameda County Planning Department, 1994a and 1994b; Calvert, 1999; EDAW, 1999; Jensen, 1999; and Kelly, 1999.

available for review at the Alameda County Community Development Agency Planning Department.

- Alameda County's Findings, Statement of Overriding Consideration, and conditions of approval of SMP-32.
- Alameda County's Draft and Final EIR for SMP-32.
- Alameda County's conditions of approval for SMP-30.
- Alameda County's Initial Study and Mitigated Negative Declaration for SMP-30.
- Alameda County's conditions of approval for SMP-24.
- Alameda County's Initial Study and Negative Declaration for SMP-24.

Actions 2a and 2b address the mining area south of I-680. These areas are currently permitted by SMP-24 and SMP-30. However, both Actions sun2a and sun2b (Phase 1) would require amendments to these existing permits.

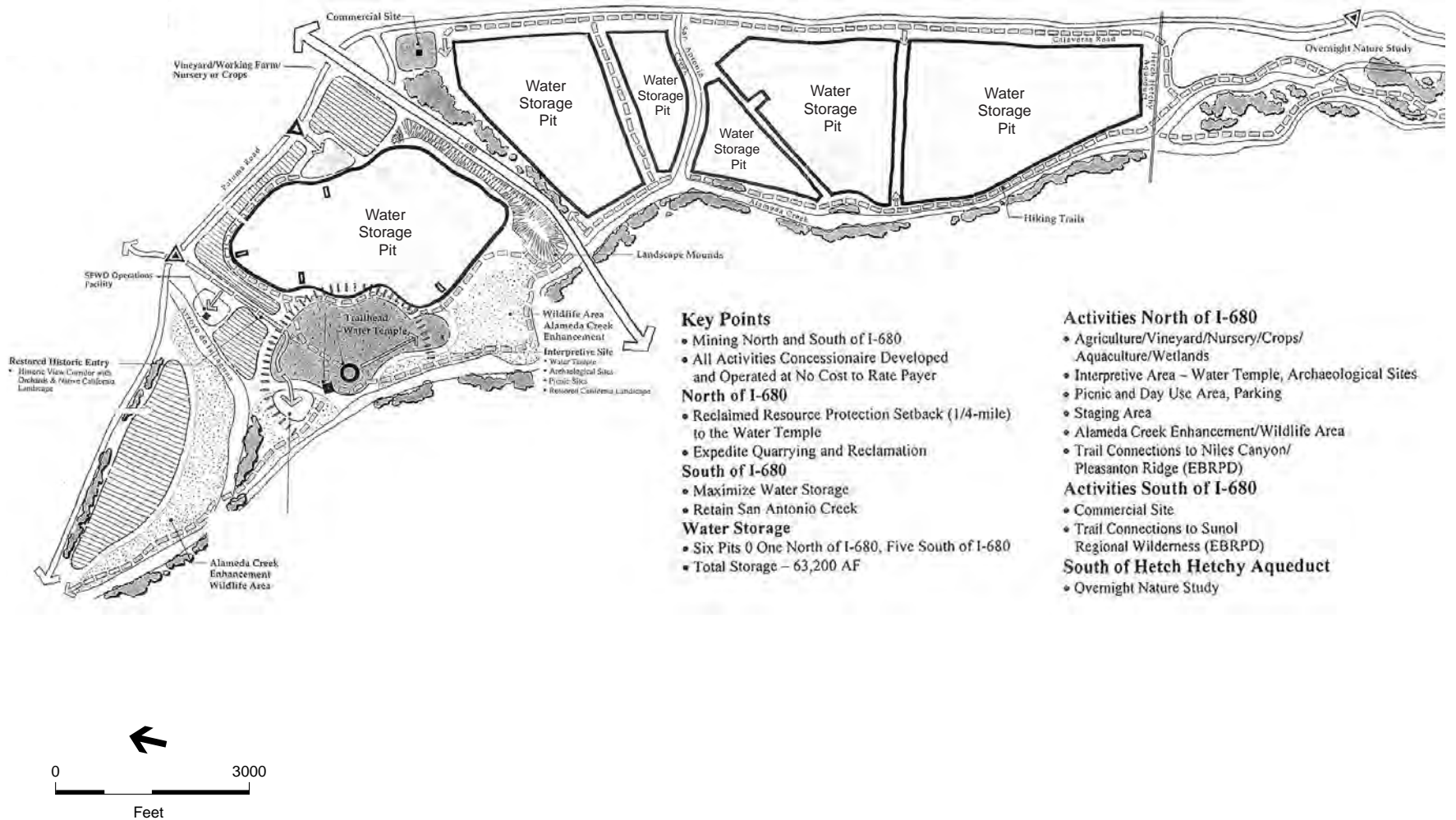
Action sun2a calls for increasing the permitted pit depths to 200 feet and for maximizing the mining footprint within the leased area. This action would create 47,100 acre-feet (AF) of water storage in five pits south of I-680, meaning that at project completion (by 2021) the land bordered by I-680/Calaveras Road and Alameda Creek would be primarily water storage reservoirs (see Figure III.B-3). Action sun2b would not amend the existing permit footprint but would increase the depth of mining to 200 feet, thus creating 38,800 AF of water storage in four pits (by 2014). As both options would require amendments to SMP-24 and SMP-30, environmental review of the permit amendments would be required to determine potential significant impacts from mining activities and to identify mitigation measures.

North of I-680, the Management Plan (Action sun1) calls for completion of mining at the existing permitted areas (SMP-32) by approximately 2035. Upon completion of mining, one water storage pit with approximately 16,100 AF of storage would remain in this area. Restoration and landscaping of a quarter-mile buffer zone in the vicinity of the Sunol Water Temple would also be completed. Changes in the timing and sequence of mining and reclamation proposed by the Management Plan may require amendments to SMP-32 by Alameda County.

Figure III.B-3 includes, schematically, the facilities described under management Actions sun3 through sun22, which address the reservoirs, recreation use, and SFPUC facilities under mining Option sun2a. Facilities included under mining Option 2b would be similar to those shown in Figure III.B-3, although that option would include only four water storage pits south of I-680.

1.4 NURSERIES

Existing nurseries in the Alameda Watershed are located in the Sunol Valley along Alameda Creek. The Alameda County Water District (ACWD) receives State Water Project water using



SOURCE: EDAW, Inc., 1998.

Alameda Watershed Management Plan EIR / 930385 ■

Figure III.B-3
 Proposed Sunol Valley Reclamation Plan
 (Action Sun2a)

Alameda Creek as a conveyance, and has junior water rights to the creek. Potential water quality impacts to the creek as a consequence of fertilizers and pesticides used by these nurseries are of concern to both SFPUC and ACWD. The *Alameda Watershed Management Plan* would require that nurseries establish greater setbacks from Alameda Creek.

1.5 INCOMPATIBLE AND PROHIBITED USES

The *Alameda Watershed Management Plan* designates a number of potential uses to be in conflict with one or more of the Watershed goals and policies. In addition, a number of existing regulations prohibit various activities on the Watershed. These include regulations set forth by the SFPUC, state codes, the Public Resources Code, and regulatory agencies such as the California Department of Fish and Game and California Department of Forestry. Incompatible and prohibited uses within the Watershed include the following:

- Unauthorized boating on existing reservoirs;
- Campgrounds;
- Camping;
- Unauthorized motorized vehicles;
- Water activities in existing reservoirs;
- Shooting ranges;
- Hang gliding;
- Off-trail use;
- Off-road use;
- Dogs (except guide-dogs);
- Unauthorized removal of Watershed resources (plant materials, firewood, cultural resources);
- Release of domestic animals;
- Smoking;
- Littering;
- Alcohol;
- Unauthorized fires; and
- Hunting (except to control pest species and feral animals).

In addition, existing regulations imposed by other agencies would also remain in force and are incorporated into the *Alameda Watershed Management Plan*.

2.0 IMPACTS

2.1 SIGNIFICANCE CRITERIA

The City has not formally adopted significance standards for land use impacts, but it generally considers that the implementation of the Management Plan would have a significant effect on land use if it were to:

- substantially disrupt or divide the physical arrangement of an established community;
- substantially conflict with established recreational, educational, religious, or scientific uses; or

- have a substantial impact on the existing character of the vicinity.

Land use impacts are evaluated with respect to compatibility of the Management Plan with the existing land uses and the potential effect the policies and actions would have on land use patterns in the project vicinity.

2.2 PROGRAM-LEVEL IMPACTS

Increase in Public Access and Use

Access to Public Use Areas

- The primary land use changes that would result from implementation of the *Alameda Watershed Management Plan* are associated with increased public access and the expansion of mining north and south of I-680. Under the proposed Plan, a Watershed Visitor Education Center, public recreation area, commercial site, and overnight nature study area (Actions pub4, sun14, sun19, and sun20) could be developed on the Watershed. These uses are designed as generally low intensity recreation and are more fully described in the preliminary *Sunol Landscape and Recreation Plan*, which has been prepared to plan recreational activities and landscape concepts for the Sunol Valley in order to develop lease terms and conditions for mining under SMP-32. The Management Plan provides for the establishment of new trails around the Sunol Temple and in the Sunol Valley as connectors to the Sunol-Ohlone Regional Park areas (Policies WA15.2 and WA15.4 and Actions sun14 and sun21). New trails would be restricted to areas of low vulnerability and risk to protect water quality and ecological resources. Areas of low vulnerability would be in the secondary Watershed (away from existing reservoirs) and in the Sunol Valley near the Town of Sunol, the only adjacent developed area. These trails would allow for general public access to the Watershed (no permit required). Access to existing internal roads and fire roads in the Watershed is currently restricted. Under the Management Plan, a docent-led program would be developed to allow individuals access to selected areas of the Watershed that are generally closed to the public (Policy WA10 and Action pub1). In addition, the Management Plan calls for provision of universal access to recreation facilities and trails, which could increase public use of the Watershed (Actions des8 and sun17).

Equestrians are currently allowed on selected EBRPD trails in the Sunol-Ohlone Regional Park. Biking is prohibited in the Ohlone Regional Wilderness and on internal roads in the Alameda Watershed. Under the Management Plan, there would be no expansion of equestrian or bike access in the Watershed.

When compared to the significance criteria outlined above, increased public use of areas of low vulnerability and risk in the Watershed would not disrupt or divide the physical arrangement of established surrounding uses. Trails would connect with urban areas to the north and other trail facilities. Areas adjacent to the northern Watershed boundary are developed with residential, commercial, and recreational uses near the Town of Sunol, and the proposed recreational uses would be compatible with these existing uses. Proposed trails would connect with existing trails and would not alter the existing land use character in the vicinity. Therefore, implementation of

the proposed Management Plan would not directly result in any significant land use impacts related to public access and use areas. However, increased public use of the Watershed would have the potential to affect water quality, natural resources, air quality, fire hazard, and cultural resources. These issues are further described in Sections III.D, Hydrology and Water Quality, III.E, Natural Resources, III.F, Air Quality, III.G, Fire Management, and III.H, Cultural Resources.

Access to Reservoirs

Fishing is presently not allowed on any of the Watershed's reservoirs due to water quality concerns. To protect water quality, this policy would continue under the proposed Plan (Policy WA1), with two exceptions. Under the Management Plan, fishing may be allowed on a section of Alameda Creek between the Sunol Regional Wilderness and Sunol Valley (Policy WA1) and in one of the future water storage reservoirs in the Sunol Valley (Policy WA40). In addition, recreational uses such as public access, fishing, and boating may be allowed at some time in the future on one of the reclaimed mining pits (Policies WA38 through WA40 and Actions sun5 and sun6). Fishing may be allowed depending on whether a self-sustaining wild trout population reestablishes itself in Alameda Creek, and whether the California Fish and Game Commission adopts regulations allowing a catch-and-release fishery in these water bodies. These activities would occur in areas of low vulnerability and limited natural resources, and body-contact recreation with potable water supplies would not be permitted (Policies WA37 and WA39). Compatibility of recreational uses at one of the water storage reservoirs near established residential and commercial uses in the Town of Sunol would depend on the proximity of the future recreational uses to existing urban uses and would require project-level environmental review.

Golf Courses

Under the Management Plan, new golf courses would not be allowed. The existing Sunol Valley Golf Course would continue to operate and could be expanded in zones of low vulnerability and/or sensitivity. Should expansion of the Sunol Valley Golf Course be proposed at some time in the future (Policy WA18.1), project-level environmental review would be required. In addition, under the Management Plan, golf course management would be subject to more stringent monitoring requirements and other guidelines to protect water quality (Actions was2 and haz1).

Grazing

Although grazing and associated animal waste have the potential to degrade water quality, grazing serves as an effective fire management tool if properly managed. Under the Management Plan, grazing would be allowed to continue, but at a reduced level and under controlled conditions (Actions gra1 through gra10). Under the *Alameda Watershed Grazing Resources Management Element*, grazing is managed on an Animal Unit Month basis. Implementation of the Management Plan would reduce historic grazing levels by more than

50 percent.² Since grazing would be reduced under the Management Plan, no significant land use conflicts related to grazing would result. The goals of the Grazing Element are to protect water quality, reduce fire hazards, maintain biodiversity, enhance native vegetation, and improve wildlife habitat. The grazing management plan under the *Alameda Watershed Grazing Resources Management Element* would continue to be implemented under the Management Plan.

Gravel Mining

The Management Plan includes the *Sunol Valley Resources Management Element* (Sunol Valley Element), which provides a conceptual program for the future of the entire Valley within the SFPUC-owned Watershed lands. In terms of mining, this element largely corresponds with plans to complete mining that were previously permitted and reviewed under CEQA by the County of Alameda, and proposes plans for reclamation of the mining pits for water storage, as described in Section 1.3.

Following completion of mining (by approximately 2035), a water storage pit with 16,100 AF of storage would remain in the area north of I-680. The conditions of approval for SMP-32 required mitigation measures to address the impacts of mining north of I-680. Landscaping and recreation plans would be prepared and implemented for this area consistent with the conditions of approval for SMP-32. Under Management Plan action sun11, following completion of mining closest to the Sunol Water Temple, the perimeter of the western edge of this pit (see Figure III.B-3) would be filled to establish a quarter-mile buffer zone as additional mitigation for visual and cultural resource impacts of mining on the Sunol Water Temple.

- As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (shortening the completion date for water storage pits) and mining reclamation (resulting in increased public access around the Sunol Water Temple). These modifications may require amendment of the existing permit but would not bring about any significant land use impacts beyond those disclosed in the EIR prepared for SMP-32. Permitted mining under SMP-32 would bring about the loss of 140 acres of prime agricultural lands. In approving SMP-32, Alameda County found this loss of prime agricultural land to be an unavoidable significant impact of that project, and implementation of the Management Plan would include approval of a new lease between SFPUC (as land owner), and the mining operator, entitling mining that would also lead to the unavoidable significant impact.

As described in Section 1.3, above, options presented under Actions sun2a and sun2b would require amendments to existing permits south of I-680. The increase in mining depths proposed in both Actions sun2a and sun2b would not be likely to impact existing land uses beyond levels

² Animal Unit Month is the amount of forage (equivalent to 800 pounds of dry matter) required by a mature cow for a period of one month.

previously analyzed and mitigated in the previous environmental documentation prepared for SMP-24 and SMP-30. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining. In terms of land use impacts, these mitigation measures include an understanding that upon completion of mining, reclamation uses are assumed to be agriculture and water storage. Any other uses would have to be approved by Alameda County. The analysis of potential impacts to other resources (i.e., water quality and natural resources) associated with SMP-24 and SMP-30 are discussed in the relevant topic sections of this EIR.

Expanding the mining footprint within the leased area, proposed under Action sun2a, could conflict with some existing nursery operations in the valley. However, the conflict would not likely be significant due to the extent of existing adjacent mining activities (including gravel processing plants and reclamation pits). Depending on the specific location and extent, expanding the mining footprint could cause a significant impact of loss of prime agricultural land. Amendment of the existing permits would be subject to project-level environmental review by Alameda County.

Reclamation of mining pits as water storage reservoirs could have effects on nearby land uses. For example, localized climate changes could occur due to the presence of relatively large bodies of water. At this time, such impacts cannot be assessed because future land uses and details about reservoir operation are not known. However, future environmental review would be required at the time construction of an operating system for the reservoirs was proposed to determine potential impacts and mitigation measures.

Science and Educational Uses

Scientific study is currently allowed by permit only. The Management Plan would continue this practice, with the goal of increasing the understanding of the Watershed's resources and biodiversity (Policy WA11). The Management Plan considers the development of a Watershed Visitor Education Center (Action pub4), which would provide docent-led activities and other educational activities (such as docent training). It could also serve as a day-use picnic area. Management Plan implementation would not conflict with established educational or scientific uses, nor would development of the education center be expected to affect the existing land use character in the Watershed vicinity.

Nurseries

Existing nursery operations would be allowed to continue under the proposed Management Plan, and the feasibility of developing agricultural uses adjacent to Alameda Creek along Niles Canyon Road would be explored (Action sun16). Implementation of the Management Plan would not disrupt or divide the physical arrangement of established surrounding uses, nor would continued nursery operation introduce any new land use compatibility problems with nearby urban uses. However, water quality concerns associated with the use of fertilizers and pesticides by these nurseries are of concern to both SFPUC and ACWD. Under the Management Plan,

nurseries would be required to establish greater setbacks from Alameda Creek in order to better buffer the Creek from any pollutants that could be inadvertently discharged.

REFERENCES – Land Use

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C. GEOLOGY AND SOILS

1.0 SETTING

1.1 TOPOGRAPHY AND GEOLOGY

The Alameda Watershed is located along the western flank of the northern Diablo Range, within the natural region of California referred to as the Coast Ranges Geomorphic Province. This province is geologically complex and seismically active and is characterized by northwest-trending faults, mountain ranges, and valleys. The Diablo Range forms the eastern boundary of the Coast Ranges and separates the geologic structural depressions of San Francisco Bay and Santa Clara Valley to the west and the San Joaquin Valley to the east.

Northwest-trending ridges and valleys control the relief of the Watershed. The major valleys include Sunol, Calaveras, Alameda Creek, and Arroyo Honda Creek. The east-west trending La Costa Valley includes San Antonio Reservoir and constitutes a major portion of the Watershed in the northern section. The rugged upland terrain of Oak Ridge, Poverty Ridge, and Apperson Ridge surrounds the major valleys.

Elevations in the Watershed range from about 230 feet above mean sea level (msl) at the northern end of Sunol Valley to about 3,300 feet above msl in the southeastern corner of the Watershed on Poverty Ridge. Slopes in the upland areas are steep, with average gradients ranging from about 3:1 (horizontal to vertical ratio) to 1:1. The major valleys have nearly level floors. Most of the tributary stream valleys are very narrow, with V-shaped cross sections.

The Watershed is composed of two distinct stratigraphic rock sequences separated by the northern section of the Calaveras Fault Zone. The fault zone separates the Hayward Hills (to the west) from the Diablo Range (to the east). The Hayward Hills consist of Cretaceous (about 65 to 135 million years old) sedimentary rocks of the Great Valley sequence. The Diablo Range is composed primarily of sedimentary and metamorphic rocks of the Franciscan complex ranging in age from Cretaceous to Jurassic (135 to 190 million years old). Within the Watershed, Tertiary (about 2.5 to 65 million years old) marine deposits overlie both of these units, along with Quaternary (less than 2 million years old) surficial alluvium (deposited by streams).

Surficial deposits include Quaternary alluvium and landslide deposits. The alluvial deposits include older stream terrace and active stream channel deposits that are most extensive in the Sunol, La Costa, and Amador Valleys. They are an important source of aggregate mineral resources and include large areas of prime farmland soils.

1.2 SOILS AND EROSION

The soils in the Watershed generally reflect the underlying geology, with variations related to slope position and stability. In areas underlain by sedimentary rocks, the soils generally consist of the Millsholm-Los Gatos-Los Osos association; in areas underlain by rocks of the Franciscan complex, soils generally consist of the Vallecitos-Parish association (Environmental Science

Associates, 1994). Upland soils generally drain well, are moderately deep, and can erode. Soils of the Yolo-Pleasanton association develop on the alluvial deposits. These soils are generally well-drained, very deep, and have low potential for erosion.

Over 50 percent of the Watershed area has units described as susceptible to topsoil erosion. These areas are particularly sensitive to further loss of the topsoil, due to the existing limited soil depth, water holding capacity, and fertility. Soil erosion hazard is a measure of the susceptibility of a soil to erode by sheet wash, rilling, or gullyng.

Accelerated erosion in this region has occurred through both sheet erosion and gully erosion. Sheet erosion, the removal of soil more or less uniformly in a thin layer, is more damaging and less obvious than gullyng. Few of the upland soils, except the Positas soils, have inherent soil characteristics that make them highly erodible. However, the soils are highly sensitive to disturbance and are highly erodible under several land use situations, including cultivation and grazing. Most cultivated soils have eroded because of slope and the agricultural methods used.

Numerous soil types throughout the Watershed have erosion hazard ratings of severe and very severe. The highest erosion ratings are generally correlated to slope angle, with very severe erosion hazards for soils on slopes steeper than 3:1, regardless of parent material. A few soils, including the Gaviota rock sandy loam, Los Osos clay loam, and Positos gravelly loam have severe erosion hazards even at lower slope angles.

1.3 SLOPE STABILITY

Landslides are common in the vicinity and are pervasive throughout many of the upland areas within the Watershed. Regional assessment of slope stability rated most of the upland Watershed areas as unstable (Category 5) and moderately unstable (Category 4) lands. The only portions of the Watershed rated as stable (Category 1) or generally stable (Category 2) are the flat valley floors and nearly level, older alluvial terraces on their margins (Nilsen et al., 1979).

Slope instabilities in the Watershed lands range from dispersed small landslides to vast areas of nearly continuous, large, old landslides susceptible to reactivation. The most extensive areas of large landslides and high hazards are in the upper Alameda Creek and Calaveras Reservoir basins. In addition, the southeastern portion of the San Antonio Reservoir basin and the corridor along Arroyo de la Laguna and Niles Canyon have large existing landslides and/or high susceptibility to slope failures. Factors affecting the susceptibility of slopes to fail include soil moisture, slope angle, and slope behavior during a seismic event. Human interaction, including road and trail construction, can undermine and reduce stability of a hillside slope.

1.4 FAULTS AND SEISMICITY

Table III.C-1 lists the faults in the vicinity of the Alameda Watershed, and Figure III.C-1 indicates the location of the primary regional active faults. The northern segment of the Calaveras fault dominates the seismic setting of the Watershed, along with other active regional faults, including the Hayward and San Andreas faults. Several faults that may have experienced Late Quaternary

**TABLE III.C-1
FAULTS IN THE VICINITY OF THE ALAMEDA WATERSHED**

Fault Zone	Relative Location	Recency of Faulting^a	Historical Seismicity^b	Maximum Moment Magnitude^c
(northern) Calaveras	within Watershed	Historic, Holocene, Late Quaternary	M5.6-M6.4; 1861 M4 to 4.5; swarms 1970, 1990	6.8
(southern) Calaveras	south of Calaveras Reservoir	Historic, Holocene, Late Quaternary	M6.1; 1984 M5.9; 1979 1861 Many <M6.5	6.2
Hayward	3 miles southwest	Historic, Holocene	M6.8; 1868 M7.0; 1838 Many <M4.5	6.9
San Andreas	20 miles west	Historic, Holocene	M7.1; 1989 M8.25; 1906 M7.0; 1838	7.1
Greenville	8 miles northeast	Historic, Holocene	M5.6; 1980	6.9
Concord – Green Valley	36 miles north	Historic; Holocene	active creep	6.9
Healdsburg – Rodgers Creek	48 miles north	Holocene	na	7.0
Las Positos	< 1 mile north	Holocene, Late Quaternary	minor slip with 1980 Greenville Earthquake	na
Williams	in Watershed	Quaternary	na	na
Verona	< 1 mile north	Holocene	na	na
Mission	in Watershed	Quaternary	na	na

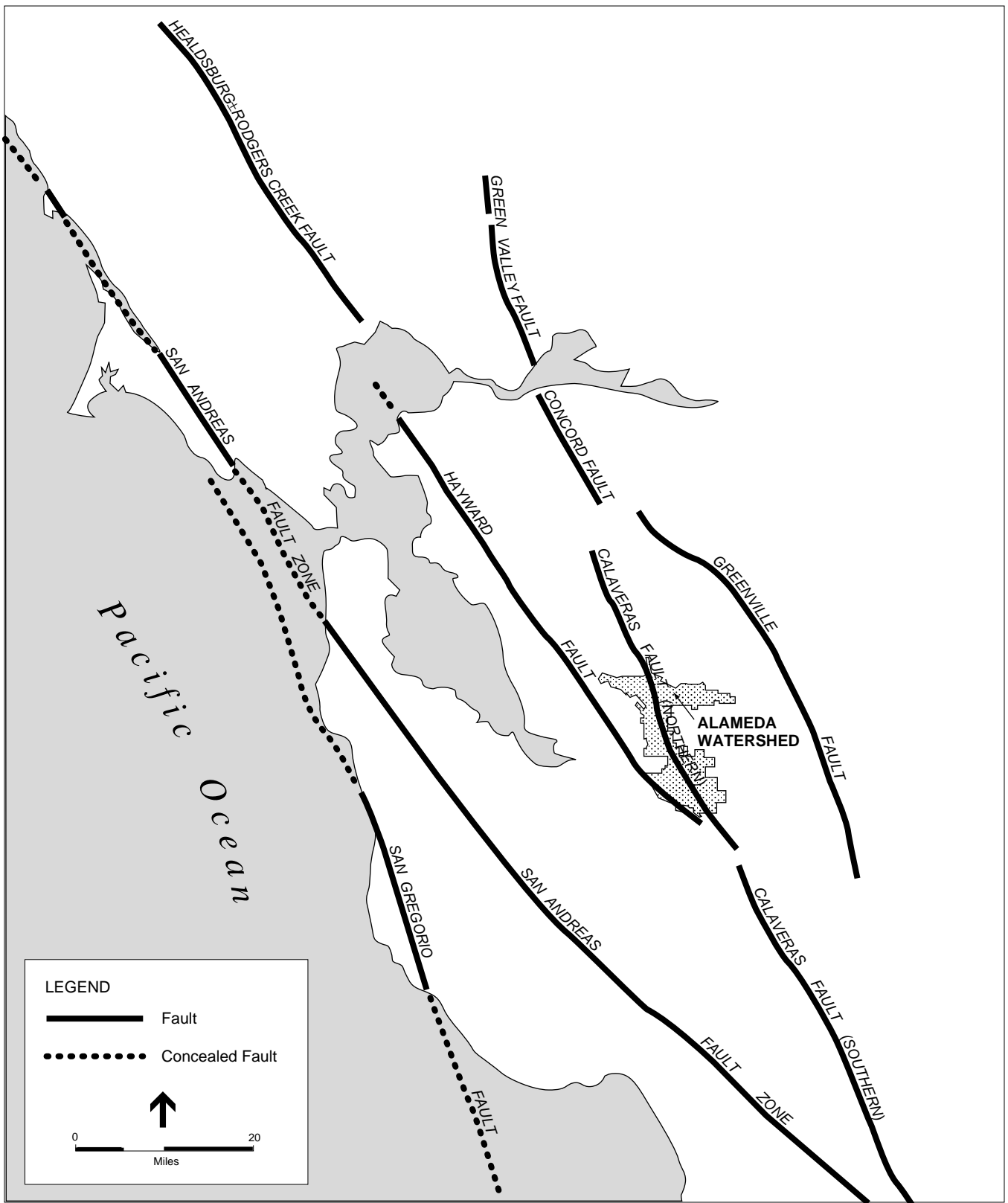
^a Recency of faulting based on Jennings, 1994. Historic: displacement during historic time (within last 200 years), including areas of known fault creep; Holocene: evidence of displacement during the last 10,000 years; Quaternary: evidence of displacement during the last 1.6 million years; Pre-Quaternary: no recognized displacement during the last 1.6 million years (but not necessarily inactive).

^b Richter magnitude (M) and year for recent and/or large events.

^c The Maximum Moment Magnitude is an estimated magnitude for a “characteristic” earthquake capable of occurring on a fault. Moment magnitude is directly related to average slip and rupture fault area, while the Richter magnitude scale reflects the amplitude of a particular type of seismic wave. Moment magnitude provides a physically meaningful measure of the size of a faulting event.

na = Not applicable and/or not available.

SOURCES: Jennings, 1994; Peterson, et al., 1996.



SOURCE: Environmental Science Associates.

Alameda Watershed Management Plan EIR / 930385 ■

Figure III.C-1
Principal Active Regional Faults
of the San Francisco Bay Area

and Holocene displacement are also within and adjacent to the Watershed. The major active and potentially active local faults that could generate seismic activity affecting the Watershed are listed in Table III.C-1. This table summarizes the historic seismic events on regional faults and estimates of maximum magnitude.

The Calaveras Fault Zone is a major structural feature in California, associated with the larger system of lateral faults that constitute the San Andreas Fault System (SFPUC, 1996).¹ The northern segment of the Calaveras Fault Zone extends 32 miles from Calaveras Reservoir to the vicinity of Walnut Creek on the north and has a slip rate of approximately 6 millimeters per year (Peterson et. al, 1996). Within the Watershed, the Calaveras Fault extends along the western side of the Arroyo de la Laguna Canyon to the Sunol Valley, along the eastern margin of the valley. Within this segment, Quaternary-aged landslides and occasional lack of surface expression obscure the fault.

1.5 SEISMIC HAZARDS

Seismic hazards within the Watershed include the potential for ground surface rupture and secondary hazards such as liquefaction and induced slope failures. Hazards due to ground rupture are primarily considered a risk along traces of active and potentially active faults within the Watershed, and would be expected to be confined to areas along the Calaveras Fault Zone.

Earthquake-generated landslides can occur in areas already susceptible to slope failure. Earthquakes may trigger landslides that might not otherwise occur until a later time. Liquefaction is the sudden loss of strength in loose, saturated, sandy materials during an earthquake, resulting in fluid-like behavior of those materials. Liquefaction can occur in areas where groundwater is shallow and materials consist of clean, poorly consolidated, fine sands.

1.6 MINERAL RESOURCES

Two active sand and gravel quarries are located within the Watershed, in Sunol Valley: the Mission Valley Rock Company and RMC Pacific Materials. A crushed stone quarry is proposed on Apperson Ridge (outside the boundaries of the SFPUC Watershed lands in unincorporated Alameda County) and has received an 80-year permit to operate. The California Division of Mines and Geology classifies lands within the San Francisco-Monterey Bay region into Mineral Resource Zones (MRZs) mandated by the Surface Mining and Reclamation Act (SMARA) of 1975 (see Regulatory Framework, below). The MRZ-2 classification includes areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence. The MRZ-3 classification includes areas containing mineral deposits, for which the significance cannot be evaluated from available data. Aggregate mineral resources have been identified within the Watershed lands in the Amador Valley and the Sunol Valley. MRZ-2 classifications are restricted to portions of Sunol Valley, and MRZ-3 areas are identified for thick alluvial deposits and sedimentary rocks (Stinson, et al., 1983).

¹ A fault zone consists of a major fault trace and includes secondary fractures originating from this fault.

1.7 REGULATORY FRAMEWORK

Mineral Resources

The Department of Mines and Geology identifies MRZs to describe the significance of mineral deposits, and the State Public Resources Code requires that local governments consider significant mineral resources in the planning process. Land use decision-making processes for areas with significant mineral resources on or adjacent to Alameda Watershed lands must comply with code requirements to explain the potential effect of land use actions on future resource extraction, and justify permitting uses in conflict with future extraction.

Ground Rupture Hazards

The Alquist-Priolo Special Studies Zones Act (1972) regulates development near active faults with the purpose of mitigating the hazard of surface fault-rupture. The principal focus of the legislation is to prohibit the location of developments and structures for human occupancy across the trace of active faults, as defined by the State Geology Board. For SFPUC Watershed lands, the regulation would require specialized geologic reports defining and delineating surface fault-rupture hazards prior to undertaking projects that would construct structures for human occupancy. The area along the Calaveras Fault Zone is designated as a special studies zone under the Alquist-Priolo Act, and seismic hazards of surface rupture must be adequately evaluated for projects that propose structures for human occupancy.

2.0 IMPACTS

2.1 SIGNIFICANCE CRITERIA

The City has not formally adopted significance standards for geology and seismicity impacts, but it generally considers that implementation of the *Alameda Watershed Management Plan* would have a significant geologic or seismic impact if it were to:

- expose people or property to geologic hazards, such as earthquakes, landslides, mudslides, ground failure, or similar hazards;
- cause substantial flooding, erosion, or siltation;
- change topography or ground surface relief features;
- substantially modify any unique geological or physical features; or
- preclude extraction of significant mineral resources.

2.2 PROGRAM-LEVEL IMPACTS

This section discusses the potential impacts of implementation of the management actions in the Management Plan on geology and soils, including potential increases in soil erosion, reduced slope stability, exposure to seismic hazards, and changes to gravel mining operations.

Increases in Soil Erosion

Implementation of several types of actions could cause substantial erosion or siltation, resulting in potentially significant impacts. These are discussed below.

The *Alameda Watershed Management Plan* includes facilities that could result in increased public visitation of the Watershed by providing new trails (Policies WA15.2 and WA15.4), golf course expansion (Policy WA18.1), and increased information regarding public activities available on the Watershed, such as public use area maps and brochures or additional information on public activity destinations. These facilities include information kiosks (Action pub3), a Watershed Visitor Education Center (Action pub4), public recreation area around the Sunol Water Temple (Action sun14), commercial site (Action sun19), overnight nature study area (Action sun20), and trail connections (Action sun21). In addition, implementation of actions des8 and sun17 would result in universal access improvements at existing Watershed facilities and trails and provide for universal access at proposed facilities.

Erosion of surficial soil within the Watershed could occur from direct exposure to wind, water, and physical disturbance. Soil erosion can result in ground instability and water quality degradation. Development of new hiking trails, bicycle trails, equestrian trails, and service roads increase direct exposure of dirt to erosional forces, particularly if increased use occurs on high use roads that are sources of erosion and sedimentation. Increased use of existing hiking, bicycle, and horse trails can lead to deepening of existing trails and the development of "shortcut" trails that, over time and with sufficient surface water runoff, can become erosional channels. The experience of other open space managers has shown that more serious degradation occurs on property where bicycles are allowed (MMWD, 1991).

Overgrazing by livestock (removal of the protective plant cover) can reduce vegetative cover and lead to soil erosion, especially on hillside slopes. Estimated erosion rates on soils recently used for pasture and range were previously higher than those cultivated for dry-farmed grain and grain hay (Environmental Science Associates, 1996).

Potentially significant soil erosion may also originate from the relocation of fire and maintenance roads and new trails or roads at the Watershed facilities described above. In addition, soil erosion may also originate during construction of new Watershed facilities. Many facilities would be installed to ensure and/or improve water quality or resource protection on the Watershed, such as barriers or fences along identified high-risk spill potential areas (Actions haz6), installation of infiltration drainfields and detention basins (Action sto1), installation of long-term sediment retention basins or other permanent measures (Action aqu12), rehabilitation of shoreline areas and stream segments (Actions aqu5 and aqu7), and the relocation or reconfiguration of existing roads (Action fir7) to improve emergency access.

Implementation of policies to reduce the threat of fire hazards or to enhance wildlife habitat through fuel reduction (Policy F11 and Action wil7) could ultimately result in increased soil erosion. Typically, vegetative cover reduces the erosive energy of rainfall and promotes infiltration of rainwater. In addition, plant root systems help stabilize soil horizons below the

surface. By removing vegetative cover, the soil's ability to absorb the water is reduced and the water tends to wash downslope, eroding soil as flow increases. In addition, increased use of trails and service roads could increase fire hazards; trampling of vegetative cover and the resultant increase in easily ignitable dry litter could increase erosion potential following fire events. Increased erosion due to vegetation loss following fire events could have detrimental effects on water quality and slope stability.

While the Management Plan proposes certain management actions that could bring about physical effects, the Management Plan also includes actions that would reduce these potential effects. Table III.C-2 is provided to link, at a program level, those actions that could result in potential impacts (column 1) with the full range of actions that could be required to reduce the potential impacts (column 2). The table highlights in **bold** text those actions that may be essential to reduce significant impacts column 1 actions, depending on the specific nature of the management action, such as design, siting, or implementation schedule. These essential actions, as well as the other actions (in non-bold text) that would further reduce potential physical effects, are discussed below. The table also indicates the level of impact significance that would remain if the actions discussed were implemented. Not every bolded action would be necessary to mitigate the effects of the associated potential impact-causing management action. For example, a very minor structure such as a kiosk located in an environmentally non-sensitive area may not require any of the bolded actions to avoid a significant effect. Because implementation information, such as locations of specific facilities, is not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts. Management actions would be reviewed at the time they are proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures (see Section II.E.5.0, Mitigation Monitoring and Reporting).

Under the Management Plan, the most important means of reducing soil erosion are actions that call for relocating high erosion potential roads (Action **roa2**) and design practices that establish guidelines and best management practices (BMPs) for the construction of new roads and trails (Action **roa12**). The new public trails proposed by the Management Plan would be placed in zones less vulnerable to erosion. Action **veg4** requires that a grading plan be prepared prior to the initiation of any construction project. Action **veg7** requires that operation, maintenance, and new construction follow erosion control BMPs. In terms of minimizing impacts that might occur due to loss of vegetative cover through fuel management, Actions **fir14** and **veg5** are crucial to establishing restoration requirements and monitoring.

In addition, the Management Plan includes other actions that would further reduce the impacts of soil erosion, when incorporated with the important actions discussed above. Actions **roa1**, **roa3**, **roa4**, and **roa7** provide guidelines for modifying existing roads and siting new roads to minimize soil erosion. Action **des5** provides design guidelines for roads, trails, and facilities specifically with respect to grading. Finally, to reduce impacts from potential fire damage, Actions **fir2** through **fir7** would improve fire pre-suppression and fire response so as not to increase vegetative cover loss and the associated soil erosion. A grazing management plan, in conjunction with Watershed monitoring, could sufficiently reduce overgrazing, thereby limiting the associated soil erosion (**gra1**, **gra2**, and **gra6**).

**TABLE III.C-2
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO GEOLOGY AND SOILS
THROUGH INCREASES IN SOIL EROSION**

Policies or Management Actions that Would Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Policy or Action ^{a,b}	Level of Significance if Implemented
Action pub3: Establish information kiosks at Watershed entryways.	Actions veg4, veg7 , and des5.	LTS
Action pub4: Establish a Watershed Visitor Education Center.	Actions roa1, roa2 , roa3, roa4, roa7, roa12, veg4, veg7 , fir2, fir3, fir4, fir5, fir6, fir7, and des5.	LTS
Action sun14: Develop a public recreation area around the Sunol Water Temple.	Actions roa1, roa2 , roa3, roa4, roa7, roa12, veg4, veg7 , fir2, fir3, fir4, fir5, fir6, fir7, and des5.	LTS
Action sun19: Establish a small commercial site.	Actions roa1, roa2 , roa3, roa4, roa7, roa12, veg4, veg7 , fir2, fir3, fir4, fir5, fir6, fir7, and des5.	LTS
Action sun20: Establish an overnight nature study area.	Actions roa1, roa2 , roa3, roa4, roa7, roa12, veg4, veg7 , fir2, fir3, fir4, fir5, fir6, fir7, and des5.	LTS
Action sun21: Establish trail connections extending to the Sunol Regional Wilderness.	Actions roa1, roa2 , roa3, roa4, roa7, roa12, veg4, veg7 , fir2, fir3, fir4, fir5, fir6, fir7, and des5.	LTS
Action des8: Implement universal access improvements at SFPUC facilities and trails.	Actions roa1, roa2 , roa3, roa4, roa7, roa12, veg4, veg7 , fir2, fir3, fir4, fir5, fir6, fir7, and des5.	LTS
Action sun17: Provide universal access at Sunol Valley recreation facilities.	Actions roa1, roa2 , roa3, roa4, roa7, roa12, veg4, veg7 , fir2, fir3, fir4, fir5, fir6, fir7, and des5.	LTS
Policy WA15.2: Consider new trails in zones of lesser vulnerability and risk.	Actions roa1, roa2 , roa3, roa4, roa7, roa12, veg4, veg7 , fir2, fir3, fir4, fir5, fir6, fir7, and des5.	LTS
Policy WA15.4: Support new trail connections that link to adjacent communities and other trail facilities.	Actions roa1, roa2 , roa3, roa4, roa7, roa12, veg4, veg7 , fir2, fir3, fir4, fir5, fir6, fir7, and des5.	LTS
Policy WA18.1: Consider expansion of existing golf course in areas of low vulnerability/sensitivity.	Actions veg4, veg7 , and des5.	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

TABLE III.C-2 (Continued)
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO GEOLOGY AND SOILS
THROUGH INCREASES IN SOIL EROSION

Policies or Management Actions that Would Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Policy or Action ^{a,b}	Level of Significance if Implemented
Action haz6: Install barriers or fences along identified high-risk spill potential areas.	Actions, veg4 , veg7 , and des5.	LTS
Action sto1: Remediate on-site stormwater collection and drainage systems through infiltration drainfields and trenches, and detention basins.	Actions, veg4 , veg7 , and des5.	LTS
Action aqu12: Install long-term sediment retention basins or other permanent measures.	Actions, veg4 , veg7 , and des5.	LTS
Action aqu5: Rehabilitate shoreline areas using structural shoreline protection practices.	Actions, veg4 , veg7 , and des5.	LTS
Action aqu7: Rehabilitate stream segments.	Actions fir14 and veg5 .	LTS
Action fir7: Identify and construct necessary road improvements.	Actions, veg4 , veg7 , and des5.	LTS
Policy F11: Use prescribed fire to control fuels.	Actions fir14 and veg5 .	LTS
Action wil7: Create palatable re-sprouting through mechanical vegetation treatments or prescribed fire.	Actions veg7 , fir14 and veg5 .	LTS
Over grazing by livestock.	Actions gra1 , gra2 , and gra6.	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

Implementation of design guidelines, and vegetation protection and restoration activities, as described above and in Section IV.C, would reduce potential soil erosion impacts associated with the Management Plan to a less than significant level. The impacts of day-to-day management activities that implement the Management Plan are analyzed in this EIR and generally would not be subject to further environmental review. No unavoidable significant program-level soil erosion impacts have been identified in this EIR. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Reduced Slope Stability

Under the Management Plan, slope instability leading to landslides would continue to occur within the hillslopes of the Watershed. However, proposed public access to and use of areas susceptible to landsliding could be increased by the addition of new trails (Policies WA15.2 and WA15.4 and Actions sun14 and sun21). Road and trail building associated with increased public use could reduce slope stability by cutting into slopes in certain areas. Therefore, reduced slope instability would be considered a significant impact of Management Plan implementation.

Table III.C-3 links, at a program-level, those management actions that could result in potential impacts on slope stability with the full range of actions that could be required to reduce the potential physical effects. Under the Management Plan, the most important means of reducing potential slope instability and landsliding is Action **veg10**, which calls for identifying areas of slope instability and failure and employing BMPs to prevent further erosion. Action **roa12** is also important, as it calls for the designing, siting, and constructing new roads and trails according to specific guidelines and BMPs for location and alignment. Implementation of these actions, as described above and in Section IV.C, would reduce the potential for slope instability and landsliding to a less than significant level.

Exposure to Seismic Hazards

Groundshaking associated with seismic activity on the Calaveras fault and fault rupture caused by the Calaveras fault or any regional active faults is a potentially hazardous occurrence in the Watershed. Increased public activity in the Watershed would expose more people and facilities to the hazards of a seismic event, including landsliding and liquefaction. It is not possible to predict whether seismically induced landsliding would be limited to certain portions of the Watershed, such as areas along or near active faults. Alluvial sediments within the valleys are potentially subject to liquefaction in the event of strong groundshaking. Given the relatively small additional number of people who might experience exposure to seismic hazards while in the Watershed, seismic hazards as a result of groundshaking and fault rupture are considered less than significant.

**TABLE III.C-3
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO
GEOLOGY AND SOILS DUE TO REDUCED SLOPE STABILITY**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action sun14: Develop a public recreation area around the Sunol Water Temple, including trail connections to Niles Canyon and Pleasanton Ridge Regional Parks.	Actions veg10 and roa12.	LTS
Action sun21: Establish trail connections extending to the Sunol Regional Wilderness.	Actions veg10 and roa12.	LTS
Policy WA15.2: Consider new trails in zones of lesser vulnerability and risk.	Actions veg10 and roa12.	
Policy WA15.4: Support new trail connections that link to adjacent communities and other trail facilities.	Actions veg10 and roa12.	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

Changes to Gravel Mining Operations

Gravel mining is proposed north of I-680, and gravel extraction operations would continue south of I-680. Under the Management Plan, mining south of I-680 would continue under one of two separate options. The following discussion applies to both continuing mining operations and proposed options.

Mining operations could result in erosion of surrounding soils by wind, water, or excavation. Expansion of mining south of I-680 would require amendments to existing permits south of I-680 but would not significantly alter topography, because the Management Plan only proposes to increase the depth of existing mining pits or to expand the mining footprint to conform to boundaries of the leased acreage. The increase in mining depths and footprint would not be likely to impact geology and soils beyond levels previously analyzed and mitigated in previous environmental documentation. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those of SMP-24, SMP-30, and applied to more recent permit permits such as SMP-32 that mitigate significant effects of mining. Mining to a greater depth should not have a significant geotechnical impact if design considerations relating to pit side slopes are followed, as required by Alameda County in conditions of approval for all three SMPs mentioned above. These conditions of approval also include requirements for erosion control plans for mining activities. Amendment of the existing permits would be subject to project-level environmental review by Alameda County.

- The impacts to geology and soils from proposed mining activities north of I-680 were analyzed in the *Mission Valley Rock Company Surface Mining Permit and Reclamation Plan SMP-32 EIR*. The potential impacts identified would be mitigated through implementation of pertinent mitigation measures that were adopted as conditions of approval of SMP-32 by Alameda County. Actions proposed in the Management Plan would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. These include requirements for grading, erosion control, and slope maintenance as mentioned above. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new geology and soils impacts beyond those disclosed in the EIR prepared for SMP-32. Amendment of the existing permit, if required, would be subject to additional environmental review by Alameda County.

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D. HYDROLOGY AND WATER QUALITY

1.0 SETTING

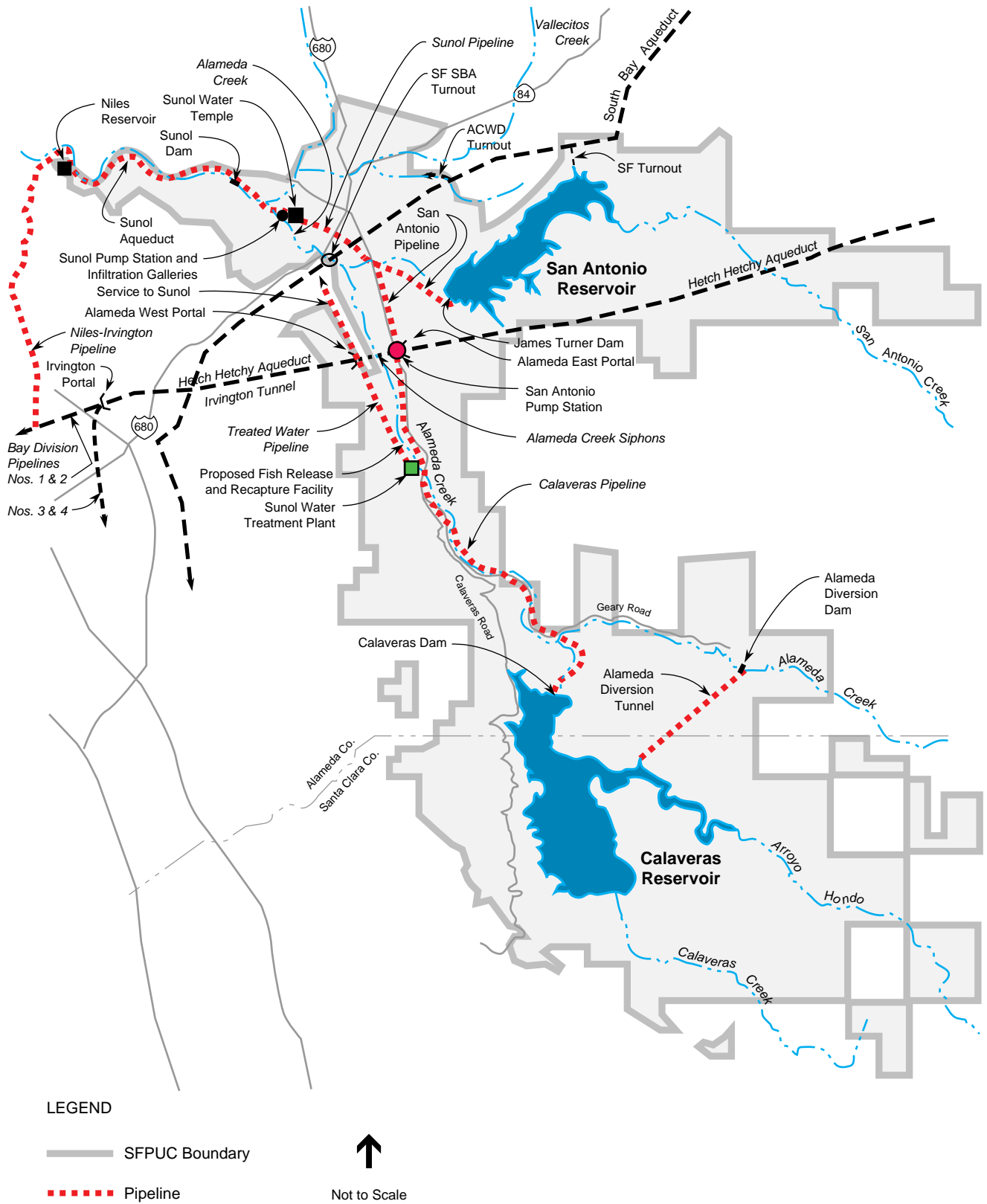
The SFPUC-owned Alameda Watershed lands are located within the much larger hydrologic boundaries of the greater southern Alameda Creek watershed, which encompasses 175 square miles in the East Bay, from Pleasanton to the north to Mount Hamilton to the south (see *Alameda Watershed Management Plan*, Figure 1-5, page 1-13). The natural drainage of the greater southern Alameda Creek watershed flows from the hills in southern Alameda County and northern Santa Clara County, converges at Alameda Creek, flows through the Sunol Valley and Niles Canyon, and eventually drains to San Francisco Bay.

The SFPUC-owned lands, referred to as the Alameda Watershed, cover about 56 square miles (36,000 acres) in the western part of this greater watershed. Natural drainage within this area has been altered by the SFPUC water system, but for this discussion of hydrology and water quality, the Alameda Watershed is described under three separate drainage basins: (1) Calaveras Reservoir and Alameda Creek above the diversion dam; (2) San Antonio Reservoir; and (3) Alameda Creek below the diversion dam. Figure III.D-1 shows the Alameda Watershed, including the reservoirs, tributary creeks, and the major SFPUC water system facilities.

- As described in Chapter II, Project Description, for purposes of the Management Plan, the Alameda Watershed is also divided into “primary” and “secondary” Watershed lands. The primary Watershed lands are defined as the areas where local drainage is collected, treated, and used as part of the SFPUC water supply system. Under existing conditions, the primary Watershed lands drain directly to San Antonio and Calaveras Reservoirs and Alameda Creek, above the diversion dam, which are essentially the same as the first two drainage basins listed above. In the Management Plan, the primary Watershed also includes drainage to Alameda Creek just downstream of the Sunol Valley WTP to the site of a proposed water release and recapture facility that would be used for fisheries enhancement.
- Secondary Watershed lands are defined as SFPUC-owned lands that do not drain into the SFPUC water supply system for drinking water uses. Under existing conditions, these areas drain to Alameda Creek below the diversion dam and are essentially the same as the third drainage basin listed above. In the Management Plan, the secondary Watershed lands are identified as Alameda Creek drainage areas downstream from the proposed water release and recapture facility. Figure II-2 shows the primary and secondary Watershed areas of the SFPUC-owned lands.

1.1 CALAVERAS RESERVOIR DRAINAGE BASIN AND ALAMEDA CREEK ABOVE THE DIVERSION DAM

The natural drainage basin for Calaveras Reservoir includes Arroyo Hondo and Calaveras Creeks from the southeast and local drainage areas along the west shore of the reservoir. The Spring Valley Water Company began construction of Calaveras Dam in 1913. Storage of water behind



SOURCE: Montgomery Watson, 1993; Environmental Science Associates.

Alameda Watershed Management Plan / 930385 ■

Figure III.D-1
Alameda Watershed
Facilities and System

the dam began in 1916, and the dam was completed in 1925. In addition, Calaveras Reservoir receives flows from upper Alameda Creek through the Alameda Diversion Dam and Tunnel, which were constructed from 1925 to 1931 following completion of the Calaveras Dam. This facility diverts natural runoff upstream of the diversion dam from the southern Alameda Creek watershed to the Calaveras Reservoir drainage basin. In winter, the diversion dam and tunnel divert storm flow in Alameda Creek into Calaveras Reservoir, and flow in Alameda Creek downstream of the diversion dam is limited to runoff in the lower watershed and groundwater accretion. In summer, the flow in Alameda Creek goes underground.

Average annual rainfall in the vicinity of the Calaveras Reservoir is 21.9 inches per year. The catchment area for the Calaveras Reservoir is approximately 135 square miles, including 62 square miles for the Calaveras Creek watershed, 38 square miles for the Arroyo Hondo watershed, and 35 square miles of the southern Alameda Creek watershed. The SFPUC-owned lands draining to Calaveras Reservoir are considered part of the primary Watershed.

Calaveras Reservoir has a capacity of 96,900 acre-feet; however, sedimentation in the reservoir since its construction in 1925 has reduced maximum reservoir capacity by about 12 percent. Large areas of the drainage basin immediately contributing to Calaveras Reservoir are eroded or highly susceptible to erosion, although gentle slopes and more stable soils are present on the south and southeast sides of the reservoir. Eroded soils and steep slopes also occur in the sub-basins of Arroyo Hondo and Calaveras Creeks. Abandoned or active commercial gravel mines or borrow pits have not been identified within the Calaveras Reservoir drainage basin.

As stated above, the natural drainage basin of upper Alameda Creek has been altered so that flow from this sub-basin is conveyed to Calaveras Reservoir and is now considered part of this watershed. The natural watershed area of the southern Alameda Creek basin extends upstream about 10 miles southeast of the diversion dam, but the SFPUC-owned lands are primarily located along the three miles upstream of the diversion, which are considered part of the primary Watershed. Large parts of the slopes draining to this reach of Alameda Creek are eroded or severely eroded, and slope angles can exceed 45 percent.

1.2 SAN ANTONIO RESERVOIR DRAINAGE BASIN

The natural drainage basin for the San Antonio Reservoir is the same as the watershed for San Antonio Creek, and it includes the tributary sub-drainage basins for Indian Creek, La Costa Creek, and Williams Gulch. The dam forming San Antonio Reservoir was built in 1965 and crosses La Costa Creek, which is also referred to as San Antonio Creek downstream of their confluence. San Antonio Creek is tributary to Alameda Creek downstream of the confluence of Alameda and Calaveras Creeks, which is also downstream of the Alameda Diversion Dam. San Antonio Reservoir has a capacity of 50,500 acre-feet and collects runoff from a watershed of about 40 square miles. The SFPUC-owned lands draining to San Antonio Reservoir are considered part of the primary Watershed. Sedimentation to the reservoir since construction in 1965 has reduced maximum reservoir capacity by about 1.5 to 2 percent. In addition to storing local runoff, San Antonio Reservoir is used to store Hetch Hetchy water, South Bay Aqueduct

emergency water, and Calaveras Reservoir surplus water. It has also been used historically to store groundwater pumped from the Sunol Infiltration Galleries (discussed in Section 1.5, below). The average annual rainfall in the vicinity of the San Antonio Reservoir is 19.8 inches per year.

SFPUC-owned lands include nearly all the drainage area north and northeast of the San Antonio Reservoir, and these lands extend eastward to include the downstream portions of each of the major contributing creeks. However, the upstream portions of the tributaries are outside of SFPUC ownership, including large areas of eroded and erosion-sensitive soils. Abandoned or active commercial gravel mines or borrow pits are not located within the San Antonio Reservoir drainage basin.

1.3 ALAMEDA CREEK DRAINAGE BASIN BELOW THE DIVERSION DAM

Alameda Creek, below the diversion dam (sometimes referred to as lower Alameda Creek), conveys flows and runoff through the Sunol Valley from tributary drainages in the Diablo Range and Livermore Valley. Through the Sunol Valley, Alameda Creek below the diversion dam receives limited surface flows from Calaveras Creek and Arroyo Hondo Creek downstream of Calaveras Reservoir and from San Antonio Creek downstream of San Antonio Reservoir. Further downstream, north of I-680, Alameda Creek receives flows from Arroyo de la Laguna and Vallecitos Creek. SFPUC-owned lands primarily include areas adjacent to Alameda Creek in the Sunol Valley and Niles Canyon, and within the downstream end of the southeastern tributaries; these lands are considered part of the secondary Watershed. The major portion of the Alameda Creek drainage area below the diversion dam is outside of the SFPUC-owned lands.

Within the vicinity of, and on SFPUC-owned lands, there are numerous public and private roads that cross the Alameda Creek drainage basin and affect the natural flow of runoff. These roads include the I-680 crossing through Arroyo de la Laguna and the Sunol Valley, the SR 84 crossing through Niles Canyon and Vallecitos Valley, county and private access roads, and a number of internal gravel/dirt roads used principally by SFPUC personnel and gravel mining operators. Commercial gravel mining currently takes place within this drainage basin, which has historically rerouted surface and groundwater flows in the immediate vicinity of the mining pits.

1.4 WATER QUALITY

Water quality within the three drainage basins of the Alameda Watershed system is influenced by the source, storage, and treatment of water. Calaveras Reservoir stores local runoff only, and aeration facilities at this reservoir are used in late summer and fall to increase dissolved oxygen in stagnant zones in the deeper parts of the reservoir. This process reduces the concentrations of dissolved iron, manganese, and hydrogen sulfide in the raw water. San Antonio Reservoir receives imported water in addition to local drainage; therefore, it has more variable water quality than does Calaveras Reservoir. The imported water stored in San Antonio Reservoir includes water from the Hetch Hetchy system, surplus water from the Calaveras Reservoir, and, in the event of a drought, water from the South Bay Aqueduct (water from the State Water

Project water system, which the City may purchase during a drought). There are also facilities to pump groundwater from the Sunol Infiltration Galleries (discussed below) to San Antonio Reservoir. Below the diversion dam, Alameda Creek receives local waters only, including runoff from the lower watershed and groundwater accretion.

Water quality testing of Alameda Watershed source waters was conducted as part of the *Hetch Hetchy Water Quality Planning Study* (Camp Dresser & McKee, 1995). Monitoring of Calaveras and San Antonio Reservoirs indicated good overall water quality. Turbidity levels in both reservoirs are typically low in the summer and higher in the winter. *Giardia*, *Cryptosporidium*, and total coliform levels were very low during monitoring. Water in San Antonio Reservoir has exhibited higher levels of sodium as well as other salts compared to Calaveras Reservoir, which is most likely due to the addition of water from the South Bay Aqueduct. Since San Antonio Reservoir has no aeration system, seasonal stratification results in oxygen depletion in the lower depths. Increased pH levels in the reservoirs are usually a direct result of algae blooms that typically occur during the warmer summer months. All water from both reservoirs is treated at the Sunol Valley WTP before it enters the SFPUC water system for distribution to customers.

Alameda Creek water quality was tested as part of the *Alameda Creek Water Resources Study* (Bookman-Edmonston Engineering, Inc., 1995). Water quality testing indicated that the quality of Alameda Creek water is acceptable for establishing a trout population. Water temperature, dissolved oxygen, pH, hydrogen sulfide, copper, iron, and manganese in Alameda Creek surface water were all within water quality criteria established by the U.S. Environmental Protection Agency for the protection of aquatic life.

As part of the development of the Management Plan, characterization of existing conditions included identifying Water Quality Vulnerability Zones (WQVZs). These zones are areas where activities or disturbance would have the greatest potential to affect the water quality of surface runoff and water stored in the reservoirs. The WQVZs were classified as high, moderate, or low vulnerability based on criteria that assessed proximity to water, intensity of rainfall, wildlife concentration, vegetation as a protective layer, slope, and soil. Disturbance to areas of the highest vulnerability would result in the greatest risk to water quality. The Management Plan identified some areas of high vulnerability within the Watershed, large areas of moderate vulnerability, and almost no areas of low vulnerability (see Figure 2-3 of the Management Plan for a map of WQVZs). The Management Plan map implies that activities in most locations on Watershed lands would likely affect water quality.

1.5 GROUNDWATER

Groundwater investigations were conducted in the Sunol Valley as part of the *Alameda Creek Water Resources Planning Study* (Luhdorff and Scalmanini Consulting Engineers, 1993). The information on groundwater presented below is based on that study.

In the Sunol Valley, the potential water-bearing geologic units consist primarily of alluvium and Livermore Gravels. The alluvium contains relatively large volumes of groundwater compared to

the other geologic units in the area. The alluvium is located in the Sunol Valley and along stream channels to depths of about 60 feet and is composed of coarse sand and gravel deposits with high permeability. Typically located below the alluvium, the Livermore Gravels are found in the Livermore Valley and Sunol Valley to depths of at least 500 feet; this geologic unit has been shown to have low water transmissivity and to contain limited groundwater. Bedrock is located at depths greater than 500 feet below the ground surface. Groundwater development in the Sunol Valley has been limited to historical operation of the Sunol Infiltration Galleries and to the shallow dewatering wells associated with mining operations.¹ Both activities are located along Alameda Creek in the secondary Watershed.

The Sunol Infiltration Galleries (sometimes referred to as the Sunol Filter Galleries, and shown in Figure III.D-1) and the Sunol Water Temple were constructed by the Spring Valley Water Company in 1901. The system was originally designed to provide passive use of shallow groundwater by capturing downstream flows in Alameda Creek from groundwater that was backed up behind the Sunol Dam. The Sunol Dam was built in 1889 and is located downstream of the Infiltration Galleries and the Sunol Water Temple. The Infiltration Galleries are essentially subsurface concrete tunnels with holes in the side walls, constructed at depths between 10 and 20 feet below the ground surface. They are approximately 9,000 feet long and run parallel to Alameda Creek, beginning at the Sunol Dam and a point just west of I-680, and meet at the Sunol Water Temple. Groundwater seeps into the Infiltration Galleries, where collected groundwater flows downstream into the Sunol Water Temple and eventually to the Sunol Aqueduct and Niles Reservoir.

Seepage into the Infiltration Galleries was increased through the installation of perforated pipes directly beneath the Alameda Creek channel and through the construction of gravel dams in the creek channel. In the 1960s, the Sunol Pump Station was constructed to pump flows from the Infiltration Galleries into San Antonio Reservoir and to the Sunol Valley WTP. Since the construction of San Antonio Reservoir in 1965, flows to the Infiltration Galleries have been reduced, and the SFPUC has ceased construction of gravel dams in Alameda Creek. Water in the shallow alluvium that percolates into the Infiltration Galleries is pumped to San Antonio Reservoir. The Sunol Aqueduct has been decommissioned.

In addition to the Infiltration Galleries, the majority of historical groundwater use in the Sunol Valley has been associated with gravel mining. Mining operations that affect the groundwater system include pumping groundwater for use in processing, diverting groundwater to empty mining pits or Alameda Creek in order to dewater the pits, and constructing slurry cutoff walls to limit groundwater flow to the mining pits. The dewatering wells are located almost exclusively within the upper layer of alluvium. Slurry cutoff walls made of bentonite (a clay material) have been installed within the alluvium to depths of 50 feet around the perimeter of most of the mining excavations to seal the upper alluvium and to prevent the flow of groundwater to the pits. While the mining pits extend to depths of 100 to 140 feet, the need for groundwater control is

¹ It should be noted that although it is referred to as shallow groundwater in this section, the groundwater intercepted by the Infiltration Galleries is considered by the California Department of Health Services to be surface water due to the connection these waters have with the shallow alluvium in Alameda Creek.

limited to the upper 50 feet. Below 50 feet, there is limited groundwater inflow to the pits. The dewatering wells used in the gravel mining operations have essentially diverted shallow groundwater in the alluvium to empty quarries, settling ponds, or Alameda Creek so that eventually it is returned to the groundwater system. In general, gravel mining has not affected the pattern of groundwater flow beneath the valley. However, not all mining pits in the Sunol Valley have slurry cutoff walls to prevent migration of shallow groundwater into the pits. Accumulated groundwater in the pits is sometimes used as process water for the mining operations, but such use could result in the need to discharge turbid water into Alameda Creek during the rainy season. Direct discharges to Alameda Creek are subject to requirements of the Regional Water Quality Control Board in order to protect water quality in the creek.

A review of data from approximately 18 existing monitoring wells in the Sunol Valley indicates that shallow groundwater levels in the alluvium typically occurs 20 to 30 feet below the ground surface, and groundwater flow is parallel to Alameda Creek. Two production wells in the valley extend into the Livermore Gravels. One well is used for small-capacity nursery irrigation, and the other well was formerly used for plant process water by one of the mining operators. Field testing of one of the production wells was conducted for the *Alameda Creek Water Resources Planning Study* and confirmed that there is limited groundwater availability or storage capacity in the Livermore Gravels (deeper than 50 feet). It was also determined that a network of 20 to 60 wells (drilled to a depth of 50 feet) would be needed to effectively pump water from the alluvium. Therefore, the study concluded that there is a low potential for groundwater development in the Sunol Valley for water supply. Groundwater quality testing for the study indicated that the groundwater generally meets primary drinking water standards. There is no evidence that gravel mining has affected groundwater quality, but there are locally elevated nitrate concentrations in groundwater in the vicinity of historical farming in the area.

1.6 GRAVEL MINING

- Historical and current gravel mining operations in the Sunol Valley have removed a large quantity of the valley's alluvium, which has altered surface and ground water flow as well as groundwater storage. Mining operations involve major earthmoving and excavation activities, and historical mining has resulted in several excavations along Alameda Creek between the San Antonio Pump Station and I-680 (see Figure III.B-2). Before mining operations began in the 1960s, Alameda Creek apparently flowed naturally through an area now occupied by one of the largest excavations. The current creek alignment has been relocated along the western edge of one of the excavations, and mining has extended to depths of 100 to 140 feet. As part of SMP-24 mining operations, slurry cutoff walls made of bentonite have been constructed in the upper 50 feet or so around the perimeter of the excavations on three sides of SMP-24 to limit the inflow of shallow groundwater to the pits. The fault trace along Calaveras Road acts as an impermeable barrier to groundwater and serves as a fourth wall. SMP-24 requires minimal dewatering to reach the total pit depths (Luhdorff and Scalmanini Consulting Engineers, 1993). Other mining operations in the Sunol Valley area remove groundwater inflow out of the pits through pumping.

- Mining operations are located in the Alameda Creek drainage basin below the diversion dam, which is within the secondary Watershed and outside of the areas draining to the water supply system. All gravel mining in the Sunol Valley occurs under surface mining permits issued by Alameda County and has undergone CEQA environmental review, which resulted in conditions of

approval that require implementation of mitigation measures to avoid or reduce impacts to hydrology and water quality. These measures include construction of a continuous slurry wall around the mining pit; drainage, erosion, and sediment controls; testing of overburden for contaminants and isolation of any soil found to be a potential source of nitrates or mineral pollutants; maintaining existing runoff patterns or constructing a sediment basin and an energy dissipater prior to discharge to Alameda Creek; compliance with regulations of the Regional Water Quality Control Board; development and approval of a spill containment and cleanup plan; and groundwater quality monitoring according to the requirements of the SFPUC (Alameda County Planning Department, 1994).

2.0 IMPACTS

2.1 SIGNIFICANCE CRITERIA

The City has not formally adopted significance standards for hydrology and water quality impacts, but it generally considers that implementation of the *Alameda Watershed Management Plan* would have a significant effect on hydrology and water quality if it were to:

- substantially change absorption rates, drainage patterns, or the rate and amount of surface water runoff;
- substantially degrade water quality;
- contaminate a public water supply;
- substantially degrade or deplete groundwater resources or interfere with groundwater recharge; or
- cause substantial flooding, erosion, or siltation.

Criteria for evaluating surface and ground water quality in the San Francisco Bay Area are based on beneficial uses and water quality objectives established by the Regional Water Quality Control Board, San Francisco Bay Region, as authorized under the Porter-Cologne Water Quality Control Act. Both beneficial uses and water quality objectives applicable to waterbodies within the area affected by the Management Plan are described in *The Water Quality Control Plan for the San Francisco Bay Basin*, also referred to as the *Basin Plan* (California RWQCB, 1995). Criteria for evaluating impacts to drinking water quality are based on California Drinking Water Standards, as established by the California Safe Drinking Water Act. Criteria for evaluating flooding hazards are based on effects to on-site and downstream 100-year flood zones, as established by the Federal Emergency Management Agency.

2.2 PROGRAM-LEVEL IMPACTS

The primary goal of the Management Plan is to maintain and improve the quality of source drinking water in order to protect public health and safety. Water Quality Policies WQ1 to WQ31 are specifically designed to address the management of natural resources, Watershed

activities, and other land use issues in order to maintain and improve water quality. These policies aim to minimize or reduce water quality problems through the control of erosion, sedimentation, stormwater runoff, the introduction of undesired constituents into the water supply, and land ownership and activities. Implementation of these policies and associated management actions would result in direct beneficial effects to water quality in the Watershed.

As stated in the Management Plan, “[i]n management of the primary Watershed, the primary goal must be met first, even if an intended action is focused on a secondary goal.” Thus, for the primary Watershed, policies under the six supporting secondary goals and associated management actions, while not directly supporting the primary goal, are still intended to be consistent with the overriding, primary goal of improving and maintaining water quality.

The policies and management actions identified in the Management Plan cover a diverse range of land uses and management activities that have the potential to affect water quality either directly or indirectly. These activities have historically resulted (or have been suspected to result) in direct or indirect impacts to water quality and include public access and use, construction of new facilities, watershed operation and maintenance activities (including management of hazardous materials, stormwater drainage, vegetation and pest management, etc.), gravel mining operations, grazing, nursery operations, and golf course use. Unless proper precautions are employed, these various activities individually or in combination could result in significant effects on hydrology and water quality. The Management Plan is designed so that policies and/or management actions pertaining to these activities would reduce or mitigate the potential effects on water quality, thereby achieving the primary goal of maintaining and improving water quality. Table III.D-1 summarizes policies and Table II-1 summarizes the actions that are related to maintenance and protection of water quality.

For all potential water quality impacts, the 31 Water Quality Policies (WQ1 to WQ31) presented in the Management Plan would address water quality protection in the Watershed and, in conjunction with a wide array of other policies and management actions, would reduce water quality impacts to a less than significant level when considered on a program-level. In addition, as stated previously, there are numerous interrelated water quality policies and management actions throughout the Management Plan, including actions for review, staffing, training, and funding, that collectively would serve to reduce potential water quality impacts associated with Management Plan implementation through collaborative efforts.

Six general categories of Management Plan actions that could result in water quality impacts are discussed below: increased public access and use, development of new facilities, Watershed operations and maintenance activities, mining operations, nursery operations, and golf course use. One category of actions, livestock grazing, would result in a beneficial impact to water quality and is discussed separately.

Improved Water Quality due to Grazing Management Actions

Grazing is currently allowed on the Alameda Watershed and has occurred on these lands for over 200 years. Under the Management Plan, grazing would be continued, but at a reduced level

**TABLE III.D-1
SUMMARY OF MANAGEMENT POLICIES RELATED TO
WATER QUALITY PROTECTION**

Water Quality (WQ)

- WQ1 Prevent the introduction of pesticides and chemicals into the water supply by minimizing and controlling the use of these constituents.
- WQ2 Restrict aerial broadcast spraying of pesticides as a means of vegetation management/pest control.
- WQ3 Minimize nutrient loading to the water supply.
- WQ4 Minimize the introduction of disinfection by-product precursors to the water supply.
- WQ5 Minimize the risk of metals leaching to waterbodies and prohibit dumping of metals.
- WQ6 Prevent the introduction of asbestos fibers into the water supply.
- WQ7 Prevent the potential for hazardous materials spills into the water supply by controlling their use and transport within the Watershed.
- WQ8 Minimize the introduction of pathogens to the water supply.
- WQ9 Once the Sunol Valley quarries have been reclaimed as reservoirs, maintain water quality in the reservoirs so that the water remains treatable by the Sunol Valley WTP.
- WQ10 Minimize, and where possible prohibit, the construction of new roads and trails.
- WQ11 Where new roads or trails are required, locate and design them to follow natural topography.
- WQ12 Minimize and where possible restrict to low vulnerability areas, construction of new roads or access easements through primary Watershed lands that serve new development not on SFPUC lands.
- WQ13 Minimize and where possible restrict new easements and rights-of-way through primary Watershed lands to areas of low vulnerability.
- WQ14 Optimize the existing road system such that there are no more roads than necessary for operations and maintenance purposes.
- WQ15 In the primary Watershed, minimize, and where possible prohibit, land uses and activities that have the potential to cause erosion, sediment generation, and stormwater runoff.
- WQ16 Where suitable, use sedimentation basins to control the effects of erosion and sediment transport.
- WQ17 Minimize and where possible prohibit the creation of impervious surfaces in primary Watershed.
- WQ18 Minimize vehicle-related contaminants in runoff from roads, parking lots, facilities, etc.
- WQ19 Minimize and where possible prohibit the construction of new on-site waste treatment systems to serve facilities or other new developments on Watershed lands.
- WQ20 Coordinate water quality concerns with fire management activities to prevent erosion.
- WQ21 Foster interagency agreements with adjacent jurisdictions to limit new construction on non-SFPUC lands within the hydrologic Watershed to minimize adverse effects to water quality.
- WQ22 Actively seek acquisition or purchase conservation easements over lands within the hydrologic Watershed not in SFPUC ownership that are critical to water quality and supply.
- WQ23 Prohibit the sale or exchange of SFPUC lands within the primary Watershed that are critical to water quality, supply, and SFPUC operations.
- WQ24 Actively participate in local and regional government planning processes to keep abreast of new projects which may affect SFPUC lands and water quality.
- WQ25 Wherever possible, preserve and protect stream channels and banks in the primary Watershed to protect water quality by maintaining or improving channel stability and reducing bank erosion.
- WQ26 Prohibit unauthorized fill or excavation activities on wetlands, riparian zones, etc.

**TABLE III.D-1
SUMMARY OF MANAGEMENT POLICIES RELATED TO
WATER QUALITY PROTECTION**

- WQ27 Prohibit swimming/boating/windsurfing and other body contact activities in all water sources.
- WQ28 Strictly control public access to minimize adverse effects to water quality.
- WQ29 Actively enforce penalties and other standard enforcement procedures on activities that adversely affect water quality.
- WQ30 Require intensive management and ongoing monitoring of land uses that could result in the introduction of pathogens into the water supply.
- WQ31 Require ongoing water quality monitoring of reservoirs and tributaries to detect decreases in water quality related to Watershed activities.

Water Supply (WS)

- WS1 Maximize reservoir storage capacities by minimizing sedimentation in reservoirs.
- WS5 Prevent a reduction in the water supply by reducing risks to water quality.
- WS6 Require that all reclaimed water used on the Watershed meet Department of Health Services / Regional Water Quality Control Board requirements.
- WS7 Enhance the water yield of the Watershed, where compatible with other natural resource management policies, while prohibiting activities that could adversely affect water quality.

Vegetation (V)

- V1 Manage an Integrated Pest Management program. Where possible, eliminate the use of chemical applications that adversely affect water quality, accumulate in the food chain, and/or have adverse effects on ecological function and reproductive success of wildlife and fish.
- V2 Focus chemical use reduction efforts where they are currently being used most intensively.

Wildlife (W)

- W6 Maintain the integrity of the Watershed creeks to retain their value as riparian ecosystems and wildlife corridors.

Aquatic Resources (AR)

- AR5 Minimize and where possible eliminate the introduction of chemicals into reservoirs and streams to protect aquatic resources.
- AR10 Prohibit selected classes of activities, or limit land use type, duration, and intensity within the high water-quality vulnerability zones, consistent with other management elements.

Fire (F)

- F2 Prohibit smoking, fireworks, and other activities likely to cause a fire as well as equipment that has not been properly equipped, serviced, and maintained in order to prevent fires.
- F3 Require all lessees and permittees to conduct fire hazard reduction activities.
- F5 Provide adequate water supplies, road infrastructure, and equipment to allow fire personnel to effectively respond to and suppress fires on the Watershed.
- F6 Provide training to adequately detect, respond to, suppress, and report on fires on SFPUC lands.
- F7 Prohibit unsupervised access to the Watershed to reduce the risk of fire.
- F8 Restrict access to the Watershed, implement strict fire hazard reduction practices, and initiate the public notification process during periods of extreme fire hazard.

TABLE III.D-1 (Continued)
SUMMARY OF MANAGEMENT POLICIES RELATED TO
WATER QUALITY PROTECTION

- F12 Require that fuel treatment activities be conducted in an ecologically sound manner to the greatest extent possible and that when used, prescribed burning strives to mimic natural fire regimes.
- F13 Actively manage fuels in a timely manner to reduce ignition potential, minimize surface fire spread/compartmentalize fires, reduce/minimize fire intensity, and reduce ember production and distance embers are cast.
- F14 Focus fuel management activities adjacent to the priority areas.

Safety and Security (S)

- S8 Require that utility pipelines within the Watershed meet current seismic standards and comply with applicable hazardous materials regulations.
- S9 Adhere to identified appropriate response procedures during high priority emergency situations.

Watershed Activities (WA)

- WA1 Prohibit activities that are detrimental to Watershed resources.
- WA2 Prohibit the construction of new trails and unsupervised access to existing roads and trails not addressed in the *Alameda Watershed Management Plan*.
- WA3 Prohibit the construction of new pipelines through the primary Watershed for the transmission of gas, oil, or other hazardous substances.
- WA4 Prohibit all commercial and non-SFPUC residential development on primary Watershed lands that is not addressed in the *Alameda Watershed Management Plan*.
- WA5 Prohibit instream mining and/or development along reservoir shorelines and tributary streams which are located within primary Watershed lands.
- WA6 Restrict new utility lines proposed on the Watershed for the transmission of or communications to existing utility corridors, and require that new power lines be buried, where feasible.
- WA7 Limit the number of facilities requiring construction of new waste disposal systems on SFPUC lands to those that are essential where possible.
- WA13 Proposed recreation activities shall be compatible with their landscape setting, shall not adversely affect Watershed resources, and shall comply with the goals and policies in the *Alameda Watershed Management Plan*.
- WA16 Inform all individuals allowed entry into the Watershed, either by permit or open access, of the Watershed’s primary purpose and the rules and regulations governing Watershed activities.
- WA17 All individuals and groups granted permits to Watershed lands shall be charged user fees to cover the operational costs.
- WA18 Manage a volunteer docent program to accommodate supervised access to the Watershed.
- WA19 All proposed plans and projects on the Watershed shall be reviewed according to the Review Process for Proposed Plans and Projects.
- WA20 Should it be determined that the proposed plan/project would not comply with the goals and policies, make appropriate comments so that the applicant may bring the proposed plan/project into compliance.
- WA22 Require that new facilities and improvement be limited to specific uses and designs.
- WA23 Require that all development, except for water-dependent structures, be excluded from the high water quality vulnerability zone and set back from the ordinary high water mark of reservoirs and from the centerline of all Watershed tributaries.

TABLE III.D-1 (Continued)
SUMMARY OF MANAGEMENT POLICIES RELATED TO
WATER QUALITY PROTECTION

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- WA24 Require that all proposed development involving any grading of land include the submittal of a grading plan to SFPUC to retain the existing topography where feasible.
 - WA25 All lessees/permittees requiring the use of pesticides shall comply with the provisions of the City's Pesticide Management Plan Ordinance and the SFPUC Integrated Pest Management Plan.
 - WA26 All maintenance, operation, and construction activities shall incorporate best management practices, as applicable.
 - WA28 All proposed plans and projects shall be subject to review under CEQA and/or NEPA, where applicable.
 - WA29 Require the use of LRMS GIS as an integral part of Watershed planning efforts.
 - WA30 Prior to initiating new construction, consider re-use of existing structures for departmental uses.
 - WA32 A reclamation plan shall be required and adhered to for all existing and any new mineral, sand, and gravel extraction sites as approved by SFPUC.
 - WA34 To avoid unintentional or inadvertent impacts to Watershed resources, all water system maintenance activities should be handled in an advisory fashion.
 - WA39 Prohibit body contact with water in the Sunol Valley reservoirs.

Public Awareness and Agency Participation (PA)

- PA1 Educate the public on the importance of protecting their water supplies and on measures to minimize risk.
 - PA2 Foster and support public information and educational programs that emphasize individual and community responsibility .
 - PA7 Encourage and allow investigations of natural resources on the Watershed for scientific research and education to increase the general understanding of these resources and their condition.
 - PA8 Conduct research and monitoring activities through collaborative and cooperative efforts with other agencies/groups whenever possible.
-

(Action gra1). Cattle have been known to enter the reservoirs, streams, and riparian corridors, and poor management of cattle and inadequate fencing have led to water quality concerns. The major concern is the waterborne pathogen *Cryptosporidium*, which is carried by mammals, including livestock, rodents, and feral pigs. Technological improvements in its detection have increased awareness of the pathogen. Even though there has been limited detection of *Cryptosporidium* in water quality sampling of source waters, the Management Plan includes specific protection measures to address waterborne pathogens carried by cattle and other mammals.

The *Alameda Watershed Grazing Resources Management Element* was adopted by the SFPUC in July 1997 and is one component of the overall *Alameda Watershed Management Plan*. The element provides for a strict cattle management program accompanied by Watershed monitoring to ensure protection of water quality. Grazing can serve as a fire management tool when appropriately managed; therefore, the element also includes measures to reduce fire hazards, to

help increase native vegetation, and to reduce invasive, exotic plant species. Implementation of the grazing element would improve water quality over current conditions. The grazing management actions included in the Management Plan were derived from the grazing element. Grazing actions pertain specifically to protection of water quality through implementation of grazing management controls (Action gra1); structural protection measures (Action gra2); water quality protection measures in lease terms (Action gra5); improvements for the identified leased lands in the areas draining to San Antonio and Calaveras Reservoirs and to Alameda Creek below the confluence with Calaveras Creek (defined in the element as Watershed Protection Areas) (Actions gra6, gra7, and gra8); and watershed monitoring (Actions gra9 and gra10). Policy WQ8 would minimize the introduction of pathogens into the water supply. In addition, management actions lea3, lea4, lea5, and lea8 would ensure that land use leases include water quality protection measures and a monitoring plan. Implementation of specific grazing management actions as well as more general lease control actions under the Management Plan would improve water quality conditions.

Impaired Water Quality

The following sections discuss the potential impacts associated with implementation of the management actions and policies in the Management Plan on the water quality of the Watershed. For each type of action, there is a discussion and a table with two parts: the first part summarizes the impact-inducing policies or management actions that could result in significant water quality impacts, and the second part summarizes the policies or management actions required to reduce the impacts to less than significant. The following types of actions that could result in water quality impacts are addressed: increased public access and use; development of new facilities, including new water storage reservoirs; operations and maintenance activities; changes to gravel mining operations; nursery operations; and expansion of golf course use.

Increase in Public Access and Use

The Management Plan includes facilities that could result in increased public visitation of the Watershed by providing new trails (Policies WA15.2, WA15.4), golf course expansion (Policy WA18.1), and increased information (such as maps and brochures) regarding public activities available on the Watershed. These facilities include information kiosks (Action pub3), a Watershed Visitor Education Center (Action pub4), public recreation area around the Sunol Water Temple (Action sun14), commercial site (Action sun19), overnight nature study area (Action sun20), and trail connections (Action sun21). Fishing could be allowed on a section of lower Alameda Creek (Policy WA1) and, in the future, in one of the reclaimed mining pits in the Sunol Valley (Policy WA40). In addition, provision of universal access at Watershed facilities could increase public use of the Watershed (Actions des8 and sun17).

Increased and more extensive public use of the Watershed could indirectly affect water quality as a result of inadequate sanitation facilities, unauthorized body-contact with reservoir or creek waters, unauthorized use by domestic animals, unauthorized fishing in reservoirs and creeks, littering, and increased potential for fire hazard. Depending on the specific activity, public use could inadvertently result in degradation of water quality, either by adding contaminants to

surface runoff or to seepage that eventually reaches groundwater. In addition, public use has the potential to adversely affect vegetation and soil, which could lead to increased erosion and sedimentation and indirectly affect water quality. Therefore, increased public use could result in significant water quality impacts.

As discussed in Section III.G, Fire Management, greater public access and use would increase the risk of fire hazards by increasing incidences of unauthorized uses (such as smoking and campfires/cooking fires) and by increasing dry litter, which is easily ignitable. Wildland fire within the Watershed poses a significant risk to water quality, and when followed by rainfall can result in major effects. While water quality is not directly affected during a wildfire, the loss of the vegetative cover leads to increased soil erosion and sedimentation, particularly on steeper slopes. Depending on the extent of a fire, stormwater runoff following a fire can transport large quantities of soil to water supply reservoirs and result in elevated levels of turbidity in the water supply. If the turbidity levels cannot be reduced through treatment and exceed drinking water standards, the public water supply would be adversely affected, until turbidity levels were reduced. Such a sequence of events would constitute a significant impact to water quality.

While the Management Plan proposes management policies and actions that could bring about physical effects, the Management Plan also includes policies and actions that would reduce these potential effects. The top portion of Table III.D-2 lists the policies and management actions related to public access and use that could result in significant water quality impacts, while the bottom portion of the table lists the full range of policies and management actions that, on a program level, could be required to reduce the impacts. Because water quality is the primary goal of the Management Plan, the impact-reducing policies or management actions are interrelated, and, at a program level, could be essential to minimizing potential impacts. Not every action would be necessary to mitigate the effects of the associated potential impact-causing management action. For example, a very minor structure such as a kiosk located in an environmentally non-sensitive area may not require all of the actions listed on Table III.D-2 to avoid a significant effect. Because implementation information, such as locations of specific facilities, is not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts. Management actions would be reviewed at the time they are proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures (see Section II.E.5.0, Mitigation Monitoring and Reporting).

The Management Plan provides for water-quality-based permit restrictions for public access, increases public education on Watershed resources, and limits the location of new trails to low vulnerability areas. Watershed Activities Policy WA1 specifically prohibits activities that would be detrimental to Watershed resources, including the following:

- swimming and body contact with the water by humans and domestic animals;
- release/walking of domestic animals, except guide, search and rescue, and police dogs;
- boating, except for SFPUC operations;
- smoking, campfires, and fireworks;

**TABLE III.D-2
SUMMARY OF POTENTIALLY SIGNIFICANT WATER QUALITY IMPACTS
DUE TO INCREASED PUBLIC ACCESS AND USE**

Impact-Inducing Policies or Management Actions:^a

- Action pub3: Establish information kiosks at Watershed entryways.
- Action pub4: Establish a Watershed Visitor Education Center.
- Action sun14: Develop a public recreation area around the Sunol Water Temple.
- Action sun19: Establish a small commercial site.
- Action sun20: Establish an overnight nature study area.
- Action sun21: Establish trail connections extending to the Sunol Regional Wilderness.
- Policy WA1: Prohibit fishing, with the exception of Alameda Creek within the Sunol Regional Wilderness.
- Policy WA40: Allow fishing in one of the Sunol Valley reservoirs.
- Policy WA15.2: Consider the addition of new trails in zones of lesser vulnerability and risk.
- Policy WA15.4: Support new trail connections that link to adjacent communities and other trail facilities.
- Policy WA18.1: Consider expansion of existing golf course in areas of low vulnerability/sensitivity.
- Action des8: Implement universal access improvements at SFPUC facilities and trails.
- Action sun17: Provide universal access at Sunol Valley recreation facilities.

Policies or Management Actions that Could be Required to Reduce Potential Impacts to Less Than Significant:^a

- Policies WQ10, WQ11, WQ15, WQ27, WQ28, and WQ29: Promote minimizing construction of new trails, restricting trail design and locations, minimizing or prohibiting any activities that cause sedimentation, and restricting public access and activities.
- Policy AR10: Prohibit certain activities within high water-quality vulnerability zones.
- Policies F2, F3, F5, F6, F7, and F8: Prohibit activities likely to cause a fire, require fire hazard reduction activities, call for providing fire suppression needs, and manage public access.
- Policies WA1, WA2, WA4, WA13, WA16, WA17, WA18, and WA39: Prohibit activities that are detrimental to Watershed resources, restrict new trails and access, restrict development, and call for managing public use through education and permit process. Policy WA39 prohibits body contact with water in the Sunol Valley reservoirs.
- Policies PA1, PA2, PA7, and PA8: Call for educating the public on Watershed resource protection and promoting collaboration in research and monitoring with agencies and public groups.
- Actions was1 and was2 require management of public sanitary facilities.
- Actions fir1 through fir14 are derived from the Fire Management Element and present an integrated approach to fire management.
- Actions saf2 through saf17 include measures to protect human health and safety as well as to protect water quality through regular maintenance of public facilities.
- Action veg1 includes human activities monitoring in development of a Vegetation Management Plan.
- Action aqu4 prohibits land use activities in shoreline segments that cause excessive sedimentation to reservoirs.
- Actions lea3, lea4, lea5, and lea8 require that all land use leases include water quality protection measures and a monitoring plan.

^a See Table II-1 for a description of each action.

TABLE III.D-2 (Continued)
SUMMARY OF POTENTIALLY SIGNIFICANT WATER QUALITY IMPACTS
DUE TO INCREASED PUBLIC ACCESS AND USE

Policies or Management Actions that Could be Required to Reduce Potential Impacts to Less Than Significant (cont.):^a

- Actions pub1 through pub11 call for development of public education and awareness of Watershed management and water quality protection measures.
- Action sta6 calls for specific water quality training for staff.
- Action fic2 authorizes or prohibits specific lease and permit activities based partially on impacts to water quality.
- Action inf3 requires recording and updating water quality data.

^a See Table II-1 for a description of each action.

- dumping and littering;
- activities that result in direct public access to reservoirs and tributaries;
- access during periods of extreme fire hazard; and
- fishing, except on Alameda Creek within the Sunol Regional Wilderness.

These general provisions would reduce the potential water quality impacts associated with increased public access and use by promoting water quality protection through public awareness and education. The Management Plan includes numerous other interrelated policies and management actions that address various aspects of water quality protection; on a program-level, implementation of these policies and actions would mitigate water quality impacts associated with public access and use under the Management Plan to a less than significant level. The impact-reducing policies and actions are briefly summarized below.

Policies and management actions included in the Management Plan would ensure that public access and use activities are consistent with the primary goal of protecting water quality. Water Quality Policies WQ10, WQ11, WQ15, WQ27, WQ28, and WQ29 call for minimizing construction of new trails, restrict trail location and design, prohibit or restrict any activities that cause sedimentation, and restrict public access and activities. Policy AR10 prohibits certain activities within high water-quality vulnerability zones. Policies WA1, WA2, WA4, WA13, WA16, WA17, and WA18 address general approaches to reducing the impacts of public use activities on Watershed resources and water quality; and Policy WA39 specifically prohibits body-contact recreation in Sunol Valley reservoirs. Public Awareness Policies PA1, PA2, PA7, and PA8 call for educating the public regarding Watershed resource protection and promote collaboration in research and monitoring with agencies and public groups.

The *Alameda Watershed Fire Management Element* presents an integrated approach to fire management that considers impacts to water quality, water supply, and ecological resources and protection of persons and property. Implementation of Fire Management Element Policies F2,

F3, F5, F6, F7, and F8 and the 14 fire management actions would mitigate any significant impacts.

Actions was1 and was2 require management of public sanitary facilities to protect water resources from contamination. Actions saf2 through saf17 include measures to protect human health and safety as well as to protect water quality through regular maintenance of public facilities. Action veg1, development of a Vegetation Management Plan, includes monitoring of human activities and habitat alterations, which would reduce potential impacts associated with public use. Action aqu4 prohibits land use activities in the shoreline segments that cause excessive sedimentation to reservoirs. Lease and Permit Requirements Actions lea3, lea4, lea5, and lea8 call for including water quality protection measures and a monitoring plan in land use leases. Public and Agency Outreach Actions pub1 through pub11, while promoting and possibly facilitating public access, also call for fostering public education and awareness of Watershed management and water quality protection measures that would offset any impacts associated with public use. Action sta6 requires specific water quality training for SFPUC staff, and Action fic2 authorizes or prohibits specific lease or permit activities, partially based on impacts to water quality. Action inf3 requires recording and updating of water quality data and establishment of a database to manage and evaluate the data.

Implementation of the policies and management actions described above, and as described in Section IV.D, would reduce potential water quality impacts related to increased public access and use to a less than significant level. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Development of New Facilities

Implementation of the Management Plan would result in construction of a number of additional facilities or improvements on the Watershed. Many of the facilities would be installed to ensure and/or improve water quality or resource protection on the Watershed, such as barriers or fences at identified high-risk areas for hazardous materials spills (Action haz6), installation of infiltration drainfields and detention basins (Action sto1); installation of long-term sediment retention basins or other permanent measures (action aqu12); rehabilitation of shoreline areas and stream segments (Actions aqu5 and aqu7); improvements that prevent human and animal waste from impacting Watershed resources (Action was1); and wildlife passage structures (Action wil13). Many of the actions listed in the Roads Section of the Management Plan (Actions roa2, roa3, roa4, roa6, roa7, and roa8) would modify or relocate existing roads or road components in order to reduce potential erosion and Watershed contamination from automobile by-products. Fire management actions include the installation of hydrants, helispots, and water tanks (Actions fir2 through fir6); roadway and access improvements (Action fir7); and implementation of fuel management projects that include construction of fuel breaks, conducting prescribed burns, and other improvements (Action fir8). Construction projects would be generated through the implementation of management actions that would provide additional

public use opportunities, such as information kiosks and a Watershed Visitor Education Center (Actions pub3 and pub4), additional new trails (Policies WA15.2 and WA15.4), and golf course expansion (Policy WA18.1). In addition, implementation of actions des8 and sun17 would result in universal access improvements at existing Watershed facilities and trails and provide to universal access at proposed facilities.

Implementation of the management actions in the *Sunol Valley Resources Management Element* would involve construction projects and restoration projects, including improvements at the Sunol maintenance facility (trade shops, equipment storage shelter, warehouse, offices, Watershed Visitor Education Center, etc.) (Action sun10), backfill and landscaping of a buffer zone at the mining module closest to the Sunol Water Temple, between the temple and that module (Action sun11), and restoration of the entry to the Sunol Water Temple (Action sun13). In addition, implementation of the Sunol management actions would involve construction of several public access facilities and improvements, including a public recreation area around the Sunol Water Temple (Action sun14), commercial site (Action sun19), overnight nature study area (Action sun20), and trail connections (Action sun21).

Implementation of the management actions in the *Alameda Watershed Grazing Resources Management Element* would generate construction projects primarily through structural protection measures and Watershed protection improvements, including fencing around reservoirs, streams, and stock water ponds; water developments; water collection systems; wildlife ponds; and livestock pond rehabilitation (Actions gra2, gra6, gra7, and gra8).

The Management Plan calls for development of water storage reservoirs from existing mining pits following completion of gravel mining (Policies WA37, WS2, and WS7 and Actions sun1, sun2a/2b, sun4, and sun5). The reservoirs would be located in the Sunol Valley both north and south of I-680 and would be designed for water storage. The Management Plan also provides for future use of the water storage reservoirs for recreational uses such as fishing and boating. Construction and operation of the water storage reservoirs would have the potential to substantially affect water quality of both groundwater and downstream receiving waters, depending on currently unknown design, construction, and operation information.

Construction activities typically involve grading and other earthmoving activities that can lead to excess sedimentation and erosion. Long-term facility operations, depending on the specific nature of the facility, would typically increase the area of impervious surfaces as well as introduce man-made chemicals and other materials into the Watershed that could in turn enter stormwater runoff and affect the quality of receiving waters. Therefore, due to the potential to substantially degrade water quality during construction or operation, the development of new facilities could result in significant water quality impacts.

The top portion of Table III.D-3 lists the policies and management actions related to development of new facilities that could result in significant water quality impacts, while the bottom portion of the table lists the full range of impact-reducing policies and management actions which, on a program-level, could be required to reduce the potential impacts. These impact-reducing policies and management actions are briefly summarized below. Not every

**TABLE III.D-3
SUMMARY OF POTENTIALLY SIGNIFICANT WATER QUALITY IMPACTS
DUE TO DEVELOPMENT OF NEW FACILITIES**

Impact-Inducing Policies or Management Actions:^a

- Action haz6: Identify high-risk spill potential areas and implement measures, including barricades, to reduce the risk of hazardous spills.
- Action sto1: Remediate on-site stormwater collection and drainage systems through infiltration drainfields and trenches, and detention basins.
- Action aqu12: Install long-term sediment retention basins or other permanent measures.
- Action aqu5: Rehabilitate shoreline areas using structural shoreline protection measures.
- Action aqu7: Rehabilitate stream segments.
- Action was1: Repair/replace vault, chemical, and composting toilet as necessary.
- Action roa2: Relocate existing necessary high use roads/road segments in proximity to streams.
- Action roa3: Modify the grading and drainage of existing necessary high use roads/road segments.
- Action roa4: Close and retire roads that are not needed and eliminate or minimize problem erosion points by installing culverts and waterbars, or otherwise stabilizing the roadway.
- Action roa6: Inspect/manage unpaved roads by remediating and stabilizing areas of erosion and regrading unpaved roads.
- Action roa7: Maintain fire roads through effective installation of waterbars and paving where needed.
- Action roa8: Restrict access on low use roads by gates or barriers.
- Action fir2: Install a total of nine hydrants into water sources.
- Action fir3: Install and maintain a total of four helispots on SFPUC property.
- Action fir4: Install three additional helispots off SFPUC lands.
- Action fir5: Install two additional hydrants on adjacent lands.
- Action fir6: Install an additional water tank.
- Action fir7: Identify/construct road improvements, including turnouts, turnarounds, and safety zones.
- Action fir8: Complete the fuel management projects, including fuel load reductions, prescribed burns, fuel breaks, and access improvements.
- Action will13: Design and install wildlife passage structures that minimize wildlife losses.
- Action pub3: Establish “gateway” information kiosks.
- Action pub4: Establish a Visitor Education Center.
- Action sun17: Provide universal access at Sunol Valley recreation facilities.
- Action des8: Implement universal access improvements at SFPUC facilities and trails.
- Actions sun1, sun2a, sun2b: These Sunol Valley actions would allow for mining of gravel quarries such that following completion of mining, the pits can be converted into water storage reservoirs.
- Action sun4: Create sideslopes on the mining pits such that there is a gradual transition to water.
- Action sun5: Reclaim mining pits with sideslopes appropriate to their proposed activity.
- Action sun10: Retain the existing Sunol maintenance facility with improvements, including equipment storage shelter, warehouse and storage yard, parking, etc.
- Action sun11: Backfill and landscape a ¼-mile buffer zone at the mining module closest to the water temple, between that module and the temple.

^a See Table II-1 for a description of each action.

TABLE III.D-3 (Continued)
SUMMARY OF POTENTIALLY SIGNIFICANT WATER QUALITY IMPACTS
DUE TO DEVELOPMENT OF NEW FACILITIES

Impact-Inducing Policies or Management Actions (cont.):^a

- Action sun13: Restore the historic entry to the Sunol Water Temple.
- Action sun14: Develop a public recreation area around the Sunol Water Temple.
- Action sun19: Establish a small commercial site.
- Action sun20: Establish an overnight nature study area.
- Action sun21: Establish trail connections extending to the Sunol Regional Wilderness.
- Action gra2: Implement structural protection measures, including fencing and other improvements.
- Action gra6: Implement improvements for the San Antonio Watershed Protection Area.
- Action gra7: Implement improvements for the Calaveras Watershed Protection Area.
- Action gra8: Implement improvements for the lower Alameda Creek Watershed Protection Area.
- Policy WA37: Expedite the creation of water storage facilities in the Sunol Valley.
- Policies WS2, WS7: Evaluate the development of water supply reservoirs and enhancement of the water yield of the Watershed.
- Policy WA15.2: Consider addition of new trails in zones of lesser vulnerability and risk.
- Policy WA15.4: Support new trail connections that link to adjacent communities and other trail facilities.
- Policy WA18.1: Consider expansion of existing golf course in areas of low vulnerability/sensitivity.

Policies or Management Actions the Could be Required to Reduce Potential Impacts to Less Than Significant:^a

- Policy WQ9: Require maintaining water quality water storage reservoirs for potential water supply uses.
- Policies WQ10, WQ11, WQ12, WQ13, WQ15, WQ17, WQ19, WQ21, WQ22, and WQ24: Set restrictions on new roads, restrict land use activities that cause sedimentation, restrict creation of impervious surfaces, restrict construction of new on-site waste treatment systems, and coordinate with other agencies regarding new construction.
- Policy AR10: Prohibit certain activities within high water-quality vulnerability zones.
- Policies F3, F5, and F6: Require fire hazard reduction activities for new lessees and provide fire suppression equipment needs.
- Policies WA7, WA19, WA20, WA22, WA23, WA24, WA25, WA28, and WA30: Limit construction of waste disposal systems, require a new projects review process, and set new facilities restrictions.
- Action roa12: Specify requirements of new roads and trails developed in the Watershed.
- Actions veg4 and veg7: Require an approved grading plan prior to any construction project and require that construction activities comply with erosion control best management practices.
- Action aqu1: Require site-specific review to ensure that construction of new non-water-dependent facilities are not located within a high water quality vulnerability zone.
- Actions env1 through env6: Require that any proposal for new facilities or projects complies with the California Environmental Quality Act.
- Actions lea3, lea4, and lea5: Require that all new land use leases include water quality protection measures and a monitoring plan.
- Actions des1 and des2: Require a review process for all proposed plans and projects.

^a See Table II-1 for a description of each action.

TABLE III.D-3 (Continued)
SUMMARY OF POTENTIALLY SIGNIFICANT WATER QUALITY IMPACTS
DUE TO DEVELOPMENT OF NEW FACILITIES

Policies or Management Actions the Could be Required to Reduce Potential Impacts to Less Than Significant (cont.):^a

- Action sta6: Provide specific water quality training for staff.
- Action fic2: Authorize/prohibit specific lease/permit activities based partially on water quality impacts.
- Action inf3: Record and update water quality data.
- Actions sun3, sun6, sun8, and sun9: Require design and operational requirements for the storage reservoirs that protect water quality and water quality monitoring in the water storage reservoirs to maintain high water quality.

^a See Table II-1 for a description of each action.

action would be necessary to mitigate the effects of the associated potential impact-causing management action. For example, a very minor structure such as a kiosk located in an environmentally non-sensitive area may not require all of the actions listed on Table III.D-3 to avoid a significant effect. Because implementation information, such as locations of specific facilities, is not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts. Management actions would be reviewed at the time they area proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures (see Section II.E.5.0, Mitigation Monitoring and Reporting).

Policies and management actions included in the Management Plan would ensure that development of new facilities is consistent with the primary goal of protecting water quality. Implementation of Policies WQ10, WQ11, WQ12, WQ13, WQ15, WQ17, WQ19, WQ21, WQ22, and WQ24 would minimize potential water quality impacts associated with development of new facilities by setting restrictions on new roads; by restricting creation of impervious surfaces, construction of new on-site waste treatment systems, and land use activities that cause sedimentation; and by providing for coordination with other agencies regarding new construction. Aquatic Resources Policy AR10 minimizes potential water quality impacts associated with development of new facilities by prohibiting certain activities within high water-quality vulnerability zones. Fire Policies F3, F5, and F6 require fire hazard reduction activities for new lessees and call for meeting fire suppression equipment needs. Policies WA7, WA19, WA20, WA22, WA23, WA24, WA25, WA28, and WA30 limit construction of new waste disposal systems, require a review process for new projects, and set restrictions for new facilities.

Action roa12 specifies requirements for new roads and trails developed in the Watershed. Action veg4 requires a grading plan be approved prior to any construction project, and Action

veg7 requires that construction activities comply with erosion control best management practices. Action aqu1 requires site-specific review to ensure that construction of new non-water-dependent facilities are not located within a high water-quality vulnerability zone.

The Management Plan includes management actions under Design and Construction Requirements (Actions des1 and des2) that would minimize and avoid wherever possible the above-described potential effects. These actions require a review process for proposed plans and projects to determine compatibility with the Management Plan goals and policies for water quality as well environmental review for CEQA compliance (Actions env1 through env6). Actions lea3, lea4, and lea5 require that all new land use leases include water quality protection measures and monitoring plans. Action sta6 provides specific water quality training for SFPUC staff. Action fic2 authorizes or prohibits specific lease or permit activities, partially based on impacts to water quality. Action inf3 requires recording and updating water quality data to establish a database for overall water quality management.

As described previously, the Management Plan calls for development of water storage reservoirs from existing mining pits following completion of gravel mining. While the Management Plan provides only conceptual planning for the new water storage reservoirs, it includes general policies and management actions to maintain and protect water quality in the reservoirs. Policy WQ9 addresses the water quality of the reservoirs after the Sunol Valley mining pits are reclaimed as reservoirs. Action sun3 provides reservoir design guidelines for maintaining high water quality; Action sun6 calls for development of operational guidelines for maintaining high water quality; and Actions sun8 and sun9 call for establishing a water quality sampling and monitoring program in the reservoirs. At this time, since plans for the water storage reservoirs have not been defined, analysis of potential water quality impacts associated with these reservoirs would be speculative. Potential effects on hydrology and water quality would depend largely on the design of the reservoirs, use of bentonite cutoff walls, and the source of water stored in the reservoirs. Effects on downstream and groundwater hydrology and water quality would be examined in detail once project details were defined and proposed.

On a program level, implementation of the policies and management actions described above, and as described in Section IV.D, would reduce potential water quality impacts related to construction of Watershed facilities to a less than significant level. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Watershed Operations and Maintenance Activities

SFPUC Watershed operations and maintenance activities involve regular procedures as well as emergency response procedures. These activities include stormwater control, hazardous materials management, facility maintenance, road maintenance, vegetation and pest control, slide repair, controlled burning, etc. Unless appropriate precautions were employed, any of these activities could result in inadvertent impacts to water quality and Watershed resources. For

example, road grading, slide repair, and controlled burning could result in excess erosion and sedimentation in runoff that could eventually reach the water supply reservoirs. Improper use of chemicals, such as the vehicle fuels or pesticides required for standard maintenance, could result in release of contaminants to groundwater or stormwater runoff that could eventually reach the water supply reservoirs.

Under the Management Plan, Policy F11 allows for prescribed burns as part of regular fire management. Action wil7 calls for use of vegetation treatments or prescribed fire to enhance habitat. Action sun10 calls for improving the Sunol maintenance facility, which would continue to use and store fuels and other hazardous materials on the Watershed, in turn increasing the risk of spill. Unless a wide range of interrelated policies and management actions were implemented, Watershed operations and maintenance activities could inadvertently but substantially degrade water quality and result in potentially significant water quality impacts.

The first three bullets of Table III.D-4 list those policies and management actions related to watershed operation and maintenance activities that could result in potentially significant water quality impacts, while the remainder of the table lists the full range of impact-reducing policies and management actions which, on a program-level, could be required to reduce the potential impacts. Implementation of these policies and management actions would ensure that Watershed operations and maintenance activities were consistent with the primary goal of protecting water quality and would minimize potential water quality impacts associated with Watershed operations and maintenance activities. These impact-reducing policies and management actions are briefly summarized below. Not every action would be necessary to mitigate the effects of the associated potential impact-causing management action. Because implementation information is not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts. Management actions would be reviewed at the time they are proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures (see Section II.E.5.0, Mitigation Monitoring and Reporting).

Water Quality Policies WQ1 through WQ8, WQ14, WQ15, WQ16, WQ18, WQ20, WQ23, WQ25, WQ26, WQ30, and WQ31 address potential water quality impacts associated with Watershed operations and maintenance activities by managing use of pesticides, metals, hazardous materials, and other chemicals; minimizing nutrient loading; preventing introduction of asbestos into the water supply; minimizing introduction of pathogens to the water supply; optimizing use of the existing road system; controlling sedimentation and erosion; protecting wetland and stream channels; coordinating with agencies to protect water quality; and requiring ongoing monitoring of activities and water quality. Policies WS5, WS6, and WS7 generally prohibit water yield activities that could adversely affect water quality. Policies V1 and V2 address pest management and chemical use. Aquatic Resources Policies AR5 and AR10 minimize the introduction of chemicals into reservoirs and streams and prohibit certain activities within high water-quality vulnerability zones. Fire Policies F5, F6, F12, F13, and F14 and Action fir1 through fir14 provide for fire suppression needs and regulate fuel management activities, while Policies S8 and S9 reduce potential water quality impacts associated with

**TABLE III.D-4
SUMMARY OF POTENTIALLY SIGNIFICANT WATER QUALITY IMPACTS
DUE TO WATERSHED OPERATIONS AND MAINTENANCE ACTIVITIES**

Impact-Inducing Policies or Management Actions:^a

- Policy F11: Allow for use of prescribed burns for fuel management.
- Action wil7: Create palatable re-sprouting through mechanical vegetation treatments or prescribed fire.
- Action sun10: Retain the Sunol maintenance facility for uses including the handling and storage of hazardous materials including fuels.

Policies or Management Actions that Could be Required to Reduce Potential Impacts to Less Than Significant:^a

- Policies WQ1 through WQ8, WQ14, WQ15, WQ16, WQ18, WQ20, WQ23, WQ25, WQ26, WQ30, and WQ31: Manage use of pesticides, metals, hazardous materials, and other chemicals; minimize nutrient loading; prevent introduction of asbestos into the water supply; minimize introduction of pathogens to the water supply; optimize use of the existing road system; control sedimentation and erosion; protect wetland and stream channels; coordinate with agencies for protecting water quality; and require ongoing monitoring of activities and water quality.
- Policies WS5, WS6, and WS7: Prohibit water yield activities which could affect water quality.
- Policies V1 and V2: Minimize potential water quality impacts associated with Watershed operations and maintenance activities by managing pest management and chemical use.
- Policies AR5 and AR10: Minimize the introduction of chemicals to reservoirs and streams and prohibiting certain activities within high water-quality vulnerability zones.
- Policies F5, F6, F12, F13, and F14: Provide fire suppression needs and regulate fuel management activities.
- Policies S8 and S9: Require utility pipelines to comply with hazardous materials regulations and to adhere to emergency response procedures.
- Policies WA3, WA26, WA29, WA33 and WA34: Prohibit construction of utility pipelines, require all operation and maintenance activities to incorporate best management practices; use the GIS as part of Watershed planning; and manage water system maintenance activities for Watershed protection. Policy WA33: Requires LRMS staff to administer, manage, direct and supervise all Watershed operations and maintenance activities.
- Action sto1: Manage stormwater drainage facilities and establish preventive maintenance programs.
- Actions haz1 through haz12: Manage use, storage, and handling of hazardous materials associated with Watershed operations and maintenance.
- Actions was3 and was4: Allow for water quality monitoring for wildlife excrement and consultation with adjacent counties regarding on-site waste disposal.
- Actions roa1 through roa11: Assess and manage existing roads to minimize effects on water quality.
- Actions fir1 through fir14 (derived from the *Alameda Watershed Fire Management Element*): Conduct an integrated approach to fire management.
- Action saf12: Develop, publish, and periodically update a Watershed manual that addresses operations and maintenance procedures, emergency response procedures, and the safety and security program.
- Action veg1: Require preparation and implementation of a Vegetation Management Plan. Action veg7: Require that operations and maintenance activities comply with erosion control best management practices. Actions veg8 and veg9: Identify areas subject to slope instability and soil

^a See Table II-1 for a description of each action.

**TABLE III.D-4
SUMMARY OF POTENTIALLY SIGNIFICANT WATER QUALITY IMPACTS
DUE TO WATERSHED OPERATIONS AND MAINTENANCE ACTIVITIES**

Policies or Management Actions that Could be Required to Reduce Potential Impacts to Less Than Significant (cont.):^a

erosion and require implementing erosion control. Action veg10: Establish long-term erosion and sediment control monitoring. Action veg11: Develop and implement an Integrated Pest Management program for the Watershed. Action veg13: Minimize the disturbance of serpentine soils to prevent erosion of asbestos fibers to the water supply.

- Actions aqu2, aqu3, aqu4, aqu5, aqu6, aqu7, and aqu8: Provide strategies for protection of reservoir shorelines and streambanks. Actions aqu10, aqu11, aqu12, aqu13, and aqu14: Specify management of sedimentation basins or sediment detention basins to optimize their use in maintaining water quality.
- Action fis6: Adopt nontoxic management practices for protection of aquatic resources.
- Action sta6: Provide specific water quality training for staff.
- Action fic2: Authorize or prohibit specific lease or permit activities based partially on impacts to water quality.
- Action inf3: Record and update water quality data.

^a See Table II-1 for a description of each action.

Watershed operations and maintenance activities by requiring utility pipelines to comply with hazardous materials regulations and to adhere to emergency response procedures. Watershed Activities Policies WA3, WA26, WA29, and WA34 require best management practices for all operation and maintenance activities, and Policy WA33 requires LRMS staff to administer, manage, direct, and supervise all Watershed operations and maintenance activities to avoid unintentional impacts to Watershed resources.

Action stol manages existing stormwater drainage facilities to protect water quality as well as to reduce the volume of stormwater runoff. To preserve and maintain water quality, Hazardous Materials and Contaminants Actions haz1 through haz12 specify procedures for proper use, storage, and handling of chemicals used for operation and maintenance activities, including herbicides and petroleum products. Actions was3 and was4 allow for water quality monitoring for wildlife excrement and consultation with adjacent counties regarding on-site waste disposal. Roads Actions roa1 through roa11 assess and manage existing roads to minimize effects on water quality. Safety and Security Action saf12 call for developing, publishing, and periodically updating a Watershed manual that addresses operations and maintenance procedures, emergency response procedures, and the safety and security program.

The Management Plan includes a range of vegetation, soil, and pest management actions (veg1, veg7, veg8, veg9, veg10, veg11, and veg13) that address management of the vegetation communities and soil resources critical to the maintenance of water quality and supply. Action

veg1 requires preparation and implementation of a Vegetation Management Plan. Action veg7 requires that operations and maintenance activities comply with erosion-control best management practices. Actions veg8 and veg9 identify areas subject to slope instability and soil erosion and require implementing erosion-control measures. Action veg10 establishes long-term erosion and sediment control monitoring. Action veg11 calls for developing and implementing an Integrated Pest Management program for the Watershed. Action veg13 minimizes the disturbance of serpentine soils to prevent release of asbestos fibers to the water supply.

Aquatic Zone Protection Actions aqu2 through aqu8 provide guidance for operations and maintenance activities associated with the protection of reservoir shorelines and streambanks, which relates directly to protecting water quality. Actions aqu10, aqu11, aqu12, aqu13, and aqu14 specify management of sedimentation basins or sediment detention basins to optimize their use in maintaining water quality. Action fis6 calls for adoption of nontoxic management practices for protection of aquatic resources. Action sta6 provides water quality training for SFPUC staff. Action fic2 authorizes or prohibits specific lease or permit activities, partially based on impacts to water quality. Action inf3 calls for recording and updating water quality data to establish a database for overall water quality management.

On a program level, implementation of the policies and management actions described above, and as described in Section IV.D, would reduce potential water quality impacts related to Watershed operations and maintenance activities to a less than significant level. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Changes to Gravel Mining Operations

The Management Plan would allow continuation of mining activities in the Sunol Valley (Policy WA37) as well as consideration of amending the existing mining permits to expand mining south of I-680, either in depth or in both depth and area, or modifications in the timing and sequence of mining and mining reclamation north of I-680 (Actions sun1, sun2a/2b). As described previously under Setting, Section 1.6, Gravel Mining, mining operations have historically affected hydrologic and water quality conditions in the Sunol Valley. These impacts are currently being addressed through conditions of approval for the operating permits and lease requirements for SMP-32, SMP-30, and SMP-24. However, implementation of Actions sun1 and sun2a/2b could result in modifications of existing mining permits that could result in potentially significant effects on water quality and groundwater.

- As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (shortening the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but

would not bring about any new water quality impacts beyond those disclosed and mitigated in the EIR prepared for SMP-32. Alameda County's conditions of approval for SMP-32 include controls for drainage, erosion, and sedimentation that mitigate proposed related mining impacts to a less than significant level.

Extending the area of mining south of I-680 could affect both surface water and the groundwater system. A larger pit would require redirecting the drainage around the expanded perimeter and would require construction of associated drainage controls for the runoff that would eventually flow to Alameda Creek. There would be a negligible decrease in the volume of runoff from the perimeter of the pit to the creek, with the associated slight increase directly entering the mining pit. Similar to existing conditions, runoff directly entering the mining pit would likely either be directed for mining process water or discharged to Alameda Creek in compliance with any discharge permits. On a program level, continued implementation of required drainage, erosion, and sedimentation controls, as required by the conditions of approval for SMP-30 and SMP-24, as well as compliance with regulatory discharge permits, would reduce any impact associated with runoff draining to Alameda Creek to a less than significant level.

- Increasing the area of mining south of I-680 would also require installation of bentonite cutoff walls in the upper 50 feet of the expanded perimeter of the mining pits, where appropriate, in compliance with existing permit and lease conditions. In some locations, the fault trace along Calaveras Road acts as an impermeable barrier to groundwater, precluding the need for a cutoff wall along the eastern limit of the mining pits in that area. Bentonite cutoff walls at the Mission Valley Rock Company SMP-24 area have been effective in diverting groundwater flow around the pits and in maintaining the overall flow of groundwater to the Alameda Creek channel. Similar to the SMP-24 mining pits, the installation of bentonite cutoff walls along the north, west, and south sides of the expanded pits could be expected to prevent the flow of shallow groundwater into the pits and protect the groundwater system.
- If groundwater were present, extending the depth of mining in existing mining pits (Actions sun2a and sun2b) could further alter groundwater flow patterns within the Sunol Valley. However, groundwater sampling in the valley has indicated limited groundwater below 50 to 60 feet, and the Management Plan would allow for extending mining from 140 to 200 feet. Thus, at these depths, groundwater flows should not be affected. On a program level, the expanded pits would not be expected to affect Alameda Creek flow and the groundwater system, based on studies conducted to date. However, a comprehensive groundwater and hydrologic study has not been conducted for all of the proposed expanded mining areas south of I-680. Therefore, potentially significant groundwater impacts from expansion of mining pits south of I-680, and subsequent impacts to Alameda Creek and associated resources, cannot be ruled out.

The top portion of Table III.D-5 lists those policies and management actions related to gravel mining operations that could result in significant water quality impacts, while the bottom portion of the table lists the full range of policies and management actions that could be required to reduce the potential impacts. Not every action would be necessary to mitigate the effects of the associated potential impact-causing management action. Because implementation information is

not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts. On a program level, implementation of these impact-reducing measures, as described below, would reduce any water quality impacts associated with existing or planned mining operations to a less than significant level.

**TABLE III.D-5
SUMMARY OF POTENTIALLY SIGNIFICANT WATER QUALITY IMPACTS
DUE TO CHANGES TO GRAVEL MINING OPERATIONS**

Impact-Inducing Policies or Management Actions^a:

- Policy WA37: Allows the continuation of mining activities in the Sunol Valley.
- Actions sun1, 2a, and 2b: Allow continuation of mining in existing permitted areas according to SMP-32 as well as consideration of amending the permits to expand mining south of I-680 either in depth or in area.

● **Policies or Management Actions that Could be Required to Reduce Potential Impacts^a:**

- Policy WA5: Prohibit instream mining and/or development along reservoir shorelines and tributary streams which are located within primary Watershed lands.
- Policy WA32: Require a reclamation plan for all existing and new mining operations.
- Policy WA24: Require a grading plan to minimize off-site soil loss.
- Policy W6: Maintain the integrity of the Watershed creeks to retain their value as riparian ecosystems and wildlife corridor.
- Policy F3: Require all lessees to conduct fire hazard reduction activities.
- Policy AR10: Prohibit or limit certain activities within high water-quality vulnerability zones.
- Actions lea3, lea4, and lea5: Ensure that land use leases would include water quality protection measures and monitoring plan.
- Actions lea6 and lea8: Require review of the reclamation plan for mineral, sand, and gravel leases that would include drainage/erosion control features to be employed and requires assignment of a lease coordinator.
- Action sta6: Provide specific water quality training for staff.
- Action fic2: Authorize or prohibit specific lease or permit activities based partially on impacts to water quality.
- Action inf3: Record and update water quality data.

^a See Table II-1 for a description of each action.

The Management Plan includes policies and management actions that require continued and expanded water quality control measures for all existing and new mining operations. Watershed Activities Policy WA5 prohibits instream mining and/or development along reservoir shorelines and tributary streams that are located within primary Watershed lands. Watershed Activities Policy WA32 specifies that a reclamation plan be required and adhered to for all existing and any new mineral, sand, and gravel extraction sites, and that the reclamation plan be approved by the SFPUC and other applicable state and local agencies, prior to any new or expanded development. Watershed Activities Policy WA24 requires that proposed development involving grading of land include the submittal of a grading plan to SFPUC to retain the existing topography where feasible, minimize grading, and minimize off-site soil loss from erosion. Because the gravel mining operations are located within the Alameda Creek drainage area in the

secondary Watershed, water quality protection is directed at fishery resource uses. Wildlife Policy W6 aims to maintain the integrity of the Watershed creeks to retain their value as riparian ecosystems and wildlife corridors. Fire Policy F3 requires all lessees to conduct fire hazard reduction activities and Aquatic Resource Policy AR10 prohibits or limits certain activities within high water quality vulnerability zones. In addition, Actions lea3, lea4, and lea5 ensure that land use leases include water quality protection measures and monitoring plans. More specifically, Actions lea6 and lea8 require review of the reclamation plan for mining leases to ensure proper erosion and drainage control. Action sta6 provides specific water quality training for staff, Action fic2 authorizes or prohibits specific lease or permit activities based partially on impacts to water quality, and Action inf3 records and updates water quality data. These policies and management actions would apply to gravel mining operations and would provide water quality protection within the secondary Watershed.

- On a program-level, implementation of the policies and management actions described above, and as described in Section IV.D, would reduce potential water quality impacts associated with gravel mining. However, expansion of mining pits south of I-680 could result in potentially significant impacts to groundwater, which in turn could affect Alameda Creek and associated resources, as described above. Implementation of the mitigation measure described in Section IV.D would reduce this impact to a less than significant level. Amendment of existing permits would be subject to additional environmental review by Alameda County.

Nursery Operations

Nurseries in the Alameda Watershed are located in the secondary Watershed along Alameda Creek below the diversion dam. Although drainage from this area does not currently flow into the existing SFPUC water supply reservoirs, downstream flows are used by the Alameda County Water District. Action sun16 calls for exploring the feasibility of developing nurseries or other agricultural uses adjacent to the proposed water storage reservoirs and/or to Alameda Creek along Niles Canyon Road. Nursery and agricultural operations typically involve use of pesticides and fertilizers; excessive use of these chemicals could result in their presence in runoff draining to Alameda Creek.

The top portion of Table III.D-6 lists the activity relating to nursery operations that could result in significant water quality impacts, while the bottom portion of the table lists the full range of policies and management actions that could be required to reduce potential impacts. Not every action would be necessary to mitigate the effects of the associated potential impact-causing management action. Because implementation information, such as locations of specific facilities, is not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts.

The existing nurseries are currently required to provide reports of use of pesticides and fertilizers. Under the Management Plan, nurseries would be required to have greater setbacks from waterbodies, providing a larger buffer between the chemical use areas and Alameda Creek, which would reduce the amount of direct runoff from the nurseries into the creek. In addition, Watershed Activities Policy WA25 states that all lessees and permittees who use pesticides must

comply with the provisions of the City's Pesticide Management Plan Ordinance and the SFPUC Integrated Pest Management Plan and submit a proposed pesticide use budget and record of pesticide applications, as well as submit a Chemical Application Management Program. These

**TABLE III.D-6
SUMMARY OF POTENTIALLY SIGNIFICANT WATER QUALITY IMPACTS
DUE TO NURSERY OPERATIONS**

Impact-Inducing Policies or Management Actions^a:

- Improper management of nursery or agricultural operations or the Management Plan.

Policies or Management Actions that Could be Required to Reduce Potential Impacts to Less Than Significant^a:

- Policy WQ3: Minimize nutrient loading to the water supply.
- Policy WA25: Require all lessees and permittees to comply with the City’s Pesticide Management Plan Ordinance and the SFPUC Integrated Pest Management Plan, and to submit a Chemical Application Management Program.
- Actions lea3, lea4, and lea5: Ensure that land use leases include water quality protection measures and monitoring plan.
- Action lea8: Require assignment of a lease coordinator.
- Action sta6: Provide specific water quality training for staff.
- Action fic2: Authorize or prohibit specific lease or permit activities based partially on impacts to water quality.
- Action inf3: Record and update water quality data.

^a See Table II-1 for a description of each action.

programs provide guidance and restrictions on types of pesticides and application methods and would protect water quality. Implementation of other policies and management actions would also provide water quality protection from nursery uses, such as WQ3, which calls for minimizing nutrient loading to the water supply, and Policy WA25, which requires all lessees and permittees to comply with the City’s Pesticide Management Plan Ordinance and the SFPUC Integrated Pest Management Plan, and to submit a Chemical Application Management Program. Actions lea3, lea4, and lea5 require that land use leases include water quality protection measures and monitoring plans. Action lea8 requires assignment of a lease coordinator and Action sta6 provides specific water quality training for staff. Action fic2 would authorize or prohibit specific lease or permit activities based partially on impacts to water quality. Action inf3 would require water quality data to be recorded and updated.

On a program-level, implementation of these policies and management actions, as described above and in Section IV.D, would reduce potential water quality impacts associated with improper management of existing and any future nursery operations to a less than significant level.

Expansion of Golf Course Uses

Under the Management Plan, the existing Sunol Valley Golf Club would continue to operate and could potentially expand in zones of low vulnerability/sensitivity (Policy WA18.1). Golf course use has the potential to affect water quality due to contaminants associated with roads and parking areas, public use and sanitation facilities, and pesticides and fertilizers.

The Sunol Valley Golf Course is adjacent to Alameda Creek, north of I-680 on the south side of the creek, in the secondary Watershed. Natural drainage from the golf course is towards the creek. Any expansion of the golf course, which is assumed to be contiguous with the existing site, would increase the drainage and runoff from golf course uses to the creek. The nature and extent of potential water quality effects would depend on the type of planned expansion. For example, construction of impervious surfaces such as paved parking or structures would increase the volume of runoff. There could be an increase in use and storage of chemicals (including fertilizers and pesticides) for golf course maintenance, increasing the risk of improper handling or inadvertent spills. New utilities, sewers, and other services could introduce associated contaminants into the Alameda Creek area. Also, temporary construction activities associated with golf course expansion would likely involve grading and earthmoving activities, with the potential to result in erosion and sedimentation to receiving waters. Surface or subsurface flows via creeks and groundwater could carry any water quality contaminants from the golf course to the creek. However, depending on the design and siting of any golf course expansion, potential water quality impacts could be reduced to a less than significant level with implementation of appropriate mitigation measures.

The Management Plan states that expansion of the golf course would be considered in areas of low vulnerability/sensitivity. Although no specific proposal or expansion sites have been identified, the map of Composite High Sensitivity Zones (see Figure 2-1 of the Management Plan) indicates the presence of a zone of water quality vulnerability in the area of the golf course. However, based on the layout of the existing golf course, the only areas available for expansion would be further away from Alameda Creek, and the existing golf course could serve as a buffer to protect the creek from potential water quality impacts associated with expansion.

The top portion of Table III.D-7 indicates the policy related to golf course expansion that could result in significant water quality impacts, while the bottom portion of the table lists the full range of policies and management actions that could be required to reduce impacts. Not every bolded action would be necessary to mitigate the effects of the associated potential impact-causing management action. For example, a very minor structure such as a kiosk located in an environmentally non-sensitive area may not require any of the bolded actions to avoid a significant effect. Because implementation information, such as locations of specific facilities, is not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts. Management actions would be reviewed at the time they are proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures (see Section II.E.5.0, Mitigation Monitoring and Reporting).

TABLE III.D-7
SUMMARY OF POTENTIALLY SIGNIFICANT WATER QUALITY IMPACTS
DUE TO EXPANSION OF GOLF COURSE USES

Impact-Inducing Policies or Management Actions^a:

- Policy WA18.1: Consider expansion of existing golf courses in zones of low vulnerability/sensitivity.

Mitigating Policies or Management Actions^a:

- Policies WQ3, WQ15, WQ17, and WQ19: Minimize nutrient loading to the water supply, minimize land uses and activities that can cause erosion and runoff, minimize the creation of impervious surfaces, and minimize the construction of new on-site waste treatment systems that could be associated with expansion of the existing golf course.
- Policy AR10: Minimize potential water quality impacts associated with expansion of golf course use by prohibiting certain activities within high water-quality vulnerability zones.
- Policies F3, F5, and F6: Minimize potential water quality impacts associated with expansion of golf course use by requiring fire hazard reduction activities for new lessees and providing fire suppression equipment needs.
- Policies WA24 and WA25: Require a grading plan and require all lessees and permittees to comply with the Integrated Pesticide Management Plan and Chemical Application Management Program.
- Actions env1 through env5: Ensure that any proposal for expansion of the existing golf course must comply with the California Environmental Quality Act.
- Actions lea3, lea4, and lea5: Ensure that land use leases would include water quality protection measures and monitoring plan.
- Actions des1 and des2: Require a review process for all proposed plans and projects.
- Action fic2: Authorize or prohibit specific lease or permit activities, based partially on impacts to water quality.
- Action inf3: Record and update water quality data.

^a See Table II-1 for a description of each action.

The Management Plan includes policies and management actions that provide general water quality protection and control measures, described below, that would be applicable for any proposed expansion of the existing golf course. On a program-level, implementation of the mitigating policies and management actions included in the Management Plan could reduce potential water quality impacts associated with expanded golf course use to a less than significant level.

Water Quality Policies WQ3, WQ15, WQ17, and W19 would minimize nutrient loading to the water supply, minimize nutrient loading to the water supply, minimize land uses and activities that can cause erosion and runoff, minimize the creation of impervious surfaces, and minimize the construction of new on-site waste treatment systems that could be associated with expansion of the existing golf course. Aquatic Resources Policy AR10 would minimize potential water quality impacts associated with expansion of golf course use by prohibiting certain activities within high water quality vulnerability zones. Fire Policies F3, F5, and F6 would minimize

potential water quality impacts associated with expansion of golf course use by requiring fire hazard reduction activities for new lessees and providing fire suppression equipment needs. Watershed Activities Policies WA24 and WA25 require a grading plan and require all lessees and permittees to comply with the Integrated Pesticide Management Plan and Chemical Application Management Program. In addition, Actions env1 through env5 ensure that any proposal for expansion of the existing golf course must comply with the California Environmental Quality Act. Actions lea3, lea4, and lea5 would ensure that land use leases include water quality protection measures and monitoring plan. Actions des1 and des2 require a review process for all proposed plans and projects. Action fic2 authorizes or prohibits specific lease or permit activities based partially on impacts to water quality. Action inf3 records and updates water quality data.

Implementation of these policies and management actions, as described above and in Section IV.D, could reduce potential water quality impacts associated with expansion of golf course uses to a less than significant level, at a program-level. Nevertheless, more detailed project-specific environmental review would be required at the time of project proposal for expansion of the golf course. Project-level environmental review would be required to determine any additional, project-specific potential water quality impacts and mitigation measures.

Build-Up of Sediments

On a program-level, implementation of the Management Plan is not anticipated to substantially alter drainage patterns or cause flooding conditions. The major hydrologic flow patterns in the Watershed, as described above under Section 1.0, Setting, would essentially remain unaltered under the Management Plan (with the possible exception of the new water storage reservoirs, discussed above). Natural drainage patterns have been modified over the past century to accommodate water diversion, storage, treatment, and conveyance facilities. Both natural and human activities in the Watershed have resulted in sedimentation to reservoirs and streams, which has indirectly affected both water quality and hydrology. During the rainy season, runoff in the Watershed transports sediments to streams, and some of the sediments eventually reach the reservoirs, resulting in increased turbidity in both the streams and reservoirs. Gradually, sediments settle at the bottom of the streams and reservoirs, and over time, the accumulated sediments have altered stream channels, modified stream flow and capacity, and reduced the water storage capacity of reservoirs.

As described above under the heading “Impaired Water Quality,” numerous Watershed activities, such as new trails, increased public access and use, unauthorized off-trail use in areas near reservoirs and creeks, construction activities, any grading activities, wildland fires, and many operations and maintenance activities, could result in erosion and sedimentation. These activities could exacerbate natural sedimentation processes, alter stream channels, and result in cumulative build-up of sediments, gradually reducing the water storage capacity of reservoirs. In addition, in the event of a large fire on the Watershed followed by rainfall, there would be a substantial increase in sedimentation, particularly on steeper slopes denuded of ground vegetation, which could lead to blocked or partially blocked stream channels, altered stream flows, and increased deposition of sediments to reservoirs. Unless appropriate control measures

were implemented, these activities associated with the Management Plan could cause substantial erosion or siltation, either individually or cumulatively. Therefore, these activities could result in potentially significant hydrologic impacts to stream channel and flow and to reservoir storage capacity.

While the Management Plan proposes certain management actions that could bring about physical effects, the Management Plan also includes actions that would reduce these potential effects. Table III.D-8 is provided to link, at a program level, those actions that could result in potential impacts (column 1) with the full range of actions that could be required to reduce the potential impacts (column 2). The table highlights in **bold** text those actions that may be essential to reduce significant impacts column 1 actions, depending on the specific nature of the management action, such as design, siting, or implementation schedule. These essential actions, as well as the other actions (in non-bold text) that would further reduce potential physical effects, are discussed below. The table also indicates the level of impact significance that would remain if the actions discussed were implemented. Not every bolded action would be necessary to mitigate the effects of the associated potential impact-causing management action. For example, a very minor structure such as a kiosk located in an environmentally non-sensitive area may not require any of the bolded actions to avoid a significant effect. Because implementation information, such as locations of specific facilities, is not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts. Management actions would be reviewed at the time they are proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures (see Section II.E.5.0, Mitigation Monitoring and Reporting).

Policies and management actions presented in the Management Plan would ensure that erosion, sedimentation, and siltation could be controlled within the Watershed and that potential hydrologic impacts would be mitigated. Policies and management actions that would mitigate sedimentation and erosion impacts include WQ14, **WQ15**, WQ16, **WQ17**, **WS1**, **WA24**, roa2, **roa3**, roa4, **roa7**, **roa12**, **veg4**, **veg7** **aqu6**, **aqu7**, **aqu10**, aqu11, and aqu12 and the policies and actions associated with the *Alameda Watershed Fire Management Element*. Policies WQ14, WQ15, WQ16, and WQ17 minimize the number of roads, prohibit activities that have the potential to cause erosion, establish sediment basins, and minimize the creation of impervious surfaces. Policy WS1 calls for minimizing sedimentation to reservoirs, and Policy WA24 requires grading plans to minimize off-site soil loss from erosion. Actions roa2, roa3, roa4, roa7, and roa12 provide for siting and modifications to roads that would minimize sedimentation and erosion. Actions veg4 and veg7 require grading plans and erosion control practices. Actions aqu7, aqu10, aqu11, and aqu12 provide for management of stream channels and sedimentation basins. The 14 fire management actions provide an integrated approach to fire management and the protection to water quality.

On a program-level, implementation of the policies and management actions described above and in Section IV.D, particularly those in bold type, would reduce potential hydrologic impacts to a less than significant level. No unavoidable significant program-level sediment build-up impacts have been identified in this EIR. However, the San Francisco Planning Department

**TABLE III.D-8
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS
DUE TO BUILD-UP OF SEDIMENTS**

Policies or Management Actions that Could Result in Potential Physical Effects ^a	Policies and Management Actions that Could be Required to Reduce Potential Physical Effects	
	Policy or Action ^{a,b}	Level of Significance if Implemented
Tables III.D-2 through III.D-7 list the actions that could result in erosion and sedimentation, thereby resulting in potential impacts due to build-up of sediments.	Policies WQ14, WQ15 , WQ16, WQ17 , WS1 , and WA24 and Actions roa2 , roa3 , roa4, roa7 , roa12 , veg4 , veg7 , aqu6 , aqu7 , aqu10 , aqu11, and aqu12 and the policies and actions associated with the Fire Management Element.	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Modified Groundwater Flow Patterns

On a program-level implementation of the Management Plan is not anticipated to substantially alter groundwater recharge patterns or affect groundwater quality conditions. The existing hydrologic flow patterns within the Watershed, as described in Section 1.0, Setting, would essentially remain unaltered under the Management Plan. Natural drainage patterns, including groundwater flow, have been modified over the past century to accommodate water diversion, storage, treatment, and conveyance facilities as well as gravel mining operations. However, under the secondary goal to maximize water supply, the Management Plan includes policies that would potentially increase long-term water storage capacity in the Watershed. Water Supply Policy WS2, as well as the *Sunol Valley Resources Management Element*, call for evaluating the potential for reclamation of mining pits. Upon completion of currently permitted gravel mining in areas north and south of I-680, the Management Plan provides for the conversion of mining pits to water storage reservoirs with capacities of about 16,000 acre-feet north of I-680 and from 38,000 (Option 2) to 47,000 acre-feet (Option 1) south of I-680. Water storage capacity would be increased by 30 to 40 percent over the existing capacity in the Calaveras and San Andreas Reservoirs. This program would include water quality monitoring to assure consistency with the primary goal of the Management Plan.

The creation of these water storage reservoirs would modify the overall hydrologic patterns within the Sunol Valley in the secondary Watershed. The Management Plan only provides for consideration of this potential future use, and engineering design and hydrologic flow of the water storage reservoirs have not yet been determined. Possible water sources for storage in the proposed water reservoirs is speculative, but could include local water, including local runoff; imported water from the Hetch Hetchy Project or from the Delta, using the South Bay Aqueduct; and recycled water from the Livermore Valley. It is unlikely that groundwater would be a source of water due to the small volume of extant groundwater in the Sunol Valley. Assuming that design of the water storage reservoirs would be consistent with Water Supply Policy WS8, the intent would be to minimize the release of water that cannot be recaptured.

Potential impacts to groundwater associated with the proposed storage reservoirs would be evaluated relative groundwater conditions that are previously affected by gravel mining operations, as discussed above. More detailed project-specific environmental review would be required when information became available regarding the source of water for the reservoirs and the design, construction, and operation of the water storage reservoirs. At that time, evaluation of potential water quality, groundwater, and other hydrological effects associated with the conversion of the mining pits to water storage reservoirs would be required to determine the nature and extent of potential impacts to groundwater and to identify project-specific mitigation measures.

REFERENCES – Hydrology and Water Quality

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E. NATURAL RESOURCES

1.0 SETTING

Located within the San Francisco Bay Area biological subregion, the Alameda Watershed encompasses 36,000 acres of the central portion of the Diablo Range. There are two Watershed reservoirs, Calaveras Reservoir and San Antonio Reservoir. West-facing slopes in the vicinity of Calaveras Reservoir are covered with grasslands, while north- and east-facing slopes are covered with oak woodland and brush in the drier locations. In the vicinity of San Antonio Reservoir, the landscape is primarily grassland, with small areas of brush and woodlands on north-facing slopes.

Livestock grazing is widespread in the Watershed and has occurred on these lands for over 200 years. Under current and historical management practices, grazing has had tremendous effects on ecological resources. First, grazing has been the primary strategy in reducing the risk of a catastrophic fire and managing vegetation throughout the Watershed. Second, grazing has shifted the natural patterns of plant distribution and, as a result, many plant communities, such as perennial needlegrass and bunchgrass, have been converted into non-native annual grasslands. This change in the community has led to a decline in the species diversity of native plants and a widespread dominance of non-native plant species.

Lastly, since grazing has affected diversity of plant species, the diversity of wildlife species has declined over time; certain types of species are favored, such as corvids (crows and ravens), birds of prey (raptors), waterfowl, passerines (perching birds), and a high density of ground squirrels. Ground squirrels are considered a nuisance to ranchers and were controlled in the past with rodenticides, although it has been four years since such measures have been implemented. In general, other wildlife in the Watershed include a small population of tule elk in the area of the San Antonio Reservoir that migrated to this area from Mount Hamilton and were formerly members of an introduced herd. Feral pigs live in the area of Calaveras Reservoir and San Antonio Reservoir, and mountain lions live in grassland and woodland areas.

The two reservoirs and their tributary streams support warmwater fishery resources. Historically, the Watershed contained anadromous steelhead trout, rainbow trout, and other native fishes. However, due to the proximity of the Watershed to highly urbanized areas of the San Francisco Bay Area, the fishery resources have declined dramatically. Barriers to fish migration, such as the Bay Area Regional Transit invert and Alameda County Water District rubberdams, have impeded upstream migration of anadromous fish. In the event that fish surmount these downstream barriers, the SFPUC Niles and Sunol Dams may also block upstream migration. Today, some steelhead trout attempt to migrate up Alameda Creek during wet years. The existing temperature and flow regime supports limited salmonid habitat. Alameda Creek does support a good assemblage of native warmwater fishes (Sacramento sucker, Sacramento squawfish, California roach, threespine stickleback, and Pacific lamprey) (Moyle, 1993). Additionally, healthy populations of resident rainbow trout are landlocked behind the Watershed dams. Warmwater fish species such as suckers, catfish, bass, sunfish, and native minnows are

the dominant species in the Watershed's streams and reservoirs. Some of these species, such as the bass and sunfish, are exotic species and probably prey on the native fishes, as they do in other California stream systems, and thus have contributed to the decline in the native fish species.

1.1 SPECIAL-STATUS SPECIES

Several species known to occur on or in the vicinity of the Watershed are accorded "special status" because of their recognized rarity or vulnerability to various causes of habitat loss or population decline. Some of these species are listed and receive specific protection through federal or state endangered species legislation. Other species have not been formally listed as threatened or endangered, but have designations as "rare" or "sensitive" on the basis of adopted policies and of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as counties, cities, and special districts to meet local conservation objectives. These species are referred to collectively as "special-status species" in this EIR, following a convention that has developed in practice but has no official sanction. For the purposes of this EIR, special-status species are defined by the following sources:

- The California Native Plant Protection Act (Cal. Fish and Game Code § 1900 *et seq.*) protects endangered and "rare" species, subspecies, and varieties of plants;
- The California Endangered Species Act lists plants and wildlife as threatened or endangered (Cal. Fish and Game Code § 2070);
- The Federal Endangered Species Act, the Secretary of Commerce, and the Secretary of the Interior list plants and wildlife as threatened or endangered (16 USC § 1533[a]; 16 USC § 1533 [a] [2]; 16 USC § 1533 [c] [1]);
- The CEQA Guidelines Section 15380 includes plants and wildlife that may be considered rare or endangered if the species meets certain specified criteria;
- The California Native Plant Society lists plants as rare, threatened, or endangered (also known as List 1 and List 2);
- The California Department of Fish and Game designates plants and wildlife as "species of special concern";
- The Migratory Bird Treaty Act (16 USC, Sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds;
- The State Fish and Game Code in California (Section 35115 [birds], 5050 [reptiles and amphibians], and 4700 [mammals]) designates wildlife as fully protected in California;
- The federal Bald Eagle Protection Act (16 USC § 668 *et seq.*) prohibits persons within the United States (or places subject to U.S. jurisdiction) from "possessing, selling, purchasing, offering to sell, transporting, exporting, or importing any bald eagle or golden eagle, alive or dead, or any part, nest, or egg thereof;

- “Special Animals” is a general term that refers to all taxa that the California Department of Fish and Game (CDFG) is interested in tracking (through the Natural Diversity Data Base), regardless of their legal or protection status. The term does not offer further protection or legal status; and
- The State Fish and Game Code (Section 4800) designates the mountain lion (genus *Felis*) as a specially protected mammal. It is unlawful to take, injure, possess, transport, import, or sell any mountain lion or any part or product thereof, except as specially provided.

1.2 STUDY AREA

Vegetation

Eighteen natural plant communities occur in the Watershed, including valley needlegrass grassland, non-native grassland, serpentine bunchgrass grassland, northern coastal scrub, chamise chaparral, northern mixed chaparral, mixed evergreen forest/coast live oak woodland, valley oak woodland, blue oak woodland, sycamore alluvial woodland, central coast arroyo willow riparian forest, central coast live oak riparian forest, white alder riparian forest, willow riparian, coast live oak riparian forest, freshwater marsh, and urban and cultivated areas. Of these plant communities, some are considered sensitive or rare under state and/or county regulation because of their limited local or regional distribution. No endangered plant communities occur in the Watershed; however, there are three rare plant communities present: valley needlegrass grassland, serpentine bunchgrass, and sycamore alluvial woodland.

A general description of each plant community and its location in the Watershed follows. For a complete description of these plant communities, refer to *Alameda Watershed Natural and Cultural Resources* (Environmental Science Associates, 1994).

Grassland Communities

Grassland communities dominate the Watershed, with pure open grassland covering over 20,000 acres, or slightly over 50 percent of the Watershed. There are three types of grasslands that occur on the Watershed: serpentine grassland, valley needlegrass grassland, and non-native grassland. The distribution of these grassland communities depends primarily on the composition and depth of soil.

Valley needlegrass grassland consists primarily of herbaceous perennial plants and is typically found in wind-swept areas. The distribution of this community type in the Watershed is currently unknown. This vegetation contains a rich variety of native grasses, including California oatgrass (*Danthonia californica*), blue wild rye grass (*Elymus glauscus*), purple needlegrass (*Nassella pulchra*), California brome (*Bromus carinatus*), and Idaho fescue (*Festuca idahoensis*). Associated herbaceous species include California poppy (*Eschscholzia californica*), soap root (*Chlorogalum pomeridianum*), squirreltail grass (*Elymus elymoides*), and California man-root (*Marah fabaceus*).

Non-native grassland predominantly occurs on the flat and gently sloping hillsides in the Watershed. This community type is dominated by a number of introduced annual grasses that include soft chess (*Bromus hordeaceus*), ripgut grass (*Bromus diandrus*), foxtail brome (*Bromus rubens*), wild oat (*Avena barbata* and *A. fatua*), and foxtail barley (*Hordeum jubatum*). In areas where this community borders wetlands, it is often dominated by perennial rye-grass (*Lolium perenne*) and rabbit's foot grass (*Polypogon monspeliensis*). Non-native grassland is generally found on fine-textured soils, usually clay, which are moist to waterlogged during winter rains and dry during the summer and fall (Holland, 1986).

Serpentine bunchgrass grassland is dominated by non-native annual grasses that include soft chess (*Bromus hordeaceus*), with native bunchgrass species such as purple needlegrass (*Nasella pulchra*), nodding needlegrass (*Nasella cernua*), and foothill needlegrass (*Nasella lepida*). In the Watershed, serpentine bunchgrass grassland is found on the northeast side of the Sunol Filter Plant.

Scrub and Chaparral Communities

On the north-facing slopes of fenced or nongrazed areas, grasslands give way to shrubs. These shrubs are composed of three scrub and chaparral communities that include northern coastal scrub, chamise chaparral, and northern mixed chaparral. These communities can withstand the drier conditions and rockier substrates that often occur on hillsides in the Watershed. Many of the species, particularly the herbaceous plants, are fire-dependent and only germinate within a certain period after a burn; a number of the shrub species, particularly the manzanitas, are adapted to stump re-sprouting and grow back very rapidly after a fire.

Northern coastal scrub consists of low shrubs, and on the slopes above Calaveras Reservoir the shrubs are found in a moderately open community with grass and herbaceous species in the openings. Northern coastal scrub occurs on shallow, rocky soils in the exposed areas of steep slopes with eastern and southern exposure. About 1,450 acres of northern coastal scrub areas are found on the Watershed. Northern coastal scrub is dominated by sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis var consanguinea*), and sticky monkeyflower (*Mimulus aurantiacus*). The general range of this community is primarily on the outer and inner Coast Ranges, with the species representation changing from a greater proportion of coyote brush near the coast to a greater proportion of sagebrush in the inner ranges, such as the Alameda Watershed.

Chamise chaparral (*Adenostoma fasciculatum*) is associated with hot, xeric sites (dry, south- and west-facing slopes and ridges) and includes various fire-adapted species such as manzanita (*Arctostaphylos* sp.), ceanothus (*Ceanothus* sp.), yerba santa (*Eriodictyon californicum*), and deer brush (*Lotus scoparius*). The canopy is dense without understory and very little litter (decaying organic matter on the forest floor). As typical of many fire-dependent communities, chamise chaparral becomes senescent (i.e., approaches death) in the absence of disturbance.

Northern mixed chaparral is composed of broad-leaved sclerophyllous (i.e., hardened, tough leaves) shrubs, such as manzanita (*Arctostaphylos* sp.) and ceanothus (*Ceanothus* sp.), that form

a dense, often impenetrable canopy. It is usually found on dry, rocky, east-facing steep slopes and exposed ridges with little soil. Species in this community include scrub oak (*Quercus dumosa*), chamise (*Adenostoma fasciculatum*), western poison oak (*Toxicodendron diversilobum*), manzanita (*Arctostaphylos* sp.), and ceanothus (*Ceanothus* sp.).

Woodland and Riparian Forest Communities

Woodland communities in the Watershed are composed of mixed evergreen forest / coast live oak woodland, valley oak, blue oak woodland, and sycamore alluvial woodlands. Woodland areas constitute about 8,700 acres (22 percent) of the Watershed. Most forest communities found within the Watershed are riparian forest communities. Riparian forest communities that occur in the Watershed include central coast arroyo willow riparian forest, willow riparian, white alder riparian forest, central coast live oak riparian forest, and coast live oak riparian forest.

Mixed evergreen forest / coast live oak woodland is found on moist, well-drained slopes with coarse soils. This community occurs on the steep northeast-facing slopes above San Antonio and Calaveras Reservoirs and along Alameda Creek above the dam. Species that make up this community include coast live oak (*Quercus agrifolia*), madrone (*Arbutus menziesii*), poison oak (*Toxicodendron diversilobum*), and California bay (*Umbellularia californica*). Some associated plant species include big-leaf maple (*Acer macrophyllum*), toyon (*Heteromeles arbutifolia*), and California blackberry (*Rhamnus californica*).

Valley oak woodland (*Quercus lobata*) is abundant in the vicinity of San Antonio and Calaveras Reservoirs. This community is sparsely distributed within non-native grassland and has an open canopy that seldom exceeds 30-40 percent cover. In the vicinity of San Antonio Reservoir, valley oaks occur near the reservoir where deep, well drained alluvial soils are present and individual trees are likely to be rooted in permanent sources of water. Many large specimens are also found along the top of Poverty Ridge, between Calaveras Reservoir and Arroyo Hondo. In the Watershed, this community is found at elevations ranging from 230 feet to 3,000 feet.

Blue oak woodland (*Quercus douglasii*) is sparsely distributed. Blue oak woodlands grow on the northeast-facing steep slopes where the soil is either dry or well drained. Within the Watershed, they occur along Alameda Creek, Arroyo Hondo, and Williams Gulch.

Sycamore alluvial woodland is an open to moderately closed, winter deciduous broad-leaved riparian woodland. It occurs in braided depositional channels of intermittent streams, usually with cobblestones or boulder type substrate; San Antonio Creek is a prime example. Common species in this community are California sycamore (*Plantanus racemosa*), California buckeye (*Aesculus californica*), blue elderberry (*Sambucus mexicana*), and occasional cottonwoods (*Populus fremontii*) and valley oaks (*Quercus lobata*). The understory is made up of introduced grasses or mule fat (*Baccharis salicifolia*). In general, this community is restricted to the South Coast Range; Alameda County is the northernmost extent of its range.

Central coast arroyo willow riparian forest occurs in moist ravines and canyons with perennial or at least intermittent stream flow. Species characteristic of this community include

low, shrubby arroyo willow (*Salix lasiolepis*), white alder (*Alnus rhombifolia*) and red alder (*Alnus rubra*) associated with California wax myrtle (*Myrica californica*), coyote brush (*Baccharis pilularis* var. *consanguinea*), Douglas' baccharis (*Baccharis douglasii*), California blackberry (*Rubus ursinus*), rush (*Juncus* sp.), and sword fern (*Polystichum minutum*).

Central coast live oak riparian forest is a low evergreen sclerophyllous (i.e., hardened, tough leaves) riparian forest, usually with an open appearance, occurring in canyon bottoms and floodplains. Coast live oaks (*Quercus agrifolia*) dominate and, often, an open understory with grasses covers the ground. Associated species include mugwort (*Artemisia douglasiana*), coyote brush (*Baccharis pilularis* var. *consanguinea*), California blackberry (*Rubus ursinus*), poison oak (*Toxicodendron diversilobum*), and valley oak (*Quercus lobata*).

White alder riparian forest is rooted in gravel or sand and supported along the banks of rapidly flowing, perennial streams. White alder (*Alnus rhombifolia*) is strongly associated with big-leaf maple (*Acer macrophylla*). Understory plants include woody and herbaceous species such as arroyo willow (*Salix lasiolepis*), elderberry (*Sambucus mexicana*), sword fern (*Polystichum munitum*), chain fern (*Woodwardia finbriata*), bleeding heart (*Dicentra formosa*), and red larkspur (*Delphinium nudicale*).

Willow riparian forest (*Salix* spp.) occurs in moist canyons with perennial or at least intermittent stream flow. Arroyo willow (*Salix lasiolepis*) grows to 20 feet in a large, dense, shrubby growth form, creating large thickets that provide valuable cover for birds and mammals. Willows also support a wide variety of insects that are fed upon by migratory birds, particularly warblers and bush tits and other small insectivorous birds.

Coast live oak riparian forest is quite close in habitat value to the oak woodlands. It is usually found on ephemeral stream courses and is the driest of the all the riparian communities that occur in the Watershed. Coast live oak (*Quercus agrifolia*) is the dominant tree in this community, with an understory of western poison oak (*Toxicodendron diversilobum*), blackberry (*Rubus ursinus*), mugwort (*Artemisia douglasiana*), coyote brush (*Baccharis pilularis* var. *consanguinea*), snowberry (*Symphoricarpos mollis*), and elderberry (*Sambucus* sp.).

Coastal and Valley Freshwater Marsh

In a number of places where streams and arroyos discharge to the reservoirs, sand and sediment suspended in the stream have been deposited in deltaic formations. These deltas are saturated during normal to high reservoir levels, and these areas support the growth of emergent wetland vegetation. This natural community is defined as coastal and valley freshwater marsh.

Freshwater marsh consists of a low-diversity assemblage of willows (*Salix* sp.), sedges (*Carex* spp.), and rushes (*Juncus* spp.). While the colonizing plants that grow in these marshes are not rare, the plant community has been disappearing in California due to increased pressure for conversion to agricultural and urban uses.

Urban and Cultivated Areas

Urban areas are highly disturbed and consist of ornamental trees, landscaping plants, and rural vegetable gardens. **Cultivated areas** occur on flat and gently rolling hills and include hay, non-native grasslands, orchards, nurseries, vineyards, and the site of SMP-32 (north of I-680).

Invasive Plant Species

Invasive plant species are non-native species that have established viable populations in the community. These species invade native plant communities, rapidly colonize disturbed and undisturbed sites, and compete for available resources with native species. As a result, invasive species decrease diversity by forming monocultures, displace native species, and typically do not provide suitable habitat for native wildlife species.

Though the number of invasive species in the Watershed is unknown, the invasive species that have been observed include pampas grass (*Cortaderia jubata*), yellow star thistle (*Centaurea solstitialis*), and purple star thistle (*Centaurea calcitrapa*). Pampas grass occurs at the existing mining area, and yellow star thistle is widespread, occurring in disturbed, open grasslands.

Special-Status Plant Species

Table III.E-1 lists special-status species that are known to occur on the Watershed or that have a high or moderate potential to occur based on the distance to the nearest documented occurrence and habitat requirements. Appendix IX.B includes a list of all sensitive species known to occur or with the potential to occur in the Watershed vicinity. Both lists were compiled using California Diversity Data Base (CDFG, 1998) search by quadrangle (i.e., La Costa Valley, Calaveras Reservoir, Mount Day and Mendenhall Springs quadrangles), California Native Plant Society Electronic Inventory (CNPS, 1998) search by quadrangle (i.e., San Jose East, Calaveras Reservoir, Mount. Day, Mendenhall Springs, Niles, Livermore, Lick Observatory and La Costa Valley quadrangles), and other data sources (i.e., Environmental Science Associates, 1994; Sharsmith, 1982; Hickman, 1993; and Smith and Berg, 1992). Four of the species have formal listings as endangered or threatened under the California Endangered Species Act or Federal Endangered Species Act (Table III.E-1). These species include Presidio clarkia, Santa Clara Valley dudleya, Contra Costa goldfields, and Metcalf Canyon jewelflower. A comprehensive survey of special-status plant species has not been conducted on the Watershed. However, the Metcalf Canyon jewelflower has been observed on the Watershed. The Presidio clarkia, Santa Clara Valley dudleya, and Contra Costa goldfields have a moderate potential to occur. A description of each of these plants follows.

Presidio clarkia (*Clarkia franciscana*) is federally and state endangered and is on California Native Plant Society (CNPS) List 1B. It occurs on serpentine soils in grassland communities. The only documented locations of this species are in the Oakland hills and Presidio National Park in San Francisco, California.

**TABLE III.E-1
SPECIAL-STATUS PLANT SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED**

Common name Scientific name	Listing Status USFWS/CDFG/ CNPS	Habitat Requirements	General Site Occurrence Within the Watershed	Flowering Period
Santa Clara thorn mint <i>Acanthomintha lanceolata</i>	--/--/4	Chaparral, shale scree	High Potential Type Habitat- Calaveras ^a	March-June
Balsamroot <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	--/--/1B	Cismontane woodland, grassland	High Potential Interior slopes near SF Bay	March-June
Oakland star-tulip <i>Calochortus umbellatus</i>	--/--/4	Broadleafed upland forests, chaparral, lower montane coniferous forests, grasslands, often on serpentinite	Moderate Potential Mt. Hamilton Range ^a	March-May
Sharsmith's harebell <i>Campanula sharsmithiae</i>	FSC/--/1B	Chaparral, ultramafic talus	Moderate Potential Mt. Hamilton Range	May-June
Mt. Hamilton thistle <i>Cirsium fontinale</i> var. <i>campylon</i>	FSC/--/1B	Ultramafic seeps, sandy streams	High Potential Mt. Hamilton Range ^a	Feb-Oct
Brewer's clarkia <i>Clarkia breweri</i>	--/--/4	Chaparral, shale talus	High Potential Mt. Hamilton Range ^a	April-May
Santa Clara red ribbons <i>Clarkia concinna</i> ssp. <i>automixa</i>	FSC/--/1B	Coastal scrub, grassland (ultramafic)	High Potential Alameda County ^c	May-July
Presidio clarkia <i>Clarkia franciscana</i>	FE/CE/1B	Coastal scrub, grassland (ultramafic)	Moderate Potential Alameda County ^c	May-July
Serpentine collomia <i>Collomia diversifolia</i>	--/--/4	Serpentine seeps, streams	Moderate Potential Red Mountains ^a	May-June
Mt. Hamilton coreopsis <i>Coreopsis hamiltonii</i>	FSC/--/1B	Steep, shale talus, woodland	Moderate Potential Mt. Hamilton Range ^a	March-May
Inner Coast Range Larkspur <i>Delphinium californicum</i> ssp. <i>interius</i>	FSC/--/1B	Dry ravines	High Potential Mt. Hamilton Range ^a	April-June
Western leatherwood <i>Dirca occidentalis</i>	--/--/1B	Broadleafed upland forests, closed-cone coniferous forests, chaparral, cismontane woodland, North Coast coniferous forests, riparian forests, riparian woodland; mesic sites	Moderate Potential Alameda, Santa Clara County ^c	Jan-March
Santa Clara Valley dudleya <i>Dudleya setchellii</i>	FE/--/1B	Ultramafic grasslands	Moderate Potential Outside of range	May-June

TABLE III.E-1 (Continued)
SPECIAL-STATUS PLANT SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED

Common name <i>Scientific name</i>	Listing Status USFWS/CDFG/ CNPS	Habitat Requirements	General Site Occurrence Within the Watershed	Flowering Period
Tiburon buckwheat <i>Eriogonum luteolum</i> var. <i>caninum</i>	--/--/3	Chaparral, coastal prairie, grasslands, usually on serpentine	Moderate Potential Alameda, Santa Clara County ^c	June-Sept
Ben Lomond buckwheat <i>Eriogonum nudum</i> var. <i>decurrens</i>	--/--/1B	Chaparral, coastal prairie, grasslands, usually on serpentine	Moderate Potential Alameda, Santa Clara, Santa Cruz County ^c	June-Sept
Jepson's woolly sunflower <i>Eriophyllum jepsonii</i>	--/--/4	Coastal scrub	High Potential Alameda, Santa Clara County ^c	April-June
Stinkbells <i>Fritillaria agrestis</i>	--/--/4	Valley and foothill grasslands, oak woodlands; on clay flats; sometimes on serpentine	High Potential Alameda, Santa Clara County ^c	March- April
Talus fritillary <i>Fritillaria falcata</i>	FSC/--/1B	Chaparral, woodland, on talus	Moderate Potential Alameda, Santa Clara County ^c	March-May
Fragrant fritillary <i>Fritillaria liliacea</i>	FSC/--/1B	Coastal scrub, valley and foothill grassland, coastal prairie; on heavy clay soils, often on ultramafic soils	High Potential Alameda, Santa Clara County ^c	Feb-April
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE/--/1B	Moist grasslands, vernal pools	Moderate Potential Alameda, Santa Clara County ^c	March-June
Woolly-headed lessingia <i>Lessingia hololeuca</i>	--/--/3	Grasslands	Moderate Potential	June-Oct
Arcuate bush mallow <i>Malacothamnus arcuatus</i>	--/--/4	Chaparral	Moderate Potential Santa Clara County ^c	April-July
Hall's bush mallow <i>Malacothamnus hallii</i>	--/--/4	Chaparral	Moderate Potential Alameda, Santa Clara County ^c	May-Sept
Gairdner's yampah <i>Perideridia gairdneri</i>	FSC/--/1B	Broad-leaved Upland forest, chapparral	Moderate Potential Santa Isabella Valley ^a	June-July
Mt. Diablo phacelia <i>Phacelia phacelioides</i>	FSC/--/1B	Cismontane woodland, chaparral	High Potential Alameda, Santa Clara County ^c	April-May
Forget-me-not popcorn flower <i>Plagiobothrys myosotoides</i>	--/--/4	Chaparral	Moderate Potential Ridge-top in Mt. Hamilton Range ^{a, c, e}	April-May

**TABLE III.E-1 (Continued)
SPECIAL-STATUS PLANT SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED**

Common name Scientific name	Listing Status USFWS/CDFG/ CNPS	Habitat Requirements	General Site Occurrence Within the Watershed	Flowering Period
Lobb's aquatic buttercup <i>Ranunculus lobbii</i>	--/--/4	Ponds, pools, watering holes	High Potential Alameda, Santa Clara County ^b	Feb-April
Rock sanicle <i>Sanicula saxatilis</i>	FSC/CR/1B	Broad-leaved upland forest, chaparral, valley and foothill grassland	Moderate Potential Santa Clara County ^c	April-May
Maple-leaved checkerbloom <i>Sidalcea malachroides</i>	--/--/1B	Grasslands	Moderate Potential Santa Clara County ^c	April-June
Metcalf Canyon jewelflower <i>Streptanthus albidus</i> ssp. <i>albidus</i>	FE/--/1B	Serpentine grassland, barrens	High Potential Santa Clara County ^c	April-June
Most beautiful jewelflower <i>Streptanthus albidus</i> ssp. <i>peramoenus</i>	FSC/--/1B	Serpentine grassland, chaparral	Moderate Potential San Francisco Bay Area ^d	April-June
Mt. Hamilton jewelflower <i>Streptanthus callistus</i>	FSC/--/1B	Shale talus	High Potential Endemic, Arroyo Bayo ^a	April-May
Mt. Diablo jewelflower <i>Streptanthus hispidus</i>	FSC/--/1B	Grassland	High Potential Endemic, Mt. Diablo ^c	March-June
Mt. Diablo cottonweed <i>Stylocline amphibola</i>	--/--/4	Broad-leaved Upland forest, Chaparral	High Potential Alameda County ^c	April-May

Federal Categories (USFWS)

FE = Listed as Endangered by the Federal Government
 FT = Listed as Threatened by the Federal Government
 FPE = Proposed for Listing as Endangered
 FPT = Proposed for Listing as Threatened
 FC = Candidate for Federal Listing
 FSC = Federal Species of Concern (former Category 2
 Candidate
 FC3c = Species removed from listing

California Native Plant Society (CNPS)

List 1A = Plants presumed extinct in California
 List 1B = Plants rare, threatened, or endangered in California
 and elsewhere
 List 2 = Plants rare, threatened, or endangered in California
 but more common
 List 3 = Plants about which more information is needed
 List 4 = Plants of limited distribution

State Categories (CDFG)

CE = Listed as Endangered by the State of California
 CT = Listed as Threatened by the State of California
 CR = Listed as Rare by the State of California

High Potential = Species expected to occur and meets all habitats as defined in list
 Moderate Potential = Habitat only marginally suitable or suitable but not within species geographic range

^a Sharsmith, 1982.

^b Hickman, 1993.

^c Smith, Berg, 1992.

^d CDFG, 1991.

^e Environmental Science Associates, 1994.

SOURCE: Environmental Science Associates, 1994; EDAW, Inc., 1998; CNPS, 1998; CDFG, 1998

Santa Clara Valley dudleya (*Dudleya setchellii*) is federally endangered and a CNPS List 1B plant. This perennial herb is known from fewer than 15 occurrences in the Santa Clara Valley (CNPS, 1998).

Contra Costa goldfields (*Lasthenia conjugens*) is federally endangered and a CNPS List 1B plant. This annual herb occurs in moist grasslands and vernal pools and was formerly known throughout the San Francisco Bay Area. After the completion of comprehensive CNPS surveys in 1993-1995, only 11 occurrences were documented in Napa and Solano Counties (CNPS, 1998). The surveys may not have included the Alameda Watershed. Further studies would be required to determine species presence and population size in the Watershed.

Metcalf Canyon jewelflower (*Streptanthus albidus* ssp. *albidus*). This species is federally endangered and a CNPS List 1B plant. The plant is an annual herb and has been identified in serpentine bunchgrass and barren areas of the Watershed. Fewer than 10 extant occurrences in Santa Clara County were reported in the 1993-1995 CNPS surveys (CNPS, 1998). These surveys may not have included the Alameda Watershed.

Wildlife

Wildlife Habitats

There are seventeen types of wildlife habitats in the Watershed. These wildlife habitats are based on the Wildlife Habitat Relationships (WHR) system and generally correspond to the natural plant communities discussed in the previous section. Table III.E-2 lists a cross-reference of the various natural plant communities with wildlife habitats. A general description of each wildlife habitat in the Watershed follows. For complete details of wildlife habitats refer to *Alameda Watershed Natural and Cultural Resources* (Environmental Science Associates, 1994).

Mixed evergreen forest/coastal oak woodland is a fairly dense woodland that grows predominantly on the northeast-facing slopes of the Alameda reservoirs. Snags and downed woody material are generally sparse throughout. Mixed evergreen forest contains food for species such as chestnut-backed chickadee, Steller's jay, pygmy nuthatch, warbling vireo, and gleaners (birds that eat insects from the bark of trees, as well as in flight) that include rufous-sided towhee and brown towhee. Other species, such as the great horned owl, use the tall trees as roosting and foraging sights during the day. The western gray squirrel and gray fox both feed on truffles, mushrooms, fruits, and nuts within the forest.

Valley oak woodland occurs on the south-facing slopes of drainages and interdigitates with a variety of other habitats. This woodland is similar in wildlife species composition to other woodland habitats. Predators such as red-shouldered hawk, red-tailed hawk, and Cooper's hawk feed on small mammals in adjacent grasslands. Cavity-nesting species such as European starlings use holes in tree trunks, and acorn eaters such as scrub jay and acorn woodpecker can be seen amongst the branches. Bark gleaners such as plain titmouse, Bewick's wren, and bushtit are also seen in the branches catching insects. Understory ground dwellers such as California quail and rufous-sided towhee are ground foliage gleaners. Mammals include several tree

**TABLE III.E-2
ALAMEDA WATERSHED WILDLIFE HABITATS**

Wildlife Habitat	Natural Plant Community
Mixed Evergreen Forest / Coastal Oak Woodland	Mixed Evergreen Forest / Coast Live Oak Woodland
Valley Oak Woodland	Valley Oak Woodland
Blue Oak Woodland	Blue Oak Woodland
Willow Riparian Forest	Central Coast Arroyo Willow Riparian Forest
Coast Live Oak Riparian	Central Coast Live Oak Riparian Forest
White Alder Riparian Forest	White Alder Riparian Forest
Sycamore Alluvial Woodland	Sycamore Alluvial Woodland
Coastal Scrub	Northern Coastal Scrub
Mixed Chaparral	Mixed Chaparral
Chamise Chaparral	Chamise Chaparral
Serpentine Grassland	Serpentine Bunchgrass Grassland
Perennial Grassland	Valley needlegrass Grassland
Annual Grassland	Non-native Grassland
Fresh Emergent Wetland	Coastal and Valley Freshwater Marsh
Riverine	(None)
Lacustrine	Pond or Reservoir
Pasture	Cultivated

SOURCE: Environmental Science Associates, 1994

squirrels, such as fox and gray squirrels, which nest and forage in this habitat. Mule deer feed on young oak shoots and acorns during the winter. California tiger salamanders could occur in this habitat type wherever there is seasonal ponding from winter rains.

Blue oak woodland grows on northeast-facing slopes that are dry or well drained, and interdigitates with a variety of other habitats. This habitat offers the same foraging and nesting resources as do other oak woodlands.

Willow riparian occurs along the eastern edge of San Antonio Reservoir and elsewhere along shorelines and streams. Willow riparian is a moist-to-wet habitat type, with high primary productivity. Decay organisms and larvae in the damp litter feed insects and other small animals, which in turn support a complex food web. This habitat is important breeding habitat for amphibians such as California tiger salamander and California red-legged frog. The physical structure of the trees provide a protected travel corridor between aquatic and upland habitat types, and is an important feeding and resting place for resident and migratory birds. Warblers and black phoebes are common insect-eating birds that use the willows for feeding and nesting.

Coast live oak riparian is found in canyon bottoms and the drier outer floodplains. The understory for this habitat consists of poison oak, blackberry bushes, and snowberry in the wetter areas and poison oak and grasses in the drier areas. As with other riparian habitats, coast live oak riparian provides water, foraging, nesting, cover, and migration and dispersal corridors for a variety of wildlife species. Common insect eaters and foliage gleaners include ash-throated flycatcher, plain titmouse, and dark-eyed junco. Bark gleaner species such as scrub jay, Steller's jay, and acorn woodpecker feed on insects as well as acorns. California quail and brown towhee are the ground foliage gleaners of this habitat. Red-shouldered hawks can be seen foraging on small mammals in the adjacent grassland from perches in the coast live oak riparian forest. Cooper's hawks and sharp-shinned hawks are often associated with this habitat and hunt small birds. Mammals such as gray squirrel forage and nest in the canopy of the trees, and long-tailed weasels hunt for shrews and meadow voles on the ground. Larger mammals, such as mule deer use the wet understory of this community (such as poison oak and blackberry) for shelter and food from the berries. Amphibians like the Pacific slender salamander, rough skinned newt, and ensatina can be found underneath the cover of fallen leaf litter and bark.

White alder riparian forest occurs along the Arroyo Hondo and Alameda Creek, interspersed with Sycamore alluvial woodland, and is often located at the bottom of a canyon stream course. This habitat consists of a narrow grove of trees with a sparse understory. It offers similar nesting and foraging resources for wildlife as willow riparian, due to the dense structure of the tree canopy (cover), moist environment for insects and foraging, and its location along streams.

Sycamore alluvial woodland occurs in the bottoms of ravines and canyons. It is often interspersed with cottonwood and oaks, as found along the east end of San Antonio Reservoir, the south end of Calaveras Reservoir, and along Alameda Creek. Wildlife species move in and out of this habitat throughout the year because of the presence of ephemeral streams. Amphibians, such as California red-legged frogs and foothill yellow-legged frogs, move upstream when the water recedes; and reptiles, such as the Alameda whipsnake, come from adjacent coastal scrub habitat and use the sycamore alluvial woodland as extended habitat for foraging and drinking. The large trees and thin canopy of the habitat provide perching surfaces for foraging raptors, such as red-tailed hawks and black-shouldered kites. Mammals, such as striped skunk and raccoon, forage underneath rocks in the creek bottom for insects and amphibians, such as western toad and Coast Range newt. Birds and mammals use the woodland as a migration corridor.

Coastal scrub occurs on shallow, rocky soils in areas with an average annual rainfall of 12 inches. Coastal scrub habitat contains species such as California quail, mourning dove, and rufous-sided towhee that are attracted to the edges of adjacent grasslands, oak woodland, or chaparral for foraging and nesting. Alameda whipsnakes utilize south, southeast and southwest facing slopes of open stands of coastal scrub. The sandy soils often associated with coastal scrub habitat provide ideal habitat for burrowing reptiles such as western fence lizards. Avian species that use the canopy of the scrub for catching insects include Pacific slope flycatcher, Wilson's warbler, and wrentit. Besides insects, flowering scrub vegetation (e.g., *Ceanothus* or deerbrush) attracts nectar drinkers such as Anna's hummingbird. Cooper's hawks hunt these smaller birds

from the adjacent Douglas-fir forest. Mammals, including striped skunk, use this habitat for protection and feed on new plant shoots. Black-tailed deer are often in coastal scrub, foraging on deerbrush in the winter and huckleberry in the spring. Small mammals occurring within coastal scrub include Audubon's cottontail, Botta's pocket gophers, and deer mice. Small mammals attract predators such as gray fox and bobcat.

Mixed chaparral often contains a dense, impenetrable overstory of pure stands of a single species or a diverse mixture of several species, with abundant leaf litter that precludes growth of any understory plants. Within the Watershed, steeply sloping hillsides and ridges with rocky soils that contain coastal scrub could support mixed chaparral. Chaparral habitat contains foraging and nesting habitat for species that are attracted to edges of the adjacent grassland or oak forest communities. These species include mountain quail, California quail, California thrasher, mourning dove, and rufous-sided towhee. Avian species that use the chaparral canopy for catching insects include phainopepla, ash-throated flycatcher, and wren. Flowers of manzanita and *Ceanothus* species attract nectar feeders such as Anna's hummingbird. If cliffs and water are located nearby, prairie falcons and sharp-shinned hawks will use chaparral for foraging grounds. Mammals use this habitat for protection and feed off new plant shoots. These species include brush rabbits, gophers, and deer mice. Small mammals attract predators such as long-tailed weasel, gray fox, red fox, and bobcat. Western rattlesnakes and western fence lizards inhabit the warm, dry chaparral community. Alameda whipsnakes tend to utilize south, southeast and southwest facing slopes of open stands of chaparral.

Chamise chaparral is dominated by chamise and as a result does not contain the diversity of wildlife food provided by coastal scrub. Wildlife species use chamise chaparral for cover and movement. The canopy is too low (3 to 6 feet) and dense for use by nesting raptors. Predators, such as gray fox or bobcat, prey on small mammals along the edges of the habitat. This habitat provides cover and foraging opportunities for reptiles. Alameda whipsnakes tend to utilize south, southeast and southwest facing slopes of open stands of chaparral.

Annual grassland is an important habitat for wildlife that require an unobstructed line of sight for hunting, communication, and territorial defense. Grassland habitat attracts seed eaters as well as insect eaters. California quail, mourning dove, and meadowlarks are seed eaters that use grasslands for nesting. Insect eaters such as scrub jays, barn swallows, and mockingbirds use the habitat only for foraging. Mammals such as California vole, deer mouse, broad-footed mole, and black-tailed jackrabbit forage and nest within the grassland. Mule deer use grassland for grazing, and for bedding and protection at night. Small rodents attract raptors (birds of prey) such as red-tailed hawks and red-shouldered hawks. Southern alligator lizard and Pacific slender salamander use the grassland to feed on invertebrates found within and underneath fallen logs. Small, seasonal ponds that are dry in the summer are found in the grassland and are important habitat for the California tiger salamander (because of their ephemeral nature, not all of these ponds have been mapped).

The annual grassland around San Antonio Reservoir is known as San Antonio Grassland, a distinct wildlife habitat unit, but a subunit of annual grassland wildlife habitat for the purposes of

this EIR. These grasslands contain unique wildlife values, including potential San Joaquin kit fox habitat, burrowing owl habitat, and known nesting golden eagles. Special-status species include, but are not limited to, the San Joaquin kit fox and short-eared owl.

Serpentine barrens¹ habitat is underlain by serpentine soils and is characterized by specially adapted plant species. Structurally this habitat is very open, with sparse ground cover to a height of 1 to 2 feet. Serpentine barrens are generally similar in value to grasslands but do not offer abundant cover or food for wildlife, except for a few specifically adapted invertebrates that require specialized microhabitats or food plant species.

Perennial grassland supports a variety of wildlife species that use the grassland as part of the foraging complex of the more dominant coastal scrub habitat. Grassland habitat attracts reptiles such as western fence lizard, which feed on invertebrates found within and underneath grass tussocks. This habitat also attracts avian seed eaters such as California quail and mourning dove, as well as insect eaters such as scrub jays and mockingbirds. Mammals such as the California vole, deer mouse, broad-footed mole, and Audubon's cottontail forage and nest within the grassland. Grasslands are important foraging grounds for aerial- and ground-foraging insect eaters such as *Myotis* bat species and pallid bats. Small rodents attract raptors such as red-tailed hawks and American kestrels.

Freshwater emergent wetland is one of the most productive habitats for wildlife because it offers water, food, and cover for a variety of species. Northern harrier, black necked stilts, avocets, red-winged blackbirds, and killdeer use these areas for foraging and nesting. Snowy egret, black-crowned night heron, and cinnamon teal also forage in this habitat. Mammals common to this habitat are meadow voles found along the edges of the marsh area, raccoons that forage on eggs and invertebrates, striped skunk, and gray fox. Reptiles in this habitat include common garter snake, tree frogs, and potentially red-legged frogs.

Riverine habitat comprises streams, rivers, and their banks. Streams in upper elevations of the Watershed flow in rocky beds along a steep gradient at relatively high velocity. At lower elevations the velocity decreases, the water becomes sluggish, sedimentation causes the stream bottom to become muddy, and water temperature and turbidity increase. Riparian vegetation is typically present on the banks of lower elevation riverine habitat. This habitat supports a variety of species that use the stream course and the banks, such as American dipper, kingfisher, and red-legged and yellow-legged frogs; the understory is foraged by mule deer, raccoons, California quail, brown towhee, and garter snakes. The canopy is used for nesting and roosting by Bewick's wren. Open water is an important link to the Pacific Flyway, which runs along the Coastal mountain ranges, and provides breeding habitat for reptiles and amphibians and a permanent water source for resident wildlife.

Pond or reservoir (lacustrine) habitat contains standing water, from either a dammed river channel or an inland depression. Sizes may vary from pond size (less than one hectare) to reservoir size (several square miles). Most permanent lacustrine systems support fish, while

¹ The term "barrens" refers to the sparse distribution of vegetation and not to the biotic values of this habitat type.

intermittent forms do not. This habitat type has been subdivided into two functionally distinct zones; open water and shoreline. Reservoirs are very important for wildlife; nesting birds use the riparian areas that lead into reservoirs and fresh emergent wetland habitat around the edges of reservoirs. Shallow ponds are often free of predatory fish and provide warmer waters during the spring and summer season for invertebrate, amphibian, and reptile species.

Pasture provides habitat among disturbed grassland where grazing animals are predominant. Three types of disturbed plant communities make up pasture wildlife habitat. These communities include agricultural land, grazed pasture land, and urban or bare land.

Agricultural land includes nurseries, orchards, and row crops. Agricultural land undergoes constant or periodic disturbance and generally does not provide the same habitat values for mammals, reptiles, and amphibians as it does for birds. The requirements of many animals for food and cover from predators and the elements, as well as for suitable courting and pairing habitats, are generally not met by agricultural uses. Wildlife using agricultural land are typically common urban species like feral cat, raccoon, striped skunk, and opossum.

Grazed pasture land is used by broadly adapted grassland wildlife species found historically in grasslands of the region. California ground squirrels, attracted to short grasses for safety reasons, create burrows that are important habitat for various species, such as burrowing owls and tiger salamanders. Resident birds of prey, such as red-tailed hawk and black-shouldered kite, use these areas for hunting small mammals. Other raptors, such as merlin and Swainson's hawk, use these types of fields for hunting during winter migration along the Pacific Flyway. Avian species typically found in grazed pastureland include pheasant, dove, red-tailed hawk, northern flicker, crow, and western meadowlark. Wildlife species typically include red fox, skunk, raccoon, opossum, jackrabbit, cottontail, California ground squirrel, California vole, western harvest mouse, western fence lizard, and gopher snake.

Urban or bare land is heavily used by humans and provides little habitat for wildlife, except for those species adapted to human habitation, such as starlings, golden-crowned sparrows, and rock doves. These areas do not provide good habitat for the larger mammalian species nor for predators, except as possible movement corridors.

Invasive Wildlife Species

Invasive wildlife species are non-native wildlife species that have established viable populations in the community. These species invade native communities, rapidly colonize sites, and compete for available resources with native species. As a result, invasive species can displace native species.

Invasive fish species occur in the Watershed. These fish, such as the largemouth bass and green sunfish, prey upon the native fish. As a result, native fish populations are reduced and, in some cases, have become extinct. It is not known if invasive fish in the Watershed have brought about extinction or contribute to other impacts.

Special-Status Wildlife Species

Table III.E-3 lists special-status wildlife species that are known to occur on the Watershed or that have a high or moderate potential to occur based on the distance to the nearest documented occurrence and habitat requirements. Appendix IX.B includes a list of all special-status species that are known to occur, or with the potential to occur in the Watershed vicinity. These lists were compiled using the California Diversity Data Base (CDFG, 1998) search by quadrangle (i.e., La Costa Valley, Calaveras Reservoir, Mount Day and Mendenhall Springs quadrangles) and other data sources (i.e., Environmental Science Associates, 1994; Stebbins, 1985; and EDAW, Inc., 1998). Eight of the species have formal listings as endangered or threatened under the California Endangered Species Act and Federal Endangered Species Act. These species are Bay checkerspot butterfly, Callipe silverspot butterfly, myrtle silverspot butterfly, California red-legged frog, Alameda whipsnake, Aleutian Canada goose, bald eagle, and San Joaquin kit fox. A comprehensive special-status species survey has not been conducted on the Watershed. However, three species—California red-legged frog, Aleutian Canada goose, and bald eagle—have been confirmed as present, at least seasonally, in the Watershed. There is a high potential for Alameda whipsnake to occur and moderate potential for Bay checkerspot butterfly, Callipe silverspot butterfly, myrtle silverspot butterfly, and San Joaquin kit fox to occur. A description of each of these special-status species follows.

Central California coast steelhead (*Oncorhynchus mykiss*) is federally threatened and exhibits one of the most complex life histories of any salmonid species. The species may be anadromous, migrating between freshwater and saltwater, or freshwater residents, which reside entirely in freshwater. Resident forms are referred to as “rainbow trout,” while anadromous forms are referred to as “steelhead.” This species migrates to marine waters after spending one or more years in freshwater. They typically reside in marine waters two to three years, prior to returning as four or five year olds to their natal stream to spawn. California coastal steelhead were proposed for listing by the U.S. Fish and Wildlife Service in 1996, and the status of the central California population was declared threatened in 1997. Steelhead have historically occurred within the Watershed, i.e., Alameda Creek, Calaveras Creek, and Arroyo Hondo Creek, (Environmental Science Associates, 1994) prior to the construction of permanent fish passage barriers. Due to a downstream impoundment in Alameda Creek, this stream is not accessible to steelhead. Lower Alameda Creek contains a small population of steelhead, which is currently known to extend upstream to a barrier associated with the Bay Area Rapid Transit (BART) tracks in Fremont.

Bay checkerspot butterfly (*Euphydryas editha bayensis*). This species is federally threatened and is restricted to isolated patches of native grasslands on serpentine soil which support an abundance of the larval food plants, namely *Orthocarpus densiflorus* and *Plantago erecta*. North-facing slopes are usually favored, except in wet years when south-facing slopes tend to be preferred. Several plants provide nectar for adult Bay checkerspot butterflies, including *Lasthenia cryostoma*, *Layia platyglossa*, *Linanthus androsaceus*, and *Lomatium* sp. Bay checkerspot butterfly populations are known from similar habitat to the south of Calaveras Reservoir. Further studies would be required to determine species presence and population size in the Watershed.

**TABLE III.E-3
SPECIAL-STATUS ANIMAL SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED**

Common name <i>Scientific name</i>	Listing Status USFWS/ CDFG	Habitat Requirements	Potential to Occur Within the Watershed	Period of Identification
<u>Invertebrates</u>				
Opler's longhorn moth <i>Adella oplerella</i>	FSC/--	Serpentine grasslands	High Potential	Spring
Serpentine phalangid <i>Calcina serpentina</i>	FSC/--	Serpentine rocks and barrens	High Potential	Fall-Winter
Bay checkerspot butterfly <i>Euphydryas editha bayensis</i>	FT/--	Serpentine grasslands	Moderate Potential	March-May
Ricksecker's water scavenger beetle <i>Hydrochara rickseckeri</i>	FSC/--	Found in freshwater ponds, shallow water of streams marshes and lakes	Moderate Potential	January-July
Curved-foot hygrotus diving beetle <i>Hygrotus curvipes</i>	FSC/--	Found in vernal pools and alkali flats	Moderate Potential	January-July
Unsilvered fritillary butterfly <i>Speyeria adiastrae adiastrae</i>	FSC/--	Found in native grasslands with <i>Viola pedunculata</i> as larval food plant	Moderate Potential	Spring
Callipe silverspot butterfly <i>Speyeria callippe callippe</i>	FE/--	Found in native grasslands with <i>Viola pedunculata</i> as larval food plant	Moderate Potential	Spring
Myrtle silverspot butterfly <i>Speyeria zerene myrtleae</i>	FE/--	Found in native grasslands with <i>Viola pedunculata</i> as larval food plant	Moderate Potential	Spring
<u>Amphibians</u>				
California tiger salamander <i>Ambystoma californiense</i>	FC/CSC	Seasonal freshwater ponds with little or no emergent vegetation	High Potential	November- May
California red-legged frog <i>Rana aurora draytonii</i>	FT/CSC	Freshwater ponds and slow streams with emergent vegetation for egg attachment	High Potential	April-June
Foothill yellow-legged frog <i>Rana boylei</i>	FSC/CSC	Streams with quiet pools absent of predatory fish	High Potential	April-June
Western spadefoot toad <i>Scaphiopus hammondi</i>	FSC/CSC	Floodplains and grassland pools	High Potential	February- August

TABLE III.E-3 (Continued)
SPECIAL-STATUS ANIMAL SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED

Common name <i>Scientific name</i>	Listing Status USFWS/ CDFG	Habitat Requirements	Potential to Occur Within the Watershed	Period of Identification
<u>Reptiles</u>				
Western pond turtle <i>Clemmys marmorata</i>	FSC/CSC	Freshwater ponds and slow streams edged with sandy soils for laying eggs	High Potential	warm days
Southwestern pond turtle <i>Clemmys marmorata pallida</i>	FSC/CSC	Freshwater ponds and slow streams edged with sandy soils for laying eggs	High Potential	warm days
Coastal western whiptail <i>Cnemidophorus tigris multiscutatus</i>	FSC/--	Dry open habitats	High Potential	all year
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	FT/CT	South, southeast and southwest facing slopes of coastal scrub and chaparral	High Potential	warm days
<u>Birds</u>				
Cooper's hawk <i>Accipiter cooperi</i>	--/CSC	Nests in riparian growths of deciduous trees and live oaks	High Potential	March-July
Sharp-shinned hawk <i>Accipiter striatus</i>	--/CSC	Nests in riparian growths of deciduous trees and live oaks	High Potential	March-July
Western grebe <i>Aechmophorus occidentalis</i>	--/*	Quiet lakes with tules or rushes	Moderate Potential	March-May
Tricolored blackbird <i>Agelaius tricolor</i>	FSC/CSC	Riparian thickets and emergent vegetation	High Potential	Spring
Golden eagle <i>Aquila chrysaetos</i>	BPA/CSC	Nests in large trees, snags, and cliffs, winters on lakes and reservoirs	High Potential	Spring
Great blue heron <i>Ardea herodias</i>	--/*	Nests in trees along lakes and estuaries	High Potential	December-July
Short-eared owl <i>Asio flammeus (nesting)</i>	--/CSC	Nests in open grasslands	High Potential	March-June
Aleutian Canada goose <i>Branta canadensis leucopareia</i>	FT/--	Winters on lakes and inland prairie	High Potential	Winter
Ferruginous hawk <i>Buteo regalis (wintering)</i>	FSC/CSC	Winters in flat open grasslands	High Potential	Winter
Northern harrier <i>Circus cyaneus</i>	--/CSC	Nests and forages in wet meadows and pastures	High Potential	Year-round

TABLE III.E-3 (Continued)
SPECIAL-STATUS ANIMAL SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED

Common name <i>Scientific name</i>	Listing Status USFWS/ CDFG	Habitat Requirements	Potential to Occur Within the Watershed	Period of Identification
<u>Birds (cont.)</u>				
California horned lark <i>Eremophila alpestris actia</i>	--/CSC	Open grasslands and irrigated pastures	High Potential	Year-round
Prairie falcon <i>Falco mexicanus</i>	--/CSC	Nests in snags and cliffs of arid climates	High Potential	Spring
Bald eagle ^a <i>Haliaeetus leucocephalus</i>	FT/CE	Nests and forages on inland lakes, reservoirs, and rivers	High Potential	Winter
Osprey <i>Pandion haliaetus</i>	--/CSC	Nests near fresh water lakes and large streams on large snags	Moderate Potential	March-June
American white pelican <i>Pelecanus erythrorhynchos</i>	--/CSC	Nests on protected islets near freshwater lakes for protection from predators	Moderate Potential	May-July
Burrowing owl <i>Speotyto (=Athene) cucularia</i> (burrow sites)	FSC/CSC	Nests in mammal burrows in open, sloping grasslands	High Potential	February-June
<u>Mammals</u>				
Pallid bat <i>Antrozous pallidus</i>	FSC/CSC	Roosts in caves, old buildings and under bark. Forages in open lowland areas and forms large maternity colonies in spring	Moderate Potential	February-August
Western mastiff bat <i>Eumops perotis</i>	FSC/CSC	Open semi-arid to arid habitats roosting on high cliffs and buildings	Moderate Potential	February-August
Small-footed myotis <i>Myotis ciliolabrum</i>	FSC/--	Roosts in caves, old buildings and under bark	Moderate Potential	February-August
Fringed myotis <i>Myotis evotis</i>	FSC/--	Roosts in caves, old buildings and under bark, forms maternity colony in the spring	Moderate Potential	February-August
Fringed myotis <i>Myotis thysanodes</i>	FSC/--	Roosts in caves, old buildings and under bark, forms maternity colony in the spring	Moderate Potential	February-August
Long-legged myotis <i>Myotis volans</i>	FSC/--	Roosts in caves, old buildings and under bark; Forms maternity colony in the spring	Moderate Potential	February-August

**TABLE III.E-3 (Continued)
SPECIAL-STATUS ANIMAL SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED**

Common name Scientific name	Listing Status USFWS/ CDFG	Habitat Requirements	Potential to Occur Within the Watershed	Period of Identification
<u>Mammals (cont.)</u>				
Townsend's big-eared bat <i>Plecotus townsendii</i>	FSC/CSC	Roosts in caves, old buildings and under bark; Forages in open lowland areas and forms large maternity colonies in spring	Moderate Potential	February-August
American badger <i>Taxidea taxus</i>	--/*	Open grasslands with loose, friable soils	Moderate Potential	Year-round
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	FE/CT	Annual grasslands or grassy open stages with scattered shrubby vegetation; Need loose-textured sandy soils for burrowing	Moderate Potential	February-October
Mountain Lion <i>Felis spp.</i>	--/4800	Rural grasslands and woodlands	High	Year-round

LISTING STATUS CODES:

U.S. Fish and Wildlife Service (USFWS)

FE = Listed as Endangered (in danger of extinction) by the federal government.
 FT = Listed as Threatened (likely to become endangered within the foreseeable future) by the federal government.
 FPE = Proposed for Listing as Endangered
 FPT = Proposed for Listing as Threatened
 FC = Candidate to become a *proposed* species.
 FSC = Federal Species of Concern. May be endangered or threatened, but not enough biological information has been gathered to support listing at this time.
 FC3c = Species removed from listing
 BPA = Federal Bald Eagle Protection Act

California Department of Fish and Game (CDFG)

CE = Listed as Endangered by the State of California
 CT = Listed as Threatened by the State of California
 CR = Listed as Rare by the State of California (plants only)
 CSC = California Species of Special Concern
 * = Special Animals
 3503.5 = Protection for nesting species of Falconiformes (hawks) and Strigiformes (owls)
 3511 = A fully protected species as defined by the CDFG
 4800 = Mountain lion protection

High Potential = Species expected to occur and meets all habitats as defined in list
 Moderate Potential = Habitat only marginally suitable or suitable but not within species geographic range

^a Federal delisting is currently proposed, pending publication in the *Federal Register*.

SOURCE: Environmental Science Associates, 1994; EDAW, Inc., 1998; CDFG, 1998

Callipe silverspot butterfly (*Speyeria callippe callippe*). This species is federally endangered and occurs in coastal grasslands. Its larval foodplant is *Viola pedunculata*. Adults have been observed using various thistles (*Cirsium* spp.) and mint (*Monardella* spp.) for nectar. Once widespread throughout the Bay Area, this butterfly is now known only in San Bruno Mountain in San Mateo County, Joaquin Miller and Redwood Regional Parks in Alameda County and the hills of southern Solano County (Federal Register, 1997; Arnold, 1981). Populations within the Livermore Valley are considered to be intermediate between two populations of silverspot butterflies: one population restricted to the Bay Area, and the second, more common population occurs in central and southern California. Factors leading to the decline of this butterfly include overcollecting, urban development, non-native plant invasion and competition and excessive livestock grazing (Federal Register, December 5, 1997). Further studies would be required to determine species presence and population size in the Watershed.

Myrtle silverspot butterfly (*Speyeria zerene myrtleae*). This species is federally endangered and occurs in coastal native grasslands where its larval foodplant, *Viola pedunculata*, is found. Potential habitat within the Watershed includes the few patches of native grassland and oak savanna.

California red-legged frog (*Rana aurora draytonii*). This species is federally threatened and primarily inhabits ponds, but will also inhabit slow-moving streams or pools in intermittent streams. Preferred ponds are usually permanent and at least 3 feet deep, with emergent vegetation (such as cattails) and shoreline cover (Stebbins, 1985). The range of this species extends from the western slope of the Cascade-Sierran mountain system, the North and South Coast Ranges, and the Transverse Range. This species is active year-long on the coast, but will aestivate (become dormant) from late summer to early winter inland (CDFG, 1988). Threats to this species are habitat loss and introduction of non-native species. Sightings of California red-legged frog are reported along Alameda Creek from studies conducted in 1993 (Leidy, 1993; DiDonato, 1997). Leidy reported California red-legged frogs in the faster moving areas of Alameda Creek and along the upper reaches of most streams flowing into Calaveras Reservoir. Biologists with the EBRPD report this species above Little Yosemite on Alameda Creek. Bullfrogs were also reported from these areas, though in isolated pockets and limited numbers (Environmental Science Associates, 1999). California red-legged frogs were observed in 1997 within approximately 3 miles south of the Sunol Valley along Alameda Creek (Environmental Science Associates, 1999).

Alameda whipsnake (*Masticophis lateralis euryxanthus*). This species is federally and state threatened. The whipsnake prefers south, southwest and southeast facing slopes of open areas in coastal scrub and chaparral stands. A good rodent population is essential to provide retreat burrows. Spiny lizards, such as western fence lizards, are especially important to the diet of this species. Urban development and associated impacts due to increased population densities, inappropriate grazing practices and alteration of suitable habitat from fire suppression are the primary reasons for the decline in population numbers of this species. Suitable resident habitat and travel corridors occur for this species around both San Antonio and Calaveras Reservoirs.

Aleutian Canada goose (*Branta canadensis leucopareia*). This species is federally threatened and is known to winter in the Sacramento and Central Valleys of California. This species feeds in flood-irrigated fields, with a strong preference for harvested corn fields when available. Rice stubble, green barley, and nonirrigated pastures are also used for foraging. Night roosting usually occurs in large marshes, flooded fields, and stock ponds, out of reach of predators. There is a reported wintering population southwest of Calaveras Reservoir (USFWS, 1991).

Bald eagle (*Haliaeetus leucocephalus*). This species is federally threatened, state endangered, California “fully-protected,” and is protected under the Bald Eagle Protection Act. However, this species is proposed for federal delisting pending publication in the *Federal Register*. Protection under the Bald Eagle Protection Act would remain intact. Bald eagles use most of California’s lakes, reservoirs, river systems, and coastal wetlands. They forage on large bodies of water or free-flowing rivers with abundant fish. This species will also opportunistically hunt sick or wounded ducks across water and will feed on carrion. Snags or large, old-growth trees are required for perching. This species has been observed around the southern part of San Antonio Reservoir (Peeters, 1993).

San Joaquin kit fox (*Vulpes macrotis mutica*). This species is federally endangered and state threatened and requires loose-textured sandy soils for burrowing and a suitable prey base such as ground squirrels. Its habitat occurs in the San Antonio annual grassland area of Sunol Valley, though there is no documentation of the species presence. Further protocol surveys would be required to determine species presence, location, and population size in the Watershed.

2.0 IMPACTS

2.1 SIGNIFICANCE CRITERIA

The City has not formally adopted significance standards for biological resources impacts, but it generally considers that implementation of the *Alameda Watershed Management Plan* would have a significant effect on biological resources if it were to:

- have a substantial adverse effect on any species identified as threatened, endangered, candidate, sensitive (rare), as discussed in CEQA Guidelines Section 15380;
- have a substantial adverse effect on the habitat of endangered, threatened, or rare species, or other sensitive natural community identified in local or regional plans, policies, regulations, or by lists compiled by CDFG or USFWS;
- have a substantial adverse effect on federally protected wetlands (including, but not limited to, marshes and riparian areas) as defined by Section 404 of the Clean Water Act, or riparian and marsh areas under the jurisdiction of CDFG, as defined by Fish and Game Code Sections 1601-1603; or
- substantially interfere with movement of any native resident or migratory fish or wildlife species, or with established fish or wildlife migratory or dispersal corridors.

2.2 PROGRAM-LEVEL IMPACTS

This section discusses the potential impacts of implementation of the management actions in the *Alameda Watershed Management Plan* on the natural resources of the Watershed, including operations, maintenance, and construction activities; increase in public access and use; increase in invasive plant species; implementation of the *Grazing Resources Management Element*; and changes to gravel mining operations.

Watershed Operations, Maintenance, and Construction Activities

There are several management actions in the Management Plan that could directly disturb native plant communities and indirectly disturb special-status wildlife species that use the communities for food and cover. These actions include Action wil5 (elimination of unnecessary infrastructures), Action wil7 (use of mechanical vegetation treatments or prescribed fire to enhance habitat), Action veg6 (removal of exotic species), and Action veg12 (clearing of vegetation around powerlines, transformers, and pole structures).

Implementation of the Management Plan would result in construction of a number of additional facilities or improvements on the Watershed. Many of the facilities would be installed to ensure and/or improve water quality or resource protection on the Watershed, such as barriers or fences at identified high-risk spill potential areas (Action haz6); installation of infiltration drainfields and detention basins (Action sto1); installation of long-term retention basins or other permanent measures (Action aqu12); rehabilitation of shoreline areas and stream segments (Actions aqu5 and aqu7); improvements that prevent human and animal waste from impacting Watershed resources (Action was1); and wildlife passage structures (Action wil13). Many of the actions listed in the Roads section of the Management Plan (Actions roa2, roa3, roa4, roa6, roa7, and roa8) call for modifying or relocating existing roads or road components in order to reduce potential erosion and Watershed contamination from automobile by-products. Fire management actions include the installation of hydrants, helispots, and water tanks (Actions fir2 through fir6); roadway and access improvements (Action fir7); and implementation of fuel management projects that include construction of fuel breaks, conducting prescribed burns, and other improvements (Action fir8). Construction projects would be generated through the implementation of management actions that would provide additional public use opportunities, such as information kiosks and a Watershed Visitor Education Center (Actions pub3 and pub4), additional new trails (Policies WA15.2 and WA15.4), and golf course expansion (Policy WA18.1). In addition, implementation of actions des8 and sun17 would result in universal access improvements at existing Watershed facilities and trails and provide for universal access at proposed facilities.

Implementation of the management actions in the *Sunol Valley Resources Management Element* would also generate construction projects through restoration and reclamation activities related to mining pits, including construction of appropriate mining pit sideslopes (Actions sun4 and sun5); improvements to the existing Sunol maintenance facility (trade shops, equipment storage shelter, warehouse, offices/Watershed Visitor Education Center, etc.) (Action sun10); backfill and landscaping of a buffer zone adjacent to the east side of Sunol Water Temple (Action sun11);

and restoration of the entry to the temple (Action sun13). In addition, implementation of the Sunol management actions would involve construction of several public access facilities and improvements, including a public recreation area around the Sunol Water Temple (Action sun14); commercial site (Action sun19), overnight nature study area (Action sun20), and trail connections (Action sun21).

Implementation of the management actions in the *Grazing Resources Management Element* would generate construction projects primarily through structural protection measures and Watershed protection area improvements, including fencing around reservoirs, streams, and stock water ponds; water developments; water collection systems; wildlife ponds; and livestock pond rehabilitation (Actions gra2, gra6, gra7, and gra8).

Although the aim of Actions wil5 (elimination of unnecessary fencing) and wil7 (habitat enhancement through vegetation treatments or prescribed fire) is to improve terrestrial habitat over the long term, implementation of these and other management actions could inadvertently disturb native plant communities as a result of trampling, removing, or continued or repeated disruption of vegetation. Such disturbance could modify the structure, composition, and diversity of the plant community. Modification of native plant communities could lead to a decline in associated wildlife species, and ultimately result in a decline in the local populations of special-status wildlife species such as sharp-shinned hawks, which feed on wildlife species that inhabit native plant communities. In addition, construction could inadvertently disturb trees (either through damage or removal) that provide potential roosting and nesting sites for various raptors and other birds that are protected by CDFG Code 3503 and 3503.5 and the Migratory Bird Treaty Act (see Section 1.1, Special-Status Species). Thus, construction activities could be a significant impact to Watershed natural resources.

While the Management Plan proposes certain management actions that could bring about physical effects, the Management Plan also includes actions that would reduce these potential effects. Table III.E-4 is provided to link, at a program level, those actions that could result in potential impacts (column 1) with the full range of actions that could be required to reduce the potential impacts (column 2). The table highlights in **bold** text those actions that may be essential to reduce significant impacts column 1 actions, depending on the specific nature of the management action, such as design, siting, or implementation schedule. These essential actions, as well as the other actions (in non-bold text) that would further reduce potential physical effects, are discussed below. The table also indicates the level of impact significance that would remain if the actions discussed were implemented. Not every bolded action would be necessary to mitigate the effects of the associated potential impact-causing management action. For example, a very minor structure such as a kiosk located in an environmentally non-sensitive area may not require any of the bolded actions to avoid a significant effect. Because implementation information, such as locations of specific facilities, is not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts. Management actions would be reviewed at the time they are proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures (see Section II.E.5.0, Mitigation Monitoring and Reporting).

**TABLE III.E-4
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO NATURAL RESOURCES FROM WATERSHED OPERATIONS, MAINTENANCE, AND CONSTRUCTION ACTIVITIES**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action veg6: Identify and remove, using IPM, invasive exotic plant species	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action veg12: Coordinate with PG&E in clearing vegetation	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action wil5: Relocate or eliminate unnecessary infrastructure and facilities.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action wil7: Create palatable re-sprouting through mechanical treatments or prescribed fire.	Actions veg1 , veg2, veg3 , veg5.1 , veg6.1 , and will .	LTS
Action sto1: Remediate on-site stormwater collection and drainage systems through infiltration drainfields and trenches, and detention basins.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action aqu12: Install long-term sediment retention basins or other permanent measures.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action aqu5: Rehabilitate shoreline areas using structural shoreline protection practices.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action aqu7: Rehabilitate stream segments.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action haz6: Identify high-risk spill potential areas and implement measures, including barricades, to reduce the risk of hazardous spills.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action was1: Repair/replace vault, chemical, and composting toilet as necessary.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action roa2: Relocate existing necessary high use roads/road segments in proximity to streams.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

TABLE III.E-4 (Continued)
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO NATURAL RESOURCES FROM WATERSHED OPERATIONS, MAINTENANCE, AND CONSTRUCTION ACTIVITIES

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action roa3: Modify the grading and drainage of existing necessary high use roads/road segments.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action roa4: Close and retire roads that are not needed and eliminate or minimize problem erosion points by installing culverts and waterbars, or otherwise stabilizing the roadway.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action roa6: Inspect/manage unpaved roads by remediating and stabilizing areas of erosion and regrading unpaved roads.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action roa7: Maintain fire roads through effective installation of waterbars and paving where needed.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action roa8: Restrict access on low use roads by gates or barriers.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action fir2: Install a total of nine hydrants into water sources.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action fir3: Install and maintain a total of four helispots on SFPUC property.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action fir4: Install three additional helispots off SFPUC lands.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action fir5: Install two additional hydrants on adjacent lands.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action fir6: Install an additional water tank.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action fir7: Identify and construct road improvements, including turnouts, turnarounds, and safety zones.	Actions veg1 , veg2, veg3 , veg6.1 , and will .	LTS
Action fir8: Complete the fuel management projects, including fuel load reductions, prescribed burns, fuel breaks, and access improvements.	Actions veg1 , veg2, veg3 , veg5.1 , veg6.1 , and will .	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

TABLE III.E-4 (Continued)
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO NATURAL RESOURCES FROM WATERSHED OPERATIONS, MAINTENANCE, AND CONSTRUCTION ACTIVITIES

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action will13: Design and install wildlife passage structures that minimize wildlife losses.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action pub3: Establish “gateway” information kiosks.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action pub4: Establish a Visitor Education Center.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action des8: Implement universal access improvements at SFPUC facilities and trails.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action sun17: Provide universal access at Sunol Valley recreation facilities.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action sun4: Create sideslopes on the quarry pits such that there is a gradual transition to water.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action sun5: Reclaim quarries with sideslopes appropriate to their proposed activity.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action sun10: Retain the existing Sunol maintenance facility with improvements, including equipment storage shelter, warehouse and storage yard, parking, etc.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action sun11: Backfill and landscape a ¼-mile buffer zone at the mining module closest to the Sunol Water Temple, between that module and the water temple.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action sun13: Restore the historic entry to the Sunol Water Temple.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action sun14: Develop a public recreation area around the Sunol Water Temple.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action sun19: Establish a small commercial site.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

TABLE III.E-4 (Continued)
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO NATURAL RESOURCES FROM WATERSHED OPERATIONS, MAINTENANCE, AND CONSTRUCTION ACTIVITIES

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action sun20: Establish an overnight nature study area.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action sun21: Establish trail connections extending to the Sunol Regional Wilderness.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action gra2: Implement structural protection measures, including fencing and other improvements.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action gra6: Implement improvements for the San Antonio Water Protection Area.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action gra7: Implement improvements for the Calaveras Watershed Protection Area.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Action gra8: Implement improvements for the Lower Alameda Creek Watershed Protection Area.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Policy WA15.2: Consider addition of new trails in zones of lesser vulnerability and risk.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Policy WA15.4: Support new trail connections that link to adjacent communities and other trail facilities.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS
Policy WA18.1: Consider expansion of existing golf course in areas of low vulnerability/sensitivity.	Actions veg1 , veg2, veg3 , veg6.1 , and will1 .	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

Under the Management Plan, the most important means of reducing potential impacts on vegetation from operations and management activities is Action **veg1**, which calls for the preparation of a Vegetation Management Plan; and Actions **veg2** and **veg3**, which require identification of specific vegetation communities prior to planning Watershed activities and initiating surveys for special-status species in ecological sensitivity zones. Action **veg5.1** calls for development of a native planting program for implementation in disturbed areas in coordination with grazing and fire management activities. Action **veg6.1** requires the identification of stands of exotic trees that serve as important roosting and nesting sites for various raptors and other birds protected by CDFG Code 3503. The action includes direction to work with appropriate agencies to preserve core habitat. In addition, Action **will1** requires avoidance of nest disturbance during construction, removal of nests during the nonbreeding period, and tagging and avoiding nests discovered during construction until the nests are abandoned or the young have fledged.

Implementation of these management actions, as described above and in Section IV.E, would reduce the potential impacts to natural resources from operations, maintenance, and construction activities to a less than significant level. The impacts of day-to-day management activities that implement the Management Plan are analyzed in this EIR and generally would not be subject to further environmental review. No unavoidable significant program-level natural resources impacts related to Watershed operations, maintenance, and construction activities have been identified in this EIR. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Increase in Public Access and Use

Currently, the SFPUC leases a portion of its Watershed to the East Bay Regional Park District (EBRPD) for public hiking, equestrian, and mountain bike trails. The EBRPD has designated two wilderness areas: the Sunol Regional Wilderness, open to the public without a permit; and the Ohlone Regional Wilderness, accessed by permit only. The *Alameda Watershed Management Plan* includes facilities that could result in increased public visitation of the Watershed by providing new trails (Policies WA15.2 and WA15.4), golf course expansion (Policy WA18.1), and increased information (such as maps and brochures) regarding public activities on the Watershed. These facilities include information kiosks (Action **pub3**), a Watershed Visitor Education Center (Action **pub4**), public recreation area around the Sunol Water Temple (Action **sun14**); commercial site (Action **sun19**), overnight nature study area (Action **sun20**), and trail connections (Action **sun21**). The Management Plan proposes new trails in low vulnerability zones nearest urban areas that would be accessible by individuals and groups without a permit. In addition, provision of universal access at Watershed facilities could increase public use of the Watershed (Actions **des8** and **sun17**).

The development of new trails could adversely affect wildlife if trail construction occurred within or near woodland and forested areas and during the bird breeding season (February–July).

Nesting raptors and other birds roost and nest in areas such as willow riparian and valley oak woodland, and are protected by California Fish and Game Code Section 3503 and the Migratory Bird Treaty Act. Harassment of birds (noise, damage to trees or nests) during the nesting season as a result of human activity along new trails could alter nesting behavior, jeopardize eggs and young, and reduce parental attentiveness. Over time there could be a decline in bird species numbers and fecundity (fertility) rates, and an increase in local extinction rates of these species.

The increase in public access and use of the Watershed as a result of new trails could also adversely affect wildlife. Increased human disturbance, such as excessive noise or vegetation trampling, could result in wildlife harassment if the disturbance were intense and prolonged, the species sensitive, or the disturbance led to changes in wildlife or plant community composition (Foin et al., 1977). Knight and Gutzwiller (1995) demonstrated human disturbance to wildlife, in which they found that rapid movements by joggers had a greater effect on wildlife than did walkers and equestrians. In general, the researchers found that human recreational use of an area will lower its wildlife productivity and diversity over time. Human intrusion can also reduce the effectiveness of foraging bald eagles, a Watershed special-status species, when feeding young or on wintering grounds (Garret, 1981).

Table III.E-5 links those management actions that could result in physical effects with the full range of management actions that could be required to reduce the potential physical effects. Under the Management Plan, the most important means of reducing potential impacts on wildlife from an increase in public access and use is Action **des5**. This management action establishes design guidelines for new construction and renovation of existing facilities. Action **wil10** institutes seasonal prohibition of recreational activities during breeding periods and enacts other mitigation measures to protect species of concern.

Implementation of design guidelines and seasonal restrictions on recreational activities would reduce the potential impacts on wildlife from increased public access and use. In addition, actions described in Section III.I, Aesthetics, under the heading Increase in Public Access and Use, would reduce the potential impacts related to wildlife disturbance. Implementation of these actions, as described above and in Section IV.E, would reduce potential natural resources impacts associated with increased public access and use to a less than significant level. No unavoidable significant program-level natural resources impacts related to increased public access and use have been identified in this EIR. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Increase in Invasive Plant Species

Invasive plant species are prominent on the Watershed. Viable populations of yellow star thistle (*Centaurea solstitialis*) and purple star thistle (*Centaurea calcitrapa*) are well established in non-native grasslands as a result of land disturbance, including cattle grazing.

**TABLE III.E-5
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO
NATURAL RESOURCES FROM AN INCREASE IN PUBLIC ACCESS AND USE**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action pub3: Establish information kiosks at Watershed entryways.	Actions des5 , wil10 . Also see Table III.I-3.	PS
Action pub4: Establish a Watershed Visitor Education Center.	Actions des5 , wil10 . Also see Table III.I-3.	PS
Action sun14: Develop a public recreation area around the Sunol Water Temple.	Actions des5 , wil10 . Also see Table III.I-3.	LTS
Action sun19: Establish a small commercial site.	Actions des5 , wil10 . Also see Table III.I-3.	LTS
Action sun20: Establish an overnight nature study area.	Actions des5 , wil10 . Also see Table III.I-3.	LTS
Action sun21: Establish trail connections extending to the Sunol Regional Wilderness.	Actions des5 , wil10 . Also see Table III.I-3.	LTS
Policy WA15.2: Consider new trails in zones of low vulnerability and risk.	Actions des5 , wil10 . Also see Table III.I-3.	LTS
Policy WA15.4: Support new trail connections that link to adjacent communities and other trail facilities.	Actions des5 , wil10 . Also see Table III.I-3.	LTS
Policy WA18.1: Consider expansion of existing golf course in areas of low vulnerability/sensitivity.	Actions des5 , wil10 . Also see Table III.I-3.	LTS
Action des8: Implement universal access improvements at SFPUC facilities and trails.	Actions des5 , wil10 . Also see Table III.I-3.	LTS
Action sun17: Provide universal access at Sunol Valley recreation facilities.	Actions des5 , wil10 . Also see Table III.I-3.	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

Construction activities, such as those required to implement some of the Watershed management actions in the Management Plan, and increased public use of the Watershed (see sections above for a description of management actions that involve construction and public use), could increase the density and distribution of invasive plant species if vegetation were removed or repeatedly trampled. These activities could create suitable conditions for germination of buried seeds of invasive plant species by exposing the soil surface to sunlight and moving the seeds from lower depths to locations on or near the soil surface. Construction activities could also serve as dispersal vectors for seeds of invasive plant species, which could latch onto construction equipment and the shoes of workers and recreation users.

Establishment of invasive plant species could cause a decline in distribution and density of native wildlife habitat, especially for special-status butterfly species limited to a single food source (e.g., the larvae of Callippe silverspot is limited to *Viola pedunculata*) (Hafernik, 1992). Furthermore, a decrease in plant diversity and a direct modification of plant communities, such as transformation from native perennial grassland to non-native annual grassland (a phenomenon that has occurred and is presently occurring throughout the Watershed) can be caused by the invasive plant species. The establishment of a viable population of invasive plant species in ecologically sensitive areas such as serpentine could result in the loss of special-status plant and wildlife species and sensitive plant communities (Falk, 1992). Different plant communities, and in some cases different plant species, provide habitat for different wildlife species. Thus, changes caused by invasive plant species could lead to alterations in the community composition, diversity, and richness of wildlife and plants and therefore, they would be considered a significant impact of Management Plan implementation.

Table III.E-6 links those management actions that could result in physical effects on plant communities with the full range of management actions that could be required to reduce the potential physical effects. Under the Management Plan, the most important means of reducing potential impacts associated with invasive plant species would be Action **veg1**, which calls for the preparation of a Vegetation Management Plan, and Action **veg6**, which requires the identification and removal of invasive exotic plant species.

Implementation of these management actions, as described above and in Section IV.E, would reduce the potential physical effects from the establishment of invasive plant species to a less than significant level. The impacts of day-to-day management activities that implement the Management Plan are analyzed in this EIR and generally would not be subject to further environmental review. No unavoidable significant program-level natural resources impacts related to an increase in invasive plant species have been identified in this EIR. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

**TABLE III.E-6
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS
FROM AN INCREASE IN INVASIVE PLANT SPECIES**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Tables III.E-4 and III.E-5 list the actions that would generate construction activities or increased public use, thereby resulting in potential impacts from an increase in invasive plant species.	Actions veg1 and veg6 .	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

Implementation of the Grazing Resource Management Element

Grazing is currently allowed on the Watershed. Policies governing the implementation of the *Grazing Resources Management Element* of the Management Plan would significantly reduce the risk of fire and enhance ecological resources. However, if not managed properly, grazing could damage vegetation, increase invasive plant species, and increase erosion (Falk, 1992).

Table III.E-7 links the activity that could result in physical effects on vegetation with the full range of management actions that could be required to reduce the potential impacts. In the case of grazing, the management actions would reduce the potential impacts associated with improperly managed grazing. These grazing management actions (Actions gra1 through gra14) include implementation of grazing management controls and structural protection measures that would enhance the health of riparian zones and reservoir margins by reducing the risk of viable pathogen discharges into streams and reservoirs. Additionally, these management actions would maintain and improve ecological resources by controlling vegetative growth, implementing specific criteria for lessee selection and lease requirements, implementing improvements to the three divided geographic Watershed protection areas (San Antonio, Calaveras, and Alameda Creeks), obtaining funding for improvements, and implementing monitoring to ensure adherence to program plans and activities.

Implementation of the *Grazing Resources Management Element*, as described above and in Section IV.E, would reduce the potential physical effects from overgrazing by livestock to a less than significant level. Therefore, mitigation measures are not required.

Changes to Gravel Mining Operations

Under the Management Plan, gravel mining is proposed north of I-680, and gravel extraction operations would continue and expand under two separate options south of I-680. The following discussion applies to both continuing mining operations and proposed options.

- As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (shortening the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit and could bring about new (but mitigable) natural resources impacts beyond those disclosed and mitigated in the EIR prepared for SMP-32, as described below. Alameda County's conditions of approval for SMP-32 include requirements for revegetation and restoration, as well as controls to be implemented during mining operations, that ensure impacts from mining would be less than significant.

As described in the SMP-32 EIR, vegetation within the SMP-32 permitted area north of I-680 (Action sun1) consists of ruderal non-native grassland, barley hay field, a vineyard and orchard. The non-cultivated areas of the site are highly disturbed, possibly due to disking. California ground

**TABLE III.E-7
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS
FROM IMPLEMENTATION OF THE GRAZING RESOURCES MANAGEMENT ELEMENT**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Improper management of grazing under the Management Plan.	Actions gra1 through gra5 and gra6 through gra14.	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

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squirrels probably occur at the site since they are found throughout the Watershed. A segment of Alameda Creek is approximately 750 feet away from the southwestern perimeter of the proposed mining area and another segment of the creek lies about 100 feet away from the southern perimeter of the mining area. Riparian woodland occurs along some portions of Alameda Creek.

The proposed mining area south of I-680 (Actions sun2a and sun2b) is disturbed and is mostly devoid of vegetation. Options presented under Actions sun2a and sun2b would require amendments to existing permits south of I-680. The increase in mining depths proposed in both Actions sun2a and sun2b would not be likely to impact natural resources beyond levels previously analyzed and mitigated in previous environmental documentation. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining. These mitigation measures include an established buffer zone from the bank of San Antonio Creek to mining activities and requirements for revegetation and reclamation with an emphasis on native plant species. Amendment of the existing permits would be subject to project-level environmental review by Alameda County.

The environmental analysis for Mission Valley Rock Company Surface Mining Permit and Reclamation Plan SMP-32 was conducted in 1994, environmental analysis for SMP-30 was conducted in 1992, and environmental analysis for SMP-24 was conducted in 1985. Since that time, several species have been listed as sensitive species, and therefore, the potential for sensitive species to occur at the proposed mining area has been restudied, as follows.

- No special status plants are expected to occur within the proposed mining area due to the disturbed nature of the site and the absence of appropriate soil, such as serpentine soils, and native plant communities such as scrub chaparral or woodlands. The area may provide breeding habitat for burrowing owl, a federal and state species of special concern, since this species can survive in a disturbed environment and can utilize ground squirrel burrows. This species could be present during mining activities and implementation of Mitigation Measures D-3(b) and D-3(c) for SMP-32 would require preconstruction surveys for burrowing owls and passive relocation if burrowing owls are found. These mitigation measures would reduce impacts from Management Plan expansion south of I-680 as well. The current conditions at the proposed mining area do not provide suitable habitat for Alameda whipsnake, California red-legged frog, or California tiger salamander. However, the corridor between Pleasanton Ridge and Sunol/Cedar Ridge has been proposed as critical habitat for the Alameda whipsnake. This proposed designation terms the area not as habitat per se, but as a possible dispersal corridor. The loss of, or disturbance to this species during mining operations would be considered a significant impact. Section IV.E presents a mitigation measure that would reduce this impact to a less than significant level.
- Alameda Creek is not accessible to the federally threatened Central California coast steelhead (*Oncorhynchus mykiss*) due to downstream impoundment. Lower Alameda Creek contains a small population of steelhead, which is currently known to extend as far upstream as a barrier

associated with the Bay Area Rapid Transport (BART) tracks in Fremont. In addition, as described in the SMP-32 and conditions of approval, mining activities, including discharges, will not occur in or impact Alameda Creek and will be buffered from riparian areas.

California red-legged frog and California tiger salamander may colonize the proposed mining area during and after project implementation, if mining operations results in the creation of

rainwater pits or other ephemeral pools. Either species is likely to migrate to standing pools of water near upland retreat areas. The loss of, or disturbance to these species during mining operations would be considered a significant impact. Section IV.E presents mitigation measures that would reduce this impact to a less than significant level.

Table III.E-8 links those management actions that could result in physical effects on sensitive species with the management action that could be required to reduce the potential effects. The most important means of reducing potential effects would be Action **will**, which would require that a site-specific review of new structures would be conducted to avoid and minimize adverse impacts to wildlife, their movement and habitat. Implementation of these measures, as described above and in Section IV.E, would reduce potential effects, but would not reduce them to a less than significant level. Further mitigation for this effect is presented in Section IV.E that reduces potential impacts to a less than significant level.

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**TABLE III.E-8
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS
FROM IMPLEMENTATION OF THE SUNOL VALLEY RESOURCES MANAGEMENT ELEMENT**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action sun1: Mine the existing permitted areas in accordance with SMP-32, north of I-680.	Action will .	PS, see Section IV.E
Action sun2a: Amend the existing mining permits south of I-680 to achieve a maximum mining depth and footprint.	Action will .	PS, see Section IV.E
Action sun2b: Amend the existing mining permits south of I-680 to achieve a maximum mining depth.	Action will .	PS, see Section IV.E

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

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F. AIR QUALITY

1.0 SETTING

1.1 CLIMATE AND METEOROLOGY

The primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted. Meteorological and topographical conditions are also important factors. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. The Alameda Watershed is located within two of the Bay Area Air Quality Management District (BAAQMD) subregions, the southwestern Alameda County subregion and the Santa Clara Valley subregion. Both of these subregions are located within the San Francisco Bay Area Air Basin. The discussions below describe the general climate and meteorology of each of these subregions.

Southwestern Alameda County

The climate in southwestern Alameda County is affected by its proximity to San Francisco Bay. The Bay breezes push cool air onshore during the daytime and draw air from the land offshore at night. Winds are predominantly out of the northwest during the summer months. In the winter, winds are equally likely to be from the east. Wind speeds are moderate in this subregion, with annual average wind speeds close to the Bay at about 7 miles per hour (mph) and further inland at about 6 mph. During summer months, average maximum temperatures are in the mid 70s. Winter maximum temperatures are in the high 50s to low 60s. Average minimum temperatures are in the low 40s in the winter and mid 50s in the summer. Pollution potential is relatively high in this subregion during the summer and fall. When high pressure dominates, low mixing depths and Bay and ocean wind patterns can combine to carry pollutants from other cities to this area, adding to the locally emitted pollutant mix.

Santa Clara Valley

The Santa Clara Valley is bound by San Francisco Bay to the north and mountains to the east, south, and west. In the northern portion of the Santa Clara Valley, the maximum temperature ranges from the low 80s in the summer to the high 50s in the winter. The minimum temperature ranges from the high 50s in the summer to the low 40s in the winter. Winds in the valley are greatly influenced by the terrain, resulting in a prevailing flow that roughly parallels the valley's northwest-southeast axis. A north-northwesterly sea breeze flows through the valley during the afternoon and early evening, and a light south-southeasterly flow occurs during the late evening and early morning. In the summer, the southern end of the valley sometimes becomes a "convergence zone," as air flowing from Monterey Bay gets channeled northward and meets with the prevailing north-northwesterly winds. Wind speeds are greatest in the spring and summer and weakest in the fall and winter. Nighttime and early morning hours frequently have

calm winds in all seasons, while summer afternoons and evenings are quite breezy. Strong winds are usually associated with winter storms.

1.2 AIR QUALITY PLANS, POLICIES, AND STANDARDS

Regulation of air pollution is achieved through both national and state ambient air quality standards and emission limits for individual sources of air pollutants, as described below.

Federal

The 1977 federal Clean Air Act (CAA) required the U.S. Environmental Protection Agency (EPA) to identify National Ambient Air Quality Standards, or national standards, to protect public health and welfare. National standards have been established for six criteria air pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter (PM-10), and lead. These pollutants are called “criteria” air pollutants because standards have been established to meet specific public health and welfare criteria set forth in the CAA. Table III.F-1 lists the national standards established for the six criteria air pollutants.

Under the CAA, air quality plans (known as State Implementation Plans, or SIPs) were required to be prepared for areas classified as “nonattainment” for any of the national standards. These plans were to contain a strategy for improving air quality and achieving the national standards.

Pursuant to the 1990 federal Clean Air Act Amendments, the EPA reclassified air basins (or portions thereof) as either “attainment” or “nonattainment” for each criteria air pollutant, based on whether or not the national standards had been achieved. The attainment status of each of the criteria air pollutants is discussed below.

Based on monitoring data in the 1970s, the Bay Area was designated “nonattainment” with respect to the national standards for ozone and carbon monoxide, and a SIP for the Bay Area was prepared. This 1982 SIP was intended to bring the Bay Area into compliance with the national standards by 1987. Under the federal Clean Air Act Amendments of 1990, SIPs were required to be revised to meet new requirements for those areas, like the Bay Area, that did not meet the 1987 deadline.

With respect to ozone, a SIP revision for the Bay Area was prepared pursuant to the federal Clean Air Act Amendments of 1990. This ozone SIP, the *Ozone Maintenance Plan*, was developed for the Bay Area in anticipation of a change in designation to “attainment.” In 1995, the EPA approved the BAAQMD’s request to change the Bay Area’s designation to “attainment” for ozone based on monitoring data which indicated that the Bay Area had achieved the national standard. At the same time, the EPA also approved the *Ozone Maintenance Plan*, which then became part of the current ozone SIP for the Bay Area. However, the EPA recently announced its final decision to reclassify the entire Bay Area as “nonattainment” for ozone based on monitored violations in 1995 and 1996. As a result of that decision, a revised SIP will be required.

**TABLE III.F-1
STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Time	State of California^{a,c}	National^{b,c}
Ozone ^d	1 hour	0.09 ppm (180 µg/m ³)	0.12 ppm (235 µg/m ³)
	8 hour	NA	0.08 ppm (160 µg/m ³)
Carbon Monoxide	1 hour	20 ppm (23,000 µg/m ³)	35 ppm (40,000 µg/m ³)
	8 hour	9.0 ppm (10,000 µg/m ³)	9 ppm (10,000 µg/m ³)
Nitrogen Dioxide	1 hour	0.25 ppm (470 µg/m ³)	NA
	Annual	NA	0.053 ppm (100 µg/m ³)
Sulfur Dioxide	1 hour	0.25 ppm (655 µg/m ³)	NA
	3 hour	NA	0.5 ppm (1,300 µg/m ³)
	24 hour	0.04 ppm (105 µg/m ³)	0.14 ppm (365 µg/m ³)
	Annual	NA	0.03 ppm (80 µg/m ³)
Particulate Matter (PM-10)	24 hour	50 µg/m ³	150 µg/ m ³
	Annual	30 µg/m ³	50 µg/ m ³
Particulate Matter (PM-2.5) ^d	24 hour	NA	65 µg/ m ³
	Annual	NA	15 µg/ m ³
Sulfates	24 hour	25 µg/m ³	NA
Lead	30 day	1.5 µg/m ³	NA
	Calendar Quarter	NA	1.5 µg/m ³
Hydrogen Sulfide	1 hour	0.03 ppm (42 µg/m ³)	NA
Vinyl Chloride	24 hour	0.010 ppm (26 µg/m ³)	NA

^a California standards for ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, particulate matter (PM-10) are values that are not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

^b National standards, other than for ozone and particulate matter and those based on annual averages, are not to be exceeded more than once per year. For the 1-hour ozone standard, the ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one. The 8-hour ozone standard is met at a monitoring site when the three-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 0.08 ppm.

^c ppm = parts per million by volume; µg/m³ = micrograms per cubic meter.

^d New standards effective September 16, 1997 (40 CFR 50.7 and 40 CFR 50.10).

NA: Not Applicable.

SOURCE: CARB, 1998.

With respect to carbon monoxide, the EPA recently announced its decision to approve a redesignation request for the Bay Area to “attainment” for the national carbon monoxide standard and to approve a *Carbon Monoxide Maintenance Plan*, which is the new carbon monoxide SIP for the Bay Area. The Bay Area is “attainment” or “unclassified” with respect to the other criteria pollutants (CARB, 1998). “Unclassified” is defined by the Clean Air Act Amendments as any area that cannot be classified, on the basis of available information, as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

State

California has adopted ambient standards, the State Ambient Air Quality Standards, that are more stringent than the federal standards for the criteria air pollutants (see Table III.F-1). In 1988, the state legislature passed the California Clean Air Act (CCAA), which is patterned after the federal Clean Air Act in that areas are required to be designated as “attainment” or “nonattainment” but for the state standards rather than the national standards. The Bay Area is a “nonattainment” area for ozone and respirable particulate matter with respect to their respective state standards (CARB, 1998). The Bay Area is designated as an “attainment” area for carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead, and “unclassified” with respect to hydrogen sulfide.

Under the CCAA, areas designated as “nonattainment” for the state standards were required to develop air quality plans in addition to those required under federal laws. In 1991, an air quality plan, the *Bay Area ‘91 Clean Air Plan*, was developed to address the Bay Area’s (then) designation of “nonattainment” for the state ozone and carbon monoxide standards.¹ The goal of the *‘91 Clean Air Plan* was to improve air quality in the 1990s through tighter industry controls, cleaner cars and trucks, cleaner fuels, and increased commuter alternatives. The *‘91 Clean Air Plan* has been updated on a triennial basis. The most recent update is the *‘97 Clean Air Plan*, which contains additional control strategies (BAAQMD, 1997a).

1.3 AIR QUALITY REGULATORY AGENCIES

The California Air Resources Board (CARB), California’s air quality management agency, regulates mobile emissions sources such as construction equipment, trucks, and automobiles; and oversees the activities of regional/county air districts. CARB is responsible for establishing emissions standards for on-road motor vehicles sold in California.

The BAAQMD is the regional agency empowered to regulate air pollutant emissions from stationary sources in the Bay Area. BAAQMD regulates air quality through its permit authority over most types of stationary emission sources and through its planning and review activities. Stationary sources, such as mining operations, are regulated through a permitting process in which applicants must secure an Authority to Construct and Permit to Operate from the

¹ Subsequent to the issuance of the *‘91 Clean Air Plan*, the Bay Area did achieve attainment status for carbon monoxide.

BAAQMD prior to operation of new or modified equipment that may affect air quality. Stationary sources can also be subject to retrofit requirements. BAAQMD's permit authority does not extend to mobile emissions sources.

1.4 EXISTING AIR QUALITY CONDITIONS

The BAAQMD operates a regional air quality monitoring network that provides information on ambient concentrations of criteria air pollutants. Monitored ambient air pollutant concentrations reflect the number and strength of emissions sources and the influence of topographical and meteorological factors. Table III.F-2 presents a five-year summary of the criteria air pollutant concentrations collected at BAAQMD's Fremont Air Monitoring Station. This station is located in the City of Fremont on Chapel Way, approximately 4.5 miles west of the closest Watershed boundary. Table III.F-2 compares air pollutant concentrations with the corresponding state standards, which are more stringent than their national counterparts. The following discussion focuses on air quality trends with respect to ozone and PM-10, the "nonattainment" pollutants in the Bay Area.

Ozone is not emitted directly into the atmosphere, but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxides (NO_x). ROG and NO_x are known as ozone "precursors." Significant ozone production generally requires the presence of ozone precursors for approximately three hours in a stable atmosphere with strong sunlight. Ozone is a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production. Ozone concentrations tend to be higher in the late spring, summer, and fall, when a combination of long sunny days and regional subsidence inversions creates conditions conducive to the formation and accumulation of secondary photochemical compounds.

Short-term exposure to ozone can irritate the eyes and cause constriction of the airways (BAAQMD, 1996). Besides causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. The data contained in Table III.F-2 show that the maximum hourly ozone concentration violated the state ozone standard in each of the past five years in which measurements were taken.

PM-10 consists of particulates 10 microns (a micron is one one-millionth of a meter) or less in diameter, which can be inhaled and cause adverse health effects. Particulates in the atmosphere result from many kinds of dust- and fume-producing industrial and agricultural operations, combustion, and atmospheric photochemical reactions. Some of the operations, such as demolition and construction activities, primarily contribute to increases in local PM-10 concentrations, while others, such as vehicular traffic, affect regional PM-10 concentrations. A subcomponent of PM-10, particulates 2.5 microns or less in diameter (PM-2.5), are the subject of recent regulatory action by the EPA. Table III.F-2 shows that the state 24-hour average PM-10 standard has been exceeded in each of the past five years.

**TABLE III.F-2
CRITERIA AIR POLLUTANT CONCENTRATIONS AT THE FREMONT AIR
QUALITY MONITORING STATION, 1993-1997**

Pollutant	State Standard ^c	Monitoring Data by Year ^a				
		1993	1994	1995	1996	1997
<u>Ozone:</u>						
Highest 1-hr. average, ppm ^b	0.09	0.13	0.12	0.15	0.10	0.11
Number of exceedences ^d	5	4	10	2	2	
<u>Carbon Monoxide:</u>						
Highest 1-hr. average, ppm	20	7	9	6	6	ND
Number of exceedences		0	0	0	0	
Highest 8-hr. average, ppm	9.0	3.6	4.1	2.9	3.4	3.0
Number of exceedences		0	0	0	0	0
<u>Nitrogen Dioxide:</u>						
Highest 1-hr. average, ppm	0.25	0.10	0.10	0.09	0.09	0.09
Number of exceedences		0	0	0	0	0
<u>Sulfur Dioxide:</u>						
Highest 1-hr. average, ppm	0.25	ND	ND	ND	ND	ND
Number of exceedences						
<u>Particulate Matter (PM-10):</u>						
Highest 24-hr. average, µg/m ^{3b}	50	77	82	52	59	70
Exceedences/Samples ^e		3/61	3/61	1/61	1/61	1/16
Annual Geometric Mean, µg/m ³	30	22.3	21.7	19.2	20.5	21.8
<u>Lead (Pb):</u>						
Highest monthly average, µg/m ^{3b}	1.5	0.01	0.01	ND	ND	ND
Number of Exceedences ^e		0	0			

^a Data for all pollutants are from the Redwood City air quality monitoring station located on Chapel Way in the City of Fremont, which is located approximately 4.5 miles west of the *Alameda Watershed Management Plan* area.

^b ppm = parts per million; µg/m³ = micrograms per cubic meter.

^c State standard, not to be exceeded.

^d Except for ozone, “number of exceedences” refers to the number of measured violations in a given year of the applicable standard. For ozone, “number of exceedences” refers to the number of days in a given year during which at least one hour exceeded the standard.

^e PM-10 and Pb are usually measured every sixth day (rather than continuously like the other pollutants). For PM-10, “exceedences/samples” indicates the number of exceedences of the state standard that occurred in a given year and the total number of samples that were taken that year.

NOTE: ND = No data available. Values shown in **bold** type exceed the applicable standard.

SOURCE: CARB, 1993-1996; BAAQMD, 1997b.

Sources of Air Pollutants and Air Quality Violations

- Quarries have been operating within the Alameda Watershed since the 1950s. The SFPUC currently has two major leases for quarries, with all of the current operations confined to areas south of I-680. A total of 750 acres of Watershed land are leased to Mission Valley Rock Company, while 300 acres are leased to RMC Pacific Materials (formerly RMC Lonestar). Both of these mining operations are subject to BAAQMD permitting. BAAQMD Compliance Division records were reviewed for air quality violations. Records indicate that between January 1, 1994 and February, 2000, RMC Pacific Materials was cited for two violations of its Permit to Operate. Both violations occurred on April 27th, 1994 and were issued for equipment or stockpile conditions, rather than an emissions violation. Between February, 1993 and February, 2000, Mission Valley Rock Company was cited for a total of 13 violations. None of the violations occurred on lands leased to Mission Valley Rock Company by SFPUC. Four of the violations involved visible emissions due to equipment failures or operator error. The remaining violations were for exceedance of established throughput limits (five violations), lack of permit (two violations), violations of closed container requirements for diesel fuel (one violation), and lack of production record (one violation). Records show that each of these violations has been addressed.

Other sources of air pollutants in the project area consist primarily of mobile sources, automobiles in particular. No other significant sources of odors or toxic air contaminants currently exist or are planned in the project vicinity.

1.5 SENSITIVE RECEPTORS

Land uses such as schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because infants, the elderly, and people with health afflictions (especially respiratory ailments) are more susceptible to respiratory infections and other air-quality-related health problems than the general public. Residential areas are also considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time and thus receive sustained exposure to any pollutants present. Sensitive receptors on and surrounding the Watershed area primarily include residential land uses north of the secondary Watershed area in the Town of Sunol and south of the City of Pleasanton.

2.0 IMPACTS

2.1 SIGNIFICANCE CRITERIA

The City has not formally adopted significance standards for air quality impacts, but it generally considers that implementation of the *Alameda Watershed Management Plan* would have a significant effect on air quality if it were to:

- violate any ambient air quality standards;
- contribute substantially to existing or projected air quality violations;
- expose sensitive receptors to substantial pollutant concentrations; or
- permeate its vicinity with objectionable odors.

The BAAQMD established thresholds for assessment of project impacts on air quality commonly employed in determining impacts significance under CEQA. Construction emissions are typically considered less than significant if appropriate mitigation is implemented to minimize particulate emissions. For operational impacts, emissions of 80 pounds per day of reactive organic gases, nitrogen oxides, and inhalable particulates are considered significant. Carbon monoxide emissions are considered in the context of roadside concentrations, measured against the state standard, since carbon monoxide is a local pollutant that does not readily disperse. Sensitive receptors (facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollution) are evaluated by their proximity to potential sources of air pollution. The closer the receptor is to an emission source, the more likely it is for a significant air quality impact to occur.

2.2 PROGRAM-LEVEL IMPACTS

This section discusses the potential impacts of implementation of Management Plan management actions on air quality, including increase in construction-related air pollutant emissions and changes to gravel mining emissions.

Operational air pollutant emissions are not discussed because operation of Management Plan components would not significantly change trip distribution patterns in the project area, would not significantly increase vehicular traffic, and would not affect regional PM-10 concentrations. Emissions from facility operations would be negligible. Therefore, no discernible change in air quality from operational emissions is anticipated.

Increase in Construction-Related Air Pollutant Emissions

Implementation of the Management Plan would result in construction of a number of additional facilities or improvements on the Watershed. Many of the facilities would be installed to ensure and/or improve water quality or resource protection, such as barriers or fences at identified high-risk spill potential areas (Action haz6); installation of infiltration drainfields and detention basins (Action sto1); installation of long-term sediment retention basins or other permanent measures (Action aqu12); rehabilitation of shoreline areas and stream segments (Actions aqu5 and aqu7); improvements that prevent human and animal waste from impacting Watershed resources (Action was1); and wildlife passage structures (Action wil13). Many of the actions listed in the Roads Section of the Management Plan (Actions roa2, roa3, roa4, roa6, roa7, and roa8) would modify or relocate existing roads or road components in order to reduce potential erosion and Watershed contamination from automobile by-products. Fire management actions include the installation of hydrants, helispots, and water tanks (Actions fir2 through fir6); roadway and access improvements (Action fir7); and implementation of fuel management projects that include construction of fuel breaks, conducting prescribed burns, and other improvements (Action fir8). Construction projects would be generated through management actions that would provide additional public use opportunities, such as information kiosks and a Watershed Visitor Education Center (Actions pub3 and pub4), additional new trails (Policies WA15.2 and WA15.4), and golf course expansion (Policy WA18.1). In addition, implementation of Actions

des8 and sun17 would result in universal access improvements at existing Watershed facilities and trails and provide universal access at proposed facilities.

Implementation of the management actions in the *Sunol Valley Resources Management Element* would also generate construction projects through restoration and reclamation activities related to mining pits, including construction of appropriate mining pit sideslopes (Actions sun4 and sun5); improvements to the existing Sunol maintenance facility (trade shops, equipment storage shelter, warehouse, offices, Watershed Visitor Education Center, etc.) (Action sun10); backfill and landscaping of a quarter-mile buffer zone at the mining module closest to the Sunol Water Temple, between that module and the temple (Action sun11); and restoration of the entry to the Sunol Water Temple (Action sun13). In addition, the Sunol management actions would involve construction of several public access facilities and improvements, including a public recreation area around the Sunol Water Temple (Action sun14), commercial site (Action sun19), overnight nature study area (Action sun20), and trail connections (Action sun21).

Implementation of the management actions in the *Grazing Resources Management Element* would generate construction projects primarily through structural protection measures and Watershed protection area improvements, including fencing around reservoirs, streams, and stock water ponds; water developments; water collection systems; wildlife ponds; and livestock pond rehabilitation (Actions gra2, gra6, gra7, and gra8).

Construction projects would generate fugitive² dust (including PM-10) and other criteria air pollutants primarily through excavation activities, exhaust from construction equipment and haul truck trips, and exhaust from construction-worker commute trips. Specific construction details related to these projects are unknown at this time, but specific project proposals could be presented at some time over the 20-year planning period of the Management Plan. Dust emissions would vary from day to day, depending on the level and type of construction activity, the silt content of the soil, and the prevailing weather. A large portion of the total construction dust emissions would result from equipment and motor-vehicle traffic over paved and unpaved roads and temporary parking lots at project sites. Other sources of fugitive dust during construction would include excavation, earth movement, grading, and wind erosion from exposed surfaces.

Peak construction activities would involve minimal grading and earthmoving. The BAAQMD approach to assessing impacts from air pollutant emissions during construction activities is based on whether identified control measures for dust emissions are implemented. Without implementation of these control measures during construction, PM-10 emissions would adversely affect air quality and could cause violations of ambient air quality standards for PM-10. Dust control measures are proposed in management Action des9 and are further described below.

² "Fugitive" emissions generally refer to those emissions that are released to the atmosphere by some means other than a stack or tailpipe.

Prescribed burning is associated with smoke production. However, implementation of prescribed burning under Policy F11, Fuel Management Projects and Action wil7, would involve development and approval of a prescription burn plan that includes measures to control smoke production and spread. These measures require selection of burn days based on air quality, weather conditions, and wind patterns. Therefore, implementation of prescribed burns under the Management Plan would not result in significant air quality impacts.

Construction equipment, haul truck trips, and construction-worker commute vehicles would also generate criteria air pollutant emissions. Emissions from construction-worker commute trips would be minor compared to the emissions generated by construction equipment. Criteria air pollutant emissions of ROG and NO_x from these emissions sources would incrementally add to regional atmospheric loading of ozone precursors during project construction.

The BAAQMD Guidelines recognize that construction equipment emits ozone precursors, but indicate that such emissions are included in the emissions inventory that is the basis for regional air quality plans, and that construction emissions are not expected to impede attainment or maintenance of ozone standards in the Bay Area (BAAQMD, 1996). Therefore, air pollutant emissions from construction equipment would not be a significant impact of implementation of the Management Plan.

While the Management Plan proposes certain management actions that could bring about physical effects, the Management Plan also includes actions that would reduce these potential effects. Table III.F-3 is provided to link, at a program level, those actions that could result in potential impacts (column 1) with the full range of actions that could be required to reduce the potential impacts (column 2). The table highlights in **bold** text those actions that may be essential to reduce significant impacts column 1 actions, depending on the specific nature of the management action, such as design, siting, or implementation schedule. These essential actions, as well as the other actions (in non-bold text) that would further reduce potential physical effects, are discussed below. The table also indicates the level of impact significance that would remain if the actions discussed were implemented. Not every bolded action would be necessary to mitigate the effects of the associated potential impact-causing management action. For example, a very minor structure such as a kiosk located in an environmentally non-sensitive area may not require any of the bolded actions to avoid a significant effect. Because implementation information, such as locations of specific facilities, is not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts. Management actions would be reviewed at the time they are proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures (see Section II.E.5.0, Mitigation Monitoring and Reporting).

Under the Management Plan, the most important means of reducing potential air quality impacts associated with Watershed construction activities is implementation of dust control best management practices (BMPs). Action **des9** requires a dust abatement program that incorporates BAAQMD recommended BMPs be implemented as part of all construction projects. These BMP's include such measures as watering active construction areas, revegetating disturbed areas

**TABLE III.F-3
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO AIR QUALITY
THROUGH INCREASE IN CONSTRUCTION-RELATED AIR POLLUTANT EMISSIONS**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action haz6: Identify high-risk spill potential areas and implement measures, including barricades, to reduce the risk of hazardous spills.	Action des9 .	LTS
Action sto1: Remediate on-site stormwater collection and drainage systems through infiltration drainfields and trenches, and detention basins.	Action des9 .	LTS
Action aqu12: Install long-term sediment retention basins or other permanent measures.	Action des9 .	LTS
Action aqu5: Rehabilitate shoreline areas using structural shoreline protection practices.	Action des9 .	LTS
Action aqu7: Rehabilitate stream segments.	Action des9 .	LTS
Action was1: Repair/replace vault, chemical, and composting toilet as necessary.	Action des9 .	LTS
Action roa2: Relocate existing necessary high use roads/road segments in proximity to streams.	Actions roa12 and des9 .	LTS
Action roa3: Modify the grading and drainage of existing necessary high use roads/road segments.	Actions roa12 and des9 .	LTS
Action roa4: Close and retire roads that are not needed and eliminate or minimize problem erosion points by installing culverts and waterbars, or otherwise stabilizing the roadway.	Actions roa12 and des9 .	LTS
Action roa6: Inspect/manage unpaved roads by remediating and stabilizing areas of erosion and regrading unpaved roads.	Actions roa12 and des9 .	LTS
Action roa7: Maintain fire roads through effective installation of waterbars and paving where needed.	Actions roa12 and des9 .	LTS
Action roa8: Restrict access on low use roads by gates or barriers.	Actions roa12 and des9 .	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

TABLE III.F-3 (Continued)
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO AIR QUALITY THROUGH INCREASE IN CONSTRUCTION-RELATED AIR POLLUTANT EMISSIONS

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action fir2: Install a total of nine hydrants into water sources.	Action des9 .	LTS
Action fir3: Install and maintain a total of four helispots on SFPUC property.	Action des9 .	LTS
Action fir4: Install three additional helispots off SFPUC lands.	Action des9 .	LTS
Action fir5: Install two additional hydrants on adjacent lands.	Action des9 .	LTS
Action fir6: Install an additional water tank.	Action des9 .	LTS
Action fir7: Identify and construct road improvements, including turnouts, turnarounds, and safety zones.	Action des9 .	LTS
Action fir8: Complete the fuel management projects, including fuel load reductions, prescribed burns, fuel breaks, and access improvements.	Action des9 .	LTS
Action will13: Design and install wildlife passage structures that minimize wildlife losses.	Action des9 .	LTS
Action pub3: Establish “gateway” information kiosks.	Action des9 .	LTS
Action pub4: Establish a Visitor Education Center.	Action des9 .	LTS
Action sun4: Create sideslopes on the quarry pits such that there is a gradual transition to water.	Action des9 .	LTS
Action sun5: Reclaim quarries with sideslopes appropriate to their proposed activity.	Action des9 .	LTS
Action sun10: Retain the existing Sunol maintenance facility with improvements, including equipment storage shelter, warehouse and storage yard, parking, etc.	Action des9 .	LTS
Action sun11: Backfill and landscape a ¼-mile buffer zone at the mining module closest to the Sunol Water Temple, between that module and the temple.	Action des9 .	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

TABLE III.F-3 (Continued)
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO AIR QUALITY THROUGH INCREASE IN CONSTRUCTION-RELATED AIR POLLUTANT EMISSIONS

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action sun13: Restore the historic entry to the Sunol Water Temple.	Action des9 .	LTS
Action sun14: Develop a public recreation area around the Sunol Water Temple.	Action des9 .	LTS
Action sun19: Establish a small commercial site.	Action des9 .	LTS
Action sun20: Establish an overnight nature study area.	Action des9 .	LTS
Action sun21: Establish trail connections extending to the Sunol Regional Wilderness.	Action des9 and roa12.	LTS
Action gra2: Implement structural protection measures, including fencing and other improvements.	Action des9 .	LTS
Action gra6: Implement improvements for the San Antonio Water Protection Area.	Action des9 .	LTS
Action gra7: Implement improvements for the Calaveras Watershed Protection Area.	Action des9 .	LTS
Action gra8: Implement improvements for the Lower Alameda Creek Watershed Protection Area.	Action des9 .	LTS
Policy WA15.2: Consider addition of new trails in zones of lesser vulnerability and risk.	Action des9 and roa12.	LTS
Policy WA15.4: Support new trail connections that link to adjacent communities and other trail facilities.	Action des9 and roa12.	LTS
Policy WA18.1: Consider expansion of existing golf course in areas of low vulnerability/sensitivity.	Action des9 .	LTS
Action des8: Implement universal access improvements at SFPUC facilities and trails.	Action des9 .	LTS
Action sun17: Provide universal access at Sunol Valley recreation facilities.	Action des9 .	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

following construction, and covering stockpiles and trucks hauling soil or other loose materials. In addition, Action 12 includes BMPs for roadway and trail construction, including minimizing grading and designing roads and trails to avoid cut-and-fill and to minimize excavation. Implementation of Action 9, as described above and in Section IV.F, would reduce fugitive dust during project construction to a less than significant level (BAAQMD, 1996).

The impacts of day-to-day management activities that implement the Management Plan are analyzed in this EIR and generally would not be subject to further environmental review. No unavoidable significant program-level air quality impacts related to construction activities have been identified in this EIR. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Changes to Gravel Mining Emissions

Gravel mining currently occurs in the Sunol Valley. At present, mining activities in the Alameda Watershed occur only south of I-680. Fugitive dust emissions from topsoil and overburdened stripping and transport associated with mining activities at Mission Valley Rock Company and RMC Pacific Materials mining areas are regulated by permits administered by the BAAQMD. Permit limits are designed to keep air pollutant emission levels below BAAQMD's threshold of significance for PM-10, the primary air pollutant of concern related to mining operations. Dust emissions from mining activities vary from day to day depending on a number of factors, such as prevailing weather and the level and type of mining activity.

- As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (shortening the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new air quality impacts beyond those disclosed and mitigated in the EIR prepared for SMP-32. Alameda County's conditions of approval for SMP-32 include measures to reduce dust emissions and requirements to maintain all quarry-operated equipment to reduce exhaust emissions. These conditions reduce air quality impacts from mining to a less than significant level. Amendment of the existing permit, if required, would be subject to project-level environmental review by Alameda County.

Mining north of I-680 proposed under the *Sunol Valley Resource Management Plan Element* would replace a portion of the current mining area south of I-680. Because mining south of I-680 is ongoing at a rate based on plant capacity and market demand, increasing the mined area by mining

north of I-680 would extend the period of time that air quality impacts would occur, but would not increase the magnitude of impacts. Mining and resulting emissions would occur closer to the Town of Sunol. However, the quarry would operate in a wet condition and would use a conveyor belt to transport unprocessed gravel to the operator's existing processing plant, which is farther from the Town of Sunol. Therefore, dust associated with the plant and truck loading would not change from existing conditions with respect to the Town of Sunol. Alameda County, in approving SMP-32, found that the project and seven conditions of approval related to air quality/dust would mitigate project and cumulative air quality impacts to a less than significant level. A BAAQMD permit conforming to BAAQMD particulate emissions attainment strategies and controls would also be required. All of the above factors would minimize dust effects on the Town of Sunol and avoid any significant air quality impact. Daily excavation would be partly limited by the capacity of the existing processing plant and would be subject to BAAQMD permitting.

Mobile equipment (e.g., trucks and loaders) would generate criteria air pollutant emissions. Criteria pollutant emissions of ROG and NO_x from these emissions sources would incrementally add to regional atmospheric loading of ozone precursors. There would be no net increase in mobile equipment associated with mining activities north of I-680 because mining activities south of I-680 are assumed to be correspondingly declining due to depletion of the resource. Consequently, there would not be any substantive increase in regional ozone concentrations, but rather a continuation of current emissions over a longer period of time.

Use of water trucks is the primary means of controlling particulate emissions from on-site vehicle travel on unpaved roads at mining locations. Additionally, the *Mission Valley Rock Company Surface Mining Permit and Reclamation Plan SMP-32 EIR* (1994) and the *Santa Clara Sand and Gravel Expanded Initial Study, SMP-30* (1992) indicate that soil moisture is generally high within mining operations due to natural water content of the aggregate and flows from intermittent springs that are intercepted during excavation. Conditions of approval from the SMP-32 EIR include the use of chemical dust suppressants that could increase dust control efficiency. The conditions of approval also require that particulate emissions be minimized by scheduling activities when soil moisture is greatest and by ceasing activities during periods of high wind. Similar types of controls would be established in permits issued by the BAAQMD prior to proposed mining operations north of I-680.

Options presented under Actions sun2a and sun2b would require amendments to existing permits south of I-680. The increase in mining depths proposed in both Actions sun2a and sun2b would not be likely to impact air quality beyond levels previously analyzed and mitigated in previous environmental documentation. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining. These mitigation measures include measures to reduce dust emissions and requirements to maintain all quarry-operated equipment to reduce exhaust emissions. Amendment of the existing permits would be subject to project-level environmental review by Alameda County.

REFERENCES - Air Quality

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G. FIRE MANAGEMENT

1.0 SETTING

The Alameda Watershed is characterized by long, dry, warm summers and drought-resistant vegetation that is adapted to frequent natural fires. The Watershed is generally protected from strong, prevailing, western winds that would spread fires. However, the topography is quite convoluted, with several shallow slopes that are conducive to small fires. The climate, coupled with a long history of grazing, has influenced an extensive cover of annual grasses. Grassland that is not regularly maintained by mowing or grazing promotes the likelihood of a fire, since grass is easily ignited.

1.1 FIRE RESPONSE AND HISTORY

The Alameda Watershed is within the California Department of Forestry and Fire Protection (CDF) State Responsibility Area and, as such, is protected by CDF. The CDF station nearest to the Watershed is the Sunol Station, located at 11345 Pleasanton-Sunol Road. For any fire that is not immediately and easily suppressed by SFPUC staff, the CDF dispatches firefighters and coordinates response to the fire. The CDF provides many other Watershed services, including inspections, training, and emergency planning.

The *Alameda Watershed Fire Management Element* provides a history of fire incidents within the Watershed, based on the recollection of SFPUC staff and CDF members. The fire history information collected from staff was useful in identifying areas where fire management action may be warranted. The historical recollection indicates that there have been 33 fires within the Watershed since 1964, and 14 fires since 1990. Fires occurred principally along public roads, particularly Calaveras Road. The most common cause of fires was mechanical equipment, including motor vehicles and landscaping equipment. Approximately 20 percent of fires were identified as arson or occurred under suspicious circumstances. From 1966 to 1996, approximately 1,670 acres in the Watershed have burned. During that period, seven fires occurred that burned 100 acres or more; the most recent fire of that magnitude occurred in 1980. The largest fire occurred in 1969 and burned approximately 400 acres. Wildfires have not threatened private homes; however, one structure at the southern end of Calaveras Reservoir burned in 1993.

1.2 ELEMENTS OF FIRE HAZARD AND PROTECTION

Four elements must be considered when addressing fire protection within the Watershed: fire hazard, the resources at risk, fire behavior, and the fire protection system. Thus, although “fire hazard” usually refers only to fuel complexes in regard to their ease of ignition and difficulty to control, the overall issue of fire management within the Watershed requires consideration of the other three elements as well. In addition to these elements, fire ignition sources are considered when addressing fire protection. Major ignition sources for wildfires are typically lightning strikes and human actions (illegal campfires, arson, equipment use, discarded matches, and

cigarettes). In the Alameda Watershed, lightning is a fairly uncommon occurrence, leaving human actions as the most prominent source of fire ignition.

Fire Hazard

Fire hazard refers to the fuels on a site, typically represented by plant biomass (plant material) and its configuration and condition, which may lead to difficult-to-control fires. The vegetative fire hazard represented by plant material fuel complexes within the Watershed consists of shrubs (chaparral and scrub), grasslands, and woodlands and forests. (Refer to Section III.E, Natural Resources, for a complete description of vegetative resources within the Watershed.) The subsurface gasoline pipeline that runs along the north side of San Antonio Reservoir represents a nonvegetative fire hazard.

Watershed fire hazards were assessed using three methods:

- Fire hazards (or severity) were mapped in accordance with the California Wildfire Severity Law;
- Static fire behavior predictions (how different types of fuel burn) were estimated using a model from the U.S. Forest Service; and
- Fire spread and growth potential were estimated using a model from the National Park Service.

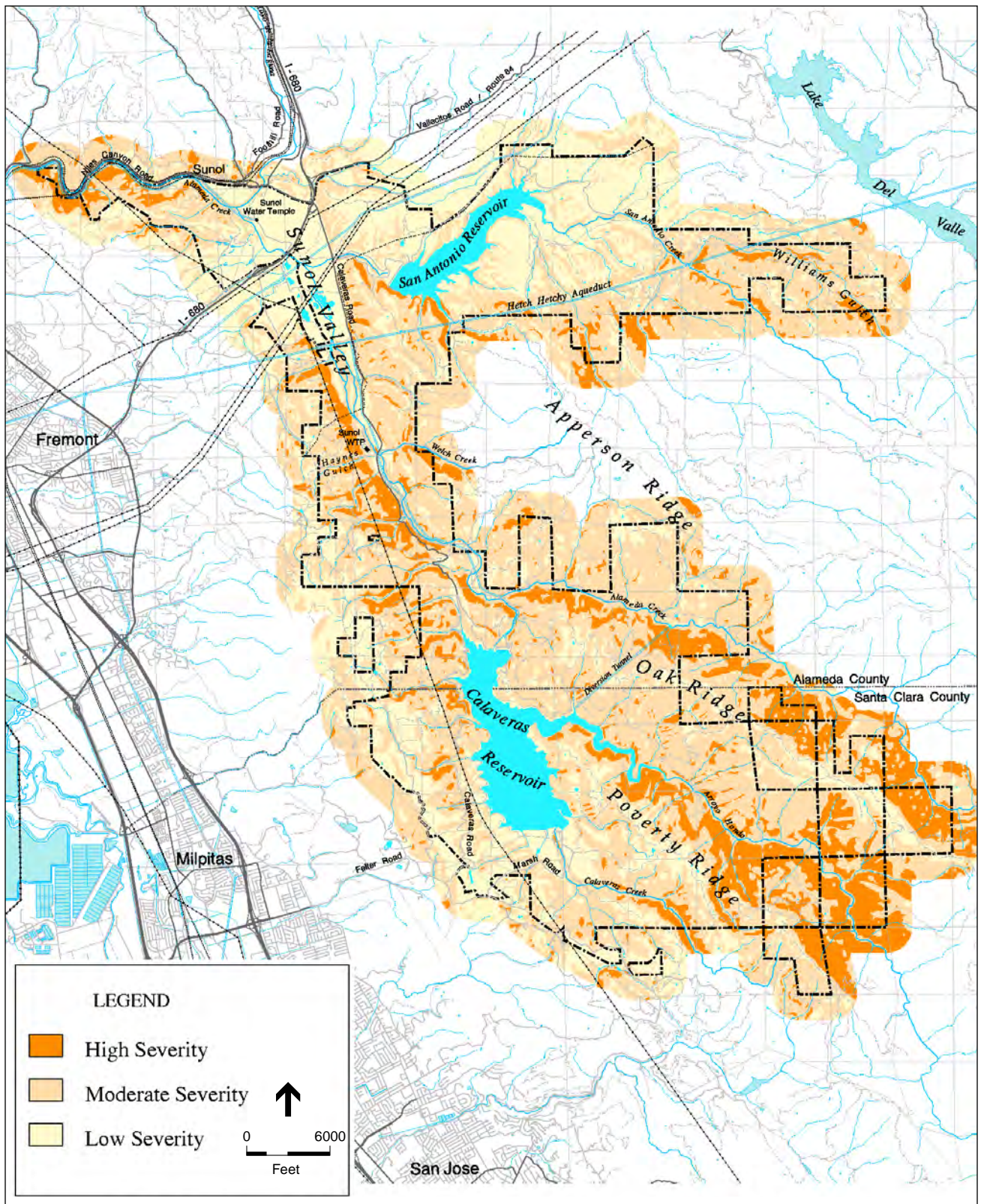
Figure III.G-1 shows the fire severity categories within the Watershed in terms of low, medium, and high severity. Results of the static fire behavior and growth models are shown for various scenarios on maps contained within Appendix A-1 of the *Alameda Watershed Management Plan*.

In general, the distribution of areas designated as high fire severity correlate with the distribution of heavily vegetated areas (scrub and woodlands). Areas of high fire severity are roughly divided into the following areas:

- steep drainages south of San Antonio Reservoir,
- east-facing slopes above Calavaras Road,
- north aspects of Alameda Creek,
- north-facing slope of Niles Canyon, and
- north aspects of Arroyo Hondo Creek and its tributaries.

Fuel Type Distribution

As indicated above and in Figure III.G-1, the Watershed contains areas of significant fire hazards. The distribution of fuel in the natural communities in the Watershed is primarily of three fuel types: grassland, woodland, and shrubs. Grassland fuel types dominate the Watershed, with pure open grassland covering over 20,000 acres, or slightly over 50 percent of the landscape. Spatially, these fuels pervade the landscape throughout the Watershed, intermixing with heavier fuel types in the canyons. The high probability of ignition and fast rate of spread associated with grassland fuel types indicate a significant risk of grass fire occurrence



SOURCE: EDAW, 1998.

Alameda Watershed Management Plan / 930385 ■
Figure III.G-1
 Alameda Watershed Wildfire Severity

in the Watershed. In addition, grass fires could vector fire into adjacent shrub-dominated areas; unlike fires started in shrub that either cannot sustain themselves or spread very slowly, an adjacent grass fire could generate sufficient heat to cause crowning (flaming combustion in the upper part of trees or other woody plants) in the shrubs.

Much of the grass-dominated areas in the Watershed are grazed and would typically be in a low development stage during most of the fire season, depending on the extent of grazing. The net effect of grazing, depending on degree of use, is to reduce both fire rate of spread and intensity. However, the major arteries of human use, such as Calaveras Road, have extensive grass fuel areas where fires could originate. The heavier fuel types adjacent to these grassy areas are derived from mixed hardwood species, where fuel structure presents relatively lower fire hazards than their eucalyptus/conifer counterparts.

Woodland fuel-type areas constitute 8,700 acres (22 percent) of the Watershed and consist of a moderate cover of mature oaks interspersed with grasses and other herbaceous plants (e.g., the blue oak woodlands east of Calaveras Lake and south of Arroyo Hondo). These landscapes intergrade between pure grass stands and the denser canopy hardwood forests of oak, bay, and madrone. Additionally, there are some areas of shrub fuels adjacent to grass-dominated areas, where fire spread would present significantly more dangerous fire behavior.

Only relatively isolated stands of northern coastal scrub fuel types are present on the Watershed. Much of the 1,450 acres of northern coastal scrub lands are dominated by low-lying California sagebrush, which has a somewhat higher ignition potential than *Bacharris*-dominated fuels. Other northern coastal scrub areas intergrade with heavier shrub fuels of chamise and mixed chaparral, creating areas of extreme fire hazard, such as portions of Poverty Ridge.

Resources at Risk

The resources at risk of fire damage are represented below in their order of priority and in accordance with the established protocols for fire suppression and fire analysis:

1. Personal Safety. This includes the health and well-being of SFPUC personnel, the public, and fire service personnel. The greatest threat to safety generally occurs in areas of dense population with poor emergency access (narrow, windy, and steep roads that serve large numbers of people). Such areas do not occur in the Watershed, but could occur outside and near the Watershed boundaries, particularly near the City of Pleasanton.
2. Property Values. In general, this refers to high-value resources, such as homes and property items that represent invested resources and high values, and is usually expressed in monetary terms. The Watershed has many resources of considerable value that could be damaged by wildfire, such as the Sunol Pump Station, Sunol Water Temple, Sunol Filter Plant, and Watershed keeper cottages. In addition, areas of the Watershed are immediately adjacent to private lands with valuable resources such as homes or schools.
3. Natural Resources. In the Watershed-urban interface, this usually means the flora and fauna on private or public lands, which can be viewed as a public resource for recreation

and aesthetics, wildlife habitat, water resources, etc. Fire suppression efforts, typically requiring heavy equipment, can damage vegetation; and wildfires can create optimal conditions for invasion by non-native plant species that may displace native plant species over time.

4. **Water Quality.** A vital resource in the Watershed is the water that runs off the slopes into the reservoirs below. While not directly affected during a wildfire, water quality and water quantity are unquestionably altered by large wildfire. Increased sedimentation is the leading cause of water quality degradation associated with a large wildfire. Sedimentation also decreases the capacity of the reservoir. Sedimentation is caused both by loss of vegetation that has been burned off of reservoir slopes and by fire suppression methods such as the creation of fuel breaks. Reduced storage capacity in current reservoirs and degraded water quality could result in losses and/or delays in service and increased water treatment costs.

Fire Behavior

The elements of a fire that are important in assessing fire hazard are encompassed in what is referred to as fire behavior, or the physical parameters associated with a fire. In general, there are two elements of potential fire behavior:

1. **Frontal Fire Behavior.** This element refers to the advancing fire front, both its capacity to ignite adjacent unburned fuels as well as the ease with which it can be contained and extinguished.
2. **Spot Fires.** This mechanism of fire spread refers to the capacity of a fire to deposit burning brands (embers) into unburned fuel complexes. Spot fires, although accounting for only 1 percent of all wildland fires in the western United States, are responsible for burning 80 to 96 percent of the area burned (Struass et al., 1989). The potential for this mechanism to drive fire into a "blow-up" phase was evidenced by the Oakland Hills fire of October 1991, where it is believed that crown fire in trees, and subsequent spotting, caused the rapid advancement of that fire (Sapsis, 1992).

The critical characteristics for analysis of the fire behavior of a site include: slope, surface fire fuel loading and arrangement, and the presence of vertical fuel continuity (stands of tall trees) that would contribute to crowning of aerial fuel complexes (Burgan, 1987; Rothermel, 1983 and 1991). Although conditions contributing to crown fires are relatively rare, when they occur and aerial fuels are engaged in flaming combustion, the potential for resultant spot fires is dramatically increased. The role of topography in fire behavior consists of its influence over wind direction, local weather patterns, vegetation types and distribution, and the presence of moisture. Topography can also create microclimates with varying moisture conditions. By influencing the local wind, fuel, moisture, and heat availability, topography directly and indirectly affects the intensity, direction, and spread rate of wildfires. In addition, topography may create impediments to firefighting.

The Watershed is on the western flank of the northern Diablo Range and contains northwest-trending ridges and valleys. Slightly more than one-half of the Watershed has a greater than

20 percent slope, one-quarter has a greater than 40 percent slope, approximately 18 percent has a 10-20 percent slope, and approximately 14 percent of the land is flat. The topographical features of the Watershed include the Calaveras rift valley (which trends northwest through the length of the Watershed), a major east-west valley (the La Costa Valley and San Antonio Creek Valley), “V”-shaped canyons formed by Watershed tributaries, and rugged terrain elsewhere. Such rugged terrain mixed with steeply sloped topography can present firefighting problems and increase fire intensity due to microclimates.

In addition to the characteristics described above, weather is a physical variable that must be considered in the analysis of fire behavior. Weather conditions can influence the ignition potential of a fire as well as the intensity, rate, and direction of movement. Wind, temperature, and humidity are the more important weather variables used to predict fire behavior. In particular, wind conditions can affect the intensity of a fire by supplying oxygen to the combustion process. Wind can also accelerate the movement of the fire front by angling flames and transporting embers. In general, winds in the Bay Area blow from the west in the summer and southwest in the winter. Small-scale, terrain controlled winds can be expected at pronounced canyons such as Williams Gulch and the Arroyo Hondo drainage.

The Watershed has warm, dry summers and cool, moist winters. Most measurable rainfall occurs from mid-October to mid-April. May to October is the fire season, and July is the time of highest fire danger. The dry season is approximately 150 days per year, during which an average of 15 days are considered to be extreme fire weather conditions.

Fire Protection System

The physical properties of an area and the fire protection infrastructure available (equipment, personnel training, etc.) are important elements in determining the capacity of fire service personnel to protect the resources at risk. Site characteristics (such as slope steepness) and infrastructure (such as fire roads and trails) contribute to accessibility by firefighters, and consequently are also an important part of fire hazard analysis. Fire defense improvements include fuelbreaks, roads, water sources, gates, and helispots (or heliports) that can aid in the effectiveness of fire suppression. All areas within the Watershed that appear to have other fire protection problems, either due to equipment/accessibility constraints or significant danger to fire service personnel, deserve special consideration.

Access to the Watershed for fire suppression efforts is provided by I-680, SR 84, as well as by four major county roads: Calaveras Road (Sunol Valley to Milpitas), Marsh Road (private lands east and southeast of the Watershed), Weller Road (private lands and communication facilities near Monument Peak and Mt. Allison), and Welsh Creek Road (Calaveras Road to private parcels north of Arroyo Hondo). In addition, numerous gravel/dirt roads and side roads provide access to parts of the Watershed.

Developed water sources for fire suppression on the Watershed are limited. There are nine hydrants on the Watershed, all located on the valley floors. There are seven water tanks on the

Watershed; however, SFPUC and CDF staff cannot access all of them because some valves are incompatible with other existing equipment.

The goals of fire protection systems are to reduce the risks associated with wildfires and to provide resource protection and personal safety. However, no fire protection system can completely eliminate the risks associated with fire, but a system can reduce these risks to some acceptable level, given constraints on the physical and social systems in which they are to be implemented.

2.0 IMPACTS

2.1 SIGNIFICANCE CRITERIA

The City has not formally adopted significance standards for increased risk of fire, but it generally considers that the implementation of the *Alameda Watershed Management Plan* would result in a significant effect with respect to fire risks if it were to:

- expose people or structures to a substantial risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands; or
- substantially interfere with an emergency response plan or emergency evacuation plan.

2.2 PROGRAM-LEVEL IMPACTS

This section discusses the potential impacts of implementation of Management Plan management actions on fire management, including reduction of existing fire breaks, increases in public access and use, and use of prescribed burns.

Reduction of Existing Fuel Breaks

Implementation of the Management Plan would result in closure or retirement of existing roads within the Watershed. Action roa4 calls for closing roads that are not needed for safety or access. Action roa5 calls for consolidating roads and could result in closure or retirement of roads. Action roa8 promotes revegetation as a method of restricting access on low-use roads with sensitive soil types, including abandoned roads. Roads serve not only as fuel breaks, but also provide access for firefighters to reach and control fires within the Watershed. Although it is the intent that roads remain passable for emergency access, implementation of these management actions could result in revegetation of roads and may lead to herbaceous fuel loading and an increase in wildfire risk. This increase in wildfire risk could substantially interfere with emergency response plans and expose people or structures to a substantial risk of loss.

While the Management Plan proposes certain management actions that could bring about physical effects, the Management Plan also includes actions that would reduce these potential

effects. Table III.G-1 is provided to link, at a program level, those actions that could result in potential impacts (column 1) with the full range of actions that could be required to reduce the potential impacts (column 2). The table highlights in **bold** text those actions that may be essential to reduce significant impacts column 1 actions, depending on the specific nature of the management action, such as design, siting, or implementation schedule. These essential actions, as well as the other actions (in non-bold text) that would further reduce potential physical effects, are discussed below. The table also indicates the level of impact significance that would remain if the actions discussed were implemented. Not every bolded action would be necessary to mitigate the effects of the associated potential impact-causing management action. Because implementation information, such as locations and extent of specific activities, is not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts. Management actions would be reviewed at the time they are proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures (see Section II.E.5.0, Mitigation Monitoring and Reporting).

Under the Management Plan, the most important means of reducing potential fire hazards due to road closures and alterations is to identify and construct road improvements that would provide better access and enhance fire suppression capabilities (**Action fir7**). The Management Plan also calls for the preparation and dissemination of maps and information delineating fire response equipment, evacuation routes, and areas of limited suppression (**Action fir12**). Also important are several actions that call for the installation of new fire response equipment and equipment access (Actions fir2 through fir6), and an action that calls out specific fuel management projects (Action fir8).

Grazing is an important means of reducing fire hazards on the Watershed. Grazing is essential to preventing overgrowth of vegetation and a subsequent increased risk of fire. In the absence of a grazing program, average fuel-loading rates on the Watershed would increase from a low fire hazard condition (1 ton per acre of grass type) to a moderate fire hazard condition (4 tons per acre of a medium brush type) in less than five years. In 20 years, there would be 10 tons per acre of medium to heavy brush. An increased fuel load of this magnitude would have significant financial implications; grazing currently produces \$10 per acre per year of revenue, while controlling the increased fire hazard through mechanical, prescribed fire, chemical, and manual methods of vegetation control would cost \$250-\$300 per acre per year. Without grazing, it would be necessary to treat 30,000 or more acres every three to five years (Wildland Resource Management, 1997).

- The approved *Grazing Resources Management Element* under the *Alameda Watershed Management Plan* was adopted in July 1997. The grazing management actions, in particular Actions **gra1** through **gra5**, primarily address water quality, erosion, disturbance of native vegetation, and displacement of wildlife. Implementation of those actions would control grazing through leases and structural improvements rather than by reducing or prohibiting the amount of grazing allowed.

**TABLE III.G-1
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS
FROM REDUCTION OF EXISTING FUEL BREAKS**

Management Actions that Could Result in Potential Physical Effects ^a	<u>Management Actions that Could be Required to Reduce Potential Physical Effects</u>	
	Action ^{a,b}	Level of Significance if Implemented
Action roa4: Close and retire roads that are not needed.	Actions fir2, fir3, fir4, fir5, fir6, fir7 , fir8, fir12 , and gra1 through gra5 .	LTS
Action roa5: Reduce the need for multiple maintenance access roads.	Actions fir2, fir3, fir4, fir5, fir6, fir7 , fir8, fir12 , and gra1 through gra5 .	LTS
Action roa8: Allow revegetation by scarifying the road surface and planting seed.	Actions fir2, fir3, fir4, fir5, fir6, fir7 , fir8, and gra1 through gra5 .	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

Implementation of these management actions, as described above and in Section IV.G, would reduce the fire risk (by reducing existing fuel breaks) to a less than significant level. No unavoidable significant program-level fire management impacts related to reduction of existing fuel breaks have been identified in this EIR. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Increase in Public Access and Use

The *Alameda Watershed Management Plan* includes facilities that could result in increased public visitation of the Watershed by providing new trails (Policies WA15.2 and WA15.4), golf course expansion (Policy WA18.1), and increased information regarding public activities available on the Watershed, such as public use area maps and brochures. These facilities include information kiosks (Action pub3), a Watershed Visitor Education Center (Action pub4), public recreation area around the Sunol Water Temple (Action sun14), commercial site (Action sun19), overnight nature study area (Action sun20), and trail connections (Action sun21). In addition, the Management Plan calls for universal access improvements to existing Watershed facilities and trails and provision of universal access at proposed facilities (Actions des8 and sun17). Increased public visitation of the Watershed could lead to increased incidences of unauthorized uses, such as smoking and campfires/cooking fires. In addition, high-volume off-trail activity and other uses that occur outside designated areas could damage vegetation, resulting in an increase in dry litter that is easily ignitable. More than four out every five forest fires are started by people; and increased human presence, no matter how regulated, translates into an increase in fire frequency (Federal Emergency Management Agency, 1998).

Table III.G-2 links those management actions that could result in physical effects from increased fire hazard with the full range of management actions that could be required to reduce potential physical effects. To the extent possible, new trails and facilities would be located on the Watershed periphery in order to reduce fire ignition potential (as well as limit impacts on natural resources). Policy **WA2** prohibits new trails and unsupervised access on the existing roads and trails of the Watershed, except as defined in the Management Plan. Also important are several actions that call for the installation of new fire response equipment and equipment access (Actions **fir2** through **fir6**) and an action that calls out specific fuel management projects (Action **fir8**). Actions **fir9** through **fir12** set out specific guidelines for fire response procedures. In addition, the Management Plan calls for identification and construction of road improvements necessary to provide better access and enhance fire suppression capabilities (Action **fir7**).

Implementation of these fire management actions, as described above and in Section IV.G, would reduce the potential fire impacts from increased public use to a less than significant level. No unavoidable significant program-level fire management impacts related to increased public access and use have been identified in this EIR. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further

**TABLE III.G-2
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO
FIRE MANAGEMENT FROM INCREASED PUBLIC ACCESS AND USE**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Policy WA15.2: Consider new trails in zones of lesser vulnerability and risk.	Policy WA2 and Actions fir2, fir3, fir4, fir5, fir6, fir7, fir8, fir9, fir10, fir11, and fir12.	LTS
Policy WA15.4: Support new trail connections that link to adjacent communities and other trail facilities.	Policy WA2 and Actions fir2, fir3, fir4, fir5, fir6, fir7, fir8, fir9, fir10, fir11, and fir12.	LTS
Policy WA18.1: Consider expansion of existing golf course in areas of low vulnerability/sensitivity.	Policy WA2 and Actions fir2, fir3, fir4, fir5, fir6, fir7, fir8, fir9, fir10, fir11, and fir12.	LTS
Action pub3: Establish information kiosks at Watershed entryways.	Policy WA2 and Actions fir2, fir3, fir4, fir5, fir6, fir7, fir8, fir9, fir10, fir11, and fir12.	LTS
Action pub4: Establish a Watershed Visitor Education Center.	Policy WA2 and Actions fir2, fir3, fir4, fir5, fir6, fir7, fir8, fir9, fir10, fir11, and fir12.	LTS
Action sun14: Develop a public recreation area around the Sunol Water Temple.	Policy WA2 and Actions fir2, fir3, fir4, fir5, fir6, fir7, fir8, fir9, fir10, fir11, and fir12.	LTS
Action sun19: Establish a small commercial site.	Policy WA2 and Actions fir2, fir3, fir4, fir5, fir6, fir7, fir8, fir9, fir10, fir11, and fir12.	LTS
Action sun20: Establish an overnight nature study area.	Policy WA2 and Actions fir2, fir3, fir4, fir5, fir6, fir7, fir8, fir9, fir10, fir11, and fir12.	LTS
Action sun21: Establish trail connections extending to the Sunol Regional Wilderness.	Policy WA2 and Actions fir2, fir3, fir4, fir5, fir6, fir8, and fir9, fir10, fir11, fir12.	LTS
Action des8: Implement universal access improvements at SFPUC facilities and trails.	Policy WA2 and Actions fir2, fir3, fir4, fir5, fir6, fir8, and fir9, fir10, fir11, fir12.	LTS
Action sun17: Provide universal access at Sunol Valley recreation facilities.	Policy WA2 and Actions fir2, fir3, fir4, fir5, fir6, fir8, and fir9, fir10, fir11, fir12.	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Use of Prescribed Burns

Fire is a naturally occurring ecological phenomenon within virtually all terrestrial communities occupying Mediterranean climates. Prescribed burns, other than open burning of waste vegetation (pile burns), have not been employed historically within the Watershed. A general fire suppression program has resulted in a heavy accumulation of fuel within the Alameda Watershed. The prescribed burn method employs the natural process of fire to reduce fuel mass (available vegetation and vegetative litter) and can be used areawide (broadcast) or in restricted spots (pile). Prescribed fire is an effective treatment in that it can be very cost effective, can be implemented in remote and inaccessible areas, and can reduce desired levels of surface fuels. Prescribed fire is most effective in vegetation types such as grassland, eucalyptus groves, pine stands, chaparral, or oak woodland, where burns can simulate natural fires and can be controlled. Both broadcast and pile burning are often used in conjunction with manual and mechanical techniques as a way to remove debris. Prescribed fire is deemed an appropriate fire management tool in the *Alameda Watershed Management Plan* (Policy F11), and several projects within the Fire Management Element, as well as one of the Wildlife actions call for the use of this technique (Actions fir8 and wil7).

The risks of using fire to modify fuels are primarily from smoke production, exposure of visitors to fire outbreak under difficult rescue conditions, and potential escape of the fire from prescribed burn boundaries. Thus, prescribed burns would pose a potentially significant safety risk to SFPUC staff, visitors, adjacent landowners, and occupants. Use of prescribed fire is also a politically sensitive issue and requires public outreach and education so that concerned citizens may understand the benefits, risks, and safety of prescribed burns.

Table III.G-3 links those management actions that could result in physical effects on Watershed resources with the full range of management actions that could be required to reduce the potential physical effects. Under the Management Plan, the most important means of reducing potential physical effects from prescribed burns would be for the CDF to develop a prescription or burn plan (**Policy F9**). The requirements for a prescribed burn would include: developing of a pre-burn plan or prescriptions, coordinating with regulating agencies to review potential site-specific environmental impacts, procuring a burn permit from the Bay Area Air Quality Management District, preparing the pre-burn site, and notifying the public and neighboring agencies.

Prescribed burns would occur only when conditions permit both adequate combustion and control. Therefore, carrying out prescribed burns requires flexibility in the scheduling of equipment and control personnel in order to respond to weather conditions. Prescribed burns require trained fire protection personnel and would likely be conducted in coordination with the CDF as part of its Vegetation Management Program.

**TABLE III.G-3
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS
FROM USE OF PRESCRIBED BURNS**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Policy F11: Use prescribed fire to control fuels, where appropriate.	Policy F9 and Actions fir2, fir3, fir4, fir5, fir6 , fir7, fir8, fir9, fir10, fir11, and fir12 .	LTS
Action wil7: Create palatable re-sprouting through mechanical treatments or prescribed fire.	Policy F9 and Actions fir2, fir3, fir4, fir5, fir6 , fir7, fir8, fir9, fir10, fir11, and fir12 .	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

In addition, the Management Plan includes several actions that call for the installation of new fire response equipment and equipment access (Actions **fir2** through **fir6**), and actions that call out specific fuel management projects (Action **fir8**). The Management Plan calls for identifying and constructing road improvements to provide better access and enhance fire suppression capabilities (Action **fir7**). Actions **fir9** through **fir12** set out specific guidelines for fire response procedures.

Implementation of fire management actions, as described above and in Section IV.G, would reduce the potential impacts from prescribed burns to a less than significant level.

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H. CULTURAL RESOURCES

1.0 SETTING

1.1 ARCHAEOLOGICAL AND PREHISTORICAL RECORDS

The greater Alameda Watershed region was a favorable setting for early and prehistoric settlement. The diverse habitats and numerous creeks of the Watershed and surrounding areas support an abundance of animal and plant resources that would have supported permanent and seasonal habitation. There is evidence of settlement in the Watershed region from about 2,300 years ago, with numerous documented sites, including sites in Pleasanton and in the Sunol Regional Wilderness. Although the Watershed lands are a favorable locale for early and prehistoric settlement, an intensive archaeological survey within the boundaries of the Alameda Watershed has not been conducted, and consequently there are few known sites. However, recent survey and test excavation work in the vicinity of the Sunol Water Temple has indicated the presence of a prehistoric cultural deposit, discussed below.

At the time the Europeans first came to the general area in about 1769, the land was occupied by the Ohlone, also known as the Costanoans. The tribe that inhabited the area controlled what is now the East Bay, from Richmond to San Jose and the Livermore Valley to the east. It is estimated that approximately 2,000 people inhabited this area in 1770. Near the Watershed, villages would have been situated adjacent to major and minor creeks and a prehistoric marsh located in the Pleasanton area, with both permanent villages and temporary camps for seasonal resources. Within the Watershed lands, at least one prehistoric village, El Molino, near the present-day Sunol Water Temple, is known to have existed.

1.2 HISTORICAL RECORDS

The historical records can roughly be divided into three periods: Spanish Period (1769 to 1822), Mexican Period (1822 to 1848), and American Period (1848 to present).

Spanish Period

Following Portola's discovery of San Francisco Bay in 1769, Pedro Fages led explorations to the East Bay and crossed through Sunol Valley and Alameda Creek circa 1772. In this area, the route of the present-day I-680 leading to the Sunol area was known as "Mission Pass," and was well traveled by Spanish expeditions as well as by Indian and Mexican vaqueros. Thousands of heads of mission cattle, horses, and sheep were herded through the pass to graze in the pasturelands of the Livermore and Sunol Valleys.

Throughout this period, the Spanish forced the native Californians of the East Bay from their villages and brought them to the missions to be converted to Christianity. Mission Santa Clara de Asis was founded in 1777 about eight miles southwest of the Watershed, and Mission San Jose de Guadalupe was founded in 1797 about two and one-half miles west of the Watershed.

By about 1810, all native Californians had been sent to the missions. During the mission period, the Costanoans were subjected to disease, and their native lifestyle was completely converted to an agricultural economy based at the missions. Eventually, the population of the Costanoans dwindled as the young adults moved away, the elders died, and the land was acquired by nonnative people.

Mexican Period

During the Mexican period, approximately 65 land grants were issued in Alameda and Santa Clara Counties, including the 48,436-acre Rancho el Valle de San Jose in Alameda County. The Alameda Watershed is located in the southern portion of this ranch. This ranch was granted to the Bernal family, was divided among family members, and portions were later sold to Antonio Sunol. The Alameda Watershed is situated in the Sunol portion of Rancho el Valle. By 1840, the Sunol homeplace was established in the vicinity of the present-day Sunol Water Temple, and consisted of an adobe and associated outbuildings and facilities on the banks of Alameda Creek. This ranch is the only known historical remain within or immediately adjacent to the Alameda Watershed that is associated with the Mexican period.

American Period

After California became part of the United States in 1848, there were numerous disputes over the validity of Mexican land grants, and the Bernals and Sunols, owners of Rancho el Valle de San Jose, were plagued by an onslaught of settlers. Portions of the ranch were sold, leased, or taken over by squatters. By the late 1870s, much of the ranch land within the Alameda Watershed had passed to other parties. The Watershed lands were productive farmlands and supported grain fields (including wheat, barley and alfalfa), vineyards, and orchards, with a few hundred farmers and ranchers living in the region. As the Sunol Valley filled with farms, people moved farther into the mountains, and there were six, one-room schoolhouses scattered through the Watershed lands during the late 1800s and early 1900s.

However, to meet the growing water needs of San Francisco, the Spring Valley Water Company began acquiring water rights and purchasing land in the Calaveras and Sunol Valley region in the 1870s to augment the water system in San Mateo County and San Francisco. The water company was aggressively purchasing land in the Watershed area from 1874 through 1913. Construction of the water system in the Alameda Watershed began in 1887 with the diversion of Alameda Creek, followed by the underground filter galleries. Construction of Calaveras Dam began in 1913 and was completed in 1925. Other facilities constructed during this period included the Sunol Water Temple, groundwater wells in Pleasanton, the Sunol Aqueduct, and the Alameda Diversion Tunnel and Dam.

In 1930, the Spring Valley Water Company officially sold its properties and facilities to the SFPUC, which currently owns, operates, and maintains the system. The Alameda Watershed water system was connected to the Hetch Hetchy system through construction of the Coast Range Tunnel in 1934 and to the Peninsula Watershed system that same year. The San Antonio

Reservoir was constructed about 30 years later. Much of the Watershed lands are still leased to cattle ranchers, nursery owners, and mining operators.

Two features of the SFPUC's water system are listed as notable historic resources. The Sunol Water Temple, built in 1900-1910, is listed in the California Inventory of Historic Resources and the Historic Civil Engineering Landmarks. This neoclassical structure was built over a complex of forebays and filter galleries and marks the confluence of waters from Calaveras Reservoir, Sunol gravel beds, and the Pleasanton wells. The Hetch Hetchy Coast Range Tunnel is listed in the Historic Civil Engineering Landmarks and consists of 29 miles of tunnels, siphons, and pipelines.

Known Cultural Resources

Based on archival research and field review of the Alameda Watershed area, there are about 70 distinct archaeological and pre-1946 historical resources known to be located largely within the Watershed. Table III.H-1 lists these resources and their sensitivity, with five categories of resources as follows:

- *National Register of Historic Places* – includes resources that are listed or have been determined eligible for listing. There are no resources in the Alameda Watershed currently listed. However, several prehistoric, ethnohistoric, and historic resources have the potential for eligibility.
- *Historic structures and features* – includes pre-1946 wells, reservoirs, dams, tunnels, cottages, facilities buildings, fountains, and the Sunol Water Temple.
- *Historic archaeological sites* – includes three rancho-era adobes, 34 homestead sites, five school sites, the Brightside cottage site, and the Coast Range Tunnel labor camp.
- *Prehistoric archaeological sites* – includes two midden sites that have not been officially recorded (one remains unconfirmed).
- *Prehistoric/ethnohistoric resources* – includes two locations identified by Native Americans; however, neither site has been officially recorded.

In addition to known cultural resources, prehistoric and historic archaeological resources may be located in archaeologically sensitive areas identified in the *Alameda Watershed Management Plan*. Sensitive areas include valleys where water sources are present and the terrain is relatively flat, such as near creeks and springs. Other sensitive areas include ridgetops, large terraces, and benches, such as Arroyo de la Laguna, where there may have been prehistoric trails and temporary encampments or possibly historic features. As stated above, most of the Watershed lands have not been subject to an intensive archaeological survey; however, it is likely that additional, currently unknown resources are present on the Watershed due to the abundance of identified sensitive areas. Zones of cultural resource sensitivity include almost all of the Alameda Creek corridor, Sunol Valley, upstream areas above Calaveras and San Antonio Reservoirs, upper regions of La Costa and Calaveras Valleys, and ridgetops of Apperson and Oak Ridges.

**TABLE III.H-1
KNOWN CULTURAL RESOURCES OF THE ALAMEDA WATERSHED**

No.	Type ^a	Name	Date	Status ^b	Comment	Sensitivity ^c
1	Hist. Struct.	Four wells; "O" Line				Low
2	Hist. Struct.	Five wells; "F" Line				Low
3	Hist. Struct.	Five wells; A Line				Low
4	Hist. Struct.	Homestead-era House	circa 1906		one, two-story house	Moderate
5	Hist. Struct.	Castlewood Reservoir/Chlorination Building				Moderate
7	Hist. Struct.	Brightside Chlorination Building/Tanks/Meter Gate and Weir	1901, 1901-1902			Moderate
8	Hist. Arch.	Brightside Cottage Site	1907		privy & watertank were also present	High
9	Hist. Arch.	Homestead-era Site	circa 1906		one structure	High
10	Hist. Struct.	Sunol Dam	1900			Moderate
11	Hist. Struct.	Chlorination Building	circa 1906			Moderate
12	Hist. Arch.	Old House Site			foundation only	Moderate
13	Prehist/Ethn	Prehistoric and Ethnohistoric Village, El Molino	abandoned mid-1800		milling site during Spanish-Mission era	High
14	Hist. Struct.	Sunol Water Temple	1900-1910	3, 4	complex includes forebays, filter galleries, and a concrete fountain type feature	High
15	Prehist. Arch.	Prehistoric Archaeological Site			no site record or number	High
16	Hist. Arch.	Adobe House Site	1850s		estimated location	High
17.1	Hist. Arch.	Antonio Sunol Adobe Site	1840s			High
17.2	Hist. Arch.	Charles Hadsell Homestead Site	1862			High
17.3	Hist. Struct.	San Francisco Water Department's Headquarters	circa 1900, 1930			Low
17.4	Hist. Arch.	Suspension Footbridge Footings Site	1910			Low

^a Type Nat. Reg. National Register of Historic Places (listed or eligible)
 Hist. Struct. Historic Structures and Features (includes stage roads)
 Hist. Arch. Historic Archaeological Sites
 Prehist. Arch. Prehistoric Archaeological Sites
 Prehist/Ethn. Prehistoric/Ethnohistoric Sites (includes Indian Villages)

^b Status 1 National Register of Historic Places 3 California Inventory of Historic Resources
 2 California Historical Landmarks 4 Historic Civil Engineering Landmarks

^c Sensitivity Based on importance of site, age of site, and current condition.

SOURCE: Environmental Science Associates, 1994

**TABLE III.H-1 (Continued)
KNOWN CULTURAL RESOURCES OF THE ALAMEDA WATERSHED**

No.	Type ^a	Name	Date	Status ^b	Comment	Sensitivity ^c
18	Hist. Arch.	Adobe Blacksmith Shop Site	late 1840s/early 1850s			High
19	Hist. Arch.	Sunol School Site	circa 1900			High
20	Hist. Arch.	Vallecitos School Site	circa 1878			High
21	Hist. Struct.	Mendoza Barn				Low
22	Hist. Arch.	Homestead-era Site	late 1800s			High
23	Hist. Arch.	Sullivan Homestead Site	late 1800s			High
24	Hist. Arch.	Homestead-era Site	late 1800s			High
25	Hist. Arch.	La Costa School Site	circa 1900			High
26	Hist. Arch.	Homestead-era Site	circa 1906			High
27	Hist. Arch.	Coast Range Tunnel Workers' Construction Site and Water Shaft	circa 1930			High
28	Hist. Arch.	Homestead-era Site	late 1800s		one house	High
29	Hist. Arch.	McDonald or Frager Cabin Site	circa 1906			High
30	Hist. Arch.	Charles McLaughlin Property Homestead Site	circa 1878		one structure	High
31	Hist. Arch.	Charles McLaughlin Property Homestead Site	circa 1878		one structure	High
32	Hist. Struct.	Mine Shaft				Low
33	Hist. Struct.	Hetch Hetchy Coast Range Tunnel	1934	4		Moderate
34	Hist. Struct.	Hetch Hetchy Coast Range Tunnel Pipeline Section with Alameda East and West Portals	1934			Moderate
35	Hist. Arch.	Homestead-era Site	circa 1906		one structure	High
39						

^a Type Nat. Reg. National Register of Historic Places (listed or eligible)
 Hist. Struct. Historic Structures and Features (includes stage roads)
 Hist. Arch. Historic Archaeological Sites
 Prehist. Arch. Prehistoric Archaeological Sites
 Prehist/Ethn. Prehistoric/Ethnohistoric Sites (includes Indian Villages)

^b Status 1 National Register of Historic Places 3 California Inventory of Historic Resources
 2 California Historical Landmarks 4 Historic Civil Engineering Landmarks

^c Sensitivity Based on importance of site, age of site, and current condition.

SOURCE: Environmental Science Associates, 1994

**TABLE III.H-1 (Continued)
KNOWN CULTURAL RESOURCES OF THE ALAMEDA WATERSHED**

No.	Type ^a	Name	Date	Status ^b	Comment	Sensitivity ^c
40	Hist. Arch.	Hollenbeck Family Homestead Site	circa 1878		one structure on 160 acres	High
41	Hist. Struct.	Calaveras Dam Spillway	1925			Low
42	Hist. Struct.	Blue Stone House				Moderate
43	Hist. Struct.	Calaveras Dam Bridge over Spillway	1925			Moderate
44	Hist. Struct.	Calaveras Reservoir Adit Tower	1925			Moderate
45	Hist. Struct.	Calaveras Dam	1925			Moderate
46	Hist. Struct.	Calaveras Filtration Plant Complex	circa 1900		includes chlorination building and aerator building	Moderate
47	Hist. Struct.	Calaveras Dam Watershed Keeper's Complex	circa 1900		includes barn	Moderate
48	Hist. Struct.	Alameda Diversion Tunnel	circa 1925			Low
49	Hist. Struct.	Alameda Diversion Tunnel Dam	circa 1925			Low
50	Hist. Arch.	Homestead-era Site	circa 1876		one structure on 80 acres	High
51	Hist. Arch.	D. and T. Williams Property Homestead Site	circa 1876		one structure on 160 acres	High
52	Hist. Arch.	Louie Frenk Homestead Site	late 1800s			High
53	Hist. Arch.	School and two-structure complex	late 1800s			High
54	Hist. Arch.	Homestead-era Site			one structure	High
55	Hist. Struct.	Parks Family Homestead Site	circa 1860			Moderate
56	Hist. Arch.	R. Charles McLaughlin Property Homestead Site	circa 1876		one structure on 640 acres	High
57	Prehist. Arch.	Unconfirmed prehistoric archaeological site				High
58	Hist. Arch.	Homestead-era Site	circa 1876		one structure on 160 acres	High

^a Type Nat. Reg. National Register of Historic Places (listed or eligible)
 Hist. Struct. Historic Structures and Features (includes stage roads)
 Hist. Arch. Historic Archaeological Sites
 Prehist. Arch. Prehistoric Archaeological Sites
 Prehist/Ethn. Prehistoric/Ethnohistoric Sites (includes Indian Villages)

^b Status 1 National Register of Historic Places 3 California Inventory of Historic Resources
 2 California Historical Landmarks 4 Historic Civil Engineering Landmarks

^c Sensitivity Based on importance of site, age of site, and current condition.

SOURCE: Environmental Science Associates, 1994

**TABLE III.H-1 (Continued)
KNOWN CULTURAL RESOURCES OF THE ALAMEDA WATERSHED**

No.	Type ^a	Name	Date	Status ^b	Comment	Sensitivity ^c
59	Hist. Arch.	O. J. Fennell Homestead Site	circa 1876		one structure on 160 acres	High
60	Hist. Arch.	D. and T. Williams Property Homestead Site	circa 1876		one structure on 80 acres	High
61	Hist. Arch.	J. Carrick Homestead Site	circa 1876		one structure on 160 acres	High
62	Hist. Arch.	A. Anderson Homestead Site	circa 1860		two structures and barn on 160 acres	High
63	Hist. Arch.	J. Carrick and Williams Property Homestead Site	circa 1876		one structure on 160 acres	High
64	Hist. Arch.	J. Alter Homestead Site	circa 1876		one structure on 67 acres	High
65	Hist. Arch.	John Patton Homestead Site	circa 1876		one structure on 160 acres	High
66	Hist. Arch.	J. McDonald Homestead Site	circa 1876		one structure on 161 acres	High
67	Hist. Arch.	J. T. Sherman Homestead Site	circa 1876		one structure on 85 acres	High
68	Hist. Arch.	D. Cullen Homestead Site	circa 1876		one structure on 80 acres	High
69	Hist. Arch.	Mrs. F. B(r)andt Homestead Site	circa 1876		one structure on 197 acres	High
70	Hist. Arch.	J. R. Weller Homestead Site	circa 1876		one structure on 280 acres	High
71	Hist. Arch.	H. G. Bulley Homestead Site	circa 1876		one structure on 335 acres	High

^a Type Nat. Reg. National Register of Historic Places (listed or eligible)
 Hist. Struct. Historic Structures and Features (includes stage roads)
 Hist. Arch. Historic Archaeological Sites

 Prehist. Arch. Prehistoric Archaeological Sites
 Prehist/Ethn. Prehistoric/Ethnohistoric Sites (includes Indian Villages)

^b Status 1 National Register of Historic Places 3 California Inventory of Historic Resources
 2 California Historical Landmarks 4 Historic Civil Engineering Landmarks

^c Sensitivity Based on importance of site, age of site, and current condition.

SOURCE: Environmental Science Associates, 1994

2.0 IMPACTS

2.1 SIGNIFICANCE CRITERIA

The City has not formally adopted significance standards for cultural resources impacts, but it generally considers that implementation of the *Alameda Watershed Management Plan* would have a significant effect on cultural resources if it were to result in irreversible damage or disruption to:

- an important prehistoric or historic archaeological site;
- a historic resource; a property that is listed or determined eligible for listing in the California Register of Historic Resources or a local register of historic resources as per Section 5020.1 of the Public Resources Code; or
- a paleontological site (except as part of a scientific study).

2.2 PROGRAM-LEVEL IMPACTS

This section discusses the potential impacts of implementation of the Management Plan management actions on cultural resources in the Watershed, including increased public access and use, operations, maintenance, and construction activities, and changes to gravel mining operations.

Increased Public Access and Use

The Management Plan includes facilities that could result in increased public visitation of the Watershed by providing new trails (Policies WA15.2 and WA15.4); golf course expansion (Policy WA18.1); and increased information regarding public activities available on the Watershed, such as public use area maps and brochures. These facilities include information kiosks (Action pub3), a Watershed Visitor Education Center (Action pub4), public recreation area around the Sunol Water Temple (Action sun14), commercial site (Action sun19), overnight nature study area (Action sun20), and trail connections (Action sun21). In addition, the Management Plan calls for provision of universal access, which could increase public use of the Watershed (Actions des8 and sun17).

Increased public access to and use of the Watershed could result in an increase in disturbance of both known and currently unknown cultural resources. Depending on the location of new trails and facilities, this could include significant disturbance to resources during construction of facilities, vandalism, or inadvertent damage to cultural resources during long-term use.

While the Management Plan proposes certain management actions that could bring about physical effects, the Management Plan also includes actions that would reduce these potential effects. Table III.H-2 is provided to link, at a program level, those actions that could result in potential impacts (column 1) with the full range of actions that could be required to reduce the potential impacts (column 2). The table highlights in **bold** text those actions that may be

**TABLE III.H-2
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO CULTURAL RESOURCES
FROM INCREASED PUBLIC ACCESS AND USE**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action pub3: Establish information kiosks at Watershed entryways.	Actions saf6 , saf7 , saf10 , and des4.	LTS
Action pub4: Establish a Watershed Visitor Education Center.	Actions saf6 , saf7 , saf10 , and des4.	LTS
Action sun14: Develop a public recreation area around the Sunol Water Temple.	Actions saf6 , saf7 , saf10 , and des4.	LTS
Action sun19: Establish a small commercial site.	Actions saf6 , saf7 , saf10 , and des4.	LTS
Action sun20: Establish an overnight nature study area.	Actions saf6 , saf7 , saf10 , and des4.	LTS
Action sun21: Establish trail connections extending to the Sunol Regional Wilderness.	Actions saf6 , saf7 , saf10 , and des4.	LTS
Policy WA15.2: Consider new trails in zones of lesser vulnerability and risk.	Actions saf6 , saf7 , saf10 , and des4.	LTS
Policy WA15.4: Support new trail connections that link to adjacent communities and other trail facilities.	Actions saf6 , saf7 , saf10 , and des4.	LTS
Policy WA18.1: Consider expansion of existing golf course in areas of low vulnerability/sensitivity.	Actions saf6 , saf7 , saf10 , and des4.	LTS
Action sun17: Provide universal access at Sunol Valley recreation facilities.	Actions saf6 , saf7 , saf10 , and des4.	LTS
Action des8: Implement universal access impoundments at SFPUC facilities and trails.	Actions saf6 , saf7 , saf10 , and des4.	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

essential to reduce significant impacts column 1 actions, depending on the specific nature of the management action, such as design, siting, or implementation schedule. These essential actions, as well as the other actions (in non-bold text) that would further reduce potential physical effects, are discussed below. The table also indicates the level of impact significance that would remain if the actions discussed were implemented. Not every bolded action would be necessary to mitigate the effects of the associated potential impact-causing management action. For example, a very minor structure such as a kiosk located in an environmentally non-sensitive area may not require any of the bolded actions to avoid a significant effect. Because implementation information, such as locations of specific facilities, is not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts. Management actions would be reviewed at the time they are proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures (see Section II.E.5.0, Mitigation Monitoring and Reporting).

Under the Management Plan, the most important means of reducing impacts on cultural resources from an increase in public access and use are through the Management Plan requirements for regular inspection and monitoring of Watershed lands and resources for disturbance to cultural resources (Actions **saf4**, **saf6**, and **saf10**). In addition, Action **des4**, which requires that sensitive cultural resources be fenced off during facility construction, would keep visitors away from resources during construction and prevent inadvertent damage from construction activities.

Implementation of these safety, security, and design actions, as described above and in Section IV.H, would reduce the potential impacts to cultural resources from increased public access and use to a less than significant level. Therefore, mitigation measures are not required. No unavoidable significant program-level cultural resources impacts related to increased public access and use have been identified in this EIR. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Watershed Operations, Maintenance, and Construction Activities

Implementation of the Management Plan would result in construction of a number of additional facilities or improvements on the Watershed. Many of the facilities would be installed to ensure and/or improve water quality or resource protection on the Watershed, such as barriers or fences at identified high-risk spill potential areas (Action **haz6**); installation of infiltration drainfields and detention basins (Action **sto1**); installation of long-term sediment retention basins or other permanent measures (Action **aqu12**); rehabilitation of shoreline areas and stream segments (Actions **aqu5** and **aqu7**); improvements that prevent human and animal waste from impacting Watershed resources (Action **was1**); wildlife habitat enhancement through mechanical vegetation treatments or prescribed fire (Action **wil7**); and wildlife passage structures (Action **wil13**). Many of the actions listed in the Roads Section of the Management Plan (Actions **roa2**, **roa3**, **roa4**, **roa6**, **roa7**, and **roa8**) would modify or relocate existing roads or road components in order

to reduce potential erosion and Watershed contamination from automobile by-products. Fire management actions include the installation of hydrants, helispots, and water tanks (Actions fir2 through fir6); roadway and access improvements (Action fir7); and implementation of fuel management projects that include construction of fuel breaks, conducting prescribed burns, and other improvements (Action fir8). Construction projects would be generated through the implementation of management actions that would provide additional public use opportunities, such as information kiosks and a Watershed Visitor Education Center (Actions pub3 and pub4), additional new trails (Policy WA15.2 and WA15.4), and golf course expansion (Policies WA18.1). In addition, implementation of Actions des8 and sun17 would result in universal access improvements at SFPUC facilities and trails and provision of universal access at proposed facilities.

Implementation of the management actions in the *Sunol Valley Resources Management Element* would also generate construction projects through restoration and reclamation activities related to mining pits, including construction of appropriate mining pit sideslopes (Actions sun4 and sun5); improvements to the existing Sunol maintenance facility (trade shops, equipment storage shelter, warehouse, offices, and the Watershed Visitor Education Center, etc.) (Action sun10); backfill and landscaping of a quarter-mile buffer zone at the mining module closest to the Water Temple, between that module and the temple (Action sun11); and restoration of the entry to the Sunol Water Temple (Action sun13). In addition, implementation of the Sunol management actions would involve construction of several public access facilities and improvements, including a public recreation area around the Sunol Water Temple (Action sun14), commercial site (Action sun19), overnight nature study area (Action sun20), and trail connections (Action sun21).

Implementation of the management actions in the *Grazing Resources Management Element* would generate construction projects primarily through structural protection measures and Watershed protection area improvements, including fencing around reservoirs, streams, and livestock water ponds; water developments; water collection systems; wildlife ponds; and livestock pond rehabilitation (Actions gra2, gra6, gra7, and gra8).

Watershed operations, maintenance, and construction activities could result in potentially significant damage to both known or currently unknown cultural resources. Activities involving surface disturbance, such as ground clearing, discing, grading, and prescribed burns, or excavation within identified zones of cultural sensitivity, would have the greatest potential for disturbance of previously unidentified cultural resources.

Table III.H-3 links those management actions that could result in physical effects on cultural resources with the full range of management actions that could be required to reduce the potential effects. Under the Management Plan, the most important means of reducing potential impacts on cultural resources from construction activities is the requirement under Action **cul1** to conduct the appropriate level of environmental review prior to undertaking activities involving surface disturbance and/or excavation to avoid damage to buried cultural resources. Actions **cul2** through **cul8** include activities that must be taken if cultural resources are found during

**TABLE III.H-3
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO CULTURAL RESOURCES
FROM OPERATIONS, MAINTENANCE, AND CONSTRUCTION ACTIVITIES**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action haz6: Identify high-risk spill potential areas and implement measures, including barricades, to reduce the risk of hazardous spills.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action sto1: Remediate on-site stormwater collection and drainage systems through infiltration drainfields and trenches, and detention basins.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action aqu12: Install long-term sediment retention basins or other permanent measures.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action aqu5: Rehabilitate shoreline areas using structural shoreline protection practices.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action aqu7: Rehabilitate stream segments.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action was1: Repair/replace vault, chemical, and composting toilet as necessary.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action roa2: Relocate existing necessary high use roads/road segments in proximity to streams.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action roa3: Modify the grading and drainage of existing necessary high use roads/road segments.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action roa4: Close and retire roads that are not needed and eliminate or minimize problem erosion points by installing culverts and waterbars, or otherwise stabilizing the roadway.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action roa6: Inspect/manage unpaved roads by remediating and stabilizing areas of erosion and regrading unpaved roads.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action roa7: Maintain fire roads through effective installation of waterbars and paving where needed.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

TABLE III.H-3 (Continued)
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO CULTURAL RESOURCES FROM OPERATIONS, MAINTENANCE, AND CONSTRUCTION ACTIVITIES

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action roa8: Restrict access on low use roads by gates or barriers.	Actions cul1 through cul18 and Policies CR1 through CR9 .	PS, see Section IV.H
Action fir2: Install a total of nine hydrants into water sources.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action fir3: Install and maintain a total of four helispots on SFPUC property.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action fir4: Install three additional helispots off SFPUC lands.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action fir5: Install two additional hydrants on adjacent lands.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action fir6: Install an additional water tank.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action fir7: Identify and construct road improvements, including turnouts, turnarounds, and safety zones.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action fir8: Complete the fuel management projects, including fuel load reductions, prescribed burns, fuel breaks, and access improvements.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action wil7: Create palatable resprouting through mechanical vegetation treatments or prescribed fire.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action will13: Design and install wildlife passage structures that minimize wildlife losses.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action pub3: Establish “gateway” information kiosks.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action pub4: Establish a Visitor Education Center.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action sun4: Create sideslopes on the quarry pits such that there is a gradual transition to water.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action sun5: Reclaim quarries with sideslopes appropriate to their proposed activity.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

TABLE III.H-3 (Continued)
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO CULTURAL RESOURCES FROM OPERATIONS, MAINTENANCE, AND CONSTRUCTION ACTIVITIES

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action sun10: Retain the existing Sunol maintenance facility with improvements, including equipment storage shelter, waterhouse and storage yard, parking, etc.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action sun11: Backfill and landscape a ¼-mile buffer zone at the mining module closest to the water storage pit, between that module and the temple.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action sun13: Restore the historic entry to the Sunol Water Temple.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action sun14: Develop a public recreation area around the Sunol Water Temple.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action sun19: Establish a small commercial site.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action sun20: Establish an overnight nature study area.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action sun21: Establish trail connections extending to the Sunol Regional Wilderness.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action gra2: Implement structural protection measures, including fencing and other improvements.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action gra6: Implement improvements for the San Antonio Water Protection Area.	Actions cul1 through cul8 and Policies CR1 through CR9 are required to reduce this impact.	PS, see Section IV.H
Action gra7: Implement improvements for the Calaveras Watershed Protection Area.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action gra8: Implement improvements for the Lower Alameda Creek Watershed Protection Area.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

**TABLE III.H-3
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO CULTURAL RESOURCES
FROM OPERATIONS, MAINTENANCE, AND CONSTRUCTION ACTIVITIES**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Policy WA15.2: Consider addition of new trails in zones of lesser vulnerability and risk.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Policy WA15.4: Support new trail connections that link to adjacent communities and other trail facilities.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Policy WA18.1: Consider expansion of existing golf course in areas of low vulnerability/sensitivity.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action des8: Implement universal access improvements at SFPUC facilities and trails.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H
Action sun17: Provide universal access at Sunol Valley recreation facilities.	Actions cul1 through cul8 and Policies CR1 through CR9 .	PS, see Section IV.H

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

construction. In addition, Cultural Resources **Policies 1** through **9** aim to protect and preserve historic structures and features and require consultation with Native American organizations, monitoring of known cultural resource sites, identification of potential adverse impacts to cultural resources to be caused by future projects, and enhancing knowledge of existing cultural resources within the Watershed.

Implementation of these actions, as described above and in Section IV.H, would reduce the potential impacts to cultural resources from operations, maintenance, and construction activities. However, the Management Plan does not contain policies or management actions specifically prohibiting demolition or inappropriate alteration of historic resources. Therefore, it is possible that such activities could occur, which would constitute a significant effect. Section IV.H.2.0 proposes mitigation that would avoid this potentially significant effect. The impact of day-to-day management activities that implement the Management Plan are analyzed in this EIR and generally would not be subject to further environmental review. No unavoidable significant program-level cultural resources impacts related to operations, maintenance, and construction activities have been identified in this EIR. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Changes to Gravel Mining Operations

The portion of the Sunol Valley used for gravel mining has been identified as a zone of cultural resource sensitivity due to its long history of occupation through many stages of California history. In addition, the Management Plan identifies the compatibility of the Sunol Valley quarries and cultural resources as a management issue. Implementation of the *Sunol Valley Resources Management Element* of the Management Plan would result in the continuation of existing mining activities in the Sunol Valley and allow for development of water storage reservoirs at the quarries following completion of mining. Gravel mining and development of future water storage reservoirs and associated facilities could potentially affect both known and currently unknown cultural resources in this area during mining or construction activities that involve surface disturbance, and through vandalism or inadvertent damage (i.e., flooding) during facility use. As an example, the Sunol Water Temple, an identified cultural resource listed on the California Inventory of Historic Places, could be significantly degraded by proposed nearby mining activities north of I-680.

- As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (shortening the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new cultural resources impacts beyond those disclosed in the EIR

prepared for SMP-32. Pertinent measures adopted by Alameda County as conditions of approval for SMP-32 include requirements for landscape plan approval and berming to provide a visual barrier to the Sunol Water Temple. In addition, the *Alameda Watershed Management Plan* includes backfilling of an additional quarter-mile buffer after mining on the east side of Sunol Water Temple, which is closest to mining activity, to provide additional mitigation for cultural resources impacts. Amendment of the existing permit, if required, would be subject to project-level environmental review by Alameda County.

Options presented under Actions sun2a and sun2b would require amendments to existing permits south of I-680. The increase in mining depths proposed in both Actions sun2a and sun2b would not be likely to impact cultural resources beyond levels previously analyzed and mitigated in previous environmental documentation. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30. These mitigation measures include requirements that dictate actions that must be taken if cultural resources are uncovered during earth removal. Amendment of the existing permits would be subject to project-level environmental review by Alameda County.

REFERENCES – Cultural Resources

Except where indicated, references are on file at the San Francisco Planning Department.

Alameda County Planning Department, *Mission Rock Company SMP-24 Initial Study*, 1985. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, Resolution R-86-62 conditionally approving SMP-24, 1986. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, incorporating and revising Resolution R-86-62 conditionally approving SMP-24, 1991. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, *Santa Clara Sand & Gravel SMP-30 Expanded Initial Study and Proposed Mitigated Negative Declaration*, 1992a. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, Resolution 93-32 conditionally approving Santa Clara Sand & Gravel SMP-30, 1992b. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, *Mission Valley Rock Company Surface Mining Permit and Reclamation Plan, SMP-32*, Draft Environmental Impact Report, 1994a. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, *Mission Valley Rock Company Surface Mining Permit and Reclamation Plan, SMP-32*, Final Environmental Impact Report and Appendices, 1994b. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, Resolution R-94-461 certifying and adopting the EIR, adopting Findings and a Statement of Overriding Considerations, and conditionally approving Surface Mining Permit and Reclamation Plan, SMP-32, 1994c. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Environmental Science Associates, prepared for the San Francisco Water Department, *Alameda Watershed Natural and Cultural Resources*, Appendix A-4 of the *Alameda Watershed Management Plan*, 1994.

I. AESTHETICS

1.0 SETTING

1.1 SCENIC VIEWING OPPORTUNITIES

The Alameda Watershed lands encompass 36,000 acres of rolling grassland and native oak woodland in northern Santa Clara County and southern Alameda County. These lands are generally located south of Alameda Creek (Niles Canyon) and east of the westernmost ridgeline of the Fremont Hills. For the most part, Watershed lands are relatively remote and not accessible to or viewed by the general public. However, Watershed lands are visible from and form part of the Bay Area Ridgeland open space area as well as the Sunol Valley. A portion of the Watershed forms part of EBRPD's popular Sunol Regional Wilderness. In addition, several major roads, such as I-680 and SR 84, provide viewing opportunities of a limited portion of the Alameda Watershed lands.

A portion of the Alameda Watershed lands are leased for a variety of uses, including cattle grazing, plant nurseries, and sand and gravel quarries. These leased lands include areas along I-680 in Alameda County and along SR 84 between the City of Fremont and the Town of Sunol. The leased lands and adjacent private lands along I-680 from San Antonio Creek (Sunol Valley) north to Pleasanton are in various stages of development. However, the Alameda Watershed lands consist primarily of undeveloped grassland hills and scattered oak woodlands.

Particular features of interest include views of Calaveras Reservoir from Calaveras Road, the Sunol Water Temple, and the narrow, forested Niles Canyon (see Figure II-2). Key observation points have been identified based on federal, state, and county plans and include I-680, Calaveras Road, Vallecitos Road, Geary Road, Mill Creek Road, and Sunol Water Temple. Roads were identified as key observation points based on current or proposed designation as scenic routes in appropriate state or county plans. Other use areas were identified based on their importance, use volume, use duration, and size. These areas, discussed below under the heading Special Use Areas, typically include designated vista points, trails, parks, and secondary roads to and from regional parks.

Interstate 680

I-680 is a major freeway that connects the South Bay communities of San Jose and Fremont with the East Bay communities of Pleasanton and Walnut Creek and points beyond. In general, Watershed lands are viewed from the portion of I-680 from Mission Pass northeast through the Sunol Valley to the southern edge of Pleasanton. This portion of I-680 is designated as a State of California Scenic Highway. In response, Alameda County has adopted policies regarding the regulation of land use, development density, and signage to maintain scenic characteristics of views from the freeway. The Watershed lands in the relatively flat Sunol Valley are viewed from I-680, as are the west-facing slopes of the hills on the eastern side of the Valley. To the north, the forested Pleasanton and Sunol Ridges form the western horizon.

Although the area is predominantly natural in appearance and undeveloped, several major built features are visible from the freeway. These include an electric transmission line along the south side of the freeway, a second set of lines approximately 0.75 mile to the south, and the large parking lot and playing field at the Sunol Valley Golf Course. Several active sand and gravel quarries are located in the Sunol Valley area. The mining itself is not highly visible since it occurs below grade and, for the most part, vantage points from surrounding roads are limited to at-grade locations. However, processing plants and conveyors are visible beyond the roadside berms. Boxed specimen trees at adjacent nurseries that cover part of the valley floor are also visible from I-680. Although some of the mining operations have resulted in open, water-filled pits within the valley floor, these waterbodies are not generally visible from I-680.

Niles Canyon Road

Niles Canyon Road winds along the bottom of forested Niles Canyon, curving along Alameda Creek. Due to the curving of the road and the steep canyon slopes that rise up to 1,000 feet above the creek, views from the road are enclosed. Canyon slopes and hillsides to the south of the road are densely vegetated, while the hillsides on the north side of the road are generally covered in annual grasses with scattered California live oak trees.

Dense riparian vegetation associated with Alameda Creek is a significant feature of views from the road. Open fields and nursery crops at the eastern end of the road near I-680 give an agricultural character to road scenes. The Sunol Water Temple is a unique landmark in the area, but is located approximately 0.5 mile from SR 84/Paloma Road (Scott's Corner) and is not highly visible to travelers on the road.

Calaveras Road

Calaveras Road provides for scenic, long-distance views to the west as it crosses over the Fremont Hills and also provides for views of Calaveras Reservoir as the road winds along the east-facing slope on the western side of the reservoir. The area surrounding the road is generally composed of northeast-southwest trending canyons and hills. Repeated ridges are covered with a mix of oak savannah, oak woodland, grassland, *Bacharris* brushland, and some pine forests. Views from the road in this area are generally natural in appearance. However, several man-made features are visible, including the Quantec and Calaveras test site, consisting of several buildings at the south shore of Calaveras Reservoir; a transmission line roughly parallel to Calaveras Road, and scattered residential developments to the south of the Watershed lands. The transmission line and associated right-of-way are not highly noticeable in views from Calaveras Road. The Calaveras Dam and waterway intake, located at the north end of the reservoir, are not highly visible from Calaveras Road. Several buildings are located on the eastern shore near the dam. As viewed from Calaveras Road, these buildings and the dam are relatively small in scale and are not highly visible.

Although the majority of the Alameda Watershed lands along Calaveras Road west of the reservoir are fenced, trespass has occurred at several locations along this route. The resulting

damage to fencing and large amounts of roadside litter detract from the scenic character of views at these locations.

North of the reservoir, Calaveras Road is located in a relatively narrow valley (Alameda Creek) that widens to form the Sunol Valley at the confluence of Alameda Creek, San Antonio Creek, and Arroyo de la Laguna. The valley floor is agricultural in character, with a variety of nurseries, vineyards, and dry land farming. Sunol Valley Water Treatment Plant is screened from view by trees and landform between Calaveras Road and the site. A transmission line is located relatively high on the ridge to the west and is not a dominant element of views.

As Calaveras Road enters the Sunol Valley, the most visible land uses are the nurseries located west of the road. Sand and gravel mining operations are also visible but are not as noticeable as the many acres of boxed specimen trees. Views of the Sunol Valley from Calaveras Road include the multiple transmission lines within the Hetch Hetchy right-of-way. Calaveras Road crosses under these lines south of Scott's Corner. The lines are highly visible as they cross the flat landscape of the Sunol Valley and traverse the east-facing slopes of the Fremont Hills near Mission Pass.

Vallecitos Road

Vallecitos Road ranges in width from two to four lanes. Only a short portion of the road between I-680 and the Vallecitos Valley is located within Alameda Watershed lands. Views from the road in this area include grass-covered slopes and large stands of oak trees. Further east, views of the north-facing slopes that surround San Antonio Reservoir are possible. These grass-covered hills are visible at a distance of approximately 1.25 miles. Small, rustic agricultural buildings and residences are located at various points along the road. The General Electric Vallecitos Nuclear Center, located just north of Vallecitos Road, is the predominant man-made feature within this area. Other notable built features visible from this road include electric transmission line parallel to the road approximately 1.25 miles to the south. These transmission lines are located outside SFPUC lands.

Geary Road

Geary Road is an Alameda County scenic route that connects Calaveras Road to Sunol Regional Wilderness. Geary Road is located east of Calaveras Road and closely follows the course of Alameda Creek. Views from the road are enclosed by both the surrounding canyon and the riparian vegetation and oak woodlands along Alameda Creek.

Mill Creek Road

Mill Creek Road begins at Highway 238 and parallels Mission Creek up to Mission Peak. Only the terminus of the road, as it nears Mission Peak, affords a view of the Alameda Watershed.

1.2 SPECIAL USE AREAS

Sunol Water Temple

The Sunol Water Temple is located at the SFPUC operations complex at the intersection of Niles Canyon Road and Calaveras Road. Currently, the area around the Sunol Water Temple consists of open fields used for alfalfa cultivation. The 0.5-mile-long entry drive to the temple is landscaped with a colonnade of oak tree saplings. Sand and gravel mining operations are planned for the area adjacent to and east of the entry drive and south of SR 84 / Paloma Road that is currently used for alfalfa cultivation (EDAW, Inc., 1994).

Sunol–Ohlone Regional Wilderness

EBRPD's Sunol–Ohlone Regional Park is located on the eastern portion of the Watershed. A portion of the Watershed, between the Sunol Valley and the Calaveras Reservoir, is leased to EBRPD for public recreation. The Ohlone Wilderness Trail extends from Del Valle Reservoir south of Livermore through the Sunol/Ohlone Regional Wilderness and through the Mission Peak Regional Preserve to the Fremont city limit. Access to the trail is by permit only. The trail crosses the Watershed south of Welch Creek Road. This area is characterized by ridges covered with a mix of oak savannah, oak woodland, grassland, *Bacharris* brushland, and some pine forests. Views from the trail in this area are natural in appearance.

Sunol Valley Golf Course

The Sunol Valley Golf Course is located southwest of the I-680/SR 84 intersection, south of the Sunol Water Temple. The golf course is visible from I-680. Views from the golf course include the undeveloped hills nearby and the Sunol Valley.

2.0 IMPACTS

2.1 SIGNIFICANCE CRITERIA

The City has not formally adopted significance standards for visual quality, but it generally considers that implementation of the *Alameda Watershed Management Plan* would have a significant effect on visual quality if it were to:

- have substantially negative aesthetic effects;
- substantially degrade or obstruct scenic views from public areas; or
- produce substantial light or glare.

2.2 PROGRAM-LEVEL IMPACTS

This section discusses the potential impacts of implementation of the Management Plan management actions on the aesthetic quality of the Watershed, including installation of new facilities, vegetation clearing activities, and increased public access and use.

Installation of New Facilities

Implementation of the Management Plan would result in construction of a number of additional facilities on the Watershed. These facilities may or may not be implemented, depending on funding and other considerations. Many of the facilities would be installed to ensure and/or improve water quality or resource protection on the Watershed, such as barriers or fences at identified high-risk spill potential areas (Actions haz6). Other facilities would be installed to facilitate public use of the Watershed, including information kiosks and a Watershed Visitor Education Center (Actions pub3 and pub4), new trails (Policies WA15.2 and WA15.4), and golf course expansion (Policy WA18.1). Fire management actions include the installation of helispots and water tanks, and access and road improvements (Actions fir3, fir4, fir6, and fir7). In addition, new roads could be built or existing roads could be relocated (Actions roa2 and roa3).

Implementation of the management actions in the *Sunol Valley Resources Management Element* would also generate construction projects through restoration projects, including improvements at the existing Sunol maintenance facility (trade shops, equipment storage shelter, warehouse, offices, Watershed Visitor Education Center, etc.) (Action sun10), backfill and landscaping of a buffer at the mining module closest to the Sunol Water Temple, between that module and the temple (Action sun11), and restoration of the entry to the Sunol Water Temple (Action sun13). In addition, implementation of the Sunol management actions would involve construction of several public access facilities and improvements, including a public recreation area around the Sunol Water Temple (Action sun14), commercial site (Action sun19), overnight nature study area (Action sun 20), and trail connections (Action sun21).

Implementation of the management actions in the *Grazing Resources Management Element* would generate construction projects primarily through structural protection measures and Watershed protection area improvements, including fencing around reservoirs, streams, and livestock water ponds; water developments; water collection systems; wildlife ponds; and livestock pond rehabilitation (Actions gra2, gra6, gra7, and gra8).

Installation of each of the facilities described above would constitute a potentially significant aesthetic change, with the degree of aesthetic change dependent on project-specific details to be determined at the time the projects are proposed. The aesthetic change would be significant if the site selection, facility scale, and facility design caused substantial degradation of the scenic quality of the Watershed from public areas. Furthermore, if lighting associated with the facility created substantial glare, the aesthetic impact would be significant.

While the Management Plan proposes certain management actions that could bring about physical effects, the Management Plan also includes actions that would reduce these potential effects. Table III.I-1 is provided to link, at a program level, those actions that could result in potential impacts (column 1) with the full range of actions that could be required to reduce the potential impacts (column 2). The table highlights in **bold** text those actions that may be essential to reduce significant impacts column 1 actions, depending on the specific nature of the management action, such as design, siting, or implementation schedule. These essential actions,

**TABLE III.I-1
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO AESTHETIC QUALITY
THROUGH INSTALLATION OF NEW FACILITIES**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects Action ^{a,b}	Level of Significance if Implemented
Action haz6: Identify high-risk spill potential areas and implement measures (e.g., fines, barricades, etc.).	Actions des5 , veg1, and veg7.	LTS
Action roa2: Relocate existing necessary high use roads/road segments in proximity to streams.	Actions roa12 , veg1, and veg7.	LTS
Action roa3: Modify the grading and drainage of existing necessary high use roads/road segments.	Actions roa12 , veg1, and veg7.	LTS
Action fir3: Install a total of four helispots on SFPUC property.	Actions des5 , veg1, and veg7.	LTS
Action fir4: Install three additional helispots on adjacent non-SFPUC lands.	Actions des5 , veg1, and veg7.	LTS
Action fir6: Install an additional water tank.	Actions des5 , veg1, and veg7.	LTS
Action fir7: Identify and construct road improvements to provide better access.	Actions roa12 , veg1, and veg7.	LTS
Action pub3: Establish information kiosks at Watershed entryways.	Actions des5 , veg1, and veg7.	LTS
Action pub4: Establish a Watershed Visitor Education Center.	Actions des5 , veg1, and veg7.	LTS
Action sun10: Retain the existing Sunol maintenance facility with improvements, including equipment storage shelter, warehouse and storage yard, parking, etc.	Actions des5 , veg1, and veg7.	LTS
Action sun11: Backfill and landscape a ¼-mile buffer zone at the mining module closest to the Sunol Water Temple, between that module and the temple.	Actions des5 , veg1, and veg7.	LTS
Action sun13: Restore the historic entry to the Sunol Water Temple.	Actions des5 , veg1, and veg7.	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

TABLE III.I-1 (Continued)
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO AESTHETIC QUALITY THROUGH INSTALLATION OF NEW FACILITIES

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action sun14: Develop a public recreation area around the Sunol Water Temple.	Actions des5 , veg1, and veg7.	LTS
Action sun19: Establish a small commercial site.	Actions des5 , veg1, and veg7.	LTS
Action sun20: Establish an overnight nature study area.	Actions des5 , veg1, and veg7.	LTS
Action sun21: Establish trail connections extending to the Sunol Regional Wilderness.	Actions des5 , roa12 , veg1, and veg7.	LTS
Action gra2: Implement structural protection measures, including fencing and other improvements.	Actions des5 , veg1, and veg7.	LTS
Action gra6: Implement improvements for the San Antonio Water Protection Area.	Actions des5 , veg1, and veg7.	LTS
Action gra7: Implement improvements for the Calaveras Watershed Protection Area.	Actions des5 , veg1, and veg7.	LTS
Action gra8: Implement improvements for the Lower Alameda Creek Watershed Protection Area.	Actions des5 , veg1, and veg7.	LTS
Policy WA15.2: Consider addition of new trails in zones of lesser vulnerability and risk.	Actions des5 , roa12 , veg1, and veg7.	LTS
Policy WA15.4: Support new trail connections that link to adjacent communities and other trail facilities.	Actions des5 , roa12 , veg1, and veg7.	LTS
Policy WA18.1: Consider expansion of existing golf course in areas of low vulnerability/sensitivity.	Actions des5 , veg1, and veg7.	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

as well as the other actions (in non-bold text) that would further reduce potential physical effects, are discussed below. The table also indicates the level of impact significance that would remain if the actions discussed were implemented. Not every bolded action would be necessary to mitigate the effects of the associated potential impact-causing management action. For example, a very minor structure such as a kiosk located in an environmentally non-sensitive area may not require any of the bolded actions to avoid a significant effect. Because implementation information, such as locations of specific facilities, is not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts. Management actions would be reviewed at the time they are proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures (see Section II.E.5.0, Mitigation Monitoring and Reporting).

Under the Management Plan, the most important means of reducing potential aesthetic impacts are design practices that reduce the overall aesthetic effect of new roads and facilities. The Management Plan includes road and trail design guidelines (Action **roa12**) that require use of BMPs for road location and alignment, such as locating and designing roads and trails to follow natural topography, minimizing stream crossings, avoiding large cut-and-fill road designs, and minimizing excavation. The Management Plan also includes facility design guidelines (Action **des5**) with several requirements for new construction activities or renovation/alteration of existing facilities, such as:

- Where grading is necessary, contour slopes and landforms to mimic the surrounding environment as much as possible;
- Design and site new roads and trails to minimize grading and the visibility of cut banks and fill slopes;
- Overpasses, safety and directional signs, and other road and highway structures may protrude above a skyline only when it can be demonstrated that: the facility is necessary for public service and safety, the break in the skyline is only seen in the foreground, and the break in the skyline is the minimum necessary to provide the required service;
- Incorporate architectural siting/design elements that are compatible with the applicable surroundings;
- Eliminate, wherever possible, the use of unpainted metallic surfaces and other sources that may increase reflectivity;
- Site, shield direct and downward exterior lighting such that it is not highly visible or obtrusive;
- Maintain the silhouette of new structures below the skyline of bluffs, cliffs, or ridges;
- Design any new structural additions to historic structures to harmonize with older structural features and comply with scenic easements and aesthetic guidelines; and
- Encourage the salvage and selective reuse of building features if historic structures are demolished.

In addition, the Management Plan includes other actions that when incorporated along with the roads and facility design guidelines described above, would further reduce the aesthetic effect of new roads and facilities. Action veg1 requires that disturbed areas be screened and restored with an appropriate mix of native vegetation species. Action veg7 requires erosion control BMPs for all construction activities in order to retain existing vegetation wherever feasible, and to minimize the total area and duration of soil exposure. Implementation of Actions veg1 and veg7 ensures that only a minimum area would be devegetated for facilities construction, and that devegetated areas would not remain bare following the construction period.

Implementation of design guidelines and vegetation protection and restoration activities, as described above and in Section IV.I, would reduce the potential aesthetic impact associated with the installation of new facilities and roads to a less than significant level. Therefore, mitigation measures are not required. No unavoidable significant program-level aesthetic quality impacts related to installation of new facilities have been identified in this EIR. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Vegetation Clearing Activities

The fuel management projects to be implemented as part of Action fir8 include tree pruning, vegetation understory removal, prescribed burns, and other activities that could disturb relatively large portions of vegetation in the Watershed and create devegetated, blackened areas. Action wil7 also includes use of prescribed fire to enhance wildlife habitat. The aesthetic change associated with implementation of Actions fir8 and wil7 would be potentially significant. The degree of aesthetic change for each fuel management project would depend on the size and location of the disturbed area, which would be determined prior to project implementation. The aesthetic change would be significant if the disturbed area were located within the public viewshed and if the disturbed area were not restored. However, it should be noted that without implementation of Action fir8, a catastrophic fire could occur on the Watershed, which could result in more severe aesthetic effects.

Removal of invasive exotic plant species under Action veg6 would also result in devegetated areas and a potentially significant aesthetic change. Action wil7 would also result in devegetated areas through use of vegetation treatments. The degree of aesthetic change would depend on the size and location of the disturbed area, which would be determined prior to project implementation. The aesthetic change would result in significant degradation of scenic views if the project were large in scale, conducted in areas visible to the public, and/or if restoration of the devegetated areas did not occur.

Table III.I-2 links those management actions that could result in physical effects with the full range of management actions that could be required to reduce the potential effects. Under the Management Plan, the most important means of reducing potential aesthetic impacts associated

**TABLE III.I-2
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO AESTHETICS THROUGH
VEGETATION CLEARING ACTIVITIES**

Management Actions that Could Result in Potential Physical Effects^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action^{a,b}	Level of Significance if Implemented
Action fir8: Complete the fuel management projects.	Actions veg1 , veg5 , veg5.1 , and veg7.	LTS
Action wil7: Create palatable re-sprouting through mechanical vegetation treatments or prescribed fire.	Actions veg1 , veg5 , veg5.1 , and veg7.	LTS
Action veg6: Identify and remove invasive exotic plant species.	Actions veg1 and veg7.	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

with implementation of the fire management projects is Action **veg5**, which requires development of an oak planting program for areas disturbed during fire management activities. Action **veg5.1** calls for development of a native species planting program for implementation in disturbed areas associated with grazing and fire management activities. In addition, Action **veg1** requires that prescribed burns be conducted under conditions that do not harm plant species that reproduce by seed only, and that disturbed areas be screened and restored with an appropriate mix of native vegetation species. Restoration and screening of disturbed areas would be the most important means of reducing potential aesthetic impacts associated with exotic plant and tree removal. Implementation of Action **veg7** would further reduce the aesthetic effect associated with fire management and plant tree removal activities by retaining existing vegetation wherever feasible, and minimizing the total area and duration of soil exposure.

Implementation of these vegetation protection and restoration actions, as described above and in Section IV.I, would reduce the potential aesthetic impact associated with fire management and plant and tree removal activities to a less than significant level. The impact of day-to-day management activities that implement the Management Plan are analyzed in this EIR and generally would not be subject to further environmental review. No unavoidable significant program-level aesthetic quality impacts related to vegetation clearing activities have been identified in this EIR. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Increased Public Access and Use

The Management Plan includes facilities that could result in increased public visitation of the Watershed by providing new trails (Policies WA15.2 and WA15.4); golf course expansion (Policy WA18.1); and increased information regarding public activities available on the Watershed, such as public use area maps and brochures. These facilities include information kiosks (Action **pub3**), a Watershed Visitor Education Center (Action **pub4**), public recreation area around the Sunol Water Temple (Action **sun14**), commercial site (Action **sun19**), overnight nature study area (Action **sun20**), and trail connections (Action **sun21**). In addition, the Management Plan calls for provision of universal access, which could increase public use of the Watershed (Action **des8** and **sun17**). Increased access and public use would not necessarily result in adverse aesthetic impacts. However, trespassing and improper use of public access areas could lead to litter, disturbed vegetation, and damage to Watershed facilities and resources, detracting from the aesthetic quality of the Watershed. Litter, disturbed vegetation, and damage to facilities and resources would constitute a significant effect if the degradation of aesthetic quality were substantial.

Table III.I-3 links those management actions that could result in physical effects with the full range of management actions that could be required to reduce the potential effects. Under the Management Plan, the most important means of reducing potential impacts from increased public access and use are those actions that call for responsible use of the Watershed and

**TABLE III.I-3
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO AESTHETICS THROUGH
INCREASED PUBLIC ACCESS AND USE**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action pub3: Establish information kiosks at Watershed entryways.	Actions saf1, saf2, saf4, saf6 , saf10, saf16 , saf17, pub8, pub9 , and pub12.	LTS
Action pub4: Establish a Watershed Visitor Education Center.	Actions saf1, saf2, saf4, saf6 , saf10, saf16 , saf17, pub8, pub9 , and pub12.	LTS
Action sun14: Develop a public recreation area around the Sunol Water Temple.	Actions saf1, saf2, saf4, saf6 , saf10, saf16 , saf17, pub8, pub9 , and pub12.	LTS
Action sun19: Establish a small commercial site.	Actions saf1, saf2, saf4, saf6 , saf10, saf16 , saf17, pub8, pub9 , and pub12.	LTS
Action sun20: Establish an overnight nature study area.	Actions saf1, saf2, saf4, saf6 , saf10, saf16 , saf17, pub8, pub9 , and pub12.	LTS
Action sun21: Establish trail connections extending to the Sunol Regional Wilderness.	Actions saf1, saf2, saf4, saf6 , saf10, saf16 , saf17, pub8, pub9 , and pub12.	LTS
Policy WA15.2: Consider new trails in zones of lesser vulnerability and risk.	Actions saf1, saf2, saf4, saf6 , saf10, saf16 , saf17, pub8, pub9 , and pub12.	LTS
Policy WA15.4: Support new trail connections that link to adjacent communities and other trail facilities.	Actions saf1, saf2, saf4, saf6 , saf10, saf16 , saf17, pub8, pub9 , and pub12.	LTS
Policy WA18.1: Consider expansion of existing golf course in areas of low vulnerability/sensitivity.	Actions saf1, saf2, saf4, saf6 , saf10, saf16 , saf17, pub8, pub9 , and pub12.	LTS
Action des8: Implement universal access improvements at SFPUC facilities and trails.	Actions saf1, saf2, saf4, saf6 , saf10, saf16 , saf17, pub8, pub9 , and pub12.	LTS
Action sun17: Provide universal access at Sunol Valley recreation facilities.	Actions saf1, saf2, saf4, saf6 , saf10, saf16 , saf17, pub8, pub9 , and pub12.	LTS

^a See accompany text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

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enforcement of the rules and regulations established for such use. Actions **pub8** and **pub9** require increased public education and awareness of Watershed resource sensitivity and publication of rules and regulations for Watershed visitors. This information would be provided in all areas subject to public use, including the kiosks, Watershed Visitor and Education Center, and mobile exhibit. Actions **saf4** and **saf6** require an inspection and maintenance program for facilities used by the public, and inspection of perimeter fencing, access gates, and locks in order to minimize trespassing and illegal dumping. In addition, Action **saf16** calls for coordinated enforcement of public use of the Watershed with the EBRPD.

The Management Plan also includes actions that, when implemented with those actions described above, would further reduce the potential aesthetic impacts associated with litter, disturbed vegetation, and damaged facilities. Actions saf1, saf2, saf10, and saf17 provide additional means for monitoring public use of the Watershed and enforcing Watershed rules and regulations. Action pub12 requires coordination with other agencies and groups in the developing educational materials, further providing opportunity for dissemination of information advocating responsible use of the Watershed.

Implementation of the public education and enforcement actions, as described above and in Section IV.I, would reduce the potential aesthetic impacts associated with improper public access and use of the Watershed to a less than significant level. No unavoidable significant program-level aesthetic quality impacts related to increased public access and use have been identified in this EIR. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

- **Changes to Gravel Mining Operations**

- As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigation measures set forth in the conditions of approval for Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (shortening the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new impacts on aesthetics beyond those disclosed in the EIR prepared for SMP-32. Pertinent measures adopted by Alameda County as conditions of approval for SMP-32 include requirements for landscape plan approval and berming to provide a visual barrier to the Sunol Water Temple. In addition, the *Alameda Watershed Management Plan* includes backfilling of an additional quarter-mile buffer after mining on the east side of Sunol Water Temple, which is closest to proposed mining activity, to provide additional mitigation for aesthetics impacts.

- Options presented under Actions sun2a and sun2b would require amendments to existing permits south of I-680. The increase in mining depths proposed in both Actions sun2a and sun2b would not be likely to substantially impact aesthetics of these existing quarries because the increased mining depth would not be visible from public view areas. Although mining has influenced the visual character of the areas south of I-680, nursery plants are more dominant in many of the views, and mitigation measures have been required for areas near the public view. Should increasing the mining width under Action sun2a result in increased public views of the mining areas, it may reasonably be assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24 and SMP-30, such as requiring an appropriate landscape plan. Amendment of the existing permits could be subject to project-level environmental review by Alameda County, which would analyze potential impacts and identify detailed mitigation measures, if warranted.

REFERENCES – Aesthetics

Except where indicated, references are on file at the San Francisco Planning Department.

EDAW, Inc., prepared for San Francisco Public Utilities Commission, *Sunol Valley Resources Management Element*, Appendix A-3 of the *Alameda Watershed Management Plan*, 1998.

EDAW, Inc., prepared for San Francisco Water Department, *Technical Memorandum No. 4: Visual Resources*, Appendix C-5 of the *Alameda Watershed Management Plan*, 1994.

J. TRANSPORTATION AND ACCESS

1.0 SETTING

A total of 51 miles of paved roads and 106 miles of unpaved roads and trails are within the Alameda Watershed. The road system consists of approximately 6 miles of interstate highways and ramps, 11 miles of state highways, 34 miles of paved roads and streets, 82 miles of unpaved roads, and 24 miles of trails. Limited-access dirt roads are used for maintenance, fire access, and security purposes. There is one active railroad track operated by Union Pacific Railroad that bisects the Watershed.

The Alameda Watershed area is served by a roadway network that includes I-680, SR 84 (nonfreeway), and Calaveras Road. Approximately two miles of I-680 traverse the Alameda Watershed, with two interchanges (Pleasanton–Sunol and SR 84–Calaveras Road) providing local access to the adjacent developed areas. I-680 carries 100,000-120,000 vehicles per day in this area (Caltrans, 1999). SR 84 (known locally as Niles Canyon Road, Paloma Way, and Vallecitos Road) runs along the northerly edge of the Watershed, connecting to Fremont to the west and to Livermore to the east. SR 84 carries 17,000-23,000 vehicles per day in the vicinity of the Watershed (Caltrans, 1999). Calaveras Road is a two-lane, low-volume roadway that traverses the Watershed from north to south. Within the Watershed, Calaveras Road provides access to mining and nursery operations, San Francisco Public Utilities Commission facilities, and the Sunol-Ohlone Regional Park.

1.1 RECREATION ACCESS

Existing Public Trails

As described above, Calaveras Road provides access (via Geary Road) to the Sunol-Ohlone Regional Park, managed by the East Bay Regional Park District (EBRPD). Within these areas trails are available to the public for hiking, bicycling, and horseback riding. Access to the Ohlone Wilderness Trail is by permit only.

Sunol Valley Golf Course

The Sunol Valley Golf Course is located within the secondary Watershed (between I-680 and SR 84) and is accessed via I-680 (Andrade Road exit).

2.0 IMPACTS

2.1 SIGNIFICANCE CRITERIA

Transportation

Traffic Circulation. The City has not formally adopted significance standards for traffic circulation impacts, but it generally considers that implementation of the *Alameda Watershed Management Plan* would have a significant effect on traffic circulation if it were to:

- cause an increase in traffic that is substantial in relation to existing traffic load and capacity of the street system (as defined by local government plans and policies); or
- interfere with the existing transportation network, causing substantial alterations to circulation patterns or major traffic hazards.

Parking. The City has not formally adopted significance standards for parking impacts, but it generally considers that implementation of the Management Plan could have a significant effect if it were to:

- result in a substantial, unmet parking demand that leads to hazardous pedestrian and traffic conditions.

Pedestrian and Bicycle Safety. The City has not formally adopted significance standards for impacts related to pedestrian and bicycle safety, but it generally considers that implementation of the Management Plan could have a significant effect if it were to:

- result in a substantial hazard to pedestrians or bicyclists; or
- substantially constrain or discourage access to the Watershed.

2.2 PROGRAM-LEVEL IMPACTS

This section discusses the potential impacts of implementation of the management actions in the Management Plan on transportation and access, including development of Sunol Valley recreational facilities and other Management Plan traffic and access impacts.

Development of Sunol Valley Recreational Facilities

Implementation of Action pub4 would establish a Watershed Visitor Education Center at the existing Sunol maintenance facility, and Action sun14 would establish a public recreation area around the Sunol Water Temple that would include an interpretive center, picnic and day-use area, events area with a small amphitheater, trail connections, and other public recreation opportunities. Both of these areas are located in the Sunol Valley north of I-680.

South of the I-680 area, Action sun19 would establish a small commercial site near the intersection of I-680 and SR 84; Action sun20 would establish an overnight nature study area to provide educational programs for school children; and Action sun21 would establish trail

connections extending to the Sunol Regional Wilderness and linking with trails established north of I-680. Operation of the Sunol Valley recreation facilities would generate vehicular traffic on access roadways, as it is expected that the facilities would attract new visitors to the Watershed. In addition, the recreation facilities would require an increase in SFPUC staff to operate them. Some visitors would go to the facilities as their primary destination, while others would be in the area anyway (e.g., attracted by existing and proposed trails). The latter visitors would not generate additional traffic on area roadways. New vehicular traffic generated by the recreation facilities is expected to represent a marginal increase in traffic volumes on roadways serving the Watershed, and the effect on traffic flow conditions and pedestrian and bicycle safety conditions would be less than significant.¹ The effect of new vehicular traffic on parking conditions, and the potential for unmet parking demand that leads to hazardous pedestrian and traffic conditions (e.g., people could choose to park improperly on walkways or roadways, forcing pedestrians and vehicles to make potentially dangerous maneuvers), would be contingent on the supply of parking spaces at and near the recreation facilities, and could be significant.

While the Management Plan proposes certain management actions that could bring about physical effects, the Management Plan also includes actions that would reduce these potential effects. However, the Management Plan does not provide specifications regarding parking demand that would result from operation of additional Watershed facilities (see Table III.J-1). Section IV.J includes a mitigation measure that would reduce parking impacts to a less than significant level.

Other Management Plan Traffic and Access Impacts

The *Alameda Watershed Management Plan* includes facilities that could result in increased public visitation of the Watershed by providing new trails (Policies WA15.2 and WA15.4), golf course expansion (Policy WA18.1), universal access to Watershed facilities (Action des8 and sun17), and increased information regarding public activities available on the Watershed, such as public use area maps and brochures. Increased public use of individual Watershed components would not substantially increase traffic, result in unmet parking demand that would lead to hazardous pedestrian and traffic conditions, or create pedestrian and bicycle hazards. The following discussion addresses the effect of implementation of all management actions and policies that could result in increased public use of the Watershed.

Vehicular traffic associated with implementation of the Management Plan's continued policies for the use of existing public trails (primarily along the eastern edge of the Watershed) would be expected to increase in proportion to increases in both local population and demand for recreational opportunities. Implementation of the Management Plan would revoke equestrian use privileges on internal Watershed roads and would grant equestrians the right of access to designated existing public trails, future additions to the public trail system, and new trails that would be open to the general public. Therefore, equestrian use would shift from internal roads to

¹ It is noted that Watershed Management Policy 22 states, in part, that proposals for new facilities, structures, roads, trails, projects and leases, or improvements to existing facilities shall be limited to essential public services and shall not be attractions unto themselves, but rather incidental to the primary purposes of the Watershed and to its enjoyment and conservation in its natural condition.

**TABLE III.J-1
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS TO TRAFFIC AND ACCESS
THROUGH DEVELOPMENT OF SUNOL VALLEY RECREATIONAL FACILITIES**

Management Actions that Could Result in Potential Physical Effects^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action^{a,b}	Level of Significance if Implemented
Action pub4: Establish a Watershed Visitor Education Center.	None	PS, see Section IV.J
Action sun14: Develop a public recreation area around the Sunol Water Temple.	None	PS, see Section IV.J
Action sun19: Establish a small commercial site.	None	PS, see Section IV.J
Action sun20: Establish an overnight nature study area.	None	PS, see Section IV.J
Action sun21: Establish trail connections.	None	PS, see Section IV.J

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

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those areas open to the general public. The overall number of equestrians on the Watershed would be expected to increase in proportion to increases in both local population and demand for recreational opportunities. The effect of changes associated with implementation of management actions pertaining to traffic flow on roadways serving the Watershed, and the subsequent effect on parking and safety conditions, would be less than significant.

Currently, group access to existing internal roads and fire roads is restricted on the Alameda Watershed. Under the Management Plan, group access to the internal portions of the Watershed would be permitted through a reservation program allowing individuals to make reservations and be part of a group tour of the Watershed. This type of tour could marginally increase the level of vehicular traffic generated and could result in a marginal increase in SFPUC docents and/or staff. However, these negligible increases would be within the daily fluctuation of traffic on roadways serving the Watershed. The overall effect on traffic flow conditions associated with increased access would be less than significant, as would the subsequent effect on parking and safety conditions.

Development of new trails and golf course expansion in zones of lesser vulnerability and risk would be expected to increase vehicular traffic in proportion to increases in both local population and demand for recreational opportunities. Development of new recreational opportunities could result in a marginal increase in SFPUC staff for patrol and maintenance of new trails and oversight of golf course operations. The effect on traffic flow associated with changes in traffic volumes on roadways serving the Watershed, and the subsequent effect on parking and safety conditions, would be less than significant. As described above, operation of the Sunol Valley recreation facilities would increase vehicle use (but effects on traffic flow and safety conditions would be less than significant) and would have potentially significant effects on parking conditions (but mitigation measures would reduce parking impacts to a less than significant level).

- As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (shortening the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new transportation and access impacts beyond those disclosed in the EIR prepared for SMP-32.

Under the Management Plan the duration of mining would be extended with lease entitlement of SMP-32, but the amount of traffic generated by the mining would not be increased because the capacity of the processing plant would not change. Mining north of I-680 would replace a portion of the current mining area south of I-680; however, increasing the area by mining north of I-680 would not increase or relocate truck traffic, because the gravel would be transported to the existing processing plant south of I-680 by conveyor belt, not haul trucks. The same number of trucks would continue to use the same access route on Andrade Road to pick up and deliver the

gravel to market. As described in the *Mission Valley Rock Company Surface Mining Permit and Reclamation Plan SMP-32 EIR*, truck trips generated by mining activity currently increase congestion on roads because of the characteristics of trucks (e.g., slower acceleration and reduced maneuverability), and this effect on traffic would continue over the life of SMP-32. However, the effect of SMP-32 operations on local roads would be minimal, because traffic generated by mining activity represents a small percentage of the traffic volume on those roads. With conditions of approval for SMP-32, Alameda County found no significant impacts associated with transportation and access. Amendment of the existing permit, if required, would be subject to project-level environmental review by Alameda County.

Options presented under Actions sun2a and sun2b would require amendments to existing permits south of I-680. The increase in mining volume proposed in both Actions sun2a and sun2b would not be likely to impact transportation and access beyond levels previously analyzed and mitigated in previous environmental documentation and conditions of approval for SMP-24 and SMP-30. Existing haul routes would not change and thus a continuation of existing impacts would be expected. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24 and SMP-30. These mitigation measures include requirements for establishing and maintaining haul routes and ensuring road safety. Amendment of the existing permits would be subject to project-level environmental review by Alameda County.

REFERENCES – Transportation and Access

Except where indicated, references are on file at the San Francisco Planning Department.

Alameda County Planning Department, *Mission Rock Company SMP-24 Initial Study*, 1985. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, Resolution R-86-62 conditionally approving SMP-24, 1986. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, Resolution R-86-62 incorporating, revising, and conditionally approving SMP-24, 1991. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, *Santa Clara Sand & Gravel SMP-30 Expanded Initial Study and Proposed Mitigated Negative Declaration*, 1992a. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, Resolution 93-32 conditionally approving Santa Clara Sand & Gravel SMP-30, 1992b. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, *Mission Valley Rock Company Surface Mining Permit and Reclamation Plan, SMP-32*, Draft Environmental Impact Report, 1994a. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, *Mission Valley Rock Company Surface Mining Permit and Reclamation Plan, SMP-32*, Final Environmental Impact Report and Appendices, 1994b. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, Resolution R-94-461 certifying and adopting the EIR, adopting Findings and a Statement of Overriding Considerations, and conditionally approving Surface Mining Permit and Reclamation Plan, SMP-32, 1994c. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

California Department of Transportation (Caltrans), *1998 Traffic Volumes on California State Highways*, 1999.

K. UTILITIES AND PUBLIC SERVICES

1.0 SETTING

1.1 SFPUC INFRASTRUCTURE

Water is conveyed from the Hetch Hetchy system across the San Joaquin Valley through a series of aqueducts and tunnels to Alameda County, near the Town of Sunol. Some of the Hetch Hetchy water is stored in San Antonio Reservoir, and the remainder flows through the Irvington Tunnel and the Bay Division Pipelines.

Local runoff from the Calaveras and San Antonio Reservoirs is treated at the Sunol Valley Water Treatment Plant (WTP) and combined with Hetch Hetchy water. This water is then conveyed across the San Francisco Bay (Bay) and distributed to wholesale customers along the way. Part of the water is stored in Peninsula reservoirs where it is blended with local runoff; the remainder is conveyed to wholesale customers along the Peninsula and distributed to San Francisco customers. The water stored in the Peninsula reservoirs is treated at the San Andreas WTP. This water continues on to the City of San Francisco and provides a potable water supply along the way.

Alameda Watershed System

The two Alameda Watershed reservoirs, Calaveras and San Antonio, are discussed along with the transmission facilities between the reservoirs, the Sunol Valley WTP, and other facilities within Sunol Valley, and the Irvington Portal.

Calaveras Reservoir

The Spring Valley Water Company began construction of the Calaveras Dam in 1913 and completed construction in 1925. Since Alameda Creek did not drain into Calaveras Reservoir, the Alameda Diversion Dam and Tunnel were constructed, from 1925 to 1931, to divert Alameda Creek flows into the reservoir following completion of the Calaveras Dam. This facility is located northeast of the reservoir along Alameda Creek.

Calaveras Reservoir has a capacity of 96,900 acre-feet. The Watershed for Calaveras Reservoir is approximately 100 square miles, including 38 square miles for the Arroyo Hondo Watershed and 35 square miles for the Alameda Creek watershed upstream of the diversion dam; 128 square miles of the Watershed lands are within Santa Clara County.

San Antonio Reservoir

James H. Turner Dam and San Antonio Reservoir, completed in 1965, are the latest major additions to the local San Francisco water system. The dam spans La Costa Creek (also referred to as San Antonio Creek), which is tributary to Alameda Creek, downstream of the confluence of Alameda and Calaveras Creeks. The reservoir has a capacity of 50,500 acre-feet and collects runoff from a Watershed of 40 square miles. It is used to store Hetch Hetchy water, South Bay

Aqueduct emergency water (discussed below), Calaveras Reservoir Surplus water (via the Calaveras Pipeline), as well as local runoff. In addition, facilities are available to pump groundwater to San Antonio Reservoir from the Sunol Filter Galleries via the Sunol Pump Station and Pipeline and the San Antonio Pipeline.

Sunol Valley Groundwater

The Sunol Valley, south of the Pleasanton well field off I-680, is a gravel-filled depression of about 1,300 acres at the upper entrance to Niles Canyon. The Alameda Creek drainage area is about 600 square miles and includes waters from the catchment area of Arroyo de la Laguna to the north, Alameda Creek and Calaveras Creek drainage areas to the south, local groundwaters, and surface waters imported from the State Water Project via the South Bay Aqueduct for the Alameda County Water District (ACWD). Alameda Creek flows through Sunol Valley (all flow that has not been diverted into the reservoirs upstream), through Niles Canyon, and then becomes a flood control channel to San Francisco Bay.

Sunol Dam, a 28-foot-high concrete structure, was constructed in 1899 and is located on Alameda Creek about one mile west of Sunol. In addition to Sunol Dam, infiltration (groundwater recharge) basins were developed, in 1900, near the Sunol Water Temple to increase the percolation of flows from Alameda Creek.

The water in Sunol Valley percolates through the gravel beds and is collected in underground 36-inch perforated-concrete pipes and conveyed through screened-brass pipes to a concrete tunnel within the Infiltration Galleries, used to filter water released from Calaveras Reservoir. The Infiltration Galleries are approximately 9,000 feet long and parallel Alameda Creek. They begin at both the Sunol Dam and a point just west of I-680 and converge at the Sunol Water Temple. The Sunol Pump Station, located next to the temple, can pump groundwater from the Infiltration Galleries through the 36-inch Sunol Pipeline to the San Antonio Pipeline, where it can be conveyed to San Antonio Reservoir or to the Sunol Valley WTP.

The Sunol Aqueduct, constructed in 1900 as a flume and replaced by a concrete box in 1923, supplies water from the Infiltration Galleries to the Peninsula via Niles Reservoir within Niles Canyon. The aqueduct alignment is adjacent to and within the Alameda Creek bed and terminates at Niles Reservoir in Fremont. From Niles Reservoir, the 44-inch Niles-Irvington pipeline, which has the capability to reverse the direction of flow, continues along an easement in railroad right-of-way and travels south to its terminus at the Bay Division Pipelines Nos. 1 and 2 at the Irvington Pump Station. The Sunol Aqueduct has been decommissioned and is currently inoperable. The Niles-Irvington Pipeline has limited use at the present time.

South Bay Aqueduct Supply

The City of San Francisco may purchase state water from the emergency water bank during droughts to augment its surface supplies. Purchased water is pumped from the Delta through the South Bay Aqueduct, which conveys state water to the three primary water contractors: ACWD, Santa Clara Valley Water District, and Alameda County Flood Control and Water Conservation District – Zone 7, all located within Alameda and Santa Clara Counties. The aqueduct extends

from Bethany Reservoir south around the Livermore Valley, with a connection to Del Valle Reservoir (a state storage facility), then across the northern end of San Antonio Reservoir. It continues across Sunol Valley parallel to I-680, into Fremont and Milpitas, and then terminates in a storage tank in San Jose.

Transmission to the Irvington Portal

From the Alameda East Portal, Hetch Hetchy water is transported 3,000 feet across the Sunol Valley in three parallel siphons under Alameda Creek to the Alameda West Portal. The Alameda West Portal is the entrance to the Irvington Tunnel, a segment of the Hetch Hetchy Aqueduct. Alternately, Hetch Hetchy water can be transferred from Alameda Creek Siphon No. 3 into San Antonio Reservoir via the San Antonio Pump Station and the 60-inch San Antonio Pipeline. Hetch Hetchy water can be conveyed to the Sunol Valley WTP through the Calaveras Pipeline via the San Antonio Pump Station, which has a capacity of 160 million gallons per day (mgd). However, water cannot be transferred to Calaveras Reservoir due to its high elevation. The Calaveras Pipeline, located parallel to Alameda Creek, is also used to convey water by gravity from the Calaveras Reservoir outlet tower to San Antonio Reservoir.

All of the water from San Antonio and Calaveras Reservoirs is treated at the Sunol Valley WTP. San Antonio Reservoir can deliver water by gravity into the Sunol Valley WTP when water in the reservoir is at a very high elevation; otherwise it must be pumped through the San Antonio Pump Station. Water from the Calaveras Reservoir flows by gravity to the Sunol Valley WTP. From the Sunol Valley WTP, a 78-inch pipeline, parallel to Alameda Creek on the west bank, conveys treated water 1.7 miles to Alameda Creek Siphon Nos. 2 and 3, where it is blended with the Hetch Hetchy aqueduct water. The siphons have a capacity of 67, 134, and 152 mgd, respectively. Some of this treated water continues past the siphons and is supplied directly to customers in Sunol.

The Calaveras Pipeline provides operational flexibility by allowing water to be conveyed quickly from Calaveras Reservoir or San Antonio Reservoir to the Sunol Valley WTP. This pipeline provides redundancy in the system in the event of a Hetch Hetchy Aqueduct problem, in which case the reservoir water can be used up to the 160 mgd capacity of the Sunol Valley WTP. The Sunol Valley WTP was designed to handle 160 mgd, but current capacity is less due to insufficient backwash water facilities and sedimentation capacity. The Sunol Valley WTP Improvement Project would restore the plant capacity to 160 mgd. The project will be the subject of a separate environmental analysis.

Bay Division Pipelines

Hetch Hetchy and Sunol Valley WTP water is conveyed from the Alameda West Portal through the Irvington Tunnel to the four Bay Division Pipelines. Bay Division No. 1 and No. 2 cross under the Bay to the Peninsula, while Bay Division No. 3 and No. 4 skirt the southern end of the Bay to the Peninsula. The Bay Area Water Users Association (BAWUA) members between the Irvington Portal at the City of Hayward and the Pulgas Tunnel on the Peninsula are supplied water from the Bay Division Pipelines.

Meters on each pipeline west of the Irvington Portal and east of the Pulgas Tunnel enable the operators at the Sunol Valley WTP to react to system demands along the Bay Division Pipelines. The Bay Division Pipelines join at the Pulgas Tunnel.

Treatment Facilities

Since water from the Alameda Watershed reservoirs must be filtered (see below) before augmenting the Hetch Hetchy water supply, SFPUC constructed filtration facilities to provide for turbidity removal, disinfection, and corrosion control. Hetch Hetchy water is not filtered, but the water is treated at several points along the aqueduct for disinfection and corrosion control purposes.

Sunol Water Treatment Plant

The Sunol Valley WTP provides conventional treatment of local runoff stored in Calaveras and San Antonio Reservoirs. As discussed previously, the Calaveras and San Antonio Pipelines are used to transport water from the two reservoirs to the Sunol Valley WTP. Hetch Hetchy water can also be treated at this plant, if necessary. Hetch Hetchy water needs filtration only during times of turbid water, usually in winter months. The Sunol Valley WTP can treat up to 160 mgd of water.

Description of SFPUC Functions

The SFPUC has five commissioners who are responsible for 13 divisions; these divisions make up the overall management organization for water and wastewater for the City of San Francisco. This section provides a brief overview of the primary SFPUC divisions that are responsible for water quality and water supply.

Water Supply and Treatment Division

The Water Supply and Treatment Division manages the water system from the Alameda East Portal downstream to the San Francisco line. This Division is further divided into the following functional groups: Millbrae Administration, Maintenance Engineering, Operations and Maintenance, Systems Operations, and the Land and Resource Management Section. The Land and Resource Management Section oversees Watershed management on lands within the Bay Area. This section includes Watershed keepers whose duties are patrolling for security problems, performing reservoir water level readings, and maintaining ongoing relations with the County Departments, the California Department of Forestry and Fire Protection, and recreation districts. They are also responsible for specific technical studies, such as hydrological studies, and for overseeing special projects related to land use activities within the Peninsula and Alameda Watersheds. This group coordinates specific tasks with the Water Quality Bureau (parallel to the Water Supply and Treatment Division), such as developing water quality monitoring programs and addressing hazardous materials issues.

Watershed policy and project plans are also developed by the Land and Resource Management Section. Watershed protection, operations, maintenance, restoration, improvement, and

enhancement activities are planned, reviewed, and/or approved by this section. Day-to-day execution of these activities is performed by Maintenance Engineering, Operations and Maintenance, and Systems Operations.

Water Quality Bureau

The Water Quality Bureau is also headquartered in Millbrae and is responsible for water quality throughout the entire system, including the Hetch Hetchy Water and Power System. This Bureau also operates a water quality laboratory.

Bureau of Commercial Land Management

The Bureau of Commercial Land Management is responsible for commercial land uses on Watershed lands that are performed under leases and permits within the Watersheds and right-of-ways.

Bureau of Utilities Engineering

The Bureau of Utilities Engineering is responsible for designing and constructing major capital improvement projects. This Bureau is staffed with design engineers who conduct or contract for specific engineering, environmental, construction management, and related services to implement components of the SFPUC's major capital improvement plans.

Other Bureaus

Another SFPUC bureau with which the Land and Resource Management Section coordinates is System Planning, Environmental and Compliance (SPEAC), which combines the former Systems Planning and Regulatory Compliance and Bureau of Environmental and Regulatory Management. SPEAC is the SFPUC's central environmental management center responsible for overseeing EIRs, keeping track of legislation, and other environmental management issues.

Hetch Hetchy Project

The Hetch Hetchy Project manages the Sierra Nevada Watersheds, reservoirs, and water conveyance facilities as far west as the Alameda East Portal. The project also manages the power production and transmission facilities from the Sierra Nevada mountains to the Newark Substation. The Hetch Hetchy Project supplies the prearranged flow of water from the Hetch Hetchy system to the SFPUC system at the Alameda East Portal. The flow rate is set by the SFPUC and is limited to the capacity of the three San Joaquin Pipelines. Depending on the seasonal demand and the water levels at the primary storage reservoirs, the SFPUC may request changes of flow rate four to five times a year.

Other Divisions

The City Distribution Division is responsible for distribution engineering, construction, and maintenance throughout the City and County of San Francisco. The Customer Service Division is responsible for customer services and accounts, the water rationing program, and field services. The Finance Bureau is responsible for water rates and budgets and water conservation

programs, in addition to long-term water resource management planning. These divisions are headquartered in San Francisco.

1.2 OTHER UTILITIES

Utility Systems

Local utilities at the Alameda Watershed are a mix of utility-owned and SFPUC-owned electrical and telephone lines. The more remote the Watershed keeper cottage or other facility, the more likely that the utility lines servicing the facility are owned and maintained by SFPUC. Water supplies at the Watershed cottages are provided by a combination of spring water lines, municipal water service from water retailers, and the Sunol Valley WTP. Pacific Gas and Electric (PG&E) provides electrical services to Watershed facilities through 60-kilovolt (kV) head transmission lines within the Watershed.

Sewerage and Water Supply Systems

Remote SFPUC facilities in the Alameda Watershed rely on chemical toilets as sanitation facilities. Most SFPUC facilities, including the Sunol maintenance facility and Watershed keeper cottages, have sewage vaults to contain waste for regular pickup and disposal. The Sunol Valley Golf Course operates a small wastewater treatment plant that has a capacity of about 12,000 gallons per day. The mining operations and nurseries in Sunol Valley have either chemical or sewage vault toilets. The Sunol Regional Wilderness area maintains 25 chemical toilets and five sewage vault toilets. No septic systems have been identified on SFPUC-owned lands in the Watershed. Septic systems for residential uses are present on some privately and institutionally owned parcels on the Watershed (such as Welch Creek).

Emergency water facilities for firefighting in the Alameda Watershed consist of water hydrants at the Watershed keeper cottages that connect to a 2-inch supply pipe and three water hydrants along the Calaveras Pipeline. Water supply systems are also located at the leasehold nursery operations in the Watershed. Intermittent water availability in the Calaveras Pipeline may occur if water is drawn from the pipeline for firefighting. The Watershed reservoirs are the major source of firefighting water supplies in the Watershed.

1.3 PUBLIC SERVICES

PG&E natural gas and/or electrical transmission lines are located along two corridors in the Alameda Watershed. A 230,000-volt electrical transmission line runs from the PG&E Newark substation to the Metcalf substation south of San Jose and crosses the Watershed west of the Calaveras Reservoir. One 60-kV overhead electrical transmission line runs along Vallecitos Road; and 60-kV and 115-kV overhead electrical transmission lines run along I-680 to the Newark substation.

According to PG&E, three high-pressure natural-gas transmission lines run through the Watershed in the San Antonio Valley, east of Vallecitos Road: a 24-inch-diameter (500 pound)

line, a 22-inch-diameter (500 pound.) line, and a 36-inch-diameter (600-700 pound) line. The lines are subsurface within the Watershed.

The Chevron Pipeline Company operates a refined petroleum-product pipeline that extends from the Bethany Pump Station near Tracy to a terminal in San Jose. This pipeline runs through the San Antonio Reservoir Watershed, runs south parallel to Calaveras Road, and then crosses Calaveras Road and Alameda Creek in Sunol Valley. About 3.3 miles of the pipeline is on SFPUC property in the Watershed. Chevron plans to reroute the pipeline segment that runs east of the Alameda Creek crossing.

2.0 IMPACTS

2.1 SIGNIFICANCE CRITERIA

The City has not formally adopted significance standards for utilities and public services impacts. Demand for additional utilities or public services associated with implementation of the *Alameda Watershed Management Plan* would not in itself be considered a significant physical environmental impact. However, if such demand were to result in the expansion of existing facilities or construction of new facilities, and if construction or operation of these expanded or new facilities were to result in a significant effect on the physical environment, implementation of the Management Plan would be considered to have a significant utilities or public services impact.

2.2 PROGRAM-LEVEL IMPACTS

This section discusses the potential impacts of implementation of the management actions in the Management Plan on utilities and public services.

Implementation of individual management actions in the Management Plan would not require expansion or improvement of the Alameda Watershed system described in Section 1.1, above. Implementation of some actions could require expansion of existing utilities, water supply, or sewerage systems, or could require an increase in SFPUC staff. However, the system expansions required for individual actions are expected to be minimal, and construction and operation of expansions would not likely result in significant effects on the physical environment.

REFERENCES – Utilities and Public Services

Except where indicated, references are on file at the San Francisco Planning Department.

E. M. Rose and Associates, prepared for San Francisco Water Department, *Technical Memorandum No. 9: Utilities and Infrastructure Review*, Appendix C-11 of the *Alameda Watershed Management Plan*, 1994.

Montgomery Watson, prepared for San Francisco Water Department, *Technical Memorandum No. 1: San Francisco Water System Facilities and Practices*, Appendix C-2 of the *Alameda Watershed Management Plan*, 1993.

L. NOISE

1.0 SETTING

1.1 NOISE ENVIRONMENT

The Alameda Watershed is mostly undeveloped and has a quiet noise environment typical of rural areas. However, portions of the Watershed are subject to higher noise levels due to commercial and industrial development. Primary sources of noise on the Watershed are adjacent roadways and commercial and industrial development within the Watershed, including:

- I-680, which traverses the northern portion of the Alameda Watershed;
- SR 84, also known as Niles Canyon Road (west of I-680) and Vallecitos Road (east of I-680), which extends along the northern Alameda Watershed boundary;
- Calaveras Road, which extends through the entire Alameda Watershed in a north-south direction;
- Commercial nurseries located east of the Town of Sunol, along SR 84 and Calaveras Road; and
- Two major gravel quarries, Mission Valley Rock and RMC Pacific Materials, located south of I-680.

The Alameda County *East County Area Plan* (Area Plan) (Alameda County, 1993) indicates that 1990 noise levels exceeded 75 dBA (CNEL)¹ within approximately 190 feet of I-680 and 65 dBA (CNEL) within 90 feet of SR 84 (Vallecitos Road). By 2010, noise levels are projected to exceed 75 dBA (CNEL) within approximately 230 feet of I-680 and 65 dBA (CNEL) within 213 feet of SR 84.

The Area Plan identifies as noise sources only those mining operations located generally between Pleasanton and Livermore. These operations occur in or near urbanized areas and have drawn noise complaints from nearby residents. The quarries south of I-680 are outside of urbanized areas; although there are noise-sensitive receptors present in the vicinity, these quarries are not identified as noise sources in the Area Plan.

Other minor sources of noise within the Watershed include operation of SFPUC water storage and distribution facilities; maintenance activities associated with existing SFPUC facilities and other utilities (e.g., Chevron's high-pressure petroleum pipeline); and recreational uses including the Sunol Valley Golf Club and existing trails.

¹ CNEL, Community Noise Equivalent Level, represents a cumulative measure in decibels (dBA) of community noise during a 24-hour period. It applies weighting factors to account for people's lower tolerance to noise during the evening (7 p.m. to 10 p.m.) and night (10 p.m. to 7 a.m.).

1.2 APPLICABLE NOISE REGULATIONS

Alameda County and Santa Clara County noise standards that are pertinent to the *Alameda Watershed Management Plan* are summarized below:

- The *Alameda County Noise Ordinance* specifies standards for maximum allowable exterior noise levels. These standards, applicable to non-transportation-related noise sources in general, establish the maximum average exterior and interior noise levels to which the specified noise-sensitive land use types may be exposed. These standards also establish the maximum amount of time (in cumulative minutes per hour) that those land use types may be exposed to specified greater-than-average noise levels.
- The *Alameda County General Plan Noise Element* sets out the County's noise level requirements and states that construction noise should occur during times that are not noise-sensitive (generally between 9 a.m. and 6 p.m., Monday–Friday). The noise element also presents the State Land Use Compatibility Guidelines, which recommend noise exposure thresholds for different land use categories. For industrial uses, agriculture, golf courses, and water recreation, noise levels up to 75 dBA (CNEL) are normally considered acceptable. For playgrounds and neighborhood parks, noise levels up to 70 dBA (CNEL) are normally considered acceptable.
- The *Alameda County Zoning Ordinance* sets performance standards with respect to exterior noise levels on industrial properties. Noise from industrial districts is not allowed to impact adjacent residential districts. The ordinance also places restrictions on noise levels at quarries, and on home occupation noise within residential districts.
- The *Santa Clara County General Plan Health and Safety Element* sets out the County's noise level requirements and states that construction noise should be prohibited in areas that exceed applicable interior and exterior standards (as defined by city/county ordinance), unless suitable mitigation measures can be implemented. The health and safety element also presents the State Land Use Compatibility Guidelines, which recommend noise exposure thresholds for different land use categories. For open space and agriculture, noise levels up to 65 dBA (CNEL) are considered "satisfactory" and above 65 dBA are considered "cautionary." "Cautionary" noise levels are those which could pose a threat to the proposed land use and for which additional study is required. No new land use proposed adjacent to an open space area is allowed to generate noise levels in excess of the "satisfactory" limit of 65 dBA (CNEL). For parks, open space reserves, and wildlife refuges, the maximum noise level considered "satisfactory" is 55 dBA (CNEL), while higher noise levels are considered "cautionary." Public buildings in parks and open space areas must meet the noise standards listed under "Public or Semi-Public Facilities."

1.3 SENSITIVE RECEPTORS

According to the Environmental Health and Safety Section of the Area Plan, noise-sensitive land uses include the following: residential development, mobile-home parks, motels and hotels, schools, libraries, churches, hospitals, nursing and convalescent homes, and some parks and cultural facilities. There are no noise-sensitive receptors within the Alameda Watershed, with the exception of a few residences (e.g., SFPUC Watershed keeper cottages) and small enclaves

of rural residential development in Santa Clara County within the southern portion of the Watershed, which are outside urban service areas and incorporated cities. The Town of Sunol is to the north of the Watershed. There are residential receptors present in the town, and the Town School is approximately one-quarter mile from the future mining permitted under SMP-32, north of I-680.

2.0 IMPACTS

2.1 SIGNIFICANCE CRITERIA

The City has not formally adopted significance standards for noise impacts, but it generally considers implementation of the *Alameda Watershed Management Plan* would have a significant noise effect if it were to:

- substantially increase noise levels above County ordinance maximums at the location of any sensitive receptors over an extended period of time; or
- substantially increase noise levels to a degree that would affect the use and enjoyment of proximate areas or facilities and/or be above County ordinance maximums.

2.2 PROGRAM-LEVEL IMPACTS

This section discusses the potential noise impacts associated with implementation of the management actions in the Management Plan, including construction activities, and operation of Watershed facilities, and changes to gravel mining operations.

Construction Activities

Implementation of the Management Plan would result in construction of a number of additional facilities or improvements on the Watershed. Many of the facilities would be installed to ensure and/or improve water quality or resource protection, such as barriers or fences at identified high-risk spill potential areas (Action haz6); installation of infiltration drainfields and detention basins (Action sto1); installation of long-term sediment retention basins or other permanent measures (Action aqu12); rehabilitation of shoreline areas and stream segments (Actions aqu5 and aqu7); improvements that prevent human and animal waste from impacting Watershed resources (Action was1); and wildlife passage structures (Action wil13). Many of the actions listed in the Roads Section of the Management Plan (Actions roa2, roa3, roa4, roa6, roa7, and roa8) would modify or relocate existing roads or road components in order to reduce potential erosion and Watershed contamination from automobile by-products. Fire management actions include the installation of hydrants, helispots, and water tanks (Actions fir2 through fir5); roadway and access improvements (Action fir7); and implementation of fuel management projects that include construction of fuel breaks, conducting prescribed burns, and other improvements (Action fir8). Construction projects would be generated through actions that would provide additional public use opportunities, such as information kiosks and a Watershed Visitor Education Center (Actions pub3 and pub4), additional new trails (Policies WA15.2 and

WA15.4), and golf course expansion (Policy WA18.1). In addition, implementation of actions des8 and sun17 would result in universal access improvements at SFPUC facilities and trails and provide for universal access at proposed trails.

Implementation of the management actions in the *Sunol Valley Resources Management Element* would also generate construction projects through restoration and reclamation activities related to mining pits, including construction of appropriate mining pit sideslopes (Actions sun4 and sun5); improvements at the Sunol maintenance facility (trade shops, equipment storage shelter, warehouse, offices; Watershed Visitor Education Center, etc.) (Action sun10); backfill and landscaping of a buffer at the mining module closest to the Sunol Water Temple, between that module and the temple (Action sun11); and restoration of the entry to the Sunol Water Temple (Action sun13). In addition, implementation of Sunol actions would involve construction of several public access facilities and improvements, including a public recreation area around the Sunol Water Temple (Action sun14), commercial site (Action sun19), overnight nature study area (Action sun20), and trail connections (Action sun21).

Implementation of the management actions in the *Grazing Resources Management Element* would generate construction projects primarily through structural protection measures and watershed protection area improvements, including fencing around reservoirs, streams, and stock water ponds; water developments; water collection systems; wildlife ponds; and livestock pond rehabilitation (Actions gra2, gra6, gra7, and gra8).

Construction of facilities in remote areas of the Watershed would not result in significant noise impacts due to the lack of sensitive receptors. Although the locations of the new trails are not specified, construction of the trails would not likely result in significant noise increases. Construction noise increases are generally associated with the operation of heavy equipment for grading or earthmoving activities. Trail construction typically does not require extensive use of heavy equipment, because trail alignments generally follow existing unpaved roadways or pathways.

Many of the facilities proposed under the Management Plan are to be located in the Sunol Valley area, or at locations that are not specified. If the facilities are located in proximity to sensitive receptors in the Town of Sunol, construction of the facilities could result in a significant noise impact. Depending on their location, construction activities could substantially increase noise levels at any nearby sensitive receptors, or could adversely affect the use and enjoyment of nearby recreation areas, unless mitigated.

While the Management Plan proposes certain management actions that could bring about physical effects, the Management Plan also includes actions that would reduce these potential effects. However, the Management Plan does not include specifications regarding construction noise (see Table III.L-1). Section IV.L includes mitigation measures that would reduce construction noise impacts to a less than significant level. No unavoidable significant program-level noise impacts related to construction activities have been identified in this EIR. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for

**TABLE III.L-1
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS ON
NOISE LEVELS THROUGH CONSTRUCTION ACTIVITIES**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action haz6: Identify high-risk spill potential areas and implement measures, including barricades, to reduce the risk of hazardous spills.	None	PS, see Section IV.L
Action sto1: Remediate on-site stormwater collection and drainage systems through infiltration drainfields and trenches, and detention basins.	None	PS, see Section IV.L
Action aqu12: Install long-term sediment retention basins or other permanent measures.	None	PS, see Section IV.L
Action aqu5: Rehabilitate shoreline areas using structural shoreline protection practices.	None	PS, see Section IV.L
Action aqu7: Rehabilitate stream segments.	None	PS, see Section IV.L
Action was1: Repair/replace vault, chemical, and composting toilet as necessary.	None	PS, see Section IV.L
Action roa2: Relocate existing necessary high use roads/road segments in proximity to streams.	None	PS, see Section IV.L
Action roa3: Modify the grading and drainage of existing necessary high use roads/road segments.	None	PS, see Section IV.L
Action roa4: Close and retire roads that are not needed and eliminate or minimize problem erosion points by installing culverts and waterbars, or otherwise stabilizing the roadway.	None	PS, see Section IV.L
Action roa6: Inspect/manage unpaved roads by remediating and stabilizing areas of erosion and regrading unpaved roads.	None	PS, see Section IV.L
Action roa7: Maintain fire roads through effective installation of waterbars and paving where needed.	None	PS, see Section IV.L

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

**TABLE III.L-1 (Continued)
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS ON
NOISE LEVELS THROUGH CONSTRUCTION ACTIVITIES**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action roa8: Restrict access on low use roads by gates or barriers.	None	PS, see Section IV.L
Action fir2: Install a total of nine hydrants into water sources.	None	PS, see Section IV.L
Action fir3: Install and maintain a total of four helispots on SFPUC property.	None	PS, see Section IV.L
Action fir4: Install three additional helispots off SFPUC lands.	None	PS, see Section IV.L
Action fir5: Install two additional hydrants on adjacent lands.	None	PS, see Section IV.L
Action fir7: Identify and construct road improvements, including turnouts, turnarounds, and safety zones.	None	PS, see Section IV.L
Action fir8: Complete the fuel management projects, including fuel load reductions, prescribed burns, fuel breaks, and access improvements.	None	PS, see Section IV.L
Action will13: Design and install wildlife passage structures that minimize wildlife losses.	None	PS, see Section IV.L
Action pub3: Establish “gateway” information kiosks.	None	PS, see Section IV.L
Action pub4: Establish a Visitor Education Center.	None	PS, see Section IV.L
Action des8: Implement universal access improvements at SFPUC facilities and trails.	None	PS, see Section IV.L
Action sun17: Provide universal access at Sunol Valley recreation facilities.	None	PS, see Section IV.L
Action sun4: Create sideslopes on the quarry pits such that there is a gradual transition to water.	None	PS, see Section IV.L

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

**TABLE III.L-1 (Continued)
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS ON
NOISE LEVELS THROUGH CONSTRUCTION ACTIVITIES**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action sun5: Reclaim quarries with sideslopes appropriate to their proposed activity.	None	PS, see Section IV.L
Action sun10: Retain the existing Sunol maintenance facility with improvements, including equipment storage shelter, warehouse and storage yard, parking, etc.	None	PS, see Section IV.L
Action sun11: Backfill and landscape a ¼-mile buffer zone at the mining module closest to the Sunol Valley Water Temple, between that module and the temple.	None	PS, see Section IV.L
Action sun13: Restore the historic entry to the Sunol Water Temple.	None	PS, see Section IV.L
Action sun14: Develop a public recreation area around the Sunol Water Temple.	None	PS, see Section IV.L
Action sun19: Establish a small commercial site.	None	PS, see Section IV.L
Action sun20: Establish an overnight nature study area.	None	PS, see Section IV.L
Action gra2: Implement structural protection measures, including fencing and other improvements.	None	PS, see Section IV.L
Action gra6: Implement improvements for the San Antonio Water Protection Area.	None	PS, see Section IV.L
Action gra7: Implement improvements for the Calaveras Watershed Protection Area.	None	PS, see Section IV.L
Action gra8: Implement improvements for the Lower Alameda Creek Watershed Protection Area.	None	PS, see Section IV.L
Policy WA18.1: Consider expansion of existing golf course in areas of low vulnerability/sensitivity.	None	PS, see Section IV.L

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

implementation to determine if further environmental review at a more detailed project-specific or site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Operation of Watershed Facilities

Increase in Public Access and Use

The Management Plan includes facilities that could result in increased public visitation of the Watershed by providing new trails (Policies WA15.2 and WA15.4); golf course expansion (Policy WA18.1); and increased information regarding public activities available on the Watershed, such as public use area maps and brochures. These facilities include information kiosks (Action pub3), a Watershed Visitor Education Center (Action pub4), public recreation area around the Sunol Water Temple (Action sun14), commercial site (Action sun19), overnight nature study area (Action sun20), and trail connections (Action sun21). In addition, the Management Plan calls for provision of universal access, which could increase public use of the Watershed (Actions des8 and sun17).

Typically, recreational uses associated with trails (hiking, bicycling, and equestrian use), picnic/day-use areas, and most other public use facilities are not considered major sources of noise and generally do not result in noise disturbance or land use compatibility issues. In addition, trails, picnic/day use areas, and other public use facilities (except the overnight nature study area) would be operated only during daytime hours, further limiting the potential for noise compatibility problems. The overnight nature study area would be located south of the Hetch Hetchy Aqueduct and not in proximity to sensitive land uses in the Town of Sunol. Therefore, operational noise associated with trails, picnic/day-use areas, and other public use facilities would be a less-than-significant impact of Management Plan implementation.

Increases in traffic noise associated with the public use areas described above would be negligible. In addition, activities at the amphitheater (Action sun14) would be limited both in number and amplification. The potential for noise impacts would depend on the proximity of these facilities (or their access roads and parking lots) to any sensitive receptors. Given the limited types of activities planned and the distance to sensitive receptors, traffic noise and operation of the amphitheater would not result in significant noise increases at these receptors.

Once mining operations had been completed, water recreation such as public access, fishing, and boating could be allowed at one of the water storage reservoirs (Policies WA38 and WA40), but the location of future water recreation is currently unknown. Since motorized boats would not be allowed (Policy WA40), noise compatibility problems from boating uses would not be expected.

Under the Management Plan, expansion of the existing Sunol Valley Golf Club could be allowed in zones of low vulnerability/sensitivity (Policy WA18.1). The expansion area has not yet been identified. The primary sources of noise associated with golf course expansion would be golf course loudspeakers and increased vehicle traffic. The potential for traffic noise impacts would depend on the proximity of these facilities (or their access roads and parking lots) to any

sensitive receptors. Potential noise impacts from loudspeakers would depend on the design, placement, and proximity to sensitive receptors. Therefore, potentially significant noise impacts could occur, depending on the location and design of the golf course expansion area, but would not be expected due to the distance to sensitive receptors.

No significant operational noise impacts would occur due to implementation of the Sunol Valley recreational facilities at the limited levels they are programmatically planned. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Changes to Gravel Mining Operations

Existing and planned mining activities would continue under the *Sunol Valley Resources Management Element* of the Management Plan (Actions sun1, sun2a, and sun2b). Mining north of I-680 would replace a portion of the current mining area south of I-680. Because mining south of I-680 is ongoing at a rate based on plant capacity and market demand, increasing the area by mining north of I-680 would extend the period of time that noise impacts would occur, but would not increase the magnitude of noise impacts.

As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. Planned mining activities north of I-680 would be closer to the community of Sunol than are the existing operations south of I-680. However, no significant noise impacts from mining operations would be anticipated. Potential noise impacts associated with SMP-32 were found to be at a less than significant level with mitigation measures that were adopted as conditions of approval by Alameda County. These measures include limits on operation times, installation of berms, and equipment requirements. Measures established to mitigate impacts from traffic would also reduce noise impacts from planned mining activities. These include use of a conveyor belt for storage, processing, transportation, and disposal of mined materials. In addition, no new access points would be established along new haul roads.

- The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (shortening the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new noise impacts beyond those disclosed in the EIR prepared for SMP-32. Amendment of the existing permit, if required, would be subject to project-level environmental review by Alameda County.

Options presented under Actions sun2a and sun2b would require amendments to existing permits south of I-680. The increase in mining depths proposed in both Actions sun2a and sun2b would

not be likely to result in noise impacts beyond levels previously analyzed and mitigated in previous environmental documentation. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining. These mitigation measures include restrictions regarding the use of explosives and measures to control noise from mining machinery. Amendment of the existing permits would be subject to project-level environmental review by Alameda County.

REFERENCES – Noise

Except where indicated, references are on file at the San Francisco Planning Department.

Alameda County, *East County Area Plan, Volume 1: Goals, Policies and Programs*, 1994 (Revised 1996). (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

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Alameda County Planning Department, *Mission Valley Rock Company Surface Mining Permit and Reclamation Plan, SMP-32*, Final Environmental Impact Report and Appendices, 1994b. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, Resolution R-94-461 certifying and adopting the EIR, adopting Findings and a Statement of Overriding Considerations, and conditionally approving Surface Mining Permit and Reclamation Plan, SMP-32, 1994c. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

M. HAZARDOUS MATERIALS AND HAZARDOUS WASTE

1.0 SETTING

1.1 DEFINITIONS

Hazardous materials and hazardous waste are defined by their levels of toxicity, ignitability, corrosivity, and reactivity. When excavated, soils with concentrations of contaminants higher than certain acceptable levels must be handled and disposed as hazardous waste. The *California Code of Regulations*, Title 22, §66261.20-24 contains technical descriptions of characteristics that would cause a soil to be classified as a hazardous waste.

1.2 REGULATORY SETTING

Hazardous Waste Handling

The California Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. In Alameda County and Santa Clara County, remediation of contaminated sites is performed under the oversight of Cal-EPA and with the cooperation of the Counties' Department of Environmental Health and the Regional Water Quality Control Board (RWQCB). At sites where contamination is suspected or known to occur, the project sponsor must perform a site investigation and draw up a remediation plan, if necessary. For typical development projects, actual site remediation is performed either before or during the construction phase of the project.

Site remediation or development may be subject to regulation by other agencies. For example, if dewatering of a hazardous waste site were required during construction, subsequent discharge to the stormwater/sewer collection system could require a permit from the Alameda County or Santa Clara Department of Environmental Health.

Throughout the Counties, a Hazardous Materials Management Plan must be prepared for the County by businesses that use or store hazardous materials. For removal of underground storage tanks (USTs), the Department of Environmental Health has regulatory authority. A closure plan for UST removal must be prepared by the applicant and submitted to the county agency. Upon approval of the UST closure plan by that agency, the appropriate fire department would issue a permit for removal.

Worker Safety

Federal and state laws provide occupational safety standards to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health (Cal-OSHA) and the federal Occupational Safety and Health Administration (OSHA) are the agencies responsible for assuring worker safety in the workplace. Cal-OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices. At sites known to be contaminated, a Site Safety Plan

must be prepared to protect workers. The Site Safety Plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at the contaminated site (NIOSH and OSHA, 1985).

1.3 BACKGROUND AND CURRENT SITE CONDITIONS

Watershed Site

The project site generally comprises wildlands, but developed uses include maintenance facilities of the SFPUC and leased properties used for nurseries, mining operations, and a golf course. Hazardous materials used by SFPUC consist of fuels, solvents, and oils for operations and maintenance of its vehicle fleet and equipment. Additionally, water is chlorinated at the Sunol Valley WTP. Hazardous materials at the water treatment plant include fuels in an aboveground storage tank, as well as oils and drums of chemicals under secondary containment.

Nurseries and the Sunol Valley Golf Course operated on the Watershed use and store fertilizers, pesticides, and herbicides. The golf course also stores and uses fuels, oils, and solvents for operation and maintenance of its golf carts. Mining operations are conducted with diesel-operated equipment. Chevron operates a below-grade gasoline pipeline that runs through the watershed on the northwest side of San Antonio Reservoir.

A leaking underground tank at SFPUC facilities at 8653 Calaveras Road is included on the California *Hazardous Waste and Substances Sites List* (Hazardous Materials Data Management Program, 1994). In addition, the former Quantec and Calaveras explosives testing site is located at the south end of the Calaveras Reservoir. This site contains soil and groundwater contaminated with heavy metals and is the subject of current negotiations between RWQCB and SPEAC.

2.0 IMPACTS

Hazardous materials and hazardous waste, if mishandled, could pose health and safety risks to the public. Potential health and safety impacts typically stem from interactions of the public, workers, or employees with hazardous wastes encountered during project implementation.

2.1 SIGNIFICANCE CRITERIA

The City has not formally adopted significance standards for hazardous materials and hazardous waste impacts, but it generally considers that implementation of the *Alameda Watershed Management Plan* would have a significant hazards effect if it were to:

- involve a substantial risk of accidental explosion or release of hazardous substances (including, but not limited to, oil, pesticides, chemicals, or radiation);
- expose people to existing sources of potential hazards including hazardous materials;
- create a public health hazard or potential public health hazard; or
- potentially interfere with an emergency response plan or emergency evacuation plan.

2.2 PROGRAM-LEVEL IMPACTS

This section discusses the potential hazardous materials and hazardous waste impacts associated with implementation of the management actions in the *Alameda Watershed Management Plan*, including construction-related and operation-related exposures.

Construction-Related Exposure

Implementation of the Management Plan would result in construction of a number of additional facilities or improvements on the Watershed. Many of the facilities would be installed to ensure and/or improve water quality or resource protection on the Watershed, such as barriers or fences at identified high-risk spill potential areas (Action haz6); installation of infiltration drainfields and detention basins (Action sto1); install long-term sediment retention basins or other permanent measures (Action aqu12); rehabilitation of shoreline areas and stream segments (Actions aqu5 and aqu7); improvements that prevent human and animal waste from impacting Watershed resources (Action was1); and wildlife passage structures (Action wil13). Many of the actions listed in the Roads Section of the Management Plan (Actions roa2, roa3, roa4, roa6, roa7, and roa8) would modify or relocate roads or road components in order to reduce potential erosion and Watershed contamination from automobile by-products. Fire management actions include the installation of hydrants, helispots, and water tanks (Actions fir2 through fir6); roadway and access improvements (Action fir7); and implementation of fuel management projects that include constructing fuel breaks, conducting prescribed burns, and other improvements (Action fir8). Construction projects would be generated through actions that would provide additional public use opportunities, such as information kiosks and a Watershed Visitor Education Center (Actions pub3 and pub4), additional new trails (Policies WA15.2 and WA 15.4), and golf course expansion (Policy WA18.1). In addition, implementation of Actions des8 and sun17 would result in universal access improvements at existing Watershed facilities and trails and provide for universal access at proposed facilities.

Implementation of the *Sunol Resource Valley Management Element* would also generate construction projects through restoration and reclamation activities related to mining pits, including construction of appropriate mining pit sideslopes (Actions sun4 and sun5); improvements at the existing Sunol maintenance facility (trade shops, equipment storage shelter, warehouse, offices, Watershed Visitor Education Center, etc.) (Action sun10); backfill and landscaping of a buffer at the mining module closest to the Sunol Water Temple, between that module and the temple (Action sun11); and restoration of the entry to the Sunol Water Temple (Action sun13). In addition, implementation of Sunol actions would include construction of several public access facilities and improvements, including a public recreation area around the Sunol Water Temple (Action sun14), commercial site (Action sun19), overnight nature study area (Action sun20), and trail connections (Action sun21).

Implementation of the *Grazing Resources Management Element* would generate construction projects primarily through structural protection measures and watershed protection area improvements, including fencing around reservoirs, streams, and stock water ponds; water

developments; water collection systems; wildlife ponds; and livestock pond rehabilitation (Actions gra2, gra6, gra7, and gra8).

Construction of the proposed facilities would require the excavation and disturbance of soils, that may be contaminated. There are several potential sources of contamination. Past land uses may have resulted in the contamination of soil and/or groundwater on or near the sites of the proposed facilities described above (ASTM, 1997). Underground storage tanks or vehicle use areas may have leaked petroleum hydrocarbons and contaminated soil and/or groundwater. In addition, maintenance operations involving the hauling of pesticides or use of pesticide loading/staging areas may have contaminated the soil. Dewatering of contaminated groundwater from trenches and other excavations could expose individuals and the environment to hazardous levels of contaminants. Similarly, body contact with contaminated soil or groundwater could lead to inadvertent exposure to contaminated materials. Furthermore, dust composed of contaminated soil particles could be inhaled. The impact of potential exposure to hazardous materials is considered potentially significant.

Exposure to hazardous materials or wastes could cause various short-term or long-term health effects. Possible health effects could be acute (immediate, or of short-term severity), chronic (long-term, recurring, or resulting from repeated exposure), or both. Acute effects, often resulting from a single exposure, could result in a range of effects from minor to major, such as nausea, vomiting, headache, dizziness, or burns. Chronic exposure could result in systemic damage or damage to organs, such as the lungs, liver, or kidneys. Health effects would be specific to each hazardous substance. For specific hazardous substances, potential health effects of exposure are described in detail in standard references (Budavari, 1989; Sax and Lewis, 1989; Sittig, 1985).

While the Management Plan proposes certain management actions that could bring about physical effects, the Management Plan also includes actions that would reduce these potential effects. Table III.M-1 is provided to link, at a program level, those actions that could result in potential impacts (column 1) with the full range of actions that could be required to reduce the potential impacts (column 2). The table highlights in **bold** text those actions that may be essential to reduce significant impacts column 1 actions, depending on the specific nature of the management action, such as design, siting, or implementation schedule. These essential actions, as well as the other actions (in non-bold text) that would further reduce potential physical effects, are discussed below. The table also indicates the level of impact significance that would remain if the actions discussed were implemented. Not every bolded action would be necessary to mitigate the effects of the associated potential impact-causing management action. For example, a very minor structure such as a kiosk located in an environmentally non-sensitive area may not require any of the bolded actions to avoid a significant effect. Because implementation information, such as locations of specific facilities, is not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts. Management actions would be reviewed at the time they are proposed for implementation to determine the potential for project-specific impacts and to identify appropriate mitigation measures (see Section II.E.5.0, Mitigation Monitoring and Reporting).

**TABLE III.M-1
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS THROUGH CONSTRUCTION-RELATED EXPOSURE OF HAZARDOUS MATERIALS**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action haz6: Identify high-risk spill potential areas and implement measures, including barricades, to reduce the risk of hazardous spills.	Action des9 .	PS, see Section IV.M
Action sto1: Remediate on-site stormwater and collection systems through infiltration drainfields and trenches, and detention basins.	Action des9 .	PS, see Section IV.M
Action aqu12: Install long-term sediment retention basins or other permanent measures.	Actions roa12 and des9 .	PS, see Section IV.M
Action aqu5: Rehabilitate shoreline areas using structural shoreline protection measures.	Actions roa12 and des9 .	PS, see Section IV.M
Action aqu7: Rehabilitate stream segments.	Actions roa12 and des9 .	PS, see Section IV.M
Action was1: Repair/replace vault, chemical, and composting toilet as necessary.	Action des9 .	PS, see Section IV.M
Action roa2: Relocate existing necessary high use roads/road segments in proximity to streams.	Actions roa12 and des9 .	PS, see Section IV.M
Action roa3: Modify the grading and drainage of existing necessary high use roads/road segments.	Actions roa12 and des9 .	PS, see Section IV.M
Action roa4: Close and retire roads that are not needed and eliminate or minimize problem erosion points by installing culverts and waterbars, or otherwise stabilizing the roadway.	Actions roa12 and des9 .	PS, see Section IV.M
Action roa6: Inspect/manage unpaved roads by remediating and stabilizing areas of erosion and regrading unpaved roads.	Actions roa12 and des9 .	PS, see Section IV.M

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

TABLE III.M-1 (Continued)
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS THROUGH CONSTRUCTION-RELATED EXPOSURE OF HAZARDOUS MATERIALS

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action roa7: Maintain fire roads through effective installation of waterbars and paving where needed.	Actions roa12 and des9 .	PS, see Section IV.M
Action roa8: Restrict access on low use roads by gates or barriers.	Actions roa12 and des9 .	PS, see Section IV.M
Action fir2: Install a total of nine hydrants into water sources.	Action des9 .	PS, see Section IV.M
Action fir3: Install and maintain a total of four helispots on SFPUC property.	Action des9 .	PS, see Section IV.M
Action fir4: Install three additional helispots off SFPUC lands.	Action des9 .	PS, see Section IV.M
Action fir5: Install two additional hydrants on adjacent lands.	Action des9 .	PS, see Section IV.M
Action fir6: Install an additional water tank.	Action des9 .	PS, see Section IV.M
Action fir7: Identify and construct road improvements, including turnouts, turnarounds, and safety zones.	Action des9 .	PS, see Section IV.M
Action fir8: Complete the fuel management projects, including fuel load reductions, prescribed burns, fuel breaks, and access improvements.	Action des9 .	PS, see Section IV.M
Action will13: Design and install wildlife passage structures that minimize wildlife losses.	Action des9 .	PS, see Section IV.M
Action pub3: Establish “gateway” information kiosks.	Action des9 .	PS, see Section IV.M
Action pub4: Establish a Visitor Education Center.	Action des9 .	PS, see Section IV.M
Action sun4: Create sideslopes on the quarry pits such that there is a gradual transition to water.	Action des9 .	PS, see Section IV.M

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

TABLE III.M-1 (Continued)
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS THROUGH CONSTRUCTION-RELATED EXPOSURE OF HAZARDOUS MATERIALS

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Action sun5: Reclaim quarries with sideslopes appropriate to their proposed activity.	Action des9 .	PS, see Section IV.M
Action sun10: Retain the existing Sunol maintenance facility with improvements, including equipment storage shelter, waterhouse and storage yard, parking, etc.	Action des9 .	PS, see Section IV.M
Action sun11: Backfill and landscape a ¼-mile buffer zone at the mining module closest to the Sunol Water Temple, between that module and the water temple.	Action des9 .	PS, see Section IV.M
Action sun13: Restore the historic entry to the Sunol Water Temple.	Action des9 .	PS, see Section IV.M
Action sun14: Develop a public recreation area around the Sunol Water Temple.	Action roa12 and des9 .	PS, see Section IV.M
Action sun19: Establish a small commercial site.	Action des9 .	PS, see Section IV.M
Action sun20: Establish an overnight nature study area.	Action des9 .	PS, see Section IV.M
Action sun21: Establish trail connections extending to the Sunol Regional Wilderness.	Action roa12 and des9 .	PS, see Section IV.M
Action gra2: Implement structural protection measures, including fencing and other improvements.	Action des9 .	PS, see Section IV.M
Action gra6: Implement improvements for the San Antonio Water Protection Area.	Action des9 .	PS, see Section IV.M
Action gra7: Implement improvements for the Calaveras Watershed Protection Area.	Action des9 .	PS, see Section IV.M
Action gra8: Implement improvements for the Lower Alameda Creek Watershed Protection Area.	Action des9 .	PS, see Section IV.M

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

TABLE III.M-1 (Continued)
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS THROUGH CONSTRUCTION-RELATED EXPOSURE OF HAZARDOUS MATERIALS

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Policy WA15.2: Consider new trails in zones of lesser vulnerability and risk.	Action roa12 and des9 .	PS, see Section IV.M
Policy WA15.4: Support new trail connections that link to adjacent communities and other trail facilities.	Action roa12 and des9 .	PS, see Section IV.M
Policy WA18.1: Consider expansion of existing golf course in areas of low vulnerability/sensitivity.	Action des9 .	PS, see Section IV.M
Action sun17: Provide universal access at Sunol Valley recreation facilities.	Action des9 .	PS, see section IV.M
Action des8: Implement universal access improvements at SFPUC facilities and trails.	Action des9 .	PS, see Section IV.M

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

Under the Management Plan, the most important means of reducing potential exposure to hazardous materials is Action **des9**. Action **des9** requires that a dust abatement program be implemented as part of all construction projects. In addition, Action **roa12** would require use of best management practices for road and trail siting and the construction procedures. Implementation of this action would control fugitive dust and reduce the potential for inhalation of contaminated dust.

However, body contact with contaminated soil would remain a potentially significant impact of Management Plan implementation. Section IV.M-1 includes a mitigation measure that would reduce construction-related hazardous materials and hazardous waste impacts to a less than significant level. The impacts of day-to-day management activities that implement the Management Plan are analyzed in this EIR and generally would not be subject to further environmental review. No unavoidable significant program-level hazardous materials impacts have been identified in this EIR. However, the San Francisco Planning Department would require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental review at a more detailed project-specific and site-specific level were necessary. Table II-1 identifies the specific management actions that are likely to require such study.

Operation-related Exposure

The *Alameda Watershed Management Plan* includes facilities that could result in increased public visitation of the Watershed by providing new trails (Policies WA15.2 and WA15.4); golf course expansion (Policy WA18.1); and increased information regarding public activities available on the Watershed, such as public use area maps and brochures. These facilities include information kiosks (Action **pub3**), a Watershed Visitor Education Center (Action **pub4**), public recreation area around the Sunol Water Temple (Action **sun14**), a commercial site (Action **sun19**), overnight nature study area (Action **sun20**), and trail connections (Action **sun21**). In addition, provision of universal access at Watershed facilities could increase public use of the Watershed (Actions **des8** and **sun17**). The resulting increase in human presence and potential increase in accessibility to remote areas of the Watershed could increase the likelihood of illegal dumping of wastes, including hazardous wastes. However, this potential generally exists in all wildlands and open space preserves and would not be considered a substantial threat to the public or the Watershed. Therefore, potential increase in illegal dumping of wastes would not be a significant impact of Plan implementation. In addition, Watershed patrols and management actions detailed in the Hazardous Materials and Contamination section of the Management Plan would reduce the potential for illegal dumping of wastes.

The Sunol Valley Golf Course would continue operations within the Watershed and could be expanded under the Management Plan (Policy WA18.1), although specific actions for golf course expansion have not been proposed. Golf courses store and use fuels, solvents, and oils for golf cart operations and maintenance. Additionally, golf courses store and use fertilizers, pesticides, and herbicides to maintain greens and fairways. Consequently, expansion of the golf course would increase the use of hazardous materials within the Watershed and would increase the risk of hazardous materials release, resulting in a potentially significant impact of

Management Plan implementation. Other facilities proposed under the Management Plan are not likely to involve the use or storage of significant amounts of hazardous materials.

Table III.M-2 links those management actions that could result in impacts relative to hazardous materials with the full range of actions that could be required to reduce the potential impacts. Under the Management Plan, the most important means of reducing potential hazards from golf course operation are development of hazardous materials management procedures and lease agreement requirements. Action **haz1** requires the development of management procedures to address type, use, storage, and disposal of chemicals and pesticides used in Watershed activities, including procedures for easements and leases. Action **lea3** requires that new leases and easement agreements, as well as existing leases (when they come up for renewal), include required best management practices, emergency response plans, and Integrated Pest Management practices. In addition, the following guidelines would be implemented:

- Provide storage, transfer, containment, maintenance, repair, and disposal procedures.
- Require review and comment from SFPUC staff prior to application of hazardous chemicals.
- Develop and implement an emergency response plan for various scenarios, including hazardous materials spill.
- Service all vehicles and equipment regularly.

In addition, Action **haz2** requires inventory and annual monitoring of all above- and below-ground fuel storage tanks, refueling stations, and vehicle maintenance yards in the Watershed. Implementation of these actions, as described above and in Section IV.M, would reduce the potential hazardous materials and hazardous waste impacts resulting from Management Plan implementation to a less than significant level. Therefore, mitigation measures are not required. Expansion of the golf course would likely require project-level environmental review prior to implementation, which would examine the potential for additional, project-specific hazardous materials impacts and identify appropriate mitigation measures.

REFERENCES – Other Hazards

Except where indicated, references are on file at the San Francisco Planning Department.

American Society for Testing and Materials (ASTM), E1527-97, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, 1997.

Budavari, S., Ed., *The Merck Index: An Encyclopedia of Chemicals, Drugs, and Biologicals*, 11th Edition, Merck & Co., Inc., 1989. (Available at the UC Berkeley Public Health Library, University of California, Berkeley, California)

California Code of Regulations, Title 22, Division 4.5 “Environmental Health Standards for the Management of Hazardous Wastes,” Chapter 11, Article 3 (Characteristics of Hazardous Waste), Sections 66261.20-24.

**TABLE III.M-2
MANAGEMENT ACTIONS THAT COULD RESULT IN SIGNIFICANT PHYSICAL EFFECTS THROUGH OPERATION-RELATED EXPOSURE OF HAZARDOUS MATERIALS**

Management Actions that Could Result in Potential Physical Effects ^a	Management Actions that Could be Required to Reduce Potential Physical Effects	
	Action ^{a,b}	Level of Significance if Implemented
Policy WA18.1: Consider expansion of existing golf course.	Actions haz1 , haz2 , and lea3 .	LTS

^a See accompanying text and Table II-1 for a description of each management action.

^b **Bold** text indicates actions that may be most essential for reducing potential significant impacts.

S = Significant

PS = Potentially Significant

LTS = Less than Significant

Cook, B., Chief, Northern California Coastal Cleanup Operations Branch, Cal/EPA Department of Toxic Substances Control, letter to Barton D. Kale approving Barbary Coast Steel Remedial Action Completion Report, 1997.

Hazardous Materials Data Management Program, California Environmental Protection Agency, *Hazardous Waste and Substances Sites List* ("Cortese List"), 1994.

National Institute for Occupational Safety and Health and Occupational Safety and Health Administration (NIOSH and OSHA), *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, 1985. (Available at the U.C. Berkeley Public Health Library, University of California, Berkeley, California)

Office of Planning and Research, *California Environmental Quality Act Statutes and Guidelines*, Appendix G, June 1997.

Sax, N.I. and R.J. Lewis, *Dangerous Properties of Industrial Materials*, 7th Edition, Van Nostrand Reinhold, New York, 1989. (Available at the U.C. Berkeley Public Health Library, University of California, Berkeley, California)

Sittig, M., *Handbook of Toxic and Hazardous Chemicals and Carcinogens*, 2nd Edition, Noyes Publications, Park Ridge, New Jersey, 1985. (Available at the UC Berkeley Public Health Library, University of California, Berkeley, California)

N. ENERGY

1.0 SETTING

1.1 REGIONAL SETTING

Sources of Energy

Petroleum and natural gas supply most of the power consumed in California. Petroleum provides about 50 percent of the state's energy need, and natural gas provides about 29 percent (CEC, 1994). The remaining 21 percent of the state's energy need is provided by a variety of energy resources, including coal, nuclear, geothermal, and hydropower. The two major uses of energy are as fuel for transportation and electricity.

Energy Plan, Policies, and Regulations

Federal

The National Energy Strategy (NES) was developed by the U.S. Department of Energy in July 1989 (U.S. Department of Energy, 1991/1992). The NES seeks to offer a balanced program of greater energy efficiency, use of alternative fuels, and the environmentally responsible development of all U.S. energy resources. The NES, expressly recognizing the connection between energy sources and air pollution, calls for reducing energy-related emissions to achieve and maintain the National Ambient Air Quality Standards for carbon monoxide and ozone, and incorporating air quality concerns into policies for energy supply and use. With respect to transportation, the NES seeks to reduce the amount of energy used to move people and goods by improving the overall efficiency of the transportation system, through such policies as promoting mass transit and ride sharing, and by establishing higher Corporate Average Fuel Efficiency standards for automobiles.

State

Building energy consumption is regulated in California under the *California Code of Regulations*, Title 24, which is referred to as the Building Standards Administrative Code. The standards related to energy efficiency are contained in Part 6 (within Title 24), which is referred to as the California Energy Code. The efficiency standards apply to new construction of both residential and nonresidential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building energy efficiency standards are enforced through the local building permit process.

Transportation-related energy consumption is not subject to specific controls. The California Energy Commission (CEC) calls for the state to aggressively work to increase the efficiency of its transportation system and the vehicles that use it, since these vehicles consume three-fourths of the oil and roughly half of all the energy used in the state, and are the major source of air pollution in California (CEC, 1992). In addition, the federal government has mandated fuel

economy standards for domestic passenger automobiles, including production targets for zero-emission vehicles.

1.2 LOCAL SETTING

Pacific Gas and Electric Company (PG&E) operates and maintains natural gas and electrical transmission lines in the Alameda Watershed. A 230-kilovolt (kV) transmission line runs through the Watershed, west of the Calaveras Reservoir, from PG&E's Newark Substation in Newark to its Metcalf Substation south of San Jose. In addition, a 60-kV overhead transmission line runs along Vallecitos Road, and two overhead transmission lines (a 60-kV and a 115-kV) run along I-680 to the Newark Substation. These overhead transmission lines provide electrical power to Watershed facilities (E.M. Rose and Associates, 1996). PG&E also maintains and operates three high-pressured underground natural gas pipelines that run through the Watershed in the San Antonio Valley east of Vallecitos Road (E.M. Rose and Associates, 1996).

Other utilities and private companies that operate facilities within the Alameda Watershed include the Chevron Pipeline Company and Hetch Hetchy Water and Power. The Chevron Pipeline Company operates an underground petroleum pipeline used for transporting refined petroleum products. The pipeline runs through the San Antonio Reservoir Watershed and then crosses Alameda Creek in the Sunol Valley. The pipeline is within the Watershed for a total distance of about eight miles. In addition to PG&E's power lines, Hetch Hetchy Water and Power operates electrical transmission lines that cross through Watershed lands west of San Antonio Reservoir and Sunol Valley.

2.0 IMPACTS

2.1 SIGNIFICANCE CRITERIA

The City has not formally adopted significance standards for energy impacts, but it generally considers that implementation of the *Alameda Watershed Management Plan* would have a significant effect on energy if it were to:

- encourage activities that resulted in the use of large amounts of fuel or energy;
- use energy resources in a wasteful manner; or
- have a substantial effect on the potential use, extraction, or depletion of a natural energy resource.

2.2 PROGRAM-LEVEL IMPACTS

This section discusses the potential energy impacts of implementation of the management actions in the Management Plan.

Energy Impacts

Construction and operation of new facilities or new or modified activities under the Management Plan would not consume substantial amounts of finite natural resources or require significant upgrade to PG&E facilities on the Watershed. Energy consumption for construction of new facilities would be a one-time impact and would not be an ongoing drain on finite energy resources. Construction energy consumption would primarily be in the form of fuel and would not significantly affect PG&E or Hetch Hetchy Water and Power energy resources. Operation of Management Plan facilities would increase the overall amount of energy consumed in the Watershed. Energy consumption would consist of electricity to operate new Watershed facilities and fuel associated with increased vehicular trips to the Watershed for recreation, education, and employment purposes. These uses would not be considered wasteful and would not consume substantial amounts of finite energy resources or require substantial upgrades to PG&E or Hetch Hetchy Water and Power facilities in the Watershed. Therefore, the energy impacts of Management Plan implementation would be less than significant.

REFERENCES – Energy

Except where indicated, references are on file at the San Francisco Planning Department.

California Energy Commission (CEC), *The 1992-1993 California Energy Plan*, 1992.

California Energy Commission (CEC), *Energy and the Economy*, 1994.

E.M. Rose and Associates, prepared for San Francisco Water Department, *Technical Memorandum No. 9: Utilities and Infrastructure Review*, Appendix C-10 of the *Alameda Watershed Management Plan*, 1994.

U.S. Department of Energy, *National Energy Strategy, Executive Summary, First Edition*, 1991/1992.

O. GROWTH INDUCEMENT

Section 15126.2 (d) of the state CEQA Guidelines requires agencies to address potential growth-inducing effects of their actions. Growth-inducing effects are defined as those effects that could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Growth-inducing effects include projects that would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. The Guidelines also require the analysis of certain characteristics of projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

The primary purpose of the *Alameda Watershed Management Plan* is to maintain and improve source water quality to protect public health and safety. An important component of this purpose is to protect the natural resources of the Watershed. This purpose and the goals, policies, and management actions of the Management Plan have no potential to foster economic or population growth, or the construction of additional housing, either directly or indirectly. Implementation of the Management Plan would not remove obstacles to population growth, but would protect an existing water supply. Over the long-term, implementation of the Management Plan would provide for additional water storage in reclaimed mining pits. Water storage reservoirs would be developed incrementally as mining were completed. The source of water to fill the reservoirs is not known. Possible water sources for storage in the reclaimed pits are local water, including local runoff; imported water from the Hetch Hetchy Project or the Delta using the South Bay Aqueduct; and recycled water from the Livermore Valley. It is unlikely that groundwater would be a source of water due to the small volume of extant groundwater in the Sunol Valley. The water stored in the reservoirs would be used as a supply resource in dry years. The existing SFPUC water system may prove to be inadequate in the event of an extended drought. Analysis of a design drought shows water demand at about 300 mgd, whereas the firm yield of the entire water system is about 240 mgd. The reclaimed mining pit reservoir storage volume would correspond to a firm yield of about seven mgd, about 11 percent of the existing shortfall. Therefore, water stored in the reservoirs would only partially reduce the existing water supply shortfall and would not induce growth by, for example, potentially serving substantial numbers of new customers or allowing SFPUC to expand its service area (SFPUC, 1999).

REFERENCES – Growth Inducement

San Francisco Public Utilities Commission (SFPUC), *SFPUC Water Resource Strategy, Technical Memorandum 14/15, 1999.*

P. CUMULATIVE ANALYSIS

A cumulative environmental effect is the result of two or more projects or actions (or policies) that have impacts that overlap in time or space or that affect the same sensitive receptor. The purpose of this cumulative analysis is to determine whether potentially significant cumulative environmental impacts would occur as a result of implementation of the *Alameda Watershed Management Plan* in combination with other projects or conditions, and to indicate the severity of the impacts and their likelihood of occurrence. The CEQA Guidelines (Section 15130) require that EIRs discuss the cumulative impacts of a project when the project's incremental effect is "cumulatively considerable," meaning that the project's incremental effects are considerable when viewed in connection with the effects of past, current, and probable future projects. The discussion of cumulative impacts should include:

- (1) Either: (A) a list of past, present, and probable future projects producing related or cumulative impacts; or (B) a summary of projections contained in an adopted general plan or similar document, or in an adopted or certified environmental document, which described or evaluated conditions contributing to a cumulative impact;
- (2) A discussion of the geographic scope of the area affected by the cumulative effect;
- (3) A summary of expected environmental effects to be produced by these projects; and
- (4) Reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

1.0 GEOGRAPHIC SCOPE

The geographic scope for the analysis of cumulative environmental impacts is the physical boundaries of the Alameda Creek Watershed, which includes lands not owned by the SFPUC. The "other" projects evaluated in this section are limited to those considered to have the potential for substantive cumulative effect when combined with the actions and projects envisioned in the Management Plan.

2.0 CUMULATIVE PROJECTS

This cumulative analysis is based on a list of projects that are planned or reasonably foreseeable and that could have cumulative effects in combination with implementation of the *Alameda Watershed Management Plan*. However, for some of these projects specific design or schedule data are not known. The cumulative projects are described below.

2.1 SFPUC PROJECTS

The SFPUC is in the process of preparing a Water Supply Master Plan for the entire SFPUC water system. This plan will look at the water supply and storage issues in the Sunol Valley and the entire Alameda Creek watershed in greater detail, and will result in projects that will undergo separate environmental review. In addition, the SFPUC is undertaking the following projects in

the Alameda Watershed that fall generally within the category of upgrade and maintenance. These projects are either underway or planned for the near future:

- Minor upgrades, ongoing improvements/repairs and additions/alterations to existing structures:
 - Watershed Facilities Demolition: removal of dilapidated, abandoned, or duplicative structures
 - Replacement, repair, and construction of new adit structures (vertical pipe/valve enclosures for maintenance staff access)
 - Watershed Cottage Maintenance and Renovation
 - Watershed and Facility Fencing
 - Watershed Roads Maintenance and Repair
- Alameda Creek Diversion Tunnel Outlet Protection: Restoration of the existing structure, including concrete work to reinforce the water-release outfall structure.
- Sunol Water Temple and Grounds Restoration: A three-phase plan that addresses the restoration of the Sunol temple building, entry road, and areas immediately adjacent to the temple and along Alameda Creek, including the area that generally extends from Temple Road to the edge of the proposed SMP-32 mining pit and to Alameda Creek and Arroyo de la Laguna.
- Sunol Water Temple Landscape and Recreation Plan: Conceptual plan that provides information to assist the SFPUC in developing lease terms and conditions for the future SMP-32 gravel quarry. The plan shows future recreational activities and landscape concepts for the area bounded by I-680 on the south, Paloma Way on the east, and Alameda and Arroyo de la Laguna Creeks on the west and north, respectively.
- Alameda Creek Diversion Dam Sluice Gates: Restoration of the existing structure, including concrete work to reinforce water-release outfall structure.
- Bridge Across Turner Dam Spillway: Construction of a shortcut for administrative vehicle traffic for safety/security reasons.
- Calaveras Outlet Tower Access Rehabilitation: Repair/upgrade of the existing structure.
- Indian Creek Chlorine Monitoring: Installation of a chlorine monitoring station on the existing Hetch Hetchy Aqueduct at the Coast Range Tunnel.
- Calaveras Pipeline Slope Stabilization: Erosion control and slope protection along the pipeline route.
- Sunol Fire Protection System (Town): Installation of additional water tanks (nonpotable water) for fire protection.
- Alameda Creek Discharge for Noncompliant Water: Installation of a discharge facility on the Alameda Creek siphon.
- Potassium Permanganate Feed Building: Demolition of the existing chlorine feed building and installation of new permanganate feed building and system at Calaveras Reservoir.

- **Aeration Facilities:** Upgrade of the existing facility at Calaveras Reservoir and installation of a new aeration facility, including a compressor building, at San Antonio Reservoir.

The above-listed projects are relatively minor, small, or upgraded replacements; therefore, they have little or no potential for significant cumulative impacts.

The following projects are larger in scale than the maintenance/upgrade projects listed above and constitute work that would require additional CEQA review separate from this EIR. These projects, in combination with implementation of the *Alameda Watershed Management Plan*, have a greater potential to contribute to cumulative effects.

- ▪ **Alameda Creek Fisheries Enhancement Project.** The SFPUC has plans (in conjunction with the California Department of Fish and Game) to improve native fisheries and restore historic trout streams on Alameda and Calaveras Creeks downstream from Calaveras Reservoir. The planned project sets specific standards for water releases from Calaveras Reservoir into Alameda Creek. The project includes construction and operation of a fish recapture facility, an inflatable rubber bladder dam to be built in the vicinity of the Sunol Valley Water Treatment Plant (WTP), a pump station, and pipeline extensions to transfer recaptured water to the WTP for treatment or transfer to San Antonio Reservoir. This project was an outgrowth of the *Alameda Creek Water Resources Study (ACWRS)*. The ACWRS, completed in January 1995, was not prepared as part of the *Alameda Watershed Management Plan*. However, the goals of the ACWRS and the Management Plan were coordinated, and the recommendations set forth in the ACWRS were developed to consider the broad goals of the Management Plan. The ACWRS resulted in the establishment of a Memorandum of Understanding with the California Department of Fish and Game. The memorandum obligates the SFPUC to move forward with the recommendations for establishing a water release and recapture facility for fisheries enhancement along Alameda and Calaveras Creeks, between the Calaveras Dam and the vicinity of the Sunol Valley WTP. The project-level ACWRS description, construction information, and other critical details are being developed.
- **Hetch Hetchy Water Treatment Project – Chloramine Conversion.** This chloramine conversion project provides for implementing chloramination of the Hetch Hetchy system to allow this water source to meet state and federal drinking water standards. The project involves construction of disinfection and treatment facilities throughout the SFPUC water supply system. Within the Sunol Valley, the following potential facilities are proposed: a new ammonia and chlorine feed facility at the San Antonio Pump Station and dechlorination facilities at the Alameda East and Alameda West Portals. The impacts of any of these facilities would primarily stem from construction activities and storage of hazardous materials. An EIR is under preparation to evaluate the environmental effects of this project.
- **Sunol Valley Water Treatment Plant Improvement Project.** The Sunol Valley Water Treatment Plant (WTP) Improvement Project (SIP) was developed in response to a 1995 Compliance Order issued by the California Department of Health Services. The Compliance Order, issued due to a treatment violation at the Sunol Valley WTP, downrated the plant capacity and stipulated a number of improvements that must be made in order to return plant operation to the design capacity. The SIP consists of two phases. Phase 1 includes the improvements specified in the Compliance Order as well as other improvements required to increase the reliability of plant operations. The purpose of Phase 2 is to develop a Future Facilities Plan for the Sunol Valley to accommodate

increasing water demand and increase the reliability/redundancy of the SFPUC's transmission system.

Phase 1 includes improvements to the following treatment processes at the Sunol Valley WTP: flow distribution/flash mix, flocculation, sedimentation, filtration, chemical feed systems, residuals handling, plant drainage, electrical and instrumentation and controls, seismic upgrades, and functional upgrades. The SFPUC proposes to restore the Sunol Valley WTP's capacity by installing plate settlers in the existing sedimentation basin. All the Phase 1 improvements are within the existing plant footprint and will be constructed by the end of 2003. It is anticipated that Phase 1 will be found Categorical Exempt from CEQA. A 40 million gallon treated water reservoir is proposed for construction at the Sunol Valley WTP as soon as funds are available, which would be subject to CEQA environmental review.

Phase 2 was developed based on demand projections from the Water Supply Master Plan. Based on a projected peak month demand of 440 million gallons per day (mgd) through the Sunol Valley in 2010 and a restored Sunol Valley WTP capacity of 160 mgd, Phase 2 recommends constructing a new 280 mgd direct filtration treatment plant at Alameda West Portal. The project also includes a new pump station, transmission and distribution pipelines, and a 60 million gallon reservoir at the Alameda West Portal site. The new Alameda West Portal plant would be constructed in modules with the first module (240 mgd) to come on line no sooner than 2010. Phase 2 would require CEQA environmental review.

The impacts of this project would primarily stem from construction of facilities. This project would not induce growth, since overall water supply system capacity would not be increased. This project will be studied in a separate environmental review.

2.2 NON-SFPUC PROJECTS

Mission Valley Rock and RMC Pacific Materials Mining Activities. Over 500 acres of the Sunol Valley (nearly all within SFPUC-owned Watershed lands) have been permitted for mining by Surface Mining Permits (SMPs) from the County of Alameda. The mining operators, Mission Valley Rock and RMC Pacific Materials, have lease agreements with SFPUC that permits exercising of certain SMPs. The area covered under the mining permits described in Section III.B are in various stages of mining development. Mining activities in this area will continue, depending on various factors including market conditions, equipment operations, quality of mined product, and quarry characteristics. Under the *Sunol Valley Resources Management Element* of the Management Plan, the preferred alternative would allow mining north of I-680 substantially pursuant to the SMP-32 EIR and mining permit; and south of I-680 the project element calls for an increase in the depth of existing mining pits (sun2a and sun2b) and, potentially, a slight expansion of the footprints of these pits (sun2a) to match current mining permit boundaries. Implementation of these management actions (sun2a and sun2b) would be subject to future Alameda County permit amendments.

Mining north of I-680 would replace a portion of the current mining area south of I-680. The rate of ongoing mining south of I-680 is based on plant capacity and market demand. Mining south of I-680 would continue in substantially the same location as existing mining and in an already

disturbed area. Management actions would extend the period of time that environmental impacts would occur, but would not increase the magnitude of ongoing, less than significant environmental impacts. As discussed in the Land Use (Section III.A) section, a significant effect of loss of prime agricultural land could result.

Apperson Ridge Quarry. Plans have been in existence since the early 1980s for development of the Apperson Ridge Quarry (680 acres of a 2,500-acre private in-holding) in the San Antonio hydrologic watershed. The quarry would be outside of SFPUC-owned Watershed lands, but an easement granting access through the Watershed was provided for this project in the early 1970s. Substantial truck traffic (up to 880 trips per day, to and from inclusive) would traverse approximately 2.8 miles of Watershed lands from Calaveras Road to the Apperson Ranch boundary (also known as Diamond A Ranch). The proposed quarry was given an 80-year permit by Alameda County in 1984 with the option to renew. The private landholding is located between Watershed lands and the Sunol–Ohlone Regional Park. Currently, the proposed quarry is undergoing evaluation by the mining company permittee (Oliver deSilva) before initiation of mining activities at this location. Several animal species have been listed as threatened or endangered since the 1984 EIR prepared by Alameda County, and the Apperson Ridge Quarry site is relatively undisturbed land that may contain habitat for some of these species (e.g., the Alameda whipsnake). If the Apperson Ridge Quarry Project requires new discretionary permits, additional CEQA review could be necessary under the following circumstances: (1) if the project deviates from the original permit conditions and/or the project as described in the 1984 EIR, leading to new or substantially more severe environmental impacts; (2) if the project could cause additional environmental impacts due to altered environmental conditions or new information since the previous environmental review; or (3) if new mitigation measures or alternatives that would reduce one or more significant effects of the project are found to be feasible but the project sponsor declines to adopt the measure or alternative (CEQA Guidelines Section 15162).

Chevron Pipe Retrofit. The Chevron Pipeline Company operates a high-pressure pipeline for the transport of refined petroleum products. The pipeline runs through the San Antonio Reservoir Watershed and then crosses Alameda Creek in the Sunol Valley. Chevron has plans to realign and retrofit this pipeline.

Residential Development. No known applications are currently pending for residential development that would significantly impact Watershed lands. However, consideration has been given to residential development and a toll road along SR 84 within the hydrologic watershed of San Antonio Reservoir. Currently, Alameda County is considering a “Sunol Valley Agricultural Enhancement Plan” encompassing lands inside and outside of the Watershed. The proposal is intended to preserve and enhance intensive agriculture in the Valley and maintain open space by allowing subdivision by private landowners into 20 acre parcels allowing one residence, with dedication of 90 percent of the area of each parcel to agriculture. Alameda County expects to release a Draft EIR studying the proposal and various alternatives in early 2000.

East Bay Regional Park District. EBRPD has proposed a trail segment from Sunol to Pleasanton Ridge as part of the Calaveras Ridge Trail. This trail would connect Pleasanton Ridge

Regional Park and the Sunol Regional Wilderness with a hiking trail west of Calaveras Road. This trail would pass through secondary Watershed land and the Sunol Valley.

3.0 PROGRAM-LEVEL CUMULATIVE IMPACTS

This section discusses the contribution from these planned or reasonably foreseeable projects and development projects proposed under the *Alameda Watershed Management Plan* to potential cumulative impacts in the Management Plan area.

3.1 DEVELOPMENT PROJECT IMPACTS

Construction of individual development projects proposed under the Management Plan could coincide with other construction projects in the Watershed, contributing to cumulative traffic and roadway disruptions, effects on cultural resources, air pollutant emissions, and temporary increases in noise levels. Cumulative construction-related impacts in the Watershed would depend on the timing and location of individual projects. For a group of projects to generate cumulative construction impacts, they must coincide with another, both geographically and in timing. Construction-related mitigation measures and management actions presented in this EIR would reduce these potential impacts of Management Plan implementation to a less than significant level. Careful planning and phasing could also reduce and/or avoid these impacts. Alameda County is preparing a Draft EIR, expected to be released in early 2000, that will examine potential construction impacts of the Sunol Valley Agricultural Enhancement Plan. Implementation of management actions in the Plan, mitigation measures identified in the EIR regarding construction of development projects, and regular agency consultation between the SFPUC, Alameda County, and Santa Clara County would reduce any cumulative construction impacts to a less than significant level.

No significant cumulative impacts from the projects listed in Section P.2.0 are identifiable at this time. Alameda County's EIR for the Sunol Valley Agricultural Enhancement Plan will examine, among other things, potential impacts on the Watershed of increased residential development that could occur under the proposal, and potential cumulative impacts.

3.2 MINING OPERATIONS IMPACTS

- Cumulative impacts from Apperson Quarry in combination with the Sunol Valley quarries would not be significant. Unlike the Sunol Valley quarries, Apperson Quarry would not result in loss of prime agricultural land. The Apperson Ridge Quarry EIR (SMP-17, certified by Alameda County in August 1984) identified unavoidable adverse impacts on special-status wildlife and high quality habitat, noise impacts at Maguire Peaks and residences at the end of Welsh Creek Road, and moderate degradation of water and wildlife quality on SFPUC lands. Because of the distance between Apperson Quarry and the Sunol Valley quarries, and the lack of significant natural resource, noise, and water quality impacts of the mitigated Sunol Valley quarries, these impacts would not be cumulative. The future haul route from Apperson Quarry (Calaveras Road) would be the same as the route used by RMC Pacific Materials. Mission Valley Rock Company has an independent access road at Athenour Way / Andrade Road. Because of the economic competitive

disadvantage of Apperson Quarry due to high startup and operating costs (as a hard rock quarry requiring blasting) and greater distance from markets than the Sunol Valley quarries, it is unlikely that the Apperson Quarry will commence operations while the Sunol Valley quarries are operating at sufficient capacity to meet market demands. Therefore, traffic impacts would not be cumulatively significant on local roads, and would represent a very small, less than significant number relative to the capacity of I-680.

REFERENCES – Cumulative Analysis

Except where indicated, references are on file at the San Francisco Planning Department.

Alameda County Planning Department, *SMP-17 Apperson Ridge Quarry Environmental Impact Report*, 1984. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, *Mission Rock Company SMP-24 Initial Study*, 1985. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, Resolution R-86-62 conditionally approving SMP-24, 1986. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, Resolution R-86-62 incorporating, revising, and conditionally approving SMP-24, 1991. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, *Santa Clara Sand & Gravel SMP-30 Expanded Initial Study and Proposed Mitigated Negative Declaration*, 1992a. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, Resolution 93-32 conditionally approving Santa Clara Sand & Gravel SMP-30, 1992b. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, *Mission Valley Rock Company Surface Mining Permit and Reclamation Plan, SMP-32*, Draft Environmental Impact Report, 1994a. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, *Mission Valley Rock Company Surface Mining Permit and Reclamation Plan, SMP-32*, Final Environmental Impact Report and Appendices, 1994b. (Available at Alameda County Community Development Agency Planning Department, Hayward, California)

Alameda County Planning Department, Resolution R-94-461 certifying and adopting the EIR, adopting Findings and a Statement of Overriding Considerations, and conditionally approving Surface Mining Permit and Reclamation Plan, SMP-32, 1994c. (Available at

Alameda County Community Development Agency Planning Department, Hayward,
California)

CHAPTER IV

MITIGATION MEASURES

This chapter proposes mitigation measures for the potentially significant environmental impacts discussed in Chapter III. Mitigation measures proposed as part of the project are designed to ensure that all applicable Management Plan management actions are implemented to reduce the impact of implementation of other management actions. Mitigation measures identified in this report are proposed for two categories of impacts:

- Impacts for which the *Alameda Watershed Management Plan* does not include management actions that would reduce the impacts.
- Impacts for which the *Management Plan* does include management actions that would reduce the impacts, but not to a less than significant level.

This chapter includes mitigation measures requiring that the impact-reducing actions discussed in Chapter III be adopted and implemented along with the actions that could result in significant impacts. If the impact-reducing actions were not adopted (i.e., due to funding), the SFPUC would need to adopt findings of overriding considerations prior to implementing those actions that could result in significant impacts unless more project-specific subsequent analysis demonstrated that a significant impact would not occur.

A. EXISTING PLANS AND POLICIES

No potentially significant or significant impacts have been identified, and no mitigation is required.

B. LAND USE

The Management Plan proposal to permit mining substantially in conformance with SMP-32 would result in the loss of prime agricultural land. Alameda County's conditions of approval for SMP-32 includes mitigation measures that would reduce but not eliminate this significant impact. The Management Plan proposal to consider horizontal expansion of mining within leased areas south of I-680 could cause further significant loss of prime agricultural land, depending on the specific location and extent of the expansion area. Project-level environmental review in conjunction with necessary amendments to Alameda County mining permits would further detail this potential significant impact and determine if mitigation measures could reduce or avoid the impact.

C. GEOLOGY AND SOILS

1.0 MITIGATION MEASURES PROPOSED AS PART OF THE PROJECT

1. In implementing any Management Plan management action that could result in significant physical effects to geology and soils through increased soil erosion, as shown in Table III.C-2, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to less-than-significant levels (see Table III.C-2).
2. In implementing any Management Plan management action that could result in potentially significant physical effects to geology and soils due to slope instability ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to less-than-significant levels, as shown in Table III.C-3.

D. HYDROLOGY AND WATER QUALITY

1.0 MITIGATION MEASURES PROPOSED AS PART OF THE PROJECT

1. In implementing any Management Plan management action that could result in significant physical effects on water quality from an increase in public access and use, as shown in Table III.D-2, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.D-2).
2. In implementing any Management Plan management action that could result in significant physical effects on water quality from development of new facilities, as shown in Table III.D-3, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.D-3).
3. In implementing any Management Plan management action that could result in significant physical effects on water quality from Watershed operations and maintenance activities, as shown in Table III.D-4, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.D-4).
4. In implementing any Management Plan management action that could result in significant physical effects on water quality from increased gravel-mining activity, as shown in Table III.D-5, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.D-5).
5. In implementing any Management Plan management action that could result in significant physical effects on water quality from nursery operations, as shown in Table III.D-6, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.D-6).
6. In implementing any Management Plan management action that could result in significant physical effects on water quality from expansion of golf course uses, as shown in

Table III.D-7, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.D-7).

7. In implementing any Management Plan management action that could result in significant physical effects on hydrology from build up of sediments, as shown in Table III.D-8, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.D-8).

- **2.0 MITIGATION MEASURES IDENTIFIED IN THIS REPORT**

- The following mitigation measure addresses potential hydrologic impacts from proposed mining operations.

- 1. Prior to approval of new or amended Surface Mining Permits or mining leases for expansion of mining south of I-680, an independent study of Alameda Creek resources shall be completed by a qualified expert and approved by the Alameda County Planning Director and the SFPUC Watershed Manager. The study shall focus on potential impacts to groundwater and surface water hydrology and fish and wildlife species of special status concern from such future mining and shall propose mitigation measures applicable to mining, if warranted, to avoid significant impacts. If warranted, such measures may include establishment of barriers to prevent adverse changes to groundwater or surface water hydrology and the resources supported by groundwater and surface water; special measures to avoid impact to steelhead trout (if established in Alameda Creek) or other fisheries resources; and special measures to avoid impacts to listed species dependent on Alameda Creek for its riparian habitat or use as a migration corridor. All feasible mitigation measures shall be incorporated into future Surface Mining Permit conditions of approval and mining leases.

- Implementation of this mitigation measure would reduce the potentially significant hydrologic impact from proposed mining operations to a less than significant level.

E. NATURAL RESOURCES

1.0 MITIGATION MEASURES PROPOSED AS PART OF THE PROJECT

1. In implementing any Management Plan management action that could result in significant physical effects on natural resources from Watershed operations, maintenance, and construction activities, as shown in Table III.E-4, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.E-4).
2. In implementing any Management Plan management action that could result in significant physical effects on natural resources from an increase in public access and use, as shown in Table III.E-5, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.E-5).

3. In implementing any Management Plan management action that could result in significant physical effects on natural resources from an increase in invasive plant species, as shown in Table III.E-6, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.E-6).
4. In implementing any Management Plan management action that could result in significant physical effects on natural resources from grazing, as shown in Table III.E-7, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.E-7).
5. In implementing any Management Plan management action that could result in significant physical effects on natural resources from mining operations, as shown in Table III.E-8, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact (see Table III.E-8). However, additional mitigation would be necessary to avoid a potentially significant effect (see Section IV.E.2.0, below).

2.0 MITIGATION MEASURES IDENTIFIED IN THIS REPORT

The following mitigation measures address potential natural resources impacts from proposed mining operations.

1. Require mining and reclamation operations north and south of I-680 to have surveys conducted by a qualified biologist within storage pit ponds and other basins that store water at proposed mining and reclamation areas on an annual basis. Surveys would be completed

for all life cycle stages of the California red-legged frog (e.g., egg masses, tadpole, juveniles, adults) and California tiger salamander. If no California red-legged frogs or California tiger salamanders are detected during these surveys, then mining operations shall continue within the survey area. If adult red-legged frogs or tadpoles or California tiger salamanders are found within specific bodies of water undergoing mining or reclamation, mining and reclamation shall cease in the specific pit pond or other basins where the frogs and salamanders have been found. The frogs or salamander would immediately be moved passively, or captured and moved, to suitable upstream sites by a biologist with the appropriate permits. Mining and reclamation may continue upon completion of the work by the biologist.

2. Require mining operators north and south of I-680 to have the area surrounding storage pit ponds and other basins that store water routinely maintained clear of vegetation.
3. Require mining operators to implement mitigation measure D-3, a - d of the Mission Valley Rock Company Surface Mining Permit and Reclamation Plan SMP-32, Final Environmental Impact Report, which avoids or minimizes impacts to wildlife. Mitigation Measures b and c shall be applied to mining and reclamation operations south of I-680 as well. These measures are as follows:
 - a) The quarry operator should incorporate revised landscaping and buffering plans to include a hay/grain field over the majority of the buffer (approximately 100 acres), with the possible exception of the I-680 frontage and the landscape berms and hillocks.
 - b) Winter and spring surveys would be conducted to confirm or deny the presence of California tiger salamanders and burrowing owls. If the species are present, additional off-site habitat should be preserved and/or enhanced at a 1:1 ratio (1 acre preserved for 1 acre developed). On-site habitat would include the project setbacks with the exception of the vineyard north of I-680. Off-site habitat would be identified in coordination with CDFG and SFPUC.
 - c) Preconstruction surveys for burrowing owls should be conducted within each module prior to each stage of topsoil disturbance and overburden removal to confirm or deny the presence of the species. If present, the species may be moved through passive relocation per approved CDFG procedures. This would include creating an artificial burrow complex and closing off each pair's den.
- 4. In new leases entitling mining, require mining and reclamation operations to follow U.S. Fish and Wildlife Survey protocol for the Alameda whipsnake critical habitat designation. Protocols for the protection of Alameda whipsnake have not yet been finalized. However, at a minimum, pre-construction surveys will be required, and will involve walking parallel transects 25 to 50 feet apart across the entire site. If found, snakes would be released into appropriate nearby habitat. The area of disturbance in any mining operation within designated critical habitat will be enclosed in snake-proof fencing.
- Implementation of these mitigation measures, in addition to the mitigation measure listed in Section IV.D.2.0, above, would reduce the significant impacts to natural resources from proposed mining operations to a less than significant level.

F. AIR QUALITY

1.0 MITIGATION MEASURES PROPOSED AS PART OF THE PROJECT

1. In implementing any Management Plan management action that could result in significant physical effects on air quality from an increase in construction activities, as shown in Table III.F-3, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.F-3).

G. FIRE MANAGEMENT

1.0 MITIGATION MEASURES PROPOSED AS PART OF THE PROJECT

1. In implementing any Management Plan management action that could result in significant physical effects with respect to fire hazard from reduction of existing fuel breaks, as shown in Table III.G-1, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.G-1).
2. In implementing any Management Plan management action that could result in significant physical effects on fire management from increased public access and use, as shown in Table III.G-2, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.G-2).
3. In implementing any Management Plan management action that could result in significant physical effects from use of prescribed burns, as shown in Table III.G-3, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.G-3).

H. CULTURAL RESOURCES

1.0 MITIGATION MEASURES PROPOSED AS PART OF THE PROJECT

1. In implementing any Management Plan management action that could result in significant physical effects on cultural resources from increased public access and use, as shown in Table III.H-2, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.H-2).
2. In implementing any Management Plan management action that could result in significant physical effects on cultural resources from operations, maintenance, and construction activities, as shown in Table III.H-3, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.H-3). However, additional mitigation would be necessary to avoid a potentially significant effect (see Section IV.H.2.0, below).

2.0 MITIGATION MEASURES PROPOSED AS PART OF THE PROJECT

1. Any alteration of identified historic resources must be in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.
2. Demolition or removal of historic structures shall be prohibited.

These mitigation measures, and measures discussed in Section IV.H.1.0 would reduce cultural resources impacts resulting from implementation of the Management Plan to a less than significant level.

I. AESTHETICS

1.0 MITIGATION MEASURES PROPOSED AS PART OF THE PROJECT

1. In implementing any Management Plan management action that could result in significant physical effects on aesthetic quality through installation of new facilities, as shown in Table III.I-1, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.I-1).
2. In implementing any Management Plan management action that could result in significant physical effects on aesthetics through vegetation clearing activities, as shown in Table III.I-2, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.I-2).
3. In implementing any Management Plan management action that could result in significant physical effects on aesthetics through increased public access and use, as shown in Table III.I-3, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.I-3).

J. TRANSPORTATION AND ACCESS

1.0 MITIGATION MEASURES PROPOSED AS PART OF THE PROJECT

None.

2.0 MITIGATION MEASURES IDENTIFIED IN THIS REPORT

The following measure addresses potential hazardous conditions related to the lack of parking at the proposed Sunol Valley facilities:

1. As part of the design of the new public facilities, include a parking plan developed in coordination with Alameda County to provide sufficient parking spaces to avoid unacceptable vehicle/pedestrian hazard. In addition, the SFPUC will monitor the area surrounding new public facilities and report illegal parking to the Alameda County Sheriff's Department for enforcement.

Implementation of this mitigation measure would reduce significant impacts from the lack of parking at the proposed Sunol Valley recreational facilities to a less than significant level.

K. UTILITIES AND PUBLIC SERVICES

No potentially significant or significant impacts have been identified, and no mitigation is required.

L. NOISE

1.0 MITIGATION MEASURES PROPOSED AS PART OF THE PROJECT

None.

2.0 MITIGATION MEASURES IDENTIFIED IN THIS REPORT

The following mitigation measures would reduce potential noise impacts related to construction of Watershed facilities and operation of public access and use areas.

1. Limit construction activities near sensitive receptors to the hours and days specified by the *Alameda County General Plan Noise Element* (generally between 9 a.m. and 6 p.m., Monday-Friday).
2. Require in construction specifications that the contractor select staging areas as far as feasibly possible from existing sensitive land uses. Activities within these staging areas shall conform to the time limitations established in Mitigation Measure 1, above.
3. Require in construction specifications that the contractor maintain all construction equipment with manufacturers' specified noise-muffling devices.
4. Require in construction specifications that the contractor maintain all stationary noise-generating construction equipment as far away as feasibly possible from sensitive receptors or in an orientation that minimizes noise impacts (i.e., behind existing barriers or storage piles, etc.).

These mitigation measures would reduce the potentially significant noise impacts resulting from implementation of the Management Plan to a less than significant level.

M. HAZARDOUS MATERIALS AND HAZARDOUS WASTE

1.0 MITIGATION MEASURES PROPOSED AS PART OF THE PROJECT

1. In implementing any Management Plan management action that could result in significant physical effects from construction-related exposure to hazardous materials and hazardous waste, as shown in Table III.M-1, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact (see Table III.M-1). However, additional mitigation would be necessary to avoid potentially significant effects (see Section IV.M.2.0, below).
2. In implementing any Management Plan management action that could result in significant physical effects from operation-related exposure to hazardous materials and hazardous waste, as shown in Table III.M-2, ensure all applicable Management Plan management actions are implemented that are necessary to reduce the impact to a less than significant level (see Table III.M-2).

2.0 MITIGATION MEASURES IDENTIFIED IN THIS REPORT

The following mitigation measure addresses construction-related hazardous materials and hazardous waste impacts:

1. Prior to any significant soil disturbance or excavation in areas with a history of uses that could have generated hazardous wastes, conduct an analysis of the soil for hazardous wastes. Where hazardous wastes are found in excess of state or federal standards, submit a site mitigation plan and worker safety plan to the Alameda County or Santa Clara Department of Environmental Health for approval. Implement the approved site mitigation plan and worker safety plan prior to site grading or other soil disturbance. If toxics are found for which no standards are established, request a determination from the Alameda County Department of Environmental Health or the jurisdiction state or federal agency as to whether site mitigation plan is needed.

Implementation of this mitigation measure would reduce significant impacts from hazardous and waste materials during construction to a less than significant level.

N. ENERGY

No potentially significant or significant impacts have been identified, and no mitigation is required.

O. GROWTH INDUCEMENT

No potentially significant or significant impacts have been identified, and no mitigation is required.

CHAPTER V

SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL EFFECTS

In accordance with Section 21067 of the California Environmental Quality Act (CEQA), and with Section 15040, 15081 and 15082 of the state CEQA Guidelines, the purpose of this chapter is to identify impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the project, or by other mitigation measures that could be implemented, as described in Chapter IV, Mitigation Measures, pp. 55-57.

- This chapter was subject to final determination by the San Francisco Planning Commission as part of its certification process for the EIR.

For implementation of many proposed *Alameda Watershed Management Plan* policies and management actions, their environmental effects are analyzed in sufficient detail to allow this EIR to fully satisfy CEQA. For example, the impacts of day-to-day management activities that implement the Management Plan are analyzed in this EIR and will generally not be subject to further environmental review. At a program-level, all potential significant impacts except loss of prime agricultural land (discussed below) would be reduced to a less than significant level with implementation of mitigation measures listed in Chapter IV, Mitigation Measures. However, implementation of certain management actions could require further environmental review at the time more specific projects are proposed. The San Francisco Planning Department will require examination of many specific management actions proposed in the Management Plan at the time they are proposed for implementation to determine if further environmental effects beyond those identified in the EIR would occur as a result of changes in the project or new circumstances or information, or if new mitigation measures or alternatives that would reduce one or more significant effects of the project are found to be feasible but SFPUC declines to adopt the measure or alternative (CEQA Guidelines Section 15162). Table II-1 identifies the specific management actions that are likely to require such study.

- Actions proposed in the Management Plan for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in Alameda County's conditions of approval for Surface Mining Permit (SMP) 32. The Management Plan incorporates the SMP-32 conditions of approval and proposes modifications in the timing and sequencing of mining (shortening the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new impacts beyond those disclosed in the EIR prepared for SMP-32. As described in that EIR, permitted mining under SMP-32 would bring about the loss of 140 acres of prime agricultural lands. The EIR for SMP-32 found this loss of prime agricultural land to be an unavoidable

significant impact of that project, and implementation of the Management Plan would include approval of a new lease between SFPUC (as land owner) and the mining operator, entitling mining that would also lead to the unavoidable significant impact.

As described in Section III.B.1.3, options presented under Actions sun2a and sun2b would require amendments to existing mining permits (SMP-24 and SMP-30). It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining. The increase in mining depths proposed in both Actions sun2a and sun2b would not be likely to result in impacts beyond levels previously analyzed and mitigated in previous environmental documentation. Expanding the mining footprint within the leased area, proposed under Action sun2a, could conflict with some existing nursery operations in the valley. However, the conflict would not likely be significant due to the extent of existing adjacent mining activities (including gravel processing plants and reclamation pits). Depending on the location and amount of horizontal expansion of the mining footprint proposed under Action sun2a, a significant loss of prime agricultural land could occur. Amendment of the existing permits would be subject to project-level environmental review by Alameda County to examine in more detail the potential for significant effects and to identify mitigation measures if warranted to reduce or avoid significant effects.

CHAPTER VI

SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Implementation of the *Alameda Watershed Management Plan* would result in short-term, construction-related impacts, and impacts from increased operations and maintenance activities; impacts associated with increased public access and use; and impacts associated with changes in gravel-mining operations. These potential impacts are identified in Chapter III. If the mitigation measures identified in Chapter IV are approved and implemented along with the management actions that could result in physical effects, implementation of the Management Plan would not result in significant irreversible environmental impacts, except for loss of prime agricultural lands associated with mining under Action sun1 north of I-680 (SMP-32) and the potential loss of prime agricultural lands associated with increasing the mining footprint of permitted mining pits south of I-680 (Action sun2a). In addition, the commitment of land (including prime agricultural land), resources, and energy for maintenance of the project facilities would be a long-term commitment. Once the project has been developed, it is unlikely that circumstances would arise that could justify the return of the land occupied by the Management Plan facilities to its original condition.

CHAPTER VII

ALTERNATIVES

A. METHODOLOGY

This alternatives analysis discusses the No Action Alternative and alternatives previously considered but rejected prior to preparation of the *Alameda Watershed Management Plan* and this EIR. The CEQA Guidelines, Section 15126.6(a), requires that Environmental Impact Reports describe a range of reasonable alternatives to the project or its location that could attain the basic project objectives but avoid or lessen significant effects of the project, as well as evaluate the comparative merits of the alternatives. The *Guidelines* set forth the following specific criteria for selecting alternatives:

1. “. . . [T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.” (§15126.6[b])
2. “The range of potential alternatives shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects.” (§15126.6[c])
3. “The specific alternative of ‘no project’ shall also be evaluated along with its impact.” (§15126.6[e][1])
4. “The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making.” (§15126.6[f])

1.0 ALTERNATIVES SCREENING PROCESS

Prior to preparation of the *Alameda Watershed Management Plan*, the SFPUC conducted an extensive analysis of water quality, natural resources, cultural resources, and fire hazard data and conducted a series of public and agency workshops. This analysis resulted in a set of resource vulnerability/sensitivity maps and defined areas of the Watershed where resources are most sensitive to disturbance. The analysis of data was combined with public comments and public survey results to form three watershed management alternatives. Alternative A provides for the highest improvement in water quality and emphasizes ecological resource protection and enhancement. Public access would be very limited under Alternative A. Alternative B provides

for moderate improvement in water quality and balanced ecological resource protection and public access and activity. Alternative C provide a slight improvement in water quality and emphasize increased public access and activity. Based on input from the public, agencies, the project consultant team, and the SFPUC Watershed Planning Committee, the SFPUC developed the preferred alternative. The preferred alternative combines Alternative B with some components of Alternative A. Alternatives A, B, and C are discussed below; the preferred alternative is discussed in Chapters II, III, and IV. The range of alternatives considered in this analysis does not include an alternative to the location of the Management Plan, as the Management Plan by definition is location-specific and its goals, plans, and policies cannot be shifted to an alternate location.

As part of the planning process, the SFPUC prepared the *Sunol Valley Resources Management Element*. The element addresses the management of water resources, mineral resources, SFPUC facilities, cultural resources, agriculture, economic resources, recreation and park facilities, and fisheries in the Alameda Creek corridor within the Alameda Watershed lands. Based on the goals and subgoals of the element and the results of public and agency workshops, six alternatives (Alternatives A through F) for the management of Sunol Valley resources were formulated. These alternatives are discussed below. From these alternatives, two options, discussed in Chapters II, III, and IV, were included in the Management Plan.

B. NO ACTION ALTERNATIVE

1.0 DESCRIPTION

Table VII-1 provides a comparison between the components of the preferred alternative and those of the No Action Alternative. Under the No Action Alternative, comprehensive watershed management strategies would not be implemented, and the SFPUC would continue to operate under existing watershed protection, operations, maintenance, and other policies. Public access to the Sunol-Ohlone Regional Park, and Sunol Valley Golf Course would likely increase in proportion to population growth and recreation demand. The SFPUC would maintain the current policy of restricted access to internal portions of the Watershed, but would consider new public trails on the fringe of the Watershed or trails that provide connectors to existing trails. Grazing would continue to occur under newly approved management practices. Under the No Action Alternative, the current fire suppression policies and fuel management policies would remain in place; all fires would be extinguished as soon as possible, and no specific direction would be provided regarding the means of fire suppression beyond standard operating procedures followed by the California Department of Forestry. Vegetation management for fire hazard reduction is permitted under the existing fuel management policies and has been used on the Watershed. The No Action Alternative could result in implementation of fuel management plans, using treatment methods that are allowed under existing fuel management policies. Under the No Action Alternative, the potential for ignitions related to trespassing and vandalism would continue.

**TABLE VII-1
COMPARATIVE DESCRIPTION OF ALAMEDA WATERSHED MANAGEMENT PLAN ALTERNATIVES**

Preferred Alternative	No Action Alternative	Management Plan Alternative A	Management Plan Alternative B	Management Plan Alternative C
<p>Watershed Management</p> <ul style="list-style-type: none"> ▪ Calls for moderate water quality monitoring following baseline monitoring. ▪ Calls for ecological resource monitoring. ▪ Calls for greater fuel load reduction than Alternative A due to greater access. ▪ Calls for staff increase to support resource protection and access. Responsibilities focus on water quality and ecological resources protection, and fire management. ▪ Calls for establishment of operations and maintenance Best Management Practices. 	<ul style="list-style-type: none"> ▪ Continue existing water quality monitoring. ▪ Continue existing resource monitoring. ▪ Continue existing fuel load reduction. ▪ No change in staffing. ▪ Continue existing operations and maintenance practices. 	<ul style="list-style-type: none"> ▪ Calls for least amount of water quality monitoring following baseline monitoring, due to limited access. Same as existing conditions. ▪ Calls for ecological resource monitoring to determine results of enhancement activity. Less than required for preferred alternative. ▪ Calls for considerable fuel load reduction, but the least of all alternatives. ▪ Calls for moderate staff increase to support resource enhancement. Responsibilities focus on ecological resource enhancement and fire management. Less than required for preferred alternative. 	<ul style="list-style-type: none"> ▪ Calls for moderate water quality monitoring following baseline monitoring. Similar to level required for preferred alternative. ▪ Calls for moderate ecological resource monitoring. Similar to level required for preferred alternative. ▪ Calls for greater fuel load reduction than Alternative A due to greater access. Similar to level required for preferred alternative. ▪ Calls for moderate staff increase to support resource protection and access. Responsibilities focus on water quality and ecological resources protection, and fire management. Similar to level required for preferred alternative. ▪ Calls for establishment of operations and maintenance Best Management Practices. Similar to level required for preferred alternative. 	<ul style="list-style-type: none"> ▪ Calls for most frequent and intensive water quality monitoring to identify increased activity/human presence impacts, following baseline monitoring. ▪ Calls for high level resource monitoring to determine increased access impacts. ▪ Calls for greatest fuel load reduction to support increased access. ▪ Calls for greatest staff increase to support increased access. Responsibilities focus on security and policing, fire management, water quality and resources protection, monitoring, and maintenance.

TABLE VII-1 (Continued)
COMPARATIVE DESCRIPTION OF ALAMEDA WATERSHED MANAGEMENT PLAN ALTERNATIVES

	Preferred Alternative	No Action Alternative	Management Plan Alternative A	Management Plan Alternative B	Management Plan Alternative C
Trails					
Existing Public Trails	<ul style="list-style-type: none"> ▪ Open to individuals/groups without permit. 	<ul style="list-style-type: none"> ▪ Open to individuals/groups without permit. 	<ul style="list-style-type: none"> ▪ Open to individuals/groups without permit. 	<ul style="list-style-type: none"> ▪ Open to individuals/groups without permit. 	<ul style="list-style-type: none"> ▪ Open to individuals/groups without permit.
New Trails	<ul style="list-style-type: none"> ▪ New trails in lesser risk and vulnerability zones, priority given to connector trails and those adjacent to developed areas/Watershed boundaries. Open to individuals/groups without permit. 	<ul style="list-style-type: none"> ▪ Allows new designated and improved urban connector trails on the fringe of Watershed. Would be open to individuals/groups without permit. 	<ul style="list-style-type: none"> ▪ Not allowed. 	<ul style="list-style-type: none"> ▪ New trails in lesser risk and vulnerability zones, priority given to connector trails and those adjacent to developed areas/watershed boundaries. Open to individuals/groups without permit. 	<ul style="list-style-type: none"> ▪ New/improved connector trails on watershed fringe. Open to individuals/groups without permit. ▪ Consider new internal trails. Access to individuals/groups with permit.
Individual Access to Internal/Fire Roads	<ul style="list-style-type: none"> ▪ Not allowed. 	<ul style="list-style-type: none"> ▪ Not allowed. 	<ul style="list-style-type: none"> ▪ Not allowed. 	<ul style="list-style-type: none"> ▪ Individual access limited to selected existing internal roads with permit. 	<ul style="list-style-type: none"> ▪ Individual access limited to selected existing internal roads with permit.
Group Access to Internal/Fire Roads	<ul style="list-style-type: none"> ▪ Docent-/staff-led. ▪ Permit required. ▪ Limited group size. 	<ul style="list-style-type: none"> ▪ Permit required. ▪ Chartered groups only. ▪ Limited group size. 	<ul style="list-style-type: none"> ▪ Docent-/staff-led. ▪ Permit required. ▪ Chartered groups only. ▪ Limited group size. 	<ul style="list-style-type: none"> ▪ Docent-/staff-led. ▪ Permit required. ▪ Limited group size. 	<ul style="list-style-type: none"> ▪ Permit required. ▪ Chartered groups only. ▪ Limited group size.
Equestrian Use	<ul style="list-style-type: none"> ▪ Not allowed except on existing/new public trails. 	<ul style="list-style-type: none"> ▪ Individual/group access. ▪ Access by permit only. ▪ Designated trails only. ▪ Limited group size. 	<ul style="list-style-type: none"> ▪ Not allowed except on existing public trails. 	<ul style="list-style-type: none"> ▪ Individual/group access. ▪ Access by permit only. ▪ Designated trails only. ▪ Limited group size. 	<ul style="list-style-type: none"> ▪ Individual/group access. ▪ Access by permit only. ▪ Designated trails only. ▪ Limited group size.
Biking	<ul style="list-style-type: none"> ▪ Not allowed except on existing/new public trails. 	<ul style="list-style-type: none"> ▪ Not allowed. 	<ul style="list-style-type: none"> ▪ Not allowed. 	<ul style="list-style-type: none"> ▪ Not allowed except on designated existing public trails. 	<ul style="list-style-type: none"> ▪ By permit only. ▪ Limited to designated internal roads and trails in certain geographic areas. ▪ No off-trail use.

TABLE VII-1 (Continued)
COMPARATIVE DESCRIPTION OF ALAMEDA WATERSHED MANAGEMENT PLAN ALTERNATIVES

Preferred Alternative	No Action Alternative	Management Plan Alternative A	Management Plan Alternative B	Management Plan Alternative C	
Fishing	<ul style="list-style-type: none"> ▪ Would be allowed on a section of Lower Alameda Creek and a reclaimed mining pit. 	<ul style="list-style-type: none"> ▪ Not allowed. 	<ul style="list-style-type: none"> ▪ Not allowed. 	<ul style="list-style-type: none"> ▪ Not allowed. 	<ul style="list-style-type: none"> ▪ Controlled fishing considered with permit.
Day Use and Environmental Education Centers	<ul style="list-style-type: none"> ▪ One Environmental Education Center and other Sunol Valley facilities. ▪ Docent-led activities. ▪ Day use only. ▪ Picnicking at designated sites only. 	<ul style="list-style-type: none"> ▪ Not allowed. 	<ul style="list-style-type: none"> ▪ Not allowed. 	<ul style="list-style-type: none"> ▪ One Environmental Education Center. ▪ Docent-led activities. ▪ Day use only. ▪ Picnicking at designated sites only. 	<ul style="list-style-type: none"> ▪ One Environmental Education Center. ▪ Docent-led activities. ▪ Day use. ▪ Consider limited overnight use for educational purposes.
Scientific Study	<ul style="list-style-type: none"> ▪ By permit only. 	<ul style="list-style-type: none"> ▪ By permit only. 	<ul style="list-style-type: none"> ▪ By permit only. 	<ul style="list-style-type: none"> ▪ By permit only. 	<ul style="list-style-type: none"> ▪ By permit only.
Golf Courses	<ul style="list-style-type: none"> ▪ Retain existing courses. ▪ Consider expansion in areas of low vulnerability/sensitivity. ▪ No new courses. 	<ul style="list-style-type: none"> ▪ Retain existing courses. ▪ Consider expansion. ▪ Consider new courses. 	<ul style="list-style-type: none"> ▪ Retain existing courses. ▪ No expansion. ▪ No new courses. 	<ul style="list-style-type: none"> ▪ Retain existing courses. ▪ Consider expansion in areas of low vulnerability/sensitivity. ▪ No new courses upstream of reservoirs. 	<ul style="list-style-type: none"> ▪ Retain existing courses. ▪ Consider expansion. ▪ Consider new courses.
Grazing	<ul style="list-style-type: none"> ▪ Animal Unit Months (AUMs) greatly reduced. ▪ Grazing managed to protect water quality, reduce fire hazard, and enhance vegetation. ▪ Protect water and resources from cattle impacts. 	<ul style="list-style-type: none"> ▪ AUMs remain the same. ▪ Grazing managed using recently improved management practices. 	<ul style="list-style-type: none"> ▪ AUMs greatly reduced. ▪ Grazing managed to protect water quality, reduce fire hazard, and enhance vegetation. ▪ Protect water and resources from cattle impacts. 	<ul style="list-style-type: none"> ▪ AUMs moderately reduced. ▪ Grazing managed to balance ecological resource protection and revenue generation while protecting water quality and ecological resources. 	<ul style="list-style-type: none"> ▪ AUMs remain the same. ▪ Grazing managed using recently improved management practices.

TABLE VII-1 (Continued)
COMPARATIVE DESCRIPTION OF ALAMEDA WATERSHED MANAGEMENT PLAN ALTERNATIVES

Preferred Alternative	No Action Alternative	Management Plan Alternative A	Management Plan Alternative B	Management Plan Alternative C	
Quarries	<ul style="list-style-type: none"> ▪ Mine existing pits south of I-680 deeper and consider horizontal expansion within leased acreage. ▪ Mine within the permitted area north of I-680 (SMP-32). ▪ Accelerate reclamation. ▪ Restore quarries for water storage and recreational use. 	<ul style="list-style-type: none"> ▪ Continue operations south of I-680. ▪ Consider mining deeper and horizontal expansion within leased acreage south of I-680. ▪ Mine SMP-29 north of I-680. Consider SMP-32. 	<ul style="list-style-type: none"> ▪ Mine existing pits south of I-680 deeper, no further expansion. ▪ No mining north of I-680. ▪ Accelerate reclamation. ▪ Restore quarries for water storage and natural resource enhancement. 	<ul style="list-style-type: none"> ▪ Mine existing pits south of I-680 deeper and consider horizontal expansion within leased acreage. ▪ Consider expansion within leased acreage north of I-680 (SMP-29). ▪ Accelerate reclamation. ▪ Restore quarries for water storage and recreational use. 	<ul style="list-style-type: none"> ▪ Mine existing pits south of I-680 deeper. ▪ Expand operations south and north of I-680 within or beyond leased acreage. ▪ Accelerate reclamation. ▪ Restore quarries for water storage and recreational use.
Nurseries	<ul style="list-style-type: none"> ▪ Require greater setbacks from water bodies. 	<ul style="list-style-type: none"> ▪ Remain in current location. 	<ul style="list-style-type: none"> ▪ Relocate nurseries. 	<ul style="list-style-type: none"> ▪ Require greater setbacks from water bodies. 	<ul style="list-style-type: none"> ▪ Remain in current location.
Other Activities and Uses	<ul style="list-style-type: none"> ▪ Policies to be developed for compatible activities/uses. 	None	None	<ul style="list-style-type: none"> ▪ Policies to be developed for compatible activities/uses. 	None

Watershed patrols, operation of the Sunol Valley Water Treatment Plant and the Sunol Valley operations and maintenance yard, erosion control, sporadic treatment of non-native species and pests, and road maintenance would continue at existing levels. Management and use of Watershed lands for mining, nursery, utility corridors, and other uses would also continue at existing levels, or as approved for future use. New leases for mining could be considered. New facilities and improvements, such as new trails on Watershed fringes or new or expanded golf courses, could be constructed under the No Action Alternative. However, existing access restriction policies would result in fewer new facilities than under the preferred alternative. For example, the Sunol Valley recreation and education facilities would not be constructed under the No Action Alternative.

2.0 IMPACTS AND REASONS FOR REJECTION

Table VII-2 provides a comparison between the impacts of the preferred alternative and those of the No Action Alternative. Without a Management Plan, the SFPUC would still be able to propose changes in Watershed management and propose new actions and projects. However, these would occur on an individual basis, without the encompassing policy framework provided by the Management Plan. Construction and operation of additional Watershed facilities could result in impacts, such as natural resource impacts during construction and increased sedimentation and water quality degradation associated with runoff from construction areas and impervious surfaces. Increased public use of the Watershed could result in an increase in unauthorized use that would in turn increase the risk and hazards associated with wildfires, habitat degradation, and water quality degradation. Under the existing fuel management policies, constraints to the existing fire protection system would remain; therefore, the potential for catastrophic wildfire due to natural processes or illegal Watershed use would continue. The No Action Alternative would not avoid the unavoidable significant impact associated with loss of prime agricultural land due to mining north of I-680 in accordance with SMP-29. However, the mined area would be less than under the preferred alternative, unless SMP-32 and horizontal expansion of mining south of I-680 were considered and entitling leases approved under the No Action Alternative.

Under the No Action Alternative, implementation of management actions and mitigation measures similar to those proposed under the preferred alternative would likely reduce impacts to a less than significant level. However, implementation of these actions and measures would occur on an individual basis, without the comprehensive management strategies presented in the Management Plan. The No Action Alternative would have a low response to the primary goal of the Management Plan to maintain and improve source water quality, and a low to moderate response to most of the secondary goals of the Management Plan. Therefore, this alternative was rejected.

C. MANAGEMENT PLAN ALTERNATIVE A: ECOLOGICAL RESOURCE ENHANCEMENT

1.0 DESCRIPTION

Table VII-1 provides a comparison between the components of the preferred alternative and those of Alternative A. Alternative A would provide for the greatest improvement in water quality and

**TABLE VII-2
COMPARISON OF IMPACTS OF ALAMEDA WATERSHED MANAGEMENT PLAN ALTERNATIVES**

Preferred Alternative	No Action Alternative	Management Plan Alternative A	Management Plan Alternative B	Management Plan Alternative C	
Land Use	<ul style="list-style-type: none"> ▪ Increased access and new facilities would increase potential effects to Watershed lands as described below. ▪ Mining north of I-680 would result in a significant unavoidable loss of prime agricultural land and potential horizontal expansion of mining south of I-680 could result in a significant unavoidable loss of prime agricultural land. 	<ul style="list-style-type: none"> ▪ The amount of new facilities and public access, and potential effects to watershed lands would be lower than under preferred alternative. ▪ Mining north of I-680 would result in a significant unavoidable loss of prime agricultural land, but would be less than under the preferred alternative, unless additional entitling leases were approved. Potential horizontal expansion of mining south of I-680 could result in a significant unavoidable loss of prime agricultural land. 	<ul style="list-style-type: none"> ▪ The amount of new facilities and public access, and potential effects to watershed lands would be lower than under preferred alternative. ▪ Mining north of I-680 and horizontal expansion of mining south of I-680 would not occur and would not result in loss of prime agricultural land. 	<ul style="list-style-type: none"> ▪ Access and construction of new facilities, and potential effects to Watershed lands would be greater than under preferred alternative. ▪ Mining would result in a significant unavoidable loss of prime agricultural land, but less than the preferred alternative. 	<ul style="list-style-type: none"> ▪ High level of public use and new facilities would result in greater potential effects on Watershed lands than preferred alternative. ▪ Mining would result in a significant unavoidable loss of prime agricultural land, and the loss could be greater than under the preferred alternative.
Geology and Soils	<ul style="list-style-type: none"> ▪ Construction of additional facilities would increase potential for erosion and landsliding. Actions to reduce soil erosion and to identify, map, and reduce threats associated with landslides would be implemented. ▪ Increased access would slightly increase the number of people potentially exposed to geologic hazards. 	<ul style="list-style-type: none"> ▪ If new facilities are constructed, erosion and landsliding potential would increase. Actions to reduce soil erosion and to identify, map, and reduce threats associated with landslides would not be implemented as part of a comprehensive plan. Actions could be proposed that would reduce potential impacts, similar to those proposed under the preferred alternative. ▪ Continued access restriction would result in a lower number of people potentially exposed to geologic impacts than under preferred alternative. 	<ul style="list-style-type: none"> ▪ Limited construction of new facilities would result in less potential for erosion and landsliding than preferred alternative. Actions to identify, map, and reduce landslide impacts would be implemented. ▪ Continued access restriction would result in a lower number of people potentially exposed to geologic hazards than under preferred alternative. 	<ul style="list-style-type: none"> ▪ Increased public use and lower reduction of grazing compared to preferred alternative would increase potential for erosion and landsliding. Operations and maintenance BMPs would be implemented. BMPs could be less comprehensive than policies/actions of preferred alternative. ▪ Greater access would result in a greater number of people potentially exposed to geologic hazards. 	<ul style="list-style-type: none"> ▪ High level of public use, new facilities, and no reduction in grazing would result in highest potential for erosion and landsliding. Would require high level of resource monitoring to reduce potential impacts due to high level of access/public use. ▪ Highest level of public use would result in the greatest number of people potentially exposed to geologic hazards.

TABLE VII-2 (Continued)
COMPARISON OF IMPACTS OF ALAMEDA WATERSHED MANAGEMENT PLAN ALTERNATIVES

Preferred Alternative	No Action Alternative	Management Plan Alternative A	Management Plan Alternative B	Management Plan Alternative C
<p>Hydrology and Water Quality</p> <ul style="list-style-type: none"> ▪ New facilities construction could result in water quality impacts. ▪ Increased public use could result in water quality impacts. 	<ul style="list-style-type: none"> ▪ If new facilities are constructed, water quality impacts could occur. ▪ Restricted access would result in lower potential water quality impacts than preferred alternative. 	<ul style="list-style-type: none"> ▪ Limited construction of new facilities would result in less potential for water quality impacts than preferred alternative. ▪ Restricted access would result in lower potential water quality impacts than preferred alternative. 	<ul style="list-style-type: none"> ▪ Construction of facilities and improvements would result in similar water quality impacts as preferred alternative. ▪ Increased access would result in greater potential water quality impacts than preferred alternative. 	<ul style="list-style-type: none"> ▪ Includes the greatest number of new facilities and improvements, resulting in the greatest potential water quality impacts. ▪ Highest level of use would result in the greatest potential water quality impacts compared to preferred alternative.
<p>Natural Resources</p> <ul style="list-style-type: none"> ▪ Construction of new facilities, improvements, and implementation of management activities could impact natural resources. Includes IPM, fuel management plan, and other resource management strategies that would reduce impacts. ▪ Increased public access could impact natural resources. Includes actions and mitigation measures that would reduce potential impacts. 	<ul style="list-style-type: none"> ▪ If new facilities are constructed, impacts to natural resources could occur. Pest management would continue under existing policies. Actions could be proposed that would reduce potential impacts, similar to those proposed under the preferred alternative. However, actions would not be conducted under a comprehensive plan. ▪ Public access would remain restricted, impacts to natural resources would be less than under preferred alternative. Actions may be proposed that would reduce potential impacts, similar to those proposed under the preferred alternative. However, actions would not be conducted under a comprehensive plan. 	<ul style="list-style-type: none"> ▪ Allows the least amount of new facilities and improvements that could impact natural resources. Calls for the greatest amount of resource enhancement. Actions that reduce potential impacts would be included, but would not be as extensive as the preferred alternative. ▪ Allows the least amount of public access and the lowest impact to natural resources. Calls for the greatest amount of resource enhancement. Actions that reduce potential impacts would be included, but would not require as great an effort as the preferred alternative. 	<ul style="list-style-type: none"> ▪ Would include similar resource management strategies as preferred alternative. Actions would be proposed that reduce potential impacts, similar to those proposed under the preferred alternative. ▪ Grazing would not be reduced as much as under preferred alternative, resulting in greater potential impacts to natural resources. ▪ Greater access would result in greater potential impacts to natural resources than under preferred alternative. Actions would be proposed that reduce potential impacts, similar to those proposed under the preferred alternative. 	<ul style="list-style-type: none"> ▪ Includes the greatest number of new facilities and improvements and the lowest reduction in grazing, resulting in the greatest potential impact to natural resources. Calls for high level of resource monitoring, but includes less resource enhancement than preferred alternative. Actions would be proposed that reduce potential impacts, similar to those proposed under the preferred alternative, but would require greater effort than under the preferred alternative. ▪ Highest level of public use would result in the greatest potential impact to natural resources. Calls for high level of resource monitoring, but includes less resource enhancement than preferred alternative. Actions and

TABLE VII-2 (Continued)
COMPARISON OF IMPACTS OF ALAMEDA WATERSHED MANAGEMENT PLAN ALTERNATIVES

	Preferred Alternative	No Action Alternative	Management Plan Alternative A	Management Plan Alternative B	Management Plan Alternative C
<p>Natural Resources (cont.)</p>					<p>mitigation measures would be proposed that reduce potential impacts, similar to those proposed under the preferred alternative, but would require greater effort than under the preferred alternative.</p>
<p>Air Quality</p>	<ul style="list-style-type: none"> ▪ Construction of facilities and improvements would not cause significant criteria pollutant and dust emissions. Actions that reduce potential impacts have been proposed. ▪ Increased access would result in increased vehicle trips but would not significantly increase motor vehicle emissions in the region. ▪ Expansion of mining would not result in significant increases of dust and criteria pollutant emissions. 	<ul style="list-style-type: none"> ▪ If facilities/improvements are constructed, criteria pollutant and dust emissions would occur. Actions that reduce potential impacts could be proposed, similar to those proposed under the preferred alternative. However, implementation of actions and mitigation measures would not occur under a comprehensive plan. ▪ Public access would be less than under the preferred alternative. Therefore, potential operational impacts would not be significant. ▪ Expansion of mining and air quality impacts would be less than or the same as under the preferred alternative. 	<ul style="list-style-type: none"> ▪ Allows the least amount of new facilities and resultant air quality impacts. Actions that reduce potential impacts would be proposed, similar to the preferred alternative. However, the level of effort required would be less than under the preferred alternative. ▪ Public access would be less than under the preferred alternative. Therefore, potential operational impacts would not be significant. ▪ No expansion of mining, associated air quality impacts would be lowest. 	<ul style="list-style-type: none"> ▪ Construction of facilities and improvements would result in similar air quality impacts as preferred alternative. Actions that reduce potential impacts would be proposed, similar to the preferred alternative. The level of effort required would be similar as that required under the preferred alternative. ▪ Greater access would result in greater emissions than preferred alternative and would be potentially significant, depending on the level of increase in public use. ▪ Expansion of mining and air quality impacts would be the similar to the preferred alternative. 	<ul style="list-style-type: none"> ▪ Increased facilities and improvement would result in greater air quality impacts than preferred alternative. Actions that reduce potential impacts would be proposed, similar to the preferred alternative. However, the level of effort required would be greater than under the preferred alternative. ▪ Increased access would result in greater emissions than preferred alternative and would be potentially significant, depending on the level of increase in public use. Mitigation measures, such as alternative transportation programs, could be proposed. ▪ Increased mining expansion would result in greater air quality impacts than preferred alternative, but would still be less than significant with mitigation.

TABLE VII-2 (Continued)
COMPARISON OF IMPACTS OF ALAMEDA WATERSHED MANAGEMENT PLAN ALTERNATIVES

Preferred Alternative	No Action Alternative	Management Plan Alternative A	Management Plan Alternative B	Management Plan Alternative C	
Fire Management	<ul style="list-style-type: none"> ▪ Increased public use could result in increased potential for wildfire ignitions and hazards. Implementation of fuel management plan would reduce threat of wildfires. 	<ul style="list-style-type: none"> ▪ Restricted access would result in a lower potential of wildfire ignitions and hazards than preferred alternative. Actions that reduce potential impacts could be proposed, similar to those proposed under the preferred alternative. However, implementation of actions measures would not occur under a comprehensive plan. 	<ul style="list-style-type: none"> ▪ Restricted access would result in a lower potential of wildfire ignitions and hazards and less extensive fuel management would be required than preferred alternative. 	<ul style="list-style-type: none"> ▪ Greater access would result in greater potential for wildfire ignitions and hazards than preferred alternative. Implementation of fuel management plan would reduce threat of wildfires to same degree as preferred alternative. 	<ul style="list-style-type: none"> ▪ Increased public use would result in greater potential for wildfire ignitions and hazards than preferred alternative. Fuel management would be more extensive than preferred alternative.
Cultural Resources	<ul style="list-style-type: none"> ▪ Construction of new facilities could result in cultural resources impacts. Measures to protect cultural resources would be implemented. ▪ Increased public access could result in damage to cultural resources. Measures to protect cultural resources would be implemented. 	<ul style="list-style-type: none"> ▪ If new facilities are constructed, cultural resources could be impacted. Actions that reduce potential impacts could be proposed, similar to those proposed under the preferred alternative. However, implementation of actions measures would not occur under a comprehensive plan. ▪ Restricted access would result in less potential damage to cultural resources than preferred alternative. Actions that reduce potential impacts could be proposed, similar to those proposed under the preferred alternative. However, implementation of actions measures would not occur under a comprehensive plan. 	<ul style="list-style-type: none"> ▪ Construction of fewer new facilities would result in less potential for cultural resources impacts. Actions to protect cultural resources would be implemented. ▪ Restricted access would result in less potential damage to cultural resources than preferred alternative. Actions to protect cultural resources would be implemented. 	<ul style="list-style-type: none"> ▪ Construction of facilities would result in similar potential for cultural resources impacts as preferred alternative. Actions to protect cultural resources would be implemented. ▪ Public access allowed would result in greater potential for cultural resources damage than preferred alternative. Actions to protect cultural resources would be implemented. 	<ul style="list-style-type: none"> ▪ Includes the greatest number of new facilities, resulting in the greatest potential for cultural resources impacts. Actions to protect cultural resources would be implemented. ▪ Increased public access would result in greater potential for cultural resources damage than preferred alternative. Actions to protect cultural resources would be implemented.

TABLE VII-2 (Continued)
COMPARISON OF IMPACTS OF ALAMEDA WATERSHED MANAGEMENT PLAN ALTERNATIVES

Preferred Alternative	No Action Alternative	Management Plan Alternative A	Management Plan Alternative B	Management Plan Alternative C	
Aesthetics	<ul style="list-style-type: none"> ▪ New facilities and improvements would result in visual change. Management actions include design requirements for structures and landscaping. ▪ Increased access could result in increased litter and facilities damage. Implementation of management actions (Safety and Security and Visitor Education) would reduce impacts to less than significant. 	<ul style="list-style-type: none"> ▪ If new facilities and improvements are constructed, visual change would result. Actions similar to those included in the Management Plan could be implemented. However, implementation would not occur as part of a comprehensive plan. 	<ul style="list-style-type: none"> ▪ Allows the least amount of new facilities and would result in the lowest visual change. Design requirements would likely be included in management actions. ▪ Restricted access would result in lower potential for litter and damage than under preferred alternative. 	<ul style="list-style-type: none"> ▪ Visual change related to new facilities and improvements would be the same as preferred alternative. Design requirements would likely be included in management actions. ▪ Greater access would result in higher potential for litter and damage than under preferred alternative. Implementation of Safety and Security actions would be required to reduce potential impacts. 	<ul style="list-style-type: none"> ▪ Allows the greatest increase in new facilities and improvements and would result in greater visual change than preferred alternative. Design requirements would likely be included in management actions. ▪ Increased access would result in higher potential for litter and damage than under preferred alternative. Implementation of Safety and Security actions would be required to reduce potential impacts.
Transportation and Access	<ul style="list-style-type: none"> ▪ Increased access would result in only a minimal increase in vehicular traffic for the region. ▪ Increased access could result in traffic safety hazards. Implementation of mitigation measures would be required. 	<ul style="list-style-type: none"> ▪ Restricted access would increase traffic in proportion to local population and demand for recreation. ▪ Some increase in traffic safety hazards could occur, implementation of similar mitigation measures as under the preferred alternative would reduce potential impacts. 	<ul style="list-style-type: none"> ▪ Restricted access would increase traffic in proportion to local population and demand for recreation. ▪ Some increase in traffic safety hazards could occur, implementation of similar mitigation measures as under the preferred alternative would reduce potential impacts. 	<ul style="list-style-type: none"> ▪ Greater access would result in a greater increase in traffic than under preferred alternative. ▪ Increased access could result in traffic safety hazards similar to the preferred plan. Implementation of similar mitigation measures as under the preferred alternative would be required. 	<ul style="list-style-type: none"> ▪ Increased access would result in a greater increase in traffic than under preferred alternative and would be potentially significant, depending on the level of increase in public use. Mitigation measures, such as alternative transportation programs, could be proposed. ▪ Increased access could result in traffic safety hazards greater than the preferred alternative. Implementation of similar mitigation measures as under the preferred alternative would be required.

TABLE VII-2 (Continued)
COMPARISON OF IMPACTS OF ALAMEDA WATERSHED MANAGEMENT PLAN ALTERNATIVES

	Preferred Alternative	No Action Alternative	Management Plan Alternative A	Management Plan Alternative B	Management Plan Alternative C
Utilities and Public Services	<ul style="list-style-type: none"> ▪ Calls for infrastructure improvement and relocation, but would not result in potential utilities and public services impacts 	<ul style="list-style-type: none"> ▪ Could result in infrastructure and relocation, but would not likely result in potential utilities and public services impacts due limited public access. 	<ul style="list-style-type: none"> ▪ Could result in infrastructure and relocation, but would not likely result in potential utilities and public services impacts due limited public access. 	<ul style="list-style-type: none"> ▪ Could result in infrastructure and relocation, similar to preferred alternative, but would not likely result in potential utilities and public services impacts. 	<ul style="list-style-type: none"> ▪ Could require greater infrastructure improvements than under the preferred alternative. If improvements are extensive, potentially significant impacts could result from construction and operation of the improvements. Mitigation would include standard construction and operation measures, as described in Section III of this EIR.
Noise	<ul style="list-style-type: none"> ▪ Construction of new facilities would result in noise increases. Mitigation measures would reduce potential impacts to a less than significant level. ▪ Increased public use would result in increased noise related to traffic and recreation use. Mitigation measures would reduce impacts to a less than significant level. ▪ Expansion of mining would not result in significant noise impacts. 	<ul style="list-style-type: none"> ▪ If new facilities and improvements are constructed, noise increases would result. Implementation of similar mitigation measures as under the preferred alternative would reduce potential impacts. ▪ Restricted access would result in lower potential for increased noise than under preferred alternative. Implementation of similar mitigation measures as under the preferred alternative would reduce potential impacts. ▪ Expansion of mining and noise impacts would be less than or the same as under the preferred alternative. 	<ul style="list-style-type: none"> ▪ Allows the least amount of new facilities and would result in the lowest construction noise increase and would be less than significant. ▪ Restricted access would result in lower potential for increased noise than under preferred alternative and would be less than significant. ▪ No expansion of mining, associated noise impacts would be lowest. 	<ul style="list-style-type: none"> ▪ Construction of facilities and improvements would result in similar noise increases as preferred alternative. Implementation of similar mitigation measures as under the preferred alternative would reduce potential impacts. ▪ Increased access would result in greater traffic and recreation noise than preferred alternative. Implementation of similar mitigation measures as under the preferred alternative would reduce potential impacts. ▪ Expansion of mining and noise impacts would be the same as the preferred alternative. 	<ul style="list-style-type: none"> ▪ Increased facilities and improvement would result in greater construction noise than preferred alternative. Implementation of similar mitigation measures as under the preferred alternative would reduce potential impacts. ▪ Increased access would result in greater traffic and recreation noise than preferred alternative. Implementation of similar mitigation measures as under the preferred alternative would reduce potential impacts. ▪ Increased mining expansion would result in greater noise impacts than preferred alternative, but would still be less than significant with mitigation.

TABLE VII-2 (Continued)
COMPARISON OF IMPACTS OF ALAMEDA WATERSHED MANAGEMENT PLAN ALTERNATIVES

Preferred Alternative	No Action Alternative	Management Plan Alternative A	Management Plan Alternative B	Management Plan Alternative C	
Other Hazards	<ul style="list-style-type: none"> ▪ Construction of facilities and improvements could expose hazards. Implementation of mitigation measures would reduce impacts to a less than significant level. ▪ Increased access could result in greater use, storage and dumping of hazardous materials, but would not result in significant impacts. 	<ul style="list-style-type: none"> ▪ If new facilities construction occurs, hazards could be exposed. Implementation of similar mitigation measures as under the preferred alternative would be required to reduce impacts to less than significant. ▪ Restricted access would result in lower hazardous materials impact potential than preferred alternative and would be less than significant. 	<ul style="list-style-type: none"> ▪ Fewer new facilities would result in lower potential for hazards exposure than preferred alternative. Implementation of similar mitigation measures as under the preferred alternative would be required to reduce impacts to a less than significant level. ▪ Restricted access would result in lower hazardous materials impact potential than preferred alternative and would be less than significant. 	<ul style="list-style-type: none"> ▪ New facilities construction and resultant potential for hazards exposure would be the same as under the preferred alternative. Implementation of similar mitigation measures as under the preferred alternative would be required to reduce impacts to a less than significant level. ▪ Greater access would result in greater hazardous materials impact potential than preferred alternative. Implementation of Safety and Security and Visitor Education actions would likely reduce impacts to a less than significant level. 	<ul style="list-style-type: none"> ▪ Increased new facilities construction would result in greater potential for hazards exposure than under the preferred alternative. Implementation of similar mitigation measures as under the preferred alternative would be required to reduce impacts to a less than significant level. ▪ Increased access would result in greater hazardous materials impact potential than preferred alternative. Implementation of Safety and Security and Visitor Education actions would likely reduce impacts to a less than significant level.
Energy	<ul style="list-style-type: none"> ▪ Construction of facilities and improvements would minimally increase energy consumption, but would be less than significant. ▪ Increased access would not result in increased regional vehicle trips and increased energy consumption, but would be less than significant. 	<ul style="list-style-type: none"> ▪ If facilities/improvements are constructed, energy consumption would occur, but would be less than significant. ▪ Energy consumption would increase in proportion to local populations and demand for recreation, but would be less than significant. 	<ul style="list-style-type: none"> ▪ Allows the least amount of new facilities and resultant air quality impacts, but would be less than significant. ▪ Retains restricted access, vehicle emissions would increase in proportion to local populations and demand for recreation, but would be less than significant. 	<ul style="list-style-type: none"> ▪ Construction of facilities and improvements would result in similar energy consumption as preferred alternative, but would be less than significant. ▪ Greater access would result in greater energy consumption than preferred alternative but would be less than significant. 	<ul style="list-style-type: none"> ▪ Increased facilities and improvement would result in greater energy consumption than preferred alternative, but would be less than significant. ▪ Increased access would result in energy consumption than preferred alternative, but would be less than significant.
Growth Inducement	<ul style="list-style-type: none"> ▪ Would not induce growth. 	<ul style="list-style-type: none"> ▪ Would not induce growth. 	<ul style="list-style-type: none"> ▪ Would not induce growth. 	<ul style="list-style-type: none"> ▪ Would not induce growth. 	<ul style="list-style-type: none"> ▪ Would not induce growth.

emphasizes ecological resource protection and enhancement. Of the three alternatives, this alternative provides the lowest anticipated risk to public health and the highest level of ecological resource protection and enhancement. Alternative A provides for extensive fuel reduction and fire management activities. Due to the reduction in fuels and controlled public access, Alternative A poses the lowest risk of fire.

Public access compatible with Alternative A is very limited. Under Alternative A, all recreational activities must meet water quality thresholds and screening criteria, as is required under all alternatives. Adherence to stringent resource and activity management practices that control public use of the Watershed would be required to protect Watershed resources under this alternative, as well as under Alternatives B and C. Activities considered compatible with Alternative A include continued access to designated public trails, docent-led group access by permit, and access by permit for scientific study. The existing golf course would remain. Activities considered incompatible with Alternative A include equestrian access, new or expanded golf courses, additional trails, educational centers, fishing, and biking.

Revenue-generating actions considered compatible with Alternative A include limited grazing, managed to enhance the growth of perennial grasses and reduce fire hazard; and mining in existing pits coupled with accelerated reclamation and restoration for water supply and natural resource enhancement. Alternative A would not include mining north of I-680, which would require revocation of the existing lease entitling mining pursuant to SMP-29.

2.0 IMPACTS AND REASONS FOR REJECTION

Table VII-2 provides a comparison between the impacts of the preferred alternative and those of Alternative A. Alternative A would result in the lowest level of public access; therefore, it would result in the lowest level of impacts related to construction of new or upgraded facilities and increased public use. Alternative A would provide comprehensive Watershed management strategies for water quality, fuels management, grazing, and other Watershed resources and would result in extensive natural resource enhancement activities. Alternative A would require a lower level of fuel reduction due to limited public access to the Watershed.

Construction and operation of additional Watershed facilities under Alternative A could result in limited impacts, such as natural resource impacts during construction and increased sedimentation and water quality degradation associated with runoff from construction areas and impervious surfaces. Increased public use of the Watershed under the alternative could result in a limited increase in unauthorized use that would increase the risk and hazards associated with wildfires and water quality degradation. Alternative A would include management actions and mitigation measures similar to those under the preferred alternative that would reduce potential impacts to a less than significant level. Alternative A would not maximize revenue from mining activities and would not maximize future water storage from reclaimed mining pits. However, mining under Alternative A would not cause a loss of prime agricultural land. Alternative A is the environmentally superior alternative.

Although Alternative A is the environmentally superior alternative, Alternative A was rejected because it does not continue existing compatible uses and provide opportunities for potential compatible uses on Watershed lands, including educational, recreational, and scientific uses to the same degree as under the Management Plan preferred alternative.

D. MANAGEMENT PLAN ALTERNATIVE B: ECOLOGICAL RESOURCE/ACCESS

1.0 DESCRIPTION

Table VII-1 provides a comparison between the components of the preferred alternative and those of Alternative B. Alternative B provides moderate improvement in water quality and seeks to balance ecological resource protection and public access and activity. Alternative B stresses management procedures and monitoring that result in prudent watershed resource management, especially in the areas of water quality protection, ecological resource protection, and reduced fire hazard. The anticipated risk to public health under this alternative due to public access is greater than under Alternative A but less than under Alternative C. This alternative would provide for many of the ecological resource enhancement practices identified in Alternative A, but they would be less extensive and intensive. Alternative B provides a greater reduction in the amount of fuels than under Alternative A. However, in addition to reducing hazardous fuels, this alternative presents a greater risk of fire ignition due to its higher level of proposed public access than under Alternative A.

Public access compatible with Alternative B is somewhat limited. Under Alternative B, all recreational activities must meet water quality thresholds and screening criteria, as is required for all alternatives. Activities considered compatible with Alternative B include continued access to designated public trails, additional urban connector trails accessible without a permit, docent-led group access by permit, access by permit for scientific study, and day-use educational centers. The existing golf course could be expanded, subject to water quality and monitoring requirements. Activities considered incompatible with Alternative B include new golf courses, additional interior trail access, fishing, and biking.

Revenue-generating actions considered compatible with Alternative B include grazing (emphasizing the protection of water bodies and ecological resources while controlling fire hazard), and mining expansion north and south of I-680, coupled with accelerated reclamation of abandoned mining pits and restoration for increased water supply.

2.0 IMPACTS AND REASONS FOR REJECTION

Table VII-2 provides a comparison between the impacts of the preferred alternative and those of Alternative B. The preferred alternative and Alternative B allow for similar watershed management activities and public use and would include most of the same facilities and improvements. However, Alternative B would allow individual access to selected existing internal roads, increased group access to internal roads, and greater levels equestrian use than

under the preferred alternative. Alternative B would provide fuel reduction through grazing, but would only reduce grazing a moderate amount and would not result in an adequate level of resource protection and enhancement in grazing areas. Construction and operation of additional Watershed facilities under Alternative B could result in impacts, such as natural resource impacts during construction and increased sedimentation and water quality degradation associated with runoff from construction areas and impervious surfaces. Increased public use of the Watershed under this alternative could result in an increase in unauthorized use that would in turn increase the risk and hazards associated with wildfires, habitat degradation, and water quality degradation. Alternative B would include management actions and mitigation measures similar to those under the preferred alternative that would reduce potential impacts to a less than significant level. Alternative B would not avoid the unavoidable significant impact associated with loss of prime agricultural land due to mining north of I-680 and possible horizontal expansion south of I-680.

The preferred alternative provides substantial opportunities for public recreation and education but would result in lower levels of impact on water quality, Watershed resources, and infrastructure (staffing) than under Alternative B. Alternative B would have only a moderate response to the primary goal and most of the secondary goals of the Watershed Plan. Therefore, Alternative B was rejected.

E. MANAGEMENT PLAN ALTERNATIVE C: INCREASED ACTIVITIES

1.0 DESCRIPTION

Table VII-1 provides a comparison between the components of the preferred alternative and Alternative C. Alternative C would provide a slight improvement in water quality compared to existing conditions and would emphasize increased public access and activity. Of the three alternatives, Alternative C poses the greatest anticipated risk to public health due to increased public access effects on water quality. Alternative C would accommodate some of the ecological resource enhancement activities identified in Alternative A, but these activities would be limited in scope and focused on the protection of areas vulnerable to damage by the public. This alternative requires the highest level of fire management and fuel reduction of the three alternatives in order to safely accommodate increased access. Following fuel reduction, this alternative would still have the highest risk of fire due to increased public access. Alternative C requires the greatest level of management in terms of security and maintenance, and the highest level of monitoring to evaluate the impacts of use on water quality.

Public access compatible with Alternative C is maximized. Under Alternative C, all recreational activities must meet water quality thresholds and screening criteria, as is required under all alternatives. Activities considered compatible with Alternative C include continued access to designated public trails and urban connector trails, as developed under Alternative B; access to additional portions of the Watershed by permit for hiking and equestrian use; access by permit for scientific study; overnight educational centers; new or expanded golf courses; and controlled fishing (outside the primary Watershed) and biking by permit.

Revenue-generating actions compatible with Alternative C include grazing (emphasizing the protection of water bodies and ecological resources while controlling fire hazard), and mining expansion south and north of I-680 coupled with accelerated reclamation of abandoned mining pits and restoration for water supply and recreation activities, including fishing and swimming.

2.0 IMPACTS AND REASONS FOR REJECTION

Table VII-2 provides a comparison between the impacts of the preferred alternative and those of Alternative C. Because Alternative C would provide the highest level of public use and access, resulting in the greatest number of new facilities and improvements, Alternative C would have the greatest impact on water quality and Watershed resources. Alternative C would require the greatest level of management activities, fuel reduction, and staffing to reduce the effects of public use on the Watershed. Grazing would not be reduced, and adverse effects on water quality and watershed resources in grazing areas would continue. Construction and operation of additional Watershed facilities under Alternative C could result in impacts, such as natural resource impacts during construction and increased sedimentation and water quality degradation associated with runoff from construction areas and impervious surfaces. Increased public use of the Watershed under this alternative could result in an increase in unauthorized use that would in turn increase the risk and hazards associated with wildfires, habitat degradation, and water quality degradation. Alternative C would include management actions and mitigation measures similar to those under the preferred alternative that would reduce potential impacts. However, given the extensive level of public use and grazing under this alternative, potential water quality, fire hazard, and natural resources impacts could be unavoidable. Alternative C would not avoid the unavoidable significant effect associated with loss of prime agricultural land due to mining north of I-680. Mining north and south of I-680 could be expanded beyond leased acreage, resulting in a greater loss of prime agricultural land than under the preferred alternative.

The preferred alternative provides substantial opportunities for public recreation and education but would result in lower levels of impact on water quality, Watershed resources, and infrastructure (staffing) than under Alternative C. Alternative C would have only a moderate response to the primary goal of the Management Plan and a low to moderate response to most of the secondary goals. Therefore, Alternative C was rejected.

F. SUNOL VALLEY RESOURCES MANAGEMENT ELEMENT OPTIONS (FOR MINING)

1.0 DESCRIPTION

In developing the alternatives for the *Sunol Valley Resources Management Element*, three initial conceptual alternatives (mining Alternatives A, B, and C, as described later) emphasized exploration of the range of water storage, recreation, and revenue-generation possibilities in the Sunol Valley. Public sentiment generally favored Alternative B, which does not allow mining north of I-680 and includes recreational, agricultural, and other revenue-generating actions in this area to partially offset the loss of mining revenue. However, Alternative B calls for removal of

San Antonio Creek south of I-680, which is an important wildlife corridor. Based on public comment and input from the Watershed Planning Committee, Mission Valley Rock Company, and other interested parties, several additional alternatives were developed.

Alternative D also emphasizes water storage, recreation, and revenue generation, but is more protective of natural resources in the area, as it includes a conservation easement. Alternative E allows mining according to SMP-32 and includes much less water storage south of I-680 than Alternative D. SMP-32 is the mining permit issued to the Mission Valley Rock Company by Alameda County for mining 200 acres north of I-680. Prior to issuance of SMP-32, the Mission Valley Rock Company had a permit and lease for 69 acres under SMP-29. In order to mine the area north of I-680 permitted under SMP-32, a lease from the SFPUC would be required.

Under Alternative E, the proposed SMP-32 (north of I-680) mining pit edge is in proximity to the Sunol Water Temple. Alternative F, proposed in response to this consideration, provides a quarter-mile setback from the Sunol Water Temple to the mined areas, more landscape screening around the mining pit, and a larger interpretive area. This setback would increase the mitigation for visual and cultural resource impacts from mining north of I-680, as was required in the Conditions of Approval for SMP-32 EIR. South of I-680, Alternative F is the same as Alternative D relative to the attempt to maximize water storage.

All alternatives would require amendments of various existing surface mining permits. Both Alternative A and Alternative D propose mining areas consistent with that encompassed under SMP-29. Alternative C and Alternative F propose a mining area that is only slightly modified from that encompassed under SMP-32. Alternative E includes a mining area fully consistent with SMP-32, as it was originally proposed. Alternative B would also require expansion and amendment of existing permits and leases.

On March 12, 1996, these six mining alternatives were presented to the SFPUC with the intent of selecting a preferred alternative for the Sunol Valley to incorporate into the Management Plan. The alternatives were presented to the public on April 9, 1996 and a final decision was made on the preferred alternative on May 14, 1996. The preferred alternative, discussed in Chapters II, III, and IV, includes portions of Alternatives E and F, and is subdivided into two options, preferred alternative Option 1 and Option 2. These options are referred to as Action sun2a and Action sun2b in the Management Plan. Alternatives A to F are analyzed below. During the public comment process, citizens from the town of Sunol introduced Alternative S, after the SFPUC had selected the preferred alternative. The components of Alternative S are similar to Alternative B, proposing revenue-generating uses north of I-680 and 47,100 acre-feet of water storage (as opposed to 51,800 acre-feet under Alternative B). Therefore, Alternative S is discussed along with Alternative B, below. All mining alternatives and options are discussed in more detail below, with key features identified in Table VII-3.

1.1 MINING ALTERNATIVE A

Alternative A provides for the mining of existing permits and leases, with mining to occur both north and south of I-680. Mining is expected to be completed by 2015. Recreational activities

**TABLE VII-3
COMPARISON OF PROPOSED FACILITIES AND PERMITTED ACTIVITIES UNDER
SUNOL VALLEY RESOURCES MANAGEMENT ELEMENT ALTERNATIVES**

FACILITIES AND ACTIVITIES	Preferred Mining Alternative Option 1		Preferred Mining Alternative Option 2		Mining Alternative A		Mining Alternative B / Alternative S		Mining Alternative C		Mining Alternative D		Mining Alternative E		Mining Alternative F	
	North of I-680	South of I-680	North of I-680	South of I-680	North of I-680	South of I-680	North of I-680	South of I-680	North of I-680	South of I-680	North of I-680	South of I-680	North of I-680	South of I-680	North of I-680	South of I-680
Mining allowed north of I-680, expanded south of I-680	■	■	■		■			■	■	■	■	■	■		■	■
Commercial Site (Gas/Groceries)		■		■	■		■		■		■		■			■
Farmers Market	■		■		■		■				■					
Organic Farm/Working Farm	■		■		■		■				■					
Agriculture/Nursery														■		
Agriculture/Vinyard/Nursery/Crop s/Aquaculture/Wetlands	■		■										■		■	
Landscaped Mounds (setbacks and buffers)					■				■		■		■		■	
Interpretive Area/Events Site – Water Temple, Archaeological Sites, Amphitheater, Picnic Area, Events Building	■		■		■		■		■		■		■ ^a		■ ^a	
Overnight Nature Study		■ ^b		■ ^b	■		■		■			■ ^b		■ ^b		■ ^b
RV Campground						■	■					■ ^b				
Group Picnic Area						■	■						■		■	
Picnic and Day Use Area	■		■													
Parking					■		■		■		■		■		■	
Staging Area/Trail Heads	■		■		■		■		■		■		■		■	

TABLE VII-3 (Continued)
COMPARISON OF PROPOSED FACILITIES AND PERMITTED ACTIVITIES UNDER
SUNOL VALLEY RESOURCES MANAGEMENT ELEMENT ALTERNATIVES

FACILITIES AND ACTIVITIES	Preferred Mining Alternative Option 1		Preferred Mining Alternative Option 2		Mining Alternative A		Mining Alternative B / Alternative S		Mining Alternative C		Mining Alternative D		Mining Alternative E		Mining Alternative F	
	North of I-680	South of I-680	North of I-680	South of I-680	North of I-680	South of I-680	North of I-680	South of I-680	North of I-680	South of I-680	North of I-680	South of I-680	North of I-680	South of I-680	North of I-680	South of I-680
Alameda Creek Enhancement/Wildlife Area					■		■		■		■		■		■	
Trail Connections to Niles Canyon/Pleasanton Ridge (EBRPD)	■		■		■		■		■		■		■		■	
Trail Connections to Sunol – Ohlone Regional Park		■		■		■		■		■		■		■		■
Boating Facility – Marina, Boat Launch, Boat Rental, Concessionaire	■		■			■		■		■		■				
Swimming Lagoon – Beach, Water Slide, Scuba Training, Picnic Area, Concessionaire						■			■							
Water-Related Recreation Area													■			
Fishing Area/Aquaculture	■				■						■					
Fishing Area – Shoreline Fishing, Fishing Pier	■		■					■		■		■			■	

- a Water Temple and Archaeological Sites only.
- b South of the Hetch Hetchy Aqueduct.
- c MEA would require examination of these facilities to determine if further CEQA environmental review of these activities at a more detailed, project-level were necessary.

under this alternative are developed to generate revenue. The alternative includes five water storage pits, one north of I-680 and four south of I-680. Total water storage volume generated by this alternative, with pits mined to 200 feet, would be 33,700 acre-feet. San Antonio Creek would not be mined under Alternative A. Potential activities under Alternative A for the land and water areas both north and south of I-680 are identified in Table VII-3. Mining would be completed by about 2015.

1.2 MINING ALTERNATIVE B / ALTERNATIVE S

Alternative B provides for maximized mining and water storage south of I-680, with no mining north of I-680. San Antonio Creek would be mined in order to create a large reservoir. Alternative S would not mine San Antonio Creek, and would therefore result in less water storage than Alternative B. Both alternatives propose recreational and agricultural activities north of I-680 to generate revenue. Both alternatives include four water storage pits, all located south of I-680. Expansion of mining activity under either Alternative B or S is not covered under existing SMP conditions and would require environmental review. Under Alternative B, the total water storage volume is 51,800 acre-feet. Alternative S indicates a total of 47,100 acre-feet of water storage. Potential activities under Alternatives B and S for the land and water areas both north and south of I-680 are identified in Table VII-3. Mining would be completed by about 2036 under Alternatives B and S.

1.3 MINING ALTERNATIVE C

Alternative C maximizes water storage both north and south of I-680. Mining is intended to be maximized south of I-680 before mining would occur north of I-680. All mining is intended to be completed by 2047. San Antonio Creek would not be mined under Alternative C. The alternative includes six water storage pits, one north and five south of I-680. Expansion of this mining activity is not covered under existing SMP conditions and would require environmental review. Total water storage under this alternative is 62,600 acre-feet. Potential activities under Alternative C for the land and water areas both north and south of I-680 are identified in Table VII-3. Mining would be completed by about 2047.

1.4 MINING ALTERNATIVE D

Alternative D was developed in response to the diverse comments received at the August 1995 public workshop. Under this alternative, existing permit and lease areas would be mined north of I-680, mining and reclamation would be expedited, and a conservation easement would be placed over the entire area to preclude additional disturbance following reclamation. South of I-680, water storage would be maximized. However, San Antonio Creek would not be mined under Alternative D. Expansion of this mining activity is not covered under existing SMP conditions and would require environmental review.

Under this alternative, as well as under Alternatives E and F, the areas north of Arroyo de la Laguna and south of the Hetch Hetchy Aqueduct are added to the planning area. A total of six storage pits, one north and five south of I-680, are proposed under this alternative. Total water

storage under this alternative is 52,300 acre-feet. Potential activities under Alternative D for the land and water areas both north and south of I-680 are identified in Table VII-3. Mining would be completed by about 2036.

1.5 MINING ALTERNATIVE E

Alternative E includes mining north and south of I-680. Mining north of I-680 reflects the terms of SMP-32, as approved and permitted by Alameda County. Mining south of I-680 would be in accordance with existing permits and leases. San Antonio Creek would not be mined under Alternative E. This alternative includes five water storage pits, one north and four south of I-680. Total water storage under this alternative is 53,100 acre-feet. Potential activities under Alternative E for the land and water areas both north and south of I-680 are identified in Table VII-3. Mining would be completed by about 2038.

1.6 MINING ALTERNATIVE F

Alternative F was developed in response to Alternative E and to address the cultural resources at the Sunol Water Temple. Alternative F provides for mining both north and south of I-680. All activities related to non-water storage would be developed and operated by a concessionaire at no cost to the rate payer.

North of I-680 this alternative accommodates SMP-32, with the exception of a quarter-mile resource-protection setback from the Sunol Water Temple. This setback is intended to provide an increased buffer between the Sunol Water Temple and the mining activity and would also serve as mitigation for visual and cultural resource impacts. This buffer would consist of a mined area around the temple that would be backfilled and landscaped after completion. Mining and reclamation would be expedited in this area.

South of I-680 water storage would be maximized. Expansion of this mining activity is not covered under existing SMP conditions and would require environmental review. San Antonio Creek would not be mined under Alternative F. The alternative includes six water storage pits, one north and five south of I-680. Total water storage under this alternative is 63,200 acre-feet. Potential activities under Alternative F for the land and water areas both north and south of I-680 are identified in **Table VII-3**. Mining would be completed by about 2047.

2.0 IMPACTS

The environmental effects of mining Alternatives A through F and Alternative S vary based on the extent and types of use provided for under the alternatives. As discussed above, Alternatives A through F and Alternative S would include mining to various extents as well as a range of water storage, recreational, and educational uses following reclamation of mining pits. Major differences between the alternatives are highlighted below:

- Alternatives A and C would provide the greatest variety of recreational activities.

- Alternative F would provide the greatest amount of mining and potential water storage.
- Alternative B would include mining of San Antonio Creek to create a large reservoir. Alternative S would not include mining of San Antonio Creek, and would extend mining to Calaveras Road.
- Alternative C would provide the greatest environmental disturbance north of I-680 due to the size of the mining pit.
- Alternative D would place a conservation easement north of I-680; none of the other alternatives include a conservation easement.
- Alternative F would provide a setback from the Sunol Water Temple.
- Alternatives A and B would provide for less mining than allowed under SMP-32; Alternatives C, D, and F require modification to SMP-32.

All alternatives would result in some level of continued mining in the Sunol Valley and would include opportunities for public recreation and educational use of the Watershed following reclamation of the mined pits. As a result, mining operations and construction and operation of Watershed facilities following the completion of mining under each alternative could result in impacts to water quality and Watershed resources, such as vegetation and wildlife. The extent of potential impacts would be similar under all alternatives, as each alternative provides for construction of a number of additional public facilities; however, these impacts would differ based on the level of activities permitted or the protective measures incorporated into each alternative. A summary of the impacts of the alternatives is provided below.

Land Use. Alternatives that include mining north of I-680 (all except Alternatives B and S) could potentially result in greater conflicts with existing land uses. However, in approving SMP-32 and establishing mitigative conditions of approval, Alameda County found no significant land use conflicts. Therefore, no significant land use impacts would be expected from mining north of I-680 in substantial conformance with SMP-32, as Alternatives A, C, D, E and F propose, beyond the loss of 140 acres of prime agricultural land. Mining south of I-680 would be a continuation of an existing use and would not be expected to result in additional land use impacts, except for the potential loss of prime agricultural land associated with horizontal expansion of permitted mining pits. Alternatives B, C, D, F and S would require modification of existing permits for mining south of I-680. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining.

Following reclamation of mining pits, public recreation and educational facilities would be constructed and operated under all of the alternatives. However, those land uses would not substantially disrupt existing land uses or impact the existing character of the area, which is primarily related to mining and nursery operations.

Geology and Soils. Alternatives that maximize mining would have a higher potential for geology and soils impacts. However, in approving SMP-32 and establishing mitigative conditions of approval, Alameda County found no significant geology and soils impacts. Therefore, no significant geology and soils impacts would be expected from mining north of I-680 in substantial conformance with SMP-32, as Alternatives A, C, D, E and F propose. Mining south of I-680 would be a continuation of an existing use and would not be expected to result in additional geology and soils impacts. Alternatives B, C, D, F and S would require modification of existing permits for mining south of I-680. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining.

Construction and operation of the public recreation and educational facilities proposed under all alternatives would result in potential impacts related to soil erosion, soil instability, and seismic hazards, as described in Section III.C. Implementation of management actions would reduce potential soil erosion and soil instability impacts to a less than significant level.

Hydrology and Water Quality. All of the alternatives would provide for water storage at reclaimed mining pits and would support the secondary goal of the Management Plan to maximize water supply. However, in approving SMP-32 and establishing mitigative conditions of approval, Alameda County found no significant hydrology and water quality impacts. Therefore, no significant hydrology and water quality impacts would be expected from mining north of I-680 in substantial conformance with SMP-32, as Alternatives A, C, D, E and F propose. Mining south of I-680 would be a continuation of an existing use and would not be expected to result in additional hydrological or water quality impacts. Alternatives B, C, D, F and S would require modification of existing permits for mining south of I-680. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining.

Construction and operation of the public recreation and educational facilities proposed under all alternatives could result in significant water quality impacts, as described in Section III.D. Alternatives A and C allow body-contact recreation, which could have a significant impact on water quality. Implementation of management actions presented in Section III.D would reduce potential hydrology and water quality impacts under all alternatives to a less than significant level. Implementation of Alternatives A or C could require mitigation measures that address body-contact recreation.

Natural Resources. The SMP-32 EIR addressed the potential natural resource impacts associated with mining activities north of I-680. However, in approving SMP-32 and establishing mitigative conditions of approval, Alameda County found no significant natural resources impacts. Additional mitigation is proposed in this EIR that would provide potential natural resource impacts. Therefore, no unavoidable significant natural resources impacts would be expected from mining north of I-680 in substantial conformance with SMP-32, as Alternatives A, C, D, E and F propose. Alternatives B, C, D, F and S would require modification of existing

permits for mining south of I-680. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining. California Department of Fish and Game noted during scoping for the Management Plan that significant impacts could result from the mining of San Antonio Creek under Alternative B.

Construction and operation of the public recreation and educational facilities proposed under all alternatives could result in significant impacts on natural resources associated with spread of invasive plant species and disturbance of vegetation and wildlife, as described in Section III.E. Implementation of actions presented in Section III.E could reduce the potential impacts to a less than significant level. In addition, Alternative D includes a conservation easement that would further reduce potential impacts on natural resources.

Air Quality. The SMP-32 EIR addresses the potential air quality impacts associated with mining activities north of I-680. However, in approving SMP-32 and establishing mitigative conditions of approval, Alameda County found no significant air quality impacts. Therefore, no significant air quality impacts would be expected from mining north of I-680 in substantial conformance with SMP-32, as Alternatives A, C, D, E and F propose. Mining south of I-680 would be a continuation of an existing use and would not be expected to result in additional air quality impacts. Alternatives B, C, D, F and S would require modification of existing permits for mining south of I-680. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining.

Construction of public recreation and educational facilities proposed under all alternatives could result in significant air quality impacts associated with construction-related emissions, as described in Section III.F. Implementation of management actions presented in Section III.F could reduce the potential air quality impacts under all alternatives to a less than significant level. Operation of public facilities would not result in significant air quality impacts.

Fire Management. Implementation of mining activities would not be expected to result in significant fire hazard or fire risk impacts. Increased public use of Watershed facilities following completion of mining could result in potentially significant increases in fire risk (i.e., increased incidences of unauthorized uses, trampling of vegetation) under all alternatives. However, implementation of management actions described in Section III.G would reduce potential impacts to a less than significant level.

Cultural Resources. The SMP-32 EIR addressed the potential impacts on cultural resources associated with mining activities north of I-680. However, in approving SMP-32 and establishing mitigative conditions of approval, Alameda County found no significant cultural resources impacts. Therefore, no significant cultural resources impacts would be expected from mining north of I-680 in substantial conformance with SMP-32, as Alternatives A, C, D, E and F propose. Mining south of I-680 would be a continuation of an existing use and would not be expected to result in additional cultural resources impacts. Alternatives B, C, D, F and S would require modification of existing permits for mining south of I-680. It may be reasonably assumed

that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining. In addition, Alternative F includes an additional quarter-mile buffer around the Sunol Water Temple, which would be implemented under all alternatives and would provide further protection for cultural resources.

Construction and operation of the public recreation and educational facilities proposed under all alternatives could result in significant cultural resources impacts related to construction disturbance of cultural resources and public use impacts such as vandalism. However, implementation of management actions presented in Section III.H would reduce the potential impacts on cultural resources under all alternatives to less than significant level.

Aesthetics. The SMP-32 EIR addressed the potential aesthetic impacts associated with mining activities north of I-680. However, in approving SMP-32 and establishing mitigative conditions of approval, Alameda County found no significant aesthetic quality impacts. Therefore, no significant aesthetic quality impacts would be expected from mining north of I-680 in substantial conformance with SMP-32, as Alternatives A, C, D, E and F propose. Mining south of I-680 would be a continuation of an existing use and would not be expected to result in additional aesthetic impacts. Alternatives B, C, D, F and S would require modification of existing permits for mining south of I-680. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining. In addition, Alternative F includes an additional quarter-mile buffer around the Sunol Water Temple, and would further screen mining pits from the temple area. This buffer would be implemented under the Management Plan.

Construction and operation of the public recreation and educational facilities proposed under all alternatives could result in significant aesthetic impacts related to the visual effect of new buildings and structures in the Sunol Valley, as well as potential degradation of facilities and vegetation through improper use of public access areas. However, implementation of actions described in Section III.I would reduce the potential aesthetic impacts under all alternatives to a less than significant level.

Transportation and Access. The SMP-32 EIR addressed the potential transportation and access impacts associated with mining activities north of I-680. However, in approving SMP-32 and establishing mitigative conditions of approval, Alameda County found no significant transportation and access impacts. Therefore, no significant transportation and access impacts would be expected from mining north of I-680 in substantial conformance with SMP-32, as Mining south of I-680 would be a continuation of an existing use and would not be expected to result in additional transportation and access impacts. Alternatives A, C, D, E and F propose. Alternatives B, C, D, F and S would require modification of existing permits for mining south of I-680. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining.

Operation of the public recreation and educational facilities following completion of mining, proposed under all alternatives, would not be expected to result in a significant increase in traffic on roadways serving the Sunol Valley (see Section III.J). However, lack of sufficient parking at Watershed facilities could result in potential safety hazards. Implementation of the mitigation measure presented in Section IV.J would reduce the potential safety hazards associated with a lack of parking to a less than significant level.

Utilities and Public Services. The SMP-32 EIR addressed the potential utilities and public services impacts associated with mining activities north of I-680. However, in approving SMP-32 and establishing mitigative conditions of approval, Alameda County found no significant utilities and public services impact. Therefore, no significant utilities and public services impacts would be expected from mining north of I-680 in substantial conformance with SMP-32, as Alternatives A, C, D, E and F propose. Mining south of I-680 would be a continuation of an existing use and would not be expected to result in additional utilities and public services impacts. Alternatives B, C, D, F and S would require modification of existing permits for mining south of I-680. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining.

Construction and operation of public facilities proposed under all alternatives would result in some increase in demand for utilities and public services, but the effect of providing these utilities and public services would not be expected to result in significant impacts.

Noise. The SMP-32 EIR addressed the potential noise impacts associated with mining activities north of I-680. However, in approving SMP-32 and establishing mitigative conditions of approval, Alameda County found no significant noise impacts. Therefore, no significant noise impacts would be expected from mining north of I-680 in substantial conformance with SMP-32, as Alternatives A, C, D, E and F propose. Mining south of I-680 would be a continuation of an existing use and would not be expected to result in additional noise impacts. Alternatives B, C, D, F and S would require modification of existing permits for mining south of I-680. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining.

Construction of public facilities proposed under all alternatives, as well as recreational use of these facilities, could result in significant noise impacts at sensitive receptors. However, implementation of mitigation measures presented in Section IV.L would reduce the potential noise impacts to a less than significant level.

Hazardous Materials and Hazardous Waste. The SMP-32 EIR addressed the potential hazardous materials and hazardous waste impacts associated with mining activities north of I-680. However, in approving SMP-32 and establishing mitigative conditions of approval, the Alameda County found no significant hazardous materials and hazardous waste impacts. Therefore, no significant hazardous materials and hazardous waste impacts would be expected from mining north of I-680 in substantial conformance with SMP-32, as Alternatives A, C, D, E

and F propose. Mining south of I-680 would be a continuation of an existing use and would not be expected to result in additional hazardous materials and hazardous waste impacts.

Alternatives B, C, D, F and S would require modification of existing permits for mining south of I-680. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining.

Construction of public facilities proposed under all alternatives could result in significant impacts related to human exposure to existing hazardous materials during construction. Implementation of the management action described in Section III.M and the mitigation measure presented in Section IV.M would reduce the potential impacts related to hazardous materials to a less than significant level.

Energy. The SMP-32 EIR addressed the potential energy impacts associated with mining activities north of I-680. However, in approving SMP-32 and establishing mitigative conditions of approval, Alameda County found no significant energy impacts. Therefore, no significant energy impacts would be expected from mining north of I-680 in substantial conformance with SMP-32, as Alternatives A, C, D, E and F propose. Mining south of I-680 would be a continuation of an existing use and would not be expected to result in additional energy impacts. Alternatives B, C, D, F and S would require modification of existing permits for mining south of I-680. It may be reasonably assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24, SMP-30, and more recent permits such as SMP-32 that mitigate significant effects of mining.

Construction and operation of public facilities proposed under all alternatives would not result in significant energy impacts.

Growth Inducement. Over the long term, implementation of the Management Plan would provide for additional in water storage reservoirs developed in reclaimed mining pits. Possible water sources for storage in the reclaimed pits would be local water, including local runoff; imported water from the Hetch Hetchy Project or from the Delta, using the South Bay Aqueduct; and recycled water from the Livermore Valley. It is unlikely that groundwater would be a source due to the small volume of groundwater extant in the Sunol Valley. The water storage reservoirs could increase the yield of the SFPUC water system by storing more water for use during droughts. The water stored in the reservoirs would be used as a supply resource in dry years. The existing SFPUC Water System may prove to be inadequate in the event of an extended drought. Analysis of a design drought shows water demand at about 300 mgd, whereas the firm yield of the entire water system is about 240 mgd. The reclaimed mining pit reservoir storage volume would correspond to a firm yield of about seven mgd, about 11 percent of the existing shortfall. Therefore, water stored in the reservoirs would only partially reduce the existing water supply shortfall and would not induce growth by, for example, potentially serving substantially number of new customers or allowing SFPUC to expand its service area (SFPUC, 1999).

It should be noted that construction and operation of the public facilities and reclamation of mining pits under any of the alternatives would require project-level environmental review prior to implementation, as would modifications of all SMPs and leases.

3.0 REASONS FOR REJECTION

Alternatives A through F were rejected for the following reasons:

- Alternatives A, C, D and S would not provide required water storage or revenue from mining.
- Alternative B would not include mining north of I-680 and would not maximize potential water storage in the Sunol Valley. In addition, Alternative B would induce significant impacts with the removal of San Antonio Creek.
- Alternatives A, C, D, and S are infeasible because of high costs relating to reclamation, particularly for the intensive recreational uses provided under these alternatives.
- Alternatives E and F were rejected as individual alternatives, but were combined to form the preferred alternative.

REFERENCES – Alternatives

Except where indicated, references are on file at the San Francisco Planning Department.

EDAW, Inc., prepared for the San Francisco Utilities Commission, *Alameda Watershed Management Plan*, 1998a.

EDAW, Inc., prepared for the San Francisco Utilities Commission, *Sunol Valley Resources Management Element*, Appendix A-3 of the *Alameda Watershed Management Plan*, 1998b.

Save Our Sunol, public comments to the *Alameda Watershed Management Plan EIR* public scoping, 1996.

San Francisco Public Utilities Commission (SFPUC), *SFPUC Water Resource Strategy, Technical Memorandum 14/15*, 1999.

CHAPTER VIII

DRAFT EIR DISTRIBUTION LIST

CHAPTER IX

APPENDICES

APPENDIX IX.A
NOTICE OF PREPARATION

APPENDIX IX.B

SPECIAL-STATUS SPECIES TABLES

**TABLE IX.B-1
SPECIAL-STATUS PLANT SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED VICINITY**

Common name Scientific name	Listing Status USFWS/CDFG/ CNPS	Habitat Requirements	General Site Occurrence Within the Watershed	Flowering Period
Santa Clara thorn mint <i>Acanthomintha lanceolata</i>	--/--/4	Chaparral, shale scree	High Potential Type Habitat- Calaveras ^a	March-June
Balsamroot <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	--/--/1B	Cismontane woodland, grassland	High Potential Interior slopes near SF Bay	March-June
Oakland star-tulip <i>Calochortus umbellatus</i>	--/--/4	Broadleaved upland forests, chaparral, lower montane coniferous forests, grasslands, often on serpentinite	Moderate Potential Mt. Hamilton Range ^a	March-May
Sharsmith's harebell <i>Campanula sharsmithiae</i>	FSC/--/1B	Chaparral, ultramafic talus	Moderate Potential Mt. Hamilton Range	May-June
Mt. Hamilton thistle <i>Cirsium fontinale</i> var. <i>campylon</i>	FSC/--/1B	Ultramafic seeps, sandy streams	High Potential Mt. Hamilton Range ^a	Feb-Oct
Brewer's clarkia <i>Clarkia breweri</i>	--/--/4	Chaparral, shale talus	High Potential Mt. Hamilton Range ^a	April-May
Santa Clara red ribbons <i>Clarkia concinna</i> ssp. <i>automixa</i>	FSC/--/1B	Coastal scrub, grassland (ultramafic)	High Potential Alameda County ^c	May-July
Presidio clarkia <i>Clarkia franciscana</i>	FE/CE/1B	Coastal scrub, grassland (ultramafic)	Moderate Potential Alameda County ^c	May-July
Serpentine collomia <i>Collomia diversifolia</i>	--/--/4	Serpentine seeps, streams	Moderate Potential Red Mountains ^a	May-June
Mt. Hamilton coreopsis <i>Coreopsis hamiltonii</i>	FSC/--/1B	Steep, shale talus, woodland	Moderate Potential Mt. Hamilton Range ^a	March-May
Inner Co. Range Larkspur <i>Delphinium californicum</i> ssp. <i>interius</i>	FSC/--/1B	Dry ravines	High Potential Mt. Hamilton Range ^a	April-June
Western leatherwood <i>Dirca occidentalis</i>	--/--/1B	Broadleaved upland forests, closed-cone coniferous forests, chaparral, cismontane woodland, North Coast coniferous forests, riparian forests, riparian woodland; mesic sites	Moderate Potential Alameda, Santa Clara County ^c	Jan-March

TABLE IX.B-1 (Continued)
SPECIAL-STATUS PLANT SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED VICINITY

Common name <i>Scientific name</i>	Listing Status USFWS/CDFG/ CNPS	Habitat Requirements	General Site Occurrence Within the Watershed	Flowering Period
Santa Clara Valley dudleya <i>Dudleya setchellii</i>	FE/--/1B	Ultramafic grasslands	Moderate Potential Outside of range	May-June
Tiburon buckwheat <i>Eriogonum luteolum</i> var. <i>caninum</i>	--/--/3	Chaparral, coastal prairie, grasslands, usually on serpentine	Moderate Potential Alameda, Santa Clara County ^c	June-Sept
Ben Lomond buckwheat <i>Eriogonum nudum</i> var. <i>decurrens</i>	--/--/1B	Chaparral, coastal prairie, grasslands, usually on serpentine	Moderate Potential Alameda, Santa Clara, Santa Cruz County ^c	June-Sept
Jepson's woolly sunflower <i>Eriophyllum jepsonii</i>	--/--/4	Coastal scrub	High Potential Alameda, Santa Clara County ^c	April-June
Hoover's button-celery <i>Eryngium aristulatum</i> var. <i>hooveri</i>	FSC /--/1B	Vernal pools	Low Potential San Francisco Bay Area ^d	May-Aug
Stinkbells <i>Fritillaria agrestis</i>	--/--/4	Valley and foothill grasslands, oak woodlands; on clay flats; sometimes on serpentine	High Potential Alameda, Santa Clara County ^c	March- April
Talus fritillary <i>Fritillaria falcata</i>	FSC/--/1B	Chaparral, woodland, on talus	Moderate Potential Alameda, Santa Clara County ^c	March-May
Fragrant fritillary <i>Fritillaria liliacea</i>	FSC/--/1B	Coastal scrub, valley and foothill grassland, coastal prairie; on heavy clay soils, often on ultramafic soils	High Potential Alameda, Santa Clara County ^c	Feb-April
Delta tule pea <i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	FSC/--/1B	Tidal estuaries	Low Potential Alameda, contra Costa County ^c	May-Sept
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE/--/1B	Moist grasslands, vernal pools	Moderate Potential Alameda, Santa Clara County ^c	March-June
Woolly-headed lessingia <i>Lessingia hololeuca</i>	--/--/3	Grasslands	Moderate Potential	June-Oct
Arcuate bush mallow <i>Malacothamnus arcuatus</i>	--/--/4	Chaparral	Moderate Potential Santa Clara County ^c	April-July

TABLE IX.B-1 (Continued)
SPECIAL-STATUS PLANT SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED VICINITY

Common name <i>Scientific name</i>	Listing Status USFWS/CDFG/ CNPS	Habitat Requirements	General Site Occurrence Within the Watershed	Flowering Period
Hall's bush mallow <i>Malacothamnus hallii</i>	--/--/4	Chaparral	Moderate Potential Alameda, Santa Clara County ^c	May-Sept
Gairdner's yampah <i>Perideridia gairdneri</i>	FSC/--/1B	Broad-leaved upland forest, chapparral	Moderate Potential Santa Isabella Valley ^a	June-July
Mt. Diablo phacelia <i>Phacelia phacelioides</i>	FSC/--/1B	Cismontane woodland, chaparral	High Potential Alameda, Santa Clara County ^c	April-May
Forget-me-not popcorn flower <i>Plagiobothrys myosotoides</i>	--/--/4	Chaparral	Moderate Potential Ridge-top in Mt. Hamilton Range ^{a, c, e}	April-May
Lobb's aquatic buttercup <i>Ranunculus lobbii</i>	--/--/4	Ponds, pools, watering holes	High Potential Alameda, Santa Clara County ^b	Feb-April
Rock sanicle <i>Sanicula saxatilis</i>	FSC/CR/1B	Broad-leaved upland forest, chaparral, valley and foothill grassland	Moderate Potential Santa Clara County ^c	April-May
Maple-leaved checkerbloom <i>Sidalcea malachroides</i>	--/--/1B	Grasslands	Moderate Potential Santa Clara County ^c	April-June
Metcalf Canyon jewelflower <i>Streptanthus albidus</i> ssp. <i>albidus</i>	FE/--/1B	Serpentine grassland, barrens	High Potential Santa Clara County ^c	April-June
Most beautiful jewelflower <i>Streptanthus albidus</i> ssp. <i>peramoenus</i>	FSC/--/1B	Serpentine grassland, chaparral	Moderate Potential San Francisco Bay Area ^d	April-June
Mt. Hamilton jewelflower <i>Streptanthus callistus</i>	FSC/--/1B	Shale talus	High Potential Endemic, Arroyo Bayo ^a	April-May
Mt. Diablo jewelflower <i>Streptanthus hispidus</i>	FSC/--/1B	Grassland	High Potential Endemic, Mt. Diablo ^c	March-June
Mt. Diablo cottonweed <i>Stylocline amphibola</i>	--/--/4	Broad-leaved upland forest, Chaparral	High Potential Alameda County ^c	April-May

TABLE IX.B-1 (Continued)
SPECIAL-STATUS PLANT SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED VICINITY

Common name <i>Scientific name</i>	Listing Status USFWS/CDFG/ CNPS	Habitat Requirements	General Site Occurrence Within the Watershed	Flowering Period
Showy Indian clover <i>Trifolium amoenum</i>	FSC/--/1A	Grasslands	Low Potential Alameda, Santa Clara County ^b	April-June
Caper-fruited tropidocarpum <i>Tropidocarpum capparideum</i>	FSC/--/1A	Alkaline hills, grasslands	Low Potential Alameda, Santa Clara County ^c	March- April

Federal Categories (USFWS)

FE = Listed as Endangered by the Federal Government
 FT = Listed as Threatened by the Federal Government
 FPE = Proposed for Listing as Endangered
 FPT = Proposed for Listing as Threatened
 FC = Candidate for Federal Listing
 FSC = Federal Species of Concern (former Category 2
 Candidate
 FC3c = Species removed from listing

California Native Plant Society (CNPS)

List 1A = Plants presumed extinct in California
 List 1B = Plants rare, threatened, or endangered in California
 and elsewhere
 List 2 = Plants rare, threatened, or endangered in California
 but more common
 List 3 = Plants about which more information is needed
 List 4 = Plants of limited distribution

State Categories (CDFG)

CE = Listed as Endangered by the State of California
 CT = Listed as Threatened by the State of California
 CR = Listed as Rare by the State of California

High Potential = Species expected to occur and meets all habitats as defined in list

Moderate Potential = Habitat only marginally suitable or suitable but not within species geographic range

Low Potential = Habitat does not meet species requirements as currently understood in the scientific community

^a Sharsmith, 1982.

^b Hickman, 1993.

^c Smith, 1992.

^d CDFG, 1991.

^e Environmental Science Associates, 1994.

SOURCE: Environmental Science Associates, 1994; EDAW, Inc., 1998; CNPS, 1998; CDFG, 1998

TABLE IX.B-2
SPECIAL-STATUS ANIMAL SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED VICINITY

Common name <i>Scientific name</i>	Listing Status USFWS/ CDFG	Habitat Requirements	Potential to Occur Within the Watershed	Period of Identification
<u>Invertebrates</u>				
Opler's longhorn moth <i>Adella oplerella</i>	FSC/--	Serpentine grasslands	High Potential	Spring
Serpentine phalangid <i>Calcina serpentina</i>	FSC/--	Serpentine rocks and barrens	High Potential	Fall-Winter
Monarch butterfly <i>Danaus plexippus</i>	--/*	Eucalyptus groves (winter sites)	Low Potential	Winter
Bay checkerspot butterfly <i>Euphydryas editha bayensis</i>	FT/--	Serpentine grasslands	Moderate Potential	March - May
Ricksecker's water scavenger beetle <i>Hydrochara rickseckeri</i>	FSC/--	Found in freshwater ponds, shallow water of streams marshes and lakes	Moderate Potential	January-July
Curved-foot hygrotus diving beetle <i>Hygrotus curvipes</i>	FSC/--	Found in vernal pools and alkali flats	Moderate Potential	January-July
Unsilvered fritillary butterfly <i>Speyeria adiastrum adiastrum</i>	FSC/--	Found in native grasslands with <i>Viola</i> <i>pedunculata</i> as larval food plant	Moderate Potential	Spring
Callipe silverspot butterfly <i>Speyeria callippe callippe</i>	FE/--	Found in native grasslands with <i>Viola</i> <i>pedunculata</i> as larval food plant	Moderate Potential	Spring
Myrtle silverspot butterfly <i>Speyeria zerene myrtilae</i>	FE/--	Found in native grasslands with <i>Viola</i> <i>pedunculata</i> as larval food plant	Moderate Potential	Spring
<u>Amphibians</u>				
California tiger salamander <i>Ambystoma californiense</i>	FC/CSC	Seasonal freshwater ponds with little or no emergent vegetation	High Potential	November- May
California red-legged frog <i>Rana aurora draytonii</i>	FT/CSC	Freshwater ponds and slow streams with emergent vegetation for egg attachment	High Potential	April-June
Foothill yellow-legged frog <i>Rana boylei</i>	FSC/CSC	Streams with quiet pools absent of predatory fish	High Potential	April-June
Western spadefoot toad <i>Scaphiopus hammondi</i>	FSC/CSC	Floodplains and grassland pools	High Potential	February- August
<u>Reptiles</u>				
Western pond turtle <i>Clemmys marmorata</i>	FSC/CSC	Freshwater ponds and slow streams edged with sandy soils for laying eggs	High Potential	warm days
Southwestern pond turtle <i>Clemmys marmorata pallida</i>	FSC/CSC	Freshwater ponds and slow streams edged with sandy soils for laying eggs	High Potential	warm days

TABLE IX.B-2 (Continued)
SPECIAL-STATUS ANIMAL SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED VICINITY

Common name <i>Scientific name</i>	Listing Status USFWS/ CDFG	Habitat Requirements	Potential to Occur Within the Watershed	Period of Identification
Reptiles (cont.)				
Coastal western whiptail <i>Cnemidophorus tigris multiscutatus</i>	FSC/--	Dry open habitats	High Potential	all year
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	FT/CT	Scrub and chaparral near water sources	High Potential	warm days
California horned lizard <i>Phrynosoma coronatum frontale</i>	FSC/CSC	Patchy open areas with sandy soils	Low Potential	Year-round
Birds				
Cooper's hawk <i>Accipiter cooperi</i>	--/CSC	Nests in riparian growths of deciduous trees and live oaks	High Potential	March-July
Sharp-shinned hawk <i>Accipiter striatus</i>	--/CSC	Nests in riparian growths of deciduous trees and live oaks	High Potential	March-July
Western grebe <i>Aechmophorus occidentalis</i>	--/*	Quiet lakes with tules or rushes	Moderate Potential	March-May
Tricolored blackbird <i>Agelaius tricolor</i>	FSC/CSC	Riparian thickets and emergent vegetation	High Potential	Spring
Golden eagle <i>Aquila chrysaetos</i>	BPA/CSC	Nests in large trees, snags, and cliffs, winters on lakes and reservoirs	High Potential	Spring
Great blue heron <i>Ardea herodias</i>	--/*	Nests in trees along lakes and estuaries	High Potential	December-July
Short-eared owl <i>Asio flammeus (nesting)</i>	--/CSC	Nests in open grasslands	High Potential	March-June
Aleutian Canada goose <i>Branta canadensis leucopareia</i>	FT/--	Winters on lakes and inland prairie	High Potential	Winter
Ferruginous hawk <i>Buteo regalis (wintering)</i>	FSC/CSC	Winters in flat open grasslands	High Potential	Winter
Northern harrier <i>Circus cyaneus</i>	--/CSC	Nests and forages in wet meadows and pastures	High Potential	Year-round
White-tailed kite <i>Elanus leucurus</i>	--/3511	Nests near wet meadows and open grasslands with trees	Low Potential	March -July
California horned lark <i>Eremophila alpestris actia</i>	--/CSC	Open grasslands and irrigated pastures	High Potential	Year-round
Prairie falcon <i>Falco mexicanus</i>	--/CSC	Nests in snags and cliffs of arid climates	High Potential	Spring

TABLE IX.B-2 (Continued)
SPECIAL-STATUS ANIMAL SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED VICINITY

Common name <i>Scientific name</i>	Listing Status USFWS/ CDFG	Habitat Requirements	Potential to Occur Within the Watershed	Period of Identification
<u>Birds (cont.)</u>				
American peregrine falcon ^a <i>Falco peregrinus anatum</i>	FE/CE	Nests in cliffs and outcrops	Low Potential	Year-round
Bald eagle ^a <i>Haliaeetus leucocephalus</i>	FT/CE	Nests and forages on inland lakes, reservoirs, and rivers	High Potential	Winter
Loggerhead shrike <i>Lanius ludovicianus</i>	FSC/CSC	Nests in shrublands and forages in open grasslands	Low Potential	March-Sept.
Osprey <i>Pandion haliaetus</i>	--/CSC	Nests near fresh water lakes and large streams on large snags	Moderate Potential	March-June
American white pelican <i>Pelecanus erythrorhynchos</i>	--/CSC	Nests on protected islets near freshwater lakes for protection from predators	Moderate Potential	May-July
Burrowing owl <i>Speotyto (=Athene) cucularia</i> (burrow sites)	FSC/CSC	Nests in mammal burrows in open, sloping grasslands	High Potential	February-June
<u>Mammals</u>				
Pallid bat <i>Antrozous pallidus</i>	FSC/CSC	Roosts in caves, old buildings and under bark. Forages in open lowland areas and forms large maternity colonies in spring.	Moderate Potential	February-August
Ringtail <i>Bassariscus astutus</i>	--/3511	Brushy and woody watercourses	Low Potential	Year-round
Western mastiff bat <i>Eumops perotis</i>	FSC/CSC	Open semi-arid to arid habitats roosting on high cliffs and buildings	Moderate Potential	February-August
Small-footed myotis <i>Myotis ciliolabrum</i>	FSC/--	Roosts in caves, old buildings and under bark	Moderate Potential	February-August
Fringed myotis <i>Myotis evotis</i>	FSC/--	Roosts in caves, old buildings and under bark, forms maternity colony in the spring	Moderate Potential	February-August
Fringed myotis <i>Myotis thysanodes</i>	FSC/--	Roosts in caves, old buildings and under bark, forms maternity colony in the spring	Moderate Potential	February-August
Long-legged myotis <i>Myotis volans</i>	FSC/--	Roosts in caves, old buildings and under bark; forms maternity colony in the spring.	Moderate Potential	February-August

TABLE IX.B-2 (Continued)
SPECIAL-STATUS ANIMAL SPECIES
POTENTIALLY OCCURRING IN THE ALAMEDA WATERSHED VICINITY

Common name <i>Scientific name</i>	Listing Status USFWS/ CDFG	Habitat Requirements	Potential to Occur Within the Watershed	Period of Identification
<u>Mammals (cont.)</u>				
Townsend's big-eared bat <i>Plecotus townsendii</i>	FSC/CSC	Roosts in caves, old buildings and under bark; forages in open lowland areas and forms large maternity colonies in spring.	Moderate Potential	February-August
American badger <i>Taxidea taxus</i>	--/*	Open grasslands with loose, friable soils	Moderate Potential	Year-round
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	FE/CT	Annual grasslands or grassy open stages with scattered shrubby vegetation; need loose-textured sandy soils for burrowing.	Moderate Potential	February-October
Mountain Lion <i>Felis spp.</i>	--/4800	Rural grasslands and woodlands	High	Year-round
<u>Fish</u>				
Steelhead trout <i>Oncorhynchus mykiss</i>	FT/--	Freshwater streams	Low Potential	Year-round

U.S. Fish and Wildlife Service (USFWS)

FE = Listed as Endangered (in danger of extinction) by the federal government.

FT = Listed as Threatened (likely to become endangered within the foreseeable future) by the federal government.

FPE = Proposed for Listing as Endangered

FPT = Proposed for Listing as Threatened

FC = Candidate to become a *proposed* species.

FSC = Federal Species of Concern. May be endangered or threatened, but not enough biological information has been gathered to support listing at this time.

FC3c = Species removed from listing

BPA = Federal Bald Eagle Protection Act

California Department of Fish and Game, (CDFG)

CE = Listed as Endangered by the State of California

CT = Listed as Threatened by the State of California

CR = Listed as Rare by the State of California (plants only)

CSC = California Species of Special Concern

* = Special Animals

3503.5 = Protection for nesting species of Falconiformes (hawks) and Strigiformes (owls)

3511 = A fully protected species as defined by the CDFG

4800 = Mountain lion protection

High Potential = Species expected to occur and meets all habitats as defined in list

Moderate Potential = Habitat only marginally suitable or suitable but not within species geographic range

Low Potential = Habitat does not meet species requirements as currently understood in the scientific community

^a Federal delisting is currently proposed, pending publication in the *Federal Register*.

SOURCE: Environmental Science Associates, 1994; EDAW, Inc., 1998; CDFG, 1998

CHAPTER X

LIST OF ACRONYMS

ACWD	Alameda County Water District
ACWRS	Alameda Creek Water Resources Study
AF	Acre-Feet
AUMs	Animal Unit Months
ASTM	American Society for Testing and Materials
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transport
BAWUA	Bay Area Water Users Association
BERM	Bureau of Environmental and Regulatory Management (now SPEAC)
BMPs	Best Management Practices
Cal-EPA	California Environmental Protection Agency
Cal-OSHA	California Division of Occupational Safety and Health
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CAA	federal Clean Air Act
CCAA	California Clean Air Act
CDF	California Department of Forestry and Fire Protection
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CHAMP	Chemical Application Management Plan
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
dBA	decibels
DTSC	Department of Toxic Substances Control
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District

EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
ESZ	Environmentally Sensitive Zone
FAR	floor-area-ratio
GIS	Geographic Information System
HCP	Habitat Conservation Plan
I-680	Interstate 680
IC	Incident Command
IPM	Integrated Pest Management
IPMP	Integrated Pest Management Plan
kV	kilovolt
LARPD	Livermore Area Recreation and Park District
LRMS	Land and Resource Management Section
MEA	Major Environmental Analysis
mgd	million gallons per day
MMWD	Marin Municipal Water District
MOU	Memorandum of Understanding
MRZs	Mineral Resource Zones
msl	mean sea level
NES	National Energy Strategy
NIOSH	National Institute for Occupational Safety and Health
NOP	Notice of Preparation
OER	Office of Environmental Review (now MEA)
OSHA	Occupational Safety and Health Administration
PG&E	Pacific Gas and Electric
PM-10	particulate matter
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SFPUC	San Francisco Public Utilities Commission
SFWD	San Francisco Water Department (now part of SFPUC)
SMARA	Surface Mining and Reclamation Act
SMP	Surface Mining Permit
SPARC	System Planning and Regulatory Compliance (now SPEAC)
SPEAC	System Planning, Environment and Compliance

SR	State Route
UEB	Utilities Engineering Bureau
USFWS	United States Fish and Wildlife Service
USTs	underground storage tanks
WHR	Wildlife Habitat Relationships
WPC	Watershed Planning Committee
WQVZs	Water Quality Vulnerability Zones
WTP	Water Treatment Plant

CHAPTER XI

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Organizations and persons consulted are listed in the reference sections found at the end of each section of Chapter III.

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CHAPTER XII

SUMMARY OF COMMENTS AND RESPONSES

	<u>Page</u>
A. INTRODUCTION	C&R.1
B. SUMMARY OF COMMENTS AND RESPONSES	C&R.2
A. EIR Process	C&R.4
B. Appropriate Baseline	C&R.11
C. Clarifications/EIR Format	C&R.13
D. Commitment to Mitigating Actions/Mitigation Requirements	C&R.16
E. Reliance on Previous EIRs	C&R.20
F. Mining	C&R.24
G. Access/Transportation	C&R.35
H. Hydrology and Water Quality	C&R.41
I. Natural Resources	C&R.51
J. Air Quality	C&R.85
K. Grazing	C&R.89
L. Fire Management	C&R.99
M. Cultural Resources/Sunol Water Temple	C&R.101
N. Aesthetics	C&R.105
O. Noise	C&R.109
P. Hazardous Materials/Hazardous Waste	C&R.111
Q. Growth Inducement/Water Rights	C&R.113
C. STAFF-INITIATED TEXT CHANGES	C&R.114

SECTION A

INTRODUCTION

This document contains public comments received on the Draft Environmental Impact Report (Draft EIR, or DEIR) prepared for the draft *Alameda Watershed Management Plan*, and responses to those comments. The DEIR analyzed, at a general level, the potential environmental impacts of a broad range of policies and management actions proposed by the Management Plan (see DEIR pages I-10 and II-22).

Following this introduction, Chapter II contains a list of all persons and organizations who submitted written comments on the Draft EIR and who testified at the public hearings on the Draft EIR held on January 25, 2000 in Pleasanton and January 27, 2000 in San Francisco. Following the list of commentors, responses to the comments are provided, organized by comment topic area. Each substantive comment on the EIR is recorded in Chapter II and the response to each comment is presented immediately after that comment. Duplicative or substantially similar comments are grouped together, with a single response. Some comments do not pertain to physical environmental issues, but responses are included to provide additional information for use by decision-makers.

These comments and responses will be incorporated into the Final EIR as a new chapter. Text changes resulting from comments and responses will also be incorporated in the Final EIR, as indicated in the responses.

SECTION B

SUMMARY OF COMMENTS AND RESPONSES

The following is a list of all persons and organizations who submitted written comments on the Draft EIR and who testified at the public hearings on the Draft EIR held on January 25, 2000 in Pleasanton and January 27, 2000 in San Francisco.

State Agencies

- California Regional Water Quality Control Board, San Francisco Bay Region, Bruce Wolfe, Chief, Watershed Management Division, January 28, 2000
- State of California Department of Conservation, Office of Governmental and Environmental Relations, Jason Marshall, Assistant Director, January 26, 2000
- State of California Department of Fish and Game, Central Coast Region, Brian Hunter, Regional Manager, January 31, 2000
- State of California Department of Forestry and Fire Protection, Santa Clara Ranger Unit, Steven F. Woodill, Unit Chief, February 1, 2000
- State of California Department of Health Services, Drinking Water Field Operations Branch, San Francisco District, Clifford L. Bowen, P.E., District Engineer, January 21, 2000
- State of California Senate, Senator Liz Figueroa, Tenth Senatorial District, April 18, 2000

Federal Agencies

- United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southwest Region, Rodney R. McInnis, Acting Regional Administrator, February 22, 2000
- United States Department of the Interior, Fish and Wildlife Service, Sacramento Fish and Wildlife Office, Endangered Species Division, Karen J. Miller, Chief, February 2, 2000

Local Agencies

- Alameda County Community Development Agency, Planning Department, James Sorensen, Planning Director, January 31, 2000
- Alameda County Water District, Paul Piraino, General Manager, January 31, 2000
- County of Alameda, Public Works Agency, Development Services Department, Scott Swanson, Deputy Director, January 31, 2000
- East Bay Regional Parks District, Brad Olson, Environmental Specialist, February 2, 2000

Private Individuals and Groups

Alameda Creek Alliance, Jeff Miller, January 28, 2000

Alameda Creek Alliance, Jeff Miller, February 16, 2000

California Sportsfishing Protection Alliance and Northern California Council/Federation of Fly Fishers, David Kruss, Director, Northern California Council Federation of Fly Fishers, Conservation Chairman and Director Peninsula Fly Fishers, Richard Izmirian, Director – CSPA, Director – FFF, January 29, 2000

Maryanne Canaparo, January 27, 2000

Tripp Diedrichs, February 3, 2000

Greg Ellis, undated

Golden Gate Audubon Society, Jacqueline A. Smalley, Chair, East Bay Conservation Committee, January 29, 2000

Joanne Freemire, January 31, 2000

Mission Valley Rock Company, William Howard, General Manager, January 28, 2000

RMC Pacific Materials, Richard L. Kelly, Project and Resources Manager, January 26, 2000

Albert J. Rothman, February 1, 2000

Andrew A. Turnbull, January 31, 2000

Pleasanton Public Meeting (January 25, 2000)

Jessie Campbell
Maryanne Canaparo
Emily Carson
Joanne Freemire
Bob Frillman
Bree James
Charles Johnson
Derek Johnson
James Levy
Jeff Miller
Jim O'Laughlin
Patricia Stillman

San Francisco Public Meeting (January 27, 2000)

There were no comments made at the public meeting held in San Francisco.

A. EIR PROCESS

1.0 EIR PROJECT DESCRIPTION AND ALTERNATIVES

Comment A-1: “I have continued to study the EIR and still find it confusing. One of the problems is I can’t find one simple diagram of either the Management Plan or the Sunol Valley Element. In Chapter II (Project Description), I found a tiny footnote telling me where the Draft Management Plan was available. I checked the website & got the Executive Summary – all words, no illustrations! Then, for the Sunol Valley Element, I found Fig. III B-3, which I hoped was a visual representation of Table VII-3 which lists Facilities and Activities for all Sunol Valley Mining Alternatives. However, the Preferred Alternative does not appear to have the landscaped Mounds, Picnic Areas, Parking or Creek & Wildlife Enhancement Areas pictured in Figure III B-3. So I continue to be confused as to what project this EIR deals with.” (Joanne Freemire)

Comment A-2: “It appears to me that there’s all sorts of a design fraud in the original layout of this whole EIR, and the design of the alternative almost to make a fatal flaw in each alternative. So, it could be rejected as one example on page -- I guess Chapter 7, Roman numeral 7 dash 16 reads, although alternative A is environmentally superior, alternative A was rejected because it does not continue existing any compatible uses for on the watershed plans, including educational, recreational, and scientific uses to the same degree as you understand the management referred alternative.

Alternative A is superior otherwise, there ought to be some way that you can add scientific and educational opportunities to it.” (Derek Johnson – Pleasanton Public Meeting)

Comment A-3: “...first I just was looking at a map figures 22 and 3B-1. ...Anyway, just this is a question of curiosity. I notice that the aqueduct used to be running south, like directly under Del Valle Reservoir, so I was wondering if that was an error in the diagram or a generalized picture. I just was curious about that.

And then also, I was wondering why is the watershed just south of Sunol here not included in the EIR because that is San Francisco watershed land, I believe. I know there’s big plans to build houses on it now. Since it’s still watershed, it should be included.” (Joanne Freemire – Pleasanton Public Meeting)

Response: The EIR covers all areas of the SFPUC Alameda Watershed addressed in the draft *Alameda Watershed Management Plan*. The Watershed lands are delineated on Figure II-2, which also schematically represents SFPUC facilities in the area. Figure III.B-3 schematically represents the proposed Sunol Valley Reclamation Plan, however given the scale of that figure, not all potential reclaimed land uses are displayed. Areas south of Sunol are included in the Management Plan and the EIR. The Management Plan does exclude surplus land in the secondary watershed north of Sunol near Pleasanton, known as the Bernal property, which has been the subject of a separate, specific land use planning effort. CEQA does not require the

inclusion of this land because it does not constitute “the whole of the action,” as the two actions are independent of each other. For example, the Bernal land is not an integral part of the Management Plan, a consequence of the Management Plan, or a future expansion of the Management Plan; it is not essential for one action to precede the other; nor is the Management Plan information crucial, necessary, or relevant to the decisions made regarding the disposition of the Bernal land.

The Management Plan was developed to provide a framework for the SFPUC to make consistent decisions about the activities, practices, and procedures that are appropriate on SFPUC watershed lands. Because of this intended purpose and vision, the actions proposed in the Management Plan cover a wide range of topics and address all watershed resources. Given this reality it is difficult to describe simply (or provide in table or diagram form) “the project.” Only a very careful reading of Chapter II, Project Description will provide this explanation. The Management Plan and the Sunol Valley Element are available from the SFPUC. The summaries of those documents found in the DEIR contain information only to the extent necessary to evaluate and review environmental impacts (CEQA Guidelines Section 15124) and are not intended to be a substitute for the full documents.

The project as defined was determined with the aid of an extensive public process. Three alternatives were developed with goals that ranged from Alternative A, which provides the greatest protection for water quality, but limits other opportunities (recreation, education, and research) to Alternative C, which provides comprehensive access opportunities, but includes less stringent provisions for water quality protection. Although water quality protection is the primary goal of SFPUC management, the Management Plan was initiated to allow for some access opportunities as well. Thus, with the assistance of comments received at a number of public workshops, the project was chosen as a hybrid of Alternatives A and B in an effort to strike a balance between the goals of water quality protection and increased access. The EIR analyzes Alternatives A, B, and C as well as the preferred project, and therefore provides CEQA review that would allow the SFPUC to select aspects of the various alternatives that are different from the preferred alternative.

2.0 PLANS AND POLICIES

Comment A-4: ‘There are sections in the DEIR that state missions or policies to protect the above issues,¹ but they don’t seem to apply to this project. **POLICY 150** states: “The County shall participate with the San Francisco Water Department in its planning efforts for Department-owned Watershed lands within the Sunol Valley to ensure that future quarry activity is **compatible with Sunol community interests** and water management activities.” Page III.A-8. **POLICY 127:** The County shall identify and **preserve significant archaeological and historical resources**, including structures and sites that contribute to the heritage of East County. Page III.A-7. Under Santa Clara County there is **POLICY R-LU 3:** “The general intent of each

¹ The comment letter previously discussed mining effects on natural resources, the community surrounding the Watershed, seismic hazard, public use, noise, the Sunol Water Temple, aesthetics, and prime agricultural land. See Comments E-6, F-9, F-16, F-18, F-20, J-3, J-4, N-2, N-3, N-4, and O-3.

Resource Conservation Area designation (which includes bay lands, agriculture, hillsides, ranch lands, open space reserve, regional parks') is to encourage land uses and densities appropriate to the rural unincorporated areas that also:

- a. help preserve rural character;
- b. conserve natural, scenic, and cultural resources;
- c. protect public health and safety from natural and man-made hazards;
- d. preserve agriculture and prime agricultural soils;
- e. protect watersheds and water quality;
- f. enhance air quality; and
- g. minimize the demand for and cost of public services and facilities.” Page III.A-12.

POLICY R-PR 39: “The natural scenery along many of Santa Clara’s highways should be protected from land uses and other activities that would diminish the aesthetic beauty.” Page III.A-15. Shouldn’t this apply to HWY. 84 and I-680 and why doesn’t it??

Why are these policies not included in Alameda County since the same conditions exist?
(Maryanne Canaparo)

Response: As is stated on pages III.A-1 and A-2 of the EIR, the General Plans of the Counties of Alameda and Santa Clara are presented for informational purposes only. Further, the SFPUC does not have jurisdiction over the content of the general plans of Alameda or Santa Clara counties. The City and County of San Francisco, as a chartered city and county, and its SFPUC, as a public utility, receive intergovernmental immunity under California Governmental Code Sections 53090 et.seq. Such immunity exempts the extraterritorial lands owned by the City and County of San Francisco, through its SFPUC, from the planning laws of a city or county in which those lands are located. As stated on DEIR page III.A-1, these policies are included in the EIR because Alameda and Santa Clara Counties are entitled to review and determine consistency of a project with the applicable general plan. Regarding Santa Clara County Policy R-PR 39; this policy does not apply to Highway 84 or the Watershed portion of I-680 because those roadways are not within Santa Clara County. As noted, these policies are not included in Alameda County’s General Plan and the City and County of San Francisco and the SFPUC do not have jurisdiction over the Alameda County General Plan. Inclusion of such policies in the Alameda County General Plan would need to be implemented by Alameda County.

3.0 PROGRAMMATIC NATURE OF THE DRAFT ALAMEDA WATERSHED MANAGEMENT PLAN

Comment A-5: “The Plan includes various suggestions for commercial development, recreation, camping, and modifications to existing mining permits, some or all of which may require County approval at the time they are officially proposed. The County will be a Responsible Agency with respect to projects for which environmental review is not completed, and will rely on the EIR prepared by San Francisco when reviewing the future implementation of the Plan’s management actions and related projects.

We have reviewed this document and believe that it is a thorough discussion for the issues, and overall, is adequate for our use. The document serves as a Program EIR and may also serve as the environmental review for the individual management actions. The following questions and comments are offered to assist the SFPUC in preparing a complete and accurate document that will serve the needs of San Francisco and Alameda County, and to clarify Alameda County's position in certain regards." (Alameda County Community Development Agency)

Comment A-6: "The EIR indicates that detailed analysis will be required later for some of the management actions. This seems appropriate because the SFWD EIR is at a Program level of detail and the specifics of many actions are not yet known. With this in mind, Alameda County believes that Table II-1 in the DEIR is helpful as a guide, but should not be considered determinative. Consistent with Section 15168 of the State CEQA Guidelines, Alameda County will undertake further environmental review when considering review and approval of implementation actions within its jurisdiction. Some future actions may already be adequately covered, and some may not be, depending on the circumstances at the time and the details of the projects." (Alameda County Community Development Agency)

Response: These comments are noted and are consistent with the EIR's approach for use of the Program EIR for coverage of certain actions and to guide future program level analysis of other actions.

Comment A-7: "The DEIR does not address impacts associated with operation and maintenance activities or impacts associated with new construction. Presumably operation and maintenance activities are part of the management of the watershed and impacts associated with those activities should be included in the DEIR. New construction is described on a programmatic level but no mitigation for loss of habitat is discussed. As described above, basic mitigation requirements should be included in the DEIR." (California Department of Fish and Game)

Comment A-8: "On B-13 in regard to the reclamation of mining pits as water storage reservoirs, there's an indication reclamation of mine pits as water storage reservoirs could have effects on nearby land users.

For example, localized climate changes could occur due to the presence of relatively large bodies of the waters. At this time such impacts cannot be assessed because of future land uses. However, future environmental review would be required at the time construction of an operating system for the resources was proposed to determine potential impacts and mitigation measures.

And my question in regards to that is have any studies been done of the effects of the water pits already in existence in the Livermore, Pleasanton area often referred to as the "Chain of Lakes" plotted to the contribution, could this review be referred to on said page and be conducted where lakes exist and not only in Livermore and Pleasanton, but also Fremont." (Jessie M. Campbell – Pleasanton Public Meeting)

Comment A-9: “We believe that the deficiencies in the management plan and Draft Environmental Impact Report are very serious.² We believe that these deficiencies would best be addressed in a new draft document that would go through another review period for public comment.” (California Sportfishing Protection Alliance and the Northern California Council/Federation of Fly Fisheries)

Response: Some of the above comments request project details and/or the analysis of project impacts that are not known at this time and are not appropriately found in this type of EIR. As is stated on DEIR page I-10, this is a programmatic EIR that analyzes, at a general level, the potential environmental impacts of a broad range of policies and management actions proposed by the draft *Alameda Watershed Management Plan*. The nature of the programmatic approach is further described on DEIR pages I-10 and II-22. The Management Plan was prepared by the SFPUC as a land resource management guide, and does not address ongoing operation of the SFPUC water service facilities. The scope of this EIR was determined by the Major Environmental Analysis section of the San Francisco Planning Department, and was described in the Initial Studies published in October, 1996 and August, 1998 (see DEIR page II-23). The EIR scope was also reviewed in a public meeting held on November 6, 1996 (see DEIR page II-24). The scope of the Management Plan and alternatives were chosen to meet the primary goal of improving water quality and water supply. The scope of the EIR is broad because insufficient details are currently available to enable full discovery or disclosure of significant impacts for some of the projects or actions called for in the Management Plan. Throughout the EIR it is stated that implementation of certain management actions will require further environmental review at the time more specific project details are proposed (see DEIR Table II-1 for a list of those actions that are likely to require such study). It is appropriate to prepare a programmatic EIR given the nature of this planning level document. Similarly, it is appropriate for SFPUC to provide the goals and objectives that must be met by the Management Plan and any alternatives analyzed.

Some commentors suggest that the EIR should address the impacts of SFPUC’s past or ongoing watershed operation and maintenance practices. To the extent that the actions of the Management Plan modify existing facilities and/or operation and management practices, the scope of this EIR includes these modifications and addresses their potential impacts. For example, with respect to impacts on natural resources habitats, DEIR pages III.E-24 through III.E-30 specifically address the programmatic impacts of proposed changes to Watershed operations and maintenance activities, and construction activities that would occur under the Management Plan. Additional analysis of operations, maintenance, and construction activities can be found on DEIR pages III.D-24, III.F-8, III.H-10, III.I-9, III.L-3, III.M-3, and III.M-9. In most instances, Management Plan actions are designed to improve operation and management practices and/or avoid environmental impacts. Consistent with CEQA requirements, the EIR does not analyze or address the effect of past or ongoing operations and maintenance activities at existing facilities.

² The comment letter previously discussed impacts on fisheries related to ongoing Watershed operations and ongoing grazing activities. See Comments I-34, I-35, and K-4.

Such activities constitute the baseline setting against which the impacts of changes proposed under the Management Plan are addressed.

Comment A-10: ‘One proposal for increased public access is the creation of new trails. Under Management Action Number roa12, (page II-28) stating that “design, site, and construct new roads and trails following guidelines for wildland conditions,” the DEIR indicates that this activity will have no potential adverse physical effects and is not analyzed in this program level EIR, and that this activity would not require project-specific environmental review. Trails alone have the potential to fragment habitat and, coupled with public access, have significant impacts, including, but not limited to, dispersal of exotic species, both plant and animal, increased predation of local wildlife, increased incidence of fire, and increased habitat disturbance and destruction, all resulting in reduced diversity and habitat. Individually these impacts are significant. Cumulatively these impacts have the potential to change large parts of the watershed ecosystem. If these impacts are not addressed in this DEIR and they are not going to be addressed in a project-specific DEIR, where exactly are they going to be addressed under CEQA? The Department recommends that Impacts associated with these activities should be addressed at a programmatic level in the DEIR with recognition that a project-specific document shall address project-specific impacts.’ (California Department of Fish and Game)

Response: This comment expresses a concern that the programmatic nature of the EIR precludes the analysis of impacts that might occur as a result of new trail development. This comment points to the conclusion that management action roa12 will not require further environmental review and is not analyzed in the EIR itself (see DEIR page II-28). However, roa12 actually calls for the use of construction guidelines appropriate for wildland conditions when siting trails or roads. Action roa12 does not call for the actual siting of trails or roads. Future specific proposals for new trails or roads in the Watershed would require review for CEQA compliance.

At a program level, the potential impacts of trail construction are analyzed throughout the DEIR, with reference to Policies WA15.2 (consideration of new trails in zones of lesser vulnerability and risk, where consistent with the goals and policies of the Management Plan) and WA15.4 (support of new trail connections that link to adjacent communities and to the trail facilities of other agencies), both of which more specifically support the development of trails and trail facilities. These analyses are referenced in the following tables within the DEIR: III.C-2, III.C-3, III.D-2, III.D-3, III.E-4, III.E-5, III.F-3, III.G-2, III.H-2, III.I-3, and III.M-1. Each of these tables notes the potential impacts on the resource analyzed and shows the proposed management actions necessary to reduce potential impacts to less than significant levels. It should also be noted that the San Francisco Planning Department would review SFPUC activities under the Management Plan and the impact assessments and required mitigation measures would be carefully considered when new trails are proposed.

4.0 FUTURE ANALYSIS

Comment A-11: “Alameda County believes that there are activities contemplated in the Plan that will require the review and approval of County agencies. In addition to General Plan

conformance review, we believe Alameda County may require use permits, building permits, encroachment permits, and other approvals for commercial, recreation, and similar development in the watershed, whether or not the land is owned by SFWD, if those actions are beyond the scope of the purposes of the SFPUC and SFWD.

The Draft EIR provides a thorough listing of policies from Alameda County’s East County Area Plan, which would be used during the General Plan conformance review and other permits for land uses in the watershed. Alameda County staff believes that the Watershed Management Plan is consistent with the East County Area Plan, and the implementation actions will not be in conflict with our plans, policies or regulations. Detailed review would be required for some of the commercial-type uses, as well as the proposed modifications to Surface Mining Permits. We would be glad to address these specifics with you as the Plan moves towards implementation.” (Alameda County Community Development Agency)

Comment A-12: “As noted in the Draft EIR, Alameda County has granted several Surface Mining Permits in the Sunol Valley in conformance with Title 6 of the Alameda County General Ordinance Code, pursuant to the California Surface Mining and Reclamation Act (SMARA). Because we have not yet received any applications for permit modifications and have only a general sense of what the Management Plan anticipates, it is not yet clear to us what level of permit review and revision will be required and/or what level of environmental review will be required for making the changes to existing mining permits that are suggested in the Watershed Management Plan.

The Draft EIR assumes that new permit applications or major amendments will be required to mine the existing pits south of I-680 deeper, or deeper and wider. The same is assumed for making major changes in mining and reclamation plans for the area north of I-680. It is noted that minor amendments may be acted upon administratively by the Planning Director.” (Alameda County Community Development Agency)

Comment A-13: “The report does not contain sufficient information on geology and soils in the area of the quarry pits or management and use of the water to be stored there. These factors and others could result in degradation of the water stored there. A mitigation measure for the quarry development action calls for water quality monitoring after they have been constructed and filled with water. If the SFPUC chose to use the water stored in these facilities, the water would be required to be treated at the Sunol Valley treatment plant and the plant would need to be adequately prepared and preliminary treatment studies conducted.” (Department of Health Services, Water Field Operations Branch)

Response: Some questions of impact and regulatory requirements cannot be answered at this time due to projects whose timing and/or design details are as yet unclear. For example, questions concerning management of quarry water storage and treatment are deferred to future environmental review, as these projects are still undefined at this time (see for example, DEIR page III.D-37).

B. APPROPRIATE BASELINE

Comment B-1: “For establishing existing environmental conditions in the Watershed (i.e. comparison baseline) to support a CEQA analysis, we believe it is inappropriate for the EIR to establish these conditions based upon a comparison with the pre-history of site conditions prior to arrival of European cultural influences. As described ... in the EIR, the Watershed has been subject to various environmental perturbations for more than 200 years. Indeed, the pristine wilderness conditions that existed cannot be feasibly restored and should not be used as the present day basis for comparison of land use changes. The EIR should instead evaluate changes in the environment based upon present site conditions, which include encroaching development, public recreation, dams, reservoirs, roads, livestock grazing, non-native vegetation, animal pests and various other changes in the environmental baseline that now comprise the normal circumstances in the Watershed.” (East Bay Regional Park District)

Comment B-2: “The EIR contains a discussion on page III.E-1 about the condition of existing natural resources in the Alameda Watershed. This discussion attributes much of the overall decline in the abundance and general health of these resources to a 200 year history of grazing and the Watershed’s proximity to “highly urbanized” areas of the San Francisco Bay Area. While historic overgrazing and encroaching urbanization have contributed towards a decline in quality of terrestrial habitats in the Watershed, fire suppression, invasive exotic vegetation and pest species, and other disturbances to natural processes have also greatly contributed to the decline.

Another cause for decline in natural resources not thoroughly addressed in the EIR is the loss or permanent alteration of terrestrial and aquatic habitats as a result of water diversion, dam construction and water impoundment. Specifically, the three large reservoirs in the Watershed area (i.e. San Antonio, Calaveras and Del Valle Reservoirs), have substantially altered or eliminated thousands of acres of native grasslands, oak woodland, chaparral/scrub and riparian areas, and have significantly altered or eliminated native populations of fish and amphibians. Construction and operation of these reservoirs and smaller diversions have also resulted in significant changes in the hydrology, sedimentation rates, flood frequency and duration of creek flows in the Alameda Watershed. While some of these diversions have helped to create non-native warm water fisheries, they have in most instances come at the loss of the native fisheries (including steelhead) and amphibians (including California red-legged frog and foothill yellow-legged frog). This section of the EIR appears to understate the impact of these changes in Watershed processes and places an inappropriate burden for these impacts on other land uses.’ (East Bay Regional Park District)

Comment B-3: “The operation of SFPUC dams and accompanying diversion and retention of water which would otherwise flow down Alameda Creek and its tributaries has not been analyzed. The SFPUC must analyze the operation of Calaveras Dam, San Antonio Dam, Upper Alameda Diversion Dam, Sunol Dam, and Niles Dam on steelhead/rainbow trout, Pacific lamprey, and other native fish species, Western yellow-billed cuckoo, California red-legged and foothill yellow-legged frogs, and California tiger salamander. The SFPUC must mitigate for any significant impacts to these species due to dam operation.” (Alameda Creek Alliance)

Comment B-4: “Additionally, for most of these species¹ there were some -- it just struck me that the analysis of the impact to these species, it was completely inadequate. And I didn’t see anywhere the EIR addressed the impact of operation of dams and water diversions from the SFPUC in the watershed and 20 reservoirs and then the dams in Niles Canyon. And the small dam.

Those dams have the impacts, obvious impacts on fish, but they also have impacts on the dependent species such as amphibians.” (Jeff Miller – Pleasanton Public Meeting)

Response: As noted on page II-1 of the DEIR, the EIR assesses the potential impacts of the Management Plan, and not the impacts of existing facilities and operations. Specifically, the core of the EIR is the analysis of management actions proposed in the Management Plan. The environmental setting presented in Chapter III of the DEIR included a description of the physical environmental conditions in the vicinity of the project, as they existed at the time the notice of preparation was published, as required by CEQA Guidelines Section 15125. This setting was used as the baseline to describe existing physical conditions upon which the potential impacts of Management Plan implementation were evaluated. It would be very difficult, less exact, and less useful to choose a time in the past (e.g., before the diversion and retention of water by the SFPUC) by which to analyze impacts to the Watershed resources. For this reason, CEQA Guidelines define baseline conditions as those that exist at the time the notice of preparation is published (see CEQA Guidelines Section 15125[a]).

While some of the environmental setting sections in Chapter III may include some historical setting information, the sections primarily describe existing conditions, based on recent literature review and field observations conducted during the preparation of the Management Plan and DEIR. The Natural Resources section (DEIR Section III.E) includes an overview of historic grazing on the Watershed, as well as historic fishery resources information. This overview was presented solely for informational purposes and to allow the reader to understand how natural resources conditions on the Watershed have changed over time. The baseline used for the evaluation of natural resources impacts was not the pre-European period (pre-grazing) as suggested in Comment B-1.

¹ The commentor previously discussed sensitive species impacts, including fisheries. See Comments I-25, I-46, and K-13.

C. CLARIFICATIONS/EIR FORMAT

Comment C-1: ‘The District currently operates five regional parks and other large “land banked” properties which are within or adjacent to the Alameda Creek Watershed that could be potentially affected by SFPUC’s Plan. Many of these lands are cooperatively managed with several water agencies. The Draft EIR on page III.B-3 provides a brief overview of these facilities, however it understates the size of these parks and extent of facilities.’ (East Bay Regional Park District)

Response: In response to this comment, text on DEIR page III.B-3 of the Land Use Section has been revised to incorporate information provided by the East Bay Regional Park District:

1.1 RECREATIONAL USES

Individual access to existing internal Watershed roads and fire roads is not permitted. All access to internal roads is by group permit, and groups must be accompanied by volunteer leaders. Existing recreational uses are located primarily in the central and northern portions of the Watershed. SFPUC currently leases ~~more than 3,600~~ **approximately 3,800** acres to the East Bay Regional Park District (EBRPD) as part of the **6,858 acre** Sunol Regional Wilderness. **The Sunol Regional Wilderness includes more than 26 miles of hiking, equestrian, and biking trails. EBRPD facilities include picnic areas, group and backpack camps, a visitor’s center, and equestrian facilities.** ~~and the~~ **The Ohlone Regional Wilderness is located to the east of the Sunol Regional Wilderness and currently contains 9,736 acres of land and has more than 42 miles of hiking and equestrian trails. EBRPD facilities include backpack camps and Camp Ohlone, a group camp (by reservation).** ~~C~~ **(collectively, the Sunol Regional Wilderness and the Ohlone Regional Wilderness are known as the Sunol-Ohlone Regional Park).** Approximately 200,000 persons per year use the combined recreation areas. ~~The Sunol Regional Wilderness includes multiuse trails for hikers, equestrians, and bikes. Trails in the Ohlone Regional Wilderness are designated for hikers only, with the exception of the Ohlone Wilderness Trail, which accommodates both hikers and equestrians (access to this trail is by permit only and bikes are prohibited).~~ The intention of the *Alameda Watershed Management Plan* is to provide for the continuation of ~~these~~ **trail** uses on the trails managed by EBRPD. Trails on the Watershed are rugged; therefore, the intensity of use is low during the hot, dry summer. The Sunol Valley Golf Course is located in the northern portion of the Alameda Watershed, north of I-680, and is used by approximately 88,000 persons per year.

Recreational uses located adjacent to the Watershed include the following:

- Pleasanton Ridge Regional Park (~~1,700~~ **3,999** acres) – EBRPD lands located off Foothill Boulevard north of Sunol; developed with ~~40~~ **20** miles of hiking, equestrian, and biking trails. **Facilities include picnic areas and equestrian facilities.**

- Del Valle Regional Park (4,311,500 acres) – EBRPD lands located on Del Valle Boulevard, south of Mines Road; developed with camping, swimming, **picnic areas, and windsurfing and boating facilities** as well as **more than 20 miles of hiking, and biking, and equestrian trails. This park is contiguous with the Sunol-Ohlone Regional Park.**
- Mission Peak Regional Preserve (3,002,999 acres) – EBRPD lands located off Mill Creek Road, off Mission Boulevard in Fremont; developed with **more than 20 miles of hiking, biking, and equestrian trails. Facilities include picnic areas and equestrian facilities. This preserve is contiguous with the Sunol-Ohlone Regional Park.**
- Ed R. Levin County Park (1,544 acres) – Santa Clara County lands located off Calaveras Road in Milpitas; developed with 15 miles of hiking and equestrian trails as well as boating, fishing, and volleyball facilities. Spring Valley Golf Course is also located within this park.

EBRPD has proposed a trail segment from Sunol to Pleasanton Ridge as part of the Calaveras Ridge Trail. This trail would connect Pleasanton Ridge Regional Park and the Sunol Regional Wilderness with a hiking trail west of Calaveras Road. This trail would pass through secondary Watershed lands and the Sunol Valley. **In addition, EBRPD has a land banked parcel located to the west of the Watershed and the Town of Sunol. This parcel is currently undeveloped and closed to the public, pending development of a land use plan for multi-use trails, staging areas, and picnic areas, and environmental review of the plan.**

Comment C-2: “Page III.B-9 of the draft EIR contains a listing of incompatible and prohibited uses within the Watershed. It is unclear if such prohibitions are intended to apply to just those Watershed areas managed by SFPUC or if they are intended to apply to areas leased or managed by other entities, such as the District’s 3,812-acre lease area in Sunol Regional Wilderness. Please consider the following examples where these prohibitions might conflict with existing uses:

- Dogs are currently permitted at Sunol (including lease areas). Would this prohibition apply to this existing use at Sunol? The significance of such a proposed change and the cost to the District to enforce such a prohibition should be addressed in the EIR.
- The District currently allows for hiking, equestrian and vehicle access between Sunol Regional Wilderness and the District’s Camp Ohlone which use some SFPUC-owned Watershed roads. Would the proposal to restrict some trail uses on internal Watershed roads apply to this or other existing uses?” (East Bay Regional Park District)

Response: In response to this comment, it is noted that the permitted uses of Watershed lands leased to the EBRPD are subject to the requirements, terms, and conditions of the lease. Future changes in lease conditions would be guided by the Management Plan.

Comment C-3: “...the SFPUC cannot expect to have an adequate EIR without a clear statement of the impacts of its actions. Almost without exception, EIRs are usually done in numbered or

lettered Impact and Mitigation Measure format. Without this structure, the impacts and mitigation measures are indiscernible from other discussion. Conventional format for the EIR should be adopted to avoid confusion.” (Alameda Creek Alliance)

Comment C-4: “I found the EIR confusing to me and I heard other people talking about that, too. I’m not really sure what can be done about that at this point, but there’s just something about that makes it very difficult to read, and I couldn’t put my finger on it, but I did want to make that comment just for what it’s worth. Then I wanted to make a few corrections to the text specifically.” (Joanne Freemire – Pleasanton Public Meeting)

Response: Because of the general nature of a planning document such as the draft *Alameda Watershed Management Plan*, and the great variety and possible combinations of its policies and actions, the impacts of a Management Plan action cannot always be simply and concisely stated. Many actions have beneficial consequences as well as potential adverse impacts. The conventional cause and effect analysis is thus more complicated than for a project specific EIR.

Although the DEIR does not number impacts as preferred by the commentor, the DEIR does contain tables throughout DEIR Chapter III that describe impacts for each impact topic and type of action that could cause an impact. In addition, DEIR Chapter I, Summary, contains concise statements of all potentially significant impacts, while DEIR Table VII-2 presents a comparison of the impacts of the Management Plan and Management Plan alternatives. The San Francisco Planning Department prefers to list numbered mitigation measures in a separate chapter in order to facilitate adoption, implementation, and monitoring of mitigation measures, including preparation and adoption of a Mitigation Monitoring and Reporting Program as required by CEQA. Although this format may differ from the format used by other lead agencies, this format provides a clear description of the impacts associated with a project. The Management Plan DEIR includes impact discussions in a section header entitled ‘Program-level Impacts,’ clearly discerning impact discussions from setting discussions. Each impact discussion lists and describes the Management Plan actions that could result in the potential impact, and describes how the impact could occur. The discussions also describe how other elements of the Management Plan could prevent impacts from occurring, or reduce the severity of the impact. At the end of each impact discussion, it is clearly stated whether implementation of the associated actions would reduce potential impacts to a less than significant level, or whether mitigation measures would be required.

Comment C-5: “Also, in a line along that when I have been through the EIR process, what I’ve seen them do is take comments like this and then just sort of stick them at the end of the EIR and call that revising the EIR. So, I’m hoping in this case you’re going to take these comments and incorporate them in the main body of the text.” (Joanne Freemire – Pleasanton Public Meeting)

Response: In addition to preparing this response to comments document, which includes changes to the Draft EIR based on public comments, a Final EIR will be prepared with incorporates all changes to the Draft EIR. Public comments on the Draft EIR, and these responses, will be included as a chapter of the Final EIR.

D. COMMITMENT TO MITIGATING ACTIONS/MITIGATION REQUIREMENTS

Comment D-1: ‘We appreciate the efforts of the SFPUC to undertake a comprehensive Management Plan, and recognize within the plan many elements that will benefit water quality and be protective of beneficial uses of Waters of the State. However, because of the manner in which the EIR addresses mitigation issues, we find that we are unable to determine the sufficiency of the proposed mitigation measures. Many management actions were identified in EIR Table III.E-4 as actions that “*could be required* to reduce potential physical effects” (emphasis ours) of other proposed management actions. However, EIR Table II-1 qualified all proposed actions with the statement that “inclusion [of an action in the Management Plan] does not ensure that funding, staff, or equipment will be made available to implement these actions, nor does it obligate the SFPUC to implement actions it chooses not to.” Given this statement, we find it impossible to determine whether an impact from a particular action would be sufficiently mitigated under this plan. Therefore, while the Management Plan lists several actions that might benefit water quality, and which might, if implemented, mitigate impacts from other proposed actions, we do not believe that the document supports your conclusion that its implementation would have less than a significant environmental impact. We believe that the San Francisco Planning Department and the SFPUC, in order to make the necessary finding, must commit explicitly to implementing appropriate mitigation for any projects that result in adverse impacts.’ (California Regional Water Quality Control Board, San Francisco Bay Region)

Comment D-2: “...the ongoing operations and maintenance activities and the construction of new facilities that will increase public access on watershed lands are not mitigated to a less than significant level through the proposed Management Actions alone.

There are two reasons that Management Actions alone do not mitigate impacts to a less than significant level. First, the Management Actions proposed are typical best management practices which, at most, reduce some impacts. However, they do not mitigate for the loss of habitat through operation and management activities and new construction resulting in increased public access. The DEIR should state and commit to basic mitigation requirements for habitat impacts and loss from the above-stated activities (e.g., wetland impacts mitigated at a 1:1 ratio, riparian impacts mitigated as a 3:1 ratio, and oak woodland impacts mitigated at a 3:1 ratio for permanent protection in addition to a 1:1 ratio for replacement of mature trees). The DEIR should include these basic mitigation requirements and make commitments to those, as well as recognize that project specific impacts will be addressed through project specific mitigation.” (California Department of Fish and Game)

Comment D-3: ‘...the Management Actions proposed are each footnoted by a statement that says, “inclusion does not insure that funding, staff, or equipment will be made available to implement these actions, nor does it obligate the SFPUC to implement actions it chooses not to.” According to the California Environmental Quality Act, CEQA Guidelines, Section 15124.4 (A), it states that “the discussion of mitigation measures shall distinguish between the measures which

are proposed by project proponents to be included in the project and other measures proposed by the lead, responsible or trustee agency or other persons...” Since the DEIR relies solely on the Management Actions as mitigation, the Management Actions should reflect the measures which shall be implemented by the SFPUC. As currently stated in the DEIR, there is no commitment by the SFPUC to implement or provide funding for any of the proposed Management Actions. Any management action that is not assured by funding, staff, or equipment or that the SFPUC chooses not to implement should be removed from the DEIR to accurately reflect what actions the SFPUC shall commit to.

In addition to stating a commitment to basic mitigation for impacts associated with the proposed activities, the DEIR should also include basic monitoring requirements for mitigation. No monitoring requirements are included in the DEIR.’ (California Department of Fish and Game)

Comment D-4: “Mitigation measures, specifically D 1.0(1), should ensure that management plan actions intended to mitigate other management plan actions occur simultaneously. If funding or policy decisions eliminate or reduce a mitigation measure then the corresponding management action should again be reviewed. Specific examples would include concurrent implementation of Management Actions **saf4**, **saf5**, **saf10** and **sta4** with actions that increase public access to the watershed; concurrent implementation of **fic4** and **fic5**, **lea3** through **lea8** and **env2** and **env3** and concurrent implementation of **was2** and **lea3**. If the mitigative management actions can no longer be supported than the management action requiring mitigation should be reviewed for its impacts and, if necessary, revised or suspended.” (California Department of Health Services, Drinking Water Field Operations Branch)

Comment D-5: ‘The SFPUC considers a management action to have a significant impact on biological resources if it: has a substantial adverse effect on any endangered, threatened, candidate or sensitive species; has a substantial adverse effect on the habitat of these species; has a substantial adverse effect on wetlands, riparian, or marsh areas; or substantially interferes with movement or migratory or dispersal corridors of native fish or wildlife (page III.E-23). As documented below, many SFPUC management actions which are not analyzed (but should be analyzed) in the report have one or more of these effects, which are not mitigated for or reduced to a level of less than significance. Many of the management actions which are analyzed have additional significant impacts which meet the criteria above which were not considered.

Many of the management actions which are analyzed by the report are presumed to be mitigated by other management actions summarized in Table II-1. In other words, many of the management actions in Table II-1 are being promoted as reducing substantial adverse impacts to less than significant. However, all of these mitigations are qualified by the statement that “Inclusion does not ensure that funding, staff, or equipment will be made available to implement these actions, nor does it obligate the SFPUC to implement actions it chooses not to,” essential[ly] rendering the mitigations meaningless. There is no assurance in the EIR that proposed mitigation actions will be undertaken, leaving potentially significant impacts unmitigated. Inclusion of this qualifier calls into question the validity of the entire EIR, and the sincerity of the SFPUC in mitigating for the impacts of its management actions. The SFPUC

needs to include a specific mitigation monitoring plan as part of the EIR, which will ensure that adequate mitigations for its management actions actually occur on the ground.’ (Alameda Creek Alliance)

Comment D-6: “The one thing that really bothered me reading, there’s a number of management actions of EIR and I forget, there’s a table and some of those management actions are proposed mitigations to reduce significant impacts to a threshold less significant and that’s the table that’s in Table 2-1.

And then there’s a disturbing footnote at the bottom of the table which simply states inclusion does not ensure that funding, staff, or equipment will be made available to implement these actions, nor does it obligate the SFPUC to implement actions it chooses not to, essentially rendering the mitigation actions meaningless.

There’s no assurance in the EIR that anyone will be actually undertaking or funding the staff. Inclusion of this qualifier calls into question a commitment to tell SFPUC -- even address these impacts. So I don’t know why the qualifiers are included.

Some of those actions in table 2.1 are specifically listed in the EIR as mitigations which will reduce impacts less than significant and if you can’t guarantee it, then you cannot rely upon those mitigations.” (Jeff Miller – Pleasanton Public Meeting)

Response: The way in which mitigation measures were introduced and the commitment to implementing mitigation measures was a point of concern for many commentors. It is the intention of the SFPUC to avoid significant impacts from any actions or set of actions it may undertake, however it is not possible at this time to determine which particular action or set of actions the SFPUC might undertake and in what timeframe. Therefore, the DEIR took a conservative approach and identified the potential impacts for any action or project for which impacts could not be ruled out. Unfortunately, this approach confused commentors and some readers presumed that the SFPUC was serving notice that it might choose to ignore mitigation measures or manage land in such a way as to cause significant impacts. This is not the case.

The Management Plan actions are primarily a set of best management practices that may be implemented by the SFPUC. Whether or not these practices are implemented is dependent on whether the SFPUC receives funding and staffing for implementation of actions or sets of actions. As actions are specifically proposed (or receive funding), the San Francisco Planning Department, Major Environmental Analysis section would review the project specifics pursuant to Sections 15168 and 15162 of the CEQA Guidelines. Section 15168 defines a Program EIR, lists the advantages to using a Program EIR, describes how a Program EIR can be used for later activities, and establishes public notice requirements for a Program EIR used for CEQA compliance for later activities. Section 15162 contains basic tests for determining whether a certified Program EIR (or any certified EIR or adopted negative declaration) may be used for CEQA compliance for a project and, together with Sections 15163 and 15164, would be used to

decide whether a subsequent EIR, supplemental EIR, EIR Addendum, or subsequent negative declaration is appropriate.

Essentially, these sections of the CEQA Guidelines indicate that no new environmental document is required if substantial evidence in the record indicates that the later activity would generate no new or substantially increased significant environmental impacts, nor would new or substantially different mitigation measures be appropriate or feasible. If only minor additional information to the program EIR is necessary and no new impacts or mitigation measures are identified, an Addendum may be prepared. If there could be new impacts or if new mitigation measures have been identified, but only minor additional information is necessary, a Supplemental EIR is normally appropriate. If major changes are proposed or major new information becomes known involving new significant impacts or mitigation measures, a Subsequent EIR may be appropriate. Under certain circumstances, such as potential new project level impacts that would be fully mitigated, a subsequent negative declaration may be appropriate.

The Mitigation Monitoring and Reporting Program (MMRP) that will be adopted by the SFPUC along with the Management Plan (if it is approved) will specify the process by which all adopted mitigation measures are to be carried out. The MMRP will also detail responsibilities for enforcement. The Management Plan and each subsequent action or project approved by the SFPUC will include CEQA Findings (per CEQA Guidelines Section 15091) that will include a determination of any environmental consequences of the particular action, project, or set of actions. The Findings document will also include and address all relevant mitigation measures.

As an example of how this review process would actually be implemented, consider the process that would result from a decision by the SFPUC to fund Management Plan Action roa2 (relocate existing high use road/road segments in proximity to streams that are the primary source of excessive erosion and sedimentation, wherever possible). Because Table II-1 (DEIR page II-27) notes that this action may require further environmental review at the time any specific road relocation project was under study, SFPUC would consult with MEA to determine what level of CEQA review is appropriate (as described above) and any special studies that would have to be undertaken. As shown on Table III.E-4 (DEIR page III.E-26), these studies would include a vegetation management plan, an exotic tree survey, and wildlife surveys. It is expected that the San Francisco Planning Department, Major Environmental Analysis section would conduct an annual review of contemplated SFPUC actions, in addition to reviewing specific proposals from the SFPUC.

E. RELIANCE ON PREVIOUS EIRS

Comment E-1: “On page II-23, the EIR refers to other Management Plan actions that have previously undergone environmental review, and therefore may go forward independent of certification of this EIR. Alameda County believes that the existing surface mining permits in the Sunol Valley fall into this category, and could proceed under the existing Alameda County environmental documentation, regardless of whether the SFWD Watershed Management Plan EIR is certified.” (Alameda County Community Development Agency)

Comment E-2: “Pages III.D-23 and 37 indicates that future reservoir design, construction, and operations may require additional environmental review because specific plans have not yet been prepared. However, to the extent water storage is part of the reclamation plans for all of the aggregate mines in the Sunol Valley, as well as in Livermore and Pleasanton, the environmental effects have been adequately addressed by Alameda County in prior adopted and certified project-specific environmental reviews. There may be some aspect of San Francisco’s future operations that cannot yet be anticipated, but no part of the previously reviewed and approved mining or water storage reclamation is subject to debate at this time.” (Alameda County Community Development Agency)

Response: Ongoing mining permits and leases, like other SFPUC ongoing watershed activities, are part of the environmental setting and may proceed independently of this EIR. Although Mission Valley Rock Company is in receipt of a surface mining permit from Alameda County, mining under SMP-32 can not commence without a lease from SFPUC as the landowner and therefore is properly reviewed under CEQA in this EIR. Although future water storage facilities may require additional environmental review, no part of the previously reviewed and approved water storage reclamation would require additional review, as stated by the commentor.

Comment E-3: “...the Department does not concur with the statement that impacts associated with mining expansion and extended timing as being unavoidable. In a memorandum to Mr. James Sorenson, Alameda County Planning Department, dated August 24, 1994, the Department recommended against certification of the Mission Valley Rock Co; Surface Mining Permit and Reclamation Plan SMP-32: Draft Environmental Impact Report, based on the inadequate discussion of several resource issues. The fact that Alameda County certified a DEIR in November 1994 does not change the significant unmitigated resource impacts of the project. In addition, the steelhead and California red-legged frog have been listed as threatened since certification of that document.” (California Department of Fish and Game, Central Coast Region)

Comment E-4: “... your findings of insignificant impact for the Sunol Valley gravel-mining actions should not rely on past CEQA findings for gravel-mining projects, nor on future discretionary actions by permitting agencies.” (California Regional Water Quality Control Board, San Francisco Bay Region)

Comment E-5: “The EIR’s evaluation of mining alternatives (pages VII-18 through VII-30) refers repeatedly to findings made by the County during environmental review for the existing

mining permits in order to conclude that the proposed mining plans will not have a significant impact. We believe that recent advances in the understanding of stream functions and values, as well as changes in environmental laws will undoubtedly lead to a higher level of scrutiny of these mining operations in the future, and this EIR should independently address these issues. It is not appropriate under CEQA to base the findings in this planning level EIR on the findings in a project-specific EIR. Furthermore, the alternatives analysis and findings rely on anticipated conditions of approval in the County's future permit and permit modifications to "mitigate significant effects of mining." It is not appropriate under CEQA to base a finding of insignificant impact on a future discretionary action by a permitting agency.' (Regional Water Quality Control Board, San Francisco Bay Region)

Comment E-6: "The loss of prime agricultural land. "Permitted mining under SMP-32 would bring about the loss of 140 acres of prime agricultural land. In approving SMP-32, Alameda County found this loss of prime agricultural land to be an unavoidable significant impact for that project, and implementation of the Management Plan would include approval of a new lease between SFPUC (as land owner), and the mining operator, entitling mining that would also lead to the unavoidable significant impact." Page III.B-12. This is a significant loss to the community because there is so much that can be done with this fertile ground that will benefit many except for the economics for San Francisco. Just the fact that the majority of agricultural land has already been sacrificed to development makes this spot more valuable and in need of preservation.' (Maryanne Canaparo)

Comment E-7: "Nowhere in your report does it deal with impacts to the people who reside in Sunol and especially to the children of Sunol Glen School.

Our school board of trustees voted in '96 to oppose the quarry because of public health and safety concerns, as well as the visual impacts that the quarry bring. A sizeable number of students already have breathing problems that require breath inhalers..." (Pleasanton Public Meeting, Patricia Stillman – Pleasanton Public Meeting)

Comment E-8: "Five years ago when we appeared in superior court appealing Alameda County's permit, the Judge ruled against us, but stated that this quarry will have a devastating impact on the Sunol Valley and admonished us for not preparing an initiative against threats for quarry.

We are very disappointed that you have accepted the Alameda County EIR and incorporated it into your draft EIR. You have accepted its quote mitigations even though Sunolians have strong reservations about their enforcements and implementations.

We believe that our alternative has not been fully considered with no real consideration of the immense consequences that this strip mine will have upon an entire community.

It is the ultimate insult and injury that any agency can do to residents of an established community. We will not accept this proposal and promise San Francisco a public relations

nightmare if you proceed with this horrendous proposal.” (Pleasanton Public Meeting, Patricia Stillman – Pleasanton Public Meeting)

Comment E-9: “My wife and I are 14-year residents of Sunol. We attended along with a healthy contingent the first meeting that were held here at this school, but the minutes of those meetings should reflect there was almost universal opposition ~~beginning plan~~ to move [quarrying] north of highway 680.

It was in fact a group of folks from Sunol ~~voted in, if be,~~ [who proposed that quarrying be] expanded [south of I-680] to whatever degree San Francisco felt they needed to expand it in order to take care of your future water storage need.

We felt as citizens of the area that possibly the nursery operations or the grape or fruit operations would be more appropriate on that agricultural land that now is covered under the SMP-32 plan from Alameda County.

I read through quite carefully your proposal, the proposed plan, and it appeared that at almost every turn the city and county of San Francisco was hiding behind what I consider to be a reprehensible piece of politicking that took place during the approval process 32. The EIR that was part of that process is completely fraud.” (At the Pleasanton Public Meeting, Bob Frillman)

Comment E-10: “... I’d like to thank you in preparing the EIR. There is a statement in there. It’s page roman numeral 222 that the EIR looks at the whole project of the watershed and I think this is a wonderful thing because many EIR’S will attack the projects piecemeal and kind of get away of seeing the whole picture, but this one is looking at the whole picture and that’s good, although I will agree that it is flawed in accepting the Alameda County EIR on the SMP-32 expansion project. ” (Joanne Freemire – Pleasanton Public Meeting)

Comment E-11: “The residents of Sunol Valley have grave and warranted concerns about the options presented by the San Francisco Public Utilities Commission for the future of their community.

I strongly urge you to consider carefully concerns of the residents of Sunol as you draft the project reports, as well as the merits of Alternative S, prepared and presented by a number of community members as a possible option for moving forward.” (California State Senator Liz Figueroa)

Response: Under Section 15162 of the CEQA Guidelines, when an EIR has been certified for a project, no subsequent EIR shall be prepared unless there are substantial changes in the project or substantial new information or circumstances that would lead to new or substantially more severe significant environmental impacts than disclosed in the previous EIR. Changes to SMP-32, consisting of changes in mining sequence and backfill of areas to be mined to provide a larger buffer area for the Sunol Water Temple, as well as changed conditions (primarily, recent special status species listings) were examined in the Management Plan EIR. The changes were found to cause potentially significant impacts on natural resources (see DEIR pages III.E-35 through

III.E-38), which could be mitigated to less than significant levels through new mitigation measures (see DEIR pages IV-3 and IV-4, Section E.2.0, mitigation measures 1, 2, and 3).

There is no CEQA prohibition against the inclusion of, or other problems resulting from the use of, information and conclusions of a project-level EIR such as SMP-32 in a program EIR such as the Management Plan. The SMP-32 EIR represents the best available information about that project's environmental impacts and mitigations. The SMP-32 EIR was prepared by the local jurisdictional agency (Alameda County) and there is no basis for the City and County of San Francisco to substitute its judgement by overriding that EIR and Alameda County's findings, particularly when upheld by trial and appellate court decisions. As noted in the Management Plan EIR (see DEIR pages I-9 and I-10), it was anticipated that many Sunol residents would disagree with these findings.

No finding of less than significant impact in the Management Plan EIR was based on future discretionary action by a permitting agency. These comments refer to the Management Plan's proposal to mine existing pits wider and/or deeper. The EIR could not identify a significant impact at the program level, and merely noted that similar projects (mining wider and/or deeper in the same areas) have been able to mitigate all identified potential impacts to less than significant levels, while disclosing the likely need for future environmental review of such proposals. However, because of the uncertainty about the timing and extent of future proposals for expansion of mining south of I-680, and the lack of a comprehensive groundwater and hydrologic study for that area, potentially significant project level impacts cannot be ruled out. Therefore, a discussion of potential impacts to Alameda Creek and its resources, and a mitigation measure, has been added to EIR Section III.D, Hydrology and Water Quality. Please see the response to Comments H-7 through H-10 (Section II.H of this document) for this discussion.

In response to Comments E-8 and E-11, the Management Plan EIR analyzed the alternative advanced by some Sunol citizens. The analysis of this alternative (Alternative S) is discussed along with mining alternative B, which is similar to the mining alternative proposed by Sunol citizens. Please see DEIR pages VII-18 through VII-30 for the discussion of Alternative S, Alternative B, and the other mining alternatives.

F. MINING

1.0 PERMITTING ISSUES

Comment F-1: “It is apparent that the watershed plan could result in restrictions on future mining in the project area. Therefore, it would be useful to the environmental impact analysis to quantify the impacts on aggregate resource availability for each of the various future mining alternatives. Impacts on aggregate resource availability of the proposed alternatives should be quantified in terms of available mineral resources and projected needed. (The 1975 Surface Mining and Reclamation Act defines resources to include reserves, and reserves are defined as aggregate for which the lead agency has issued a permit to mine.)

The Division has published Open-File Report 96-03, Update of Mineral land Classification: Aggregate Materials in the South San Francisco Bay Production-Consumption Region, by Kohler-Antablin, Susan, 1996. This would be useful reference for addressing the project’s aggregate resource impacts, particularly its supply impacts. We recommend that Open-File Report 96-03 be used in responding to the above comments.” (Department of Conservation, Division of Mines and Geology)

Comment F-2: “The State-designed Mineral Resource Zones are discussed briefly on page III.C-5, but no map or follow-up discussion provides the reader with an understanding of whether all or some of the areas might be precluded from mining due to Plan policies and management actions. Please clarify the resource areas, project areas, and potential impacts, if any.” (Alameda County Community Development Agency)

Response: These comments appear to be concerned with potential loss of availability of designated mineral resources. The relative amount of resource that would be extracted under the various mining alternatives is proportional to the resulting water storage volume upon completion of mining; these amounts are given for each mining alternative on DEIR pages VII-19 through VII-23. The preferred Management Plan alternative maximizes mining in comparison to other alternatives. Under the definition of “reserves,” as presented by the Division of Mines and Geology, the Management Plan would result in the same or more aggregate mined than the amount allowed under existing Alameda County permits. The Management Plan is intended to maximize resource extraction consistent with environmental and political constraints.

Comment F-3: ‘Page II-45 / Action sun2a “Work with Alameda County to amend the existing permits south of I-680 to achieve a maximum mining depth of 200 feet and a maximum mining footprint.”

Expansion of the mining depth and footprint should be the preferred action. This option will substantially increase the water storage capacity of the lakes. It is well documented that Northern California experiences extended periods of drought. The increased water storage of the lakes for such an event would be invaluable to the local Bay Area communities.’ (RMC Pacific Materials)

Response: As is noted in the comment, Action sun2a would maximize future water storage capacity of reclaimed quarry pits.

Comment F-4: “The Plan and EIR refer to a completion date for SMP-32 of 2035. To reduce the length of time impacts would be experienced in the area and to expedite water storage north of I-680, the County’s permit for SMP-32 extends to 2045, which is substantially shorter than the originally-proposed completion date in 2080. However, our understanding is that no further shortening of time can be accommodated, because of the limitations of the SMP-24 processing plant and market forces that only absorb so much material in any given year. The inability to meet an earlier completion date is further compounded if additional mining is conducted south of I-680, which would delay the start date for mining north of I-680.” (Alameda County Community Development Agency)

Comment F-5: “There is a statement regarding timing which appears in each chapter of the DEIR usually in the section titled “Charges in Gravel Mining Operations, the first being Chapter 1 Section 2.0 the second paragraph as follows:

“The Management Plan incorporates the SMP-32 conditions of approval and proposes modifications in the timing and sequencing of mining (extending the completion date for water storage pits) and mining reclamation -----”.

The meaning of this statement is not consistent with the completion data for mining shown in Figure III B-2, Table III B-1 or with Management Action Sun 1 Table II 1 page II-45 and other similar references. SMP-32 EIR projected the completion of mining and reclamation as the year 2045. Section IV of this DEIR indicates completion dates for Alternative E (SMP-32) and Alternative F as “about 2038” and “about 2047” respectively. SMP-32 final EIR dated November 1994 in Table 3 Mining and Reclamation Schedule shows the mining and reclamation completed 38 years after the start of mining which is a minimum of 5 years in the future. Therefore a completion date of 2045 appears to be correct and we would recommend that 2045 be used in place of 2035 in referring to completion of mining and reclamation.’ (Mission Valley Rock Company)

Response: The dates in the Management Plan and in the EIR are correct. Pages 7 through 8 of the *Sunol Valley Resources Management Element* provide for a completion date of 2035 for SMP-32. This date was established to expedite the creation of water storage facilities and maximize revenue, while minimizing environmental impacts as stated in Policy WA37. Commentors will have an opportunity to raise the issue of mining date completion or other concerns at the SFPUC public hearing for the adoption of the Management Plan, during lease negotiations, and at the SFPUC public hearing for the approval of the SMP-32 lease.

Comment F-6: “Table III B-1 page III B-6 – The reference to “Parcel 5” should read as follows:

“The upper level of parcel 3 is typically -----.” (Mission Valley Rock Company)

Response: In response to this comment, DEIR Section III.B, Land Use, page III.B-6, Table III.B-1, column “SMP-24,” line “Mining Phases” has been revised:

Parcel 3 tends to be mined during the summer due to water levels in the pit during winter months. **The upper level of parcel 3** ~~Parcel 5~~ is typically mined in wet weather due to good drainage in the pit.

Comment F-7: “Sunol Valley / Gravel Mining – The Sunol Valley section of the Management Plan includes many proposed actions that go well beyond the level of specificity that we would expect in a general management plan, and this level of descriptive detail is not sufficiently supported by a more detailed evaluation of these actions in the EIR. The Management Plan proposes to expand existing gravel mines, add additional mines, increase the period of operation of these mines, and then reclaim the pits for water storage. It details a ¼-mile wide landscaped buffer for the water storage pits, but no buffer for, or restoration of, the Alameda River corridor. It also proposes other, very specific, design elements. The only mitigation proposed for the impacts of the Sunol Valley actions is to “conduct site-specific review of new structures, linear facilities, parking lots, roads, or trains to avoid adverse impacts to wildlife” (Table III.E-8), and once again, there is no assurance that this measure will be implemented (Table II-1). We believe this action, even if it is implemented, does not sufficiently offset the proposed impacts.

The EIR should discuss the long-term impacts of this plan on the designated beneficial uses of Alameda and San Antonio creeks (*cold freshwater habitat, fish migration, fish spawning, wildlife habitat, and preservation of rare and endangered species*). There are many ways in which the proposed Sunol Valley plan may impact these beneficial uses. For example, the excavation of the mines within the historic creek-bed may effect the hydrology of the creek, potentially lowering the water table and reducing flow levels. Management of the reclaimed pits for water storage could further impact the stream by fluctuating water levels, particularly during the driest years when this secondary water supply would most likely be used. The EIR should fully evaluate all potential impacts.” (California Regional Water Quality Control Board, San Francisco Bay Region)

Comment F-8: ‘Attempted rape of a beautiful virgin. I admit that this is, indeed, a strong statement. However, I can think of no better analogy to apply to what is going on in Sunol, CA. Someone is trying to push through an “Environmental Impact Report” that purports that the impact of placing a strip mine rock quarry on the picturesque property at Highway 680 and Paloma Way in the bay area’s jewel of Sunol, California can be mitigated. Those who are either standing aside to observe or actually participating in propagating such a plan are essentially condoning or committing *attempted rape of beautiful virgin agricultural land in a scenic corridor of the east San Francisco bay area*.

The screams have only just begun. Undoubtedly, you are hearing from the vocal group of us who are fortunate enough to have achieved the dream of living in rural Sunol. Indeed, we are trying to speak on behalf of the quiet, beautiful, god created stretch of virgin agricultural land and

its surrounding area. *If the rapists are successful, we will hear screams as the mine strips the land for years to come.* One need only observe the southern side of the freeway to see and hear the devastating affect of a quarry. If you visit the quarry when the sirens are going off – which can happen at any hour of the night and for hours at a time – you’ll bear witness to *the screaming of a strip mine.* A phone call into the existing quarry company yielded a response that ‘the sirens are from OSHA required alarm system that must be present to warn the workers that the equipment is getting overloaded...thus averting a potential disaster in the area.’ If a new quarry is placed on the Paloma property, those who either live or visit the adjacent town or its historic water temple would hear the screams from years to come.

The rape might feel good for the rapist; somebody’s wallet will certainly be filled if this rape is not stopped. Its clear that someone has spent a great deal of time and money cooking up an EIR that indicates that, somehow, its OK to strip mine in Sunol...that the impact to the local environment, the nearby streams, the children at the adjacent school, the serene surroundings, the nearby parks, and those who are experiencing the dream of living in Sunol would somehow be mitigated...that strip mining for rocks on the virgin, agricultural land just won’t hurt anything. *“Its OK, she’ll be just fine in the morning.”* In fact, the damaging impact would be felt for generations to come, long after the profits are spent.

It is unconscionable to allow this attempted rape to continue. Please carefully read the so called “EIR” for what is really is: attempted rape of a virgin. Do the right thing. Please stop the proposed Paloma Way, Sunol strip mine rock quarry.’ (Andrew A. Turnbull)

Comment F-9: “SMP 32 has many issues surrounding its’ implementation: **Loss of habitat for flora and fauna and alteration of creek hydrology.** No mitigation is made for this major loss which can not be restored...” (Maryanne Canaparo)

Comment F-10: “In reading through this document, I wasn’t sure if SFPUC really understood the relationship between the quarry and where everything is on there.

In this picture we have the existing quarrys on the far side of 680. The 680, the proposed quarry area, is this whole field and I didn’t see exactly what the phase plan of when different sections would be quarried, but essentially majority of this field with the water temple right here and the town of Sunol is right here. Sunol Glen School right here. This would be the Sunol Glen School right here and their play fields right here.” (Derek Johnson – Pleasanton Public Meeting)

Comment F-11 “And also in these images I’d like to point out that there is an impact. This document seems to say that there’s very little impact from any of this mining operation. I can’t imagine something that can produce pictures like this not having any impact. I don’t have all the technical terms and I haven’t studied exactly what animals live there and things like that. But when you see a strip mined area, it has an impact.” (Derek Johnson – Pleasanton Public Meeting)

Comment F-12: “I had hoped actually because I had been involved, that the city and county would have rejected that whole process and at least revisited that process, but it appears that you’re using that as the shield to sort of wash your hands of all responsibility.

I guess in closing I would submit to the powers that be that you have a responsibility obviously to your legislatures, that’s a responsibility that’s been denied that you do have. But I think you have a higher responsibility and that is to the land that you have been entrusted with to shepherd. You have an absolutely jewel on that 150 or so acre spot that you’re prepared to flush down the toilet.” (Bob Frillman – Pleasanton Public Meeting)

Comment F-13: “... and it’s not only the aesthetics that the EIR refers to, saying that the quarry would have no impact, but the recreational facilities and educational centers that are proposed for the Water Temple, the area you know would have a negative effect of the EIR, says it would be that those facilities would have a negative effect on the esthetics, the noise, the dust, the hazardous materials and that the quarry would have none of those things.” (Joanne Freemire – Pleasanton Public Meeting)

Comment F-14: “...The Bay Area kicks in the teeth. Twenty years ago I moved here. We bought a house in Palo Alto. When we started having boys, we moved to Fremont. Now our four boys we couldn’t afford a larger house in Fremont and we were very fortunate to find a home in Sunol. And I’ve told my boys this is where we are homesteading. This is where we are going to be.

And then I told them how totally upset I was to hear that this [mining] proposal was going through. And again, I apologize for not being better versed and everything else.

But they said to me tonight on the way over here they said, dad, you remember that butterfly lady over there that we saw? They said well, we’ll camp out there and we’ll be there just to make sure it never comes in. And I’m not an activist type person, but what’s happening here it’s just phenomenal by law.” (Charles Johnson – Pleasanton Public Meeting)

Comment F-15: “It [mining] could contaminate Alameda Creek and ruin its efforts, that is the source for drinking water for a major portion of the southern Alameda County.” (Patricia Stillman – Pleasanton Public Meeting)

Response: In part, these comments express concern that this EIR does not fully review potential impacts that could occur from mining activities. The Management Plan refers to two areas where new or increased mining could take place. The most substantial changes are proposed for the area north of I-680 where mining has not occurred. These mining parameters and conditions are clearly defined in Alameda County’s EIR and conditions of approval for SMP-32. The second area where mining could be expanded is introduced in the Management Plan and involves mining existing pits south of I-680 wider and/or deeper. The quarry operators have not made project specific proposals for the potential changes to existing quarries south of I-680 (see DEIR page I-4). As discussed in the response to Comments E-3 through E-11 (see Section II.E –

Reliance on Previous EIRs), the Management Plan EIR does not identify a potentially significant program level impact to hydrology and water quality resulting from mining existing quarries south of I-680 wider and/or deeper. However, because of the uncertainty about the timing and extent of future proposals for expansion of mining south of I-680, and the lack of a comprehensive groundwater and hydrologic study for that area, potentially significant project level impacts cannot be ruled out. Therefore, a discussion of potential impacts to Alameda Creek and its resources, and a mitigation measure, has been added to EIR Section III.D, Hydrology and Water Quality. Please see the response to Comments H-7 through H-10 (see Section II.H of this document) for this discussion.

Some of the SMP-32 project details are described in the Management Plan, and thus in the EIR, to make clear to the reader the minor changes to SMP-32 proposed under the Management Plan. Detailed analysis of the impacts of SMP-32 was developed in Alameda County's EIR for that project. That analysis is supplemented by the Management Plan EIR to account for minor changes in the project and the listing of additional special status species since the approval of the SMP-32 EIR by Alameda County. The Management Plan EIR, based on the new information and analysis, found potentially significant impacts on natural resources (see DEIR pages III.E-35 through III.E-38), which could be mitigated to less than significant levels through new mitigation measures (see DEIR pages IV-3 and IV-4, Section IV.E.2.0, mitigation measures 1, 2, and 3). Further details regarding SMP-32's relationship to the Management Plan actions can be found in the *Sunol Landscape and Recreation Plan* and the *Sunol Valley Resources Management Element*, both of which are part of the record for this project.

The conditions of approval for SMP-32 imposed mitigation measures to reduce the impact of noise on sensitive receptors, protect wildlife, and protect people and facilities from seismic hazards. Backfilling of a ¼ mile landscaped buffer was included in the SFPUC preferred mining alternative to further mitigate for potential impacts to cultural resources. As described in the SMP-32 EIR and the Management Plan DEIR, the mining operators will use conveyors to transport aggregate offsite to the existing Mission Valley Rock Company processing plant, in order to minimize changes in noise and truck traffic. Further details regarding the mitigation measures required under SMP-32 are discussed in Section II.I, Natural Resources, Section II.M, Cultural Resources/Sunol Water Temple, and Section II.O, Noise of this document. The loss of 140 acres of prime agricultural land was an unavoidable impact described in the SMP-32 EIR and the Management Plan EIR.

The creek bed would not be excavated under the proposed Management Plan (see DEIR Figure III.B-3). Several comments state that the impacts of the changes that are suggested by the Management Plan are not fully examined or mitigated. Impacts to natural resources from the proposed Sunol Valley activities are analyzed on DEIR pages III.E-35 through III.E-39. In particular, Comment F-7 mentioned a mitigation measure (Action will – conduct site specific surveys), and claims it was not adequate to reduce impacts. Three additional mitigation measures were identified on DEIR pages IV-3 and IV-4 as necessary to avoid potentially significant impacts. Potential impacts to hydrology and water quality are also described on DEIR pages III.D-27 through III.D-30. Comment F-7 asks for further analysis of the management of

the future water storage reservoirs. These impacts cannot be analyzed at this time as future water sources have not yet been determined, nor have future operational options or timing and phasing of implementation for the system been identified (see Section II.Q of this document). As described in DEIR Table II-1 (page II-46), future reservoir construction and operation will require further environmental review.

Comment F-16: "...I would be very interested in seeing the Final EIR include an evaluation of potential health risks to students and staff at the Sunol Glen School, which is located immediately adjacent to the proposed quarry site." (California State Senator Liz Figueroa)

Response: As described in EIR Sections III.F and III.L, the potential air quality and noise impacts associated with mining under SMP-32 were evaluated in the EIR prepared for that project and are summarized in the Management Plan EIR. Please see the response to Comments J-3, J-4, and J-5 (Section II.J of this document), and the response to Comments O-2 and O-3 (Section II.O of this document). These responses summarize the SMP-32 EIR discussions of air quality and noise impacts, and Alameda County conditions of approval. Based on the SMP-32 EIR and CEQA Findings, the data and analysis indicate that air quality and noise impacts from SMP-32, as mitigated through conditions of approval, would be less than significant. No new evidence or information has been received that would warrant reanalysis of the SMP-32 air quality and noise issues.

Comment F-17: "The loss of public use. The restored Temple will not reach its goals of providing wedding sites, family gatherings, a destination for many Temple visitors, etc. because of this proposed adjacent quarry operation." (Maryanne Canaparo)

Response: This comment implies that noise, dust, and visual impacts from quarry operations would render the restored temple area undesirable for public use. It should be noted that there is no public use of the temple at this time. The conditions of approval for SMP-32 include mitigation for noise (berms and mining quickly to get to where excavation activities would be 15 feet or more below grade), visual quality (berms, setbacks, and screening landscaping), and dust (dust control measures). Implementation of these conditions would avoid significant impacts on planned future public use of the temple area. Please see Section II.M (Cultural Resources/Sunol Water Temple) of this document.

Comment F-18: "Additionally, I hope that the Planning Department will also consider preserving the area surrounding the Sunol Water Temple. This is another Bay Area gem that we need to keep. (The land is being threatened by a large gravel quarry.)" (Greg Ellis)

Comment F-19: "I support sun2a or sun2b in exchange for removal of sun1 for consideration since the land has already been destroyed on the south/east side of I-680." (Maryanne Canaparo)

Comment F-20: "And I notice in the maps and in the EIR, that quarry [proposed north of I-680] and the quarry that Mission Rock already has, would have the same completion date and it would seem to me it would make better sense to make them complete what they're working on and then

make the decision to let them expand if that decision is to be made. But to just open the whole area to quarry now and have it all going at once just doesn't seem a good idea to me." (Joanne Freemire – Pleasanton Public Meeting)

Response: These comments express the desire for SFPUC not to permit mining north of I-680. Section VII of the DEIR describes the mining options in some detail. Mining Alternative B (DEIR page VII-22) does not allow mining on the north side of I-680. This Alternative was analyzed as an alternative in the DEIR and thus it is still available for consideration by the SFPUC.

Comment F-21: "The **seismic hazard** of the area which is located on the Calaveras Fault "Hazards due to ground rupture are primarily considered a risk along traces of active and potentially active faults within the Watershed, and would be expected to be confined to areas along the Calaveras Fault Zone." Page III.C-5 "The area along the Calaveras Fault Zone is designated as a special studies zone under the Alquist-Priolo Act, and seismic hazards of surface rupture must get adequately evaluated for projects that propose structures for human occupancy." Page III.C-6. How will an earthquake affect the proposed underground tunnel to the east side operation? What will happen if the tunnel becomes inoperable?" (Maryanne Canaparo)

Response: The comment assumes that there will be an underground tunnel associated with mining expansion. There is no such facility planned. The comment may be referring to the proposed conveyor belt that will be used to carry quarry material to the plant. This conveyor belt would be a freestanding and mobile conveyor placed on the ground surface and would pass under the existing Alameda Creek Bridge at I-680. In the event of an earthquake, the conveyor belt could become inoperable, necessitating repair by the quarry operator. While quarry operation could be temporarily affected, no significant environmental effect would be anticipated.

Comment F-22: "Under Existing Plans and Policies section, (page III.A1) the DEIR states the following:

The City and County of San Francisco, as a chartered city and county, and its SFPUC, as a public utility, receive intergovernmental immunity under California Government Code Sections 53090 et seq. Such immunity exempts the extraterritorial lands owned by the City and County of San Francisco through its SFPUC, from the planning and building laws of a city or county in which those lands are located.

However, the DEIR also states that since San Francisco has no Surface Mining and Reclamation Act (SMARA) ordinance, it defers their mining leases to acquire Surface Mining permits from a county outside San Francisco. Given the above-stated immunity, it seems incongruous for the City and County to exercise the Surface Mining and Reclamation Act (SMARA) ordinance of another county in order to lease land for aggregate mining operations. It appears that the City and County is exercising two sets of rules for the management of its extraterritorial lands, thereby obviating the responsibility of the City and County to address impacts on watershed lands for activities that they have no CEQA control over. The Department strongly recommends that the DEIR should, on a programmatic level, disclose impacts resulting from aggregate mining

operations on watershed lands, irrespective of the county nexus.” (California Department of Fish and Game)

Response: There is confusion within this comment regarding the City’s regulatory authority. In those cases where the City has its own ordinances governing a certain type of action, such as planning and building, it has governmental immunity from the regulations of a city or county where City of San Francisco lands are located. However, where the City has no laws governing an action, such as a surface mining ordinance, the laws of the city or county where that land is located become the basis for issuing a permit. In addition, the EIR acknowledges the City’s CEQA responsibility in executing mining leases. The EIR recognizes that, notwithstanding Alameda County’s granting of SMP-32 and other Surface Mining Permits, new mining in the Watershed cannot proceed without lease entitlements from the SFPUC. Therefore, the SFPUC is in a position of being a responsible agency obligated under CEQA (Guidelines Section 15096) to consider the EIR prepared by the lead agency. The SMP-32 EIR was prepared in 1994 and the SFPUC and the San Francisco Planning Department’s environmental review office participated in its scoping and also commented extensively on the Draft EIR. It was determined that the mining lease for SMP-32 should not be executed while the Management Plan, including the Sunol Valley Element, was under preparation. It was also determined that, due to changed conditions that were not present when the SMP-32 EIR was certified in 1994 (primarily the management and planning framework provided by the proposed Management Plan and Sunol Valley Element, and the listing of additional special status species since that time) and proposed minor modifications to the mining permit (changes in mining sequence and backfill of areas to be mined to provide a larger buffer for the Sunol Water Temple area), the Management Plan EIR should include a review and update of pertinent SMP-32 EIR information in order to comply with CEQA, prior to SFPUC consideration of a lease agreement for SMP-32.

The Management Plan EIR discloses potential impacts from SMP-32 and potential expansion of existing quarries in pertinent environmental topic chapters, usually under the heading of “Changes to Gravel Mining Operations.” Concurring with the County of Alameda, the Management Plan DEIR found that the SMP-32 conditions of approval, based on mitigation measures contained in the SMP-32 EIR, were generally sufficient to avoid significant impacts. However, the Management Plan EIR’s analysis identified additional potential impacts on natural resources requiring new mitigation measures to reduce impacts to a less than significant (see DEIR Section IV.E.2.0 and the response to Comments I-4 through I-27 in Section II.I of this document). These mitigation measures are suggested for SFPUC consideration for incorporation into a mining lease, if approved. The Management Plan EIR also reiterates the SMP-32 findings of an unavoidable significant impact on natural resources (loss of prime agricultural land), acknowledging the SFPUC’s responsibility to recognize this impact in its consideration of the mining lease. Thus, the Management Plan EIR does analyze and disclose potential impacts arising from aggregate mining, and identifies new mitigation measures. Please refer also to the response provided in the response to Comments E-3 to E-11 (Section II.E of this document).

Comment F-23: ‘In the Alternatives section (page VII-19) the DEIR states that the preferred alternative “includes portions of Alternatives E and F, and is subdivided into two options,

preferred alternative Option 1 and Option 2.” These options are outlined in Table VII-3, however they are not discussed in the text. It is not entirely clear how they compare to other options, for example, whether or not San Antonio Creek is proposed for mining. Without the text description, it is not possible to assess which option is preferred. However, in previous meetings, the Department has recommended Mining Alternative A. This alternative maximizes increased public access on the north side of I-680 in an area closer to the fringes of the watershed where there are fewer resource impacts, as compared to areas that are located in the interior of the watershed.’ (California Department of Fish and Game)

Response: The comment regarding the recommendation of Alternative A is noted. The text discussions of the preferred alternative options can be found in several places in the EIR. DEIR Chapter II – Project Description (page II-16) is the first place these options are described. The commentor is also referred to DEIR pages III.D-28 and III.D-29 in the Hydrology and Water Quality Section for further explanation of these options from a hydrologic standpoint. San Antonio Creek is not proposed for mining under the preferred alternative (see DEIR Figure III.B-3 and pages VII-21 through VII-23). Mining alternatives that included mining in San Antonio Creek were rejected because of California Department of Fish and Game concerns that the creek is a wildlife corridor. Alternative B is the only alternative that would include mining of the creek, and that is not the preferred alternative.

2.0 CUMULATIVE MINING EFFECTS

Comment F-24: “Page III.P-6 discusses the combined effects of different mining operations. Calaveras Road would be the haul route for Apperson Ridge quarry products and is the same road used by RMC Pacific Materials. Mission Valley Rock has an independent access road at Athenour Way / Andrade Road. However, the combined impacts of Apperson and RMC are unlikely to be cumulative, in the sense of being additive, because the Apperson Ridge Quarry is unlikely to begin operation until the market forces create a demand for more expensive material, and that would likely be after RMC has completed mining of its areas in the Sunol Valley.” (Alameda County Community Development Agency, Planning Department)

Comment F-25: “The EIR provides a brief discussion of the Apperson Ridge Quarry in the “Cumulative Analysis” section. This analysis does not include a thorough discussion of the cumulative impacts of this quarry on Watershed lands. While an updated project impact analyses appears warranted by Alameda County to address changes in project circumstances, the subject EIR should also consider in general terms these same impacts to Watershed lands. This analysis, if and when a specific proposal to commence quarrying is submitted, should include impacts from or to water quality, fuel spills, truck noise, blasting noise, air quality, aesthetics, plants and wildlife, special-status species (especially Alameda whipsnake), public safety, risk of wildfire, increased traffic, roadway relocation/expansion, park and Watershed operations, and impacts to park and Watershed users.” (The East Bay Regional Parks District)

Response: As noted by Alameda County, combined impacts of the Apperson Ridge Quarry and mining in Sunol Valley, in the sense of being additive, would not be considered “reasonably

foreseeable” because the Apperson Ridge Quarry is unlikely to begin operation until mining ceases in Sunol Valley. While the comment from Alameda County is generally consistent with the DEIR analysis of program-level cumulative effects of mining operations, minor clarifying text changes have been made to DEIR pages III.P-6 and III.P-7 to incorporate Alameda County’s comment:

3.2 MINING OPERATIONS IMPACTS

Cumulative impacts from Apperson Quarry in combination with the Sunol Valley quarries would not be significant. Unlike the Sunol Valley quarries, Apperson Quarry would not result in loss of prime agricultural land. The Apperson Ridge Quarry EIR (SMP-17, certified by Alameda County in August 1984) identified unavoidable adverse impacts on special-status wildlife and high quality habitat, noise impacts at Maguire Peaks and residences at the end of Welsh Creek Road, and moderate degradation of water and wildlife quality on SFPUC lands. Because of the distance between Apperson Quarry and the Sunol Valley quarries, and the lack of significant natural resource, noise, and water quality impacts of the mitigated Sunol Valley quarries, these impacts would not be cumulative. ~~Haul routes from the Sunol Valley quarries to I-680 are different than the~~ **The future haul route from Apperson Quarry (Calaveras Road) would be the same as the route used by RMC Pacific Materials. Mission Valley Rock Company has an independent access road at Athenour Way / Andrade Road.** ~~Therefore, traffic impacts would not be cumulatively significant on local roads, and would represent a very small, less than significant number relative to capacity of I-680. Furthermore, b~~ **Because of the economic competitive disadvantage of Apperson Quarry due to high startup and operating costs (as a hard rock quarry requiring blasting) and greater distance from markets than the Sunol Valley quarries, it is speculative whether unlikely that the Apperson Quarry will commence operations while the Sunol Valley quarries are operating at sufficient capacity to meet market demands. Therefore, traffic impacts would not be cumulatively significant on local roads, and would represent a very small, less than significant number relative to the capacity of I-680.**

G. ACCESS/TRANSPORTATION

1.0 CLARIFICATION OF ACCESS PROPOSED IN THE MANAGEMENT PLAN

Comment G-1: “The District’s 1997 Master Plan includes two regional trails that are affected by SFPUC’s Plan and EIR. The Sunol to Pleasanton Ridge and the Niles Canyon Regional Trails are key components in the District’s efforts to link major regional parks together as well as providing connections between southern and central Alameda County. The Plan as presented does not address these trails, and the types of uses currently permitted on other regional trails which traverse SFPUC lands, with the detail necessary to provide direction for their future planning and implementation. In addition, the Plan lists the implementation program for the Sunol to Pleasanton Ridge Trail as Phase III which could delay its planning and implementation for up to 20 years. Both these trails should be listed as components of the Phase I implementation. The District has substantially completed the acquisition of both Sunol Wilderness and Pleasanton Ridge, developed public access and desires to link these parklands in the near term in order to meet the increasing public demand for these types of recreational facilities. With the extensive planning for the property adjacent to the Water Temple and the planning for mining between 680 and Sunol Wilderness, planning for the regional trail needs to parallel these efforts.

During the past four years, the District has pointed out the need to link the trail between Pleasanton Ridge and Sunol with the Ohlone Wilderness Trail. Alternatives for alignments in the Plan (briefly cited in Action sun 14 item E) should include both the valley floor as well as an alignment through the hill range to the west of Calaveras Road. This would allow a more direct connection into the Ohlone Wilderness Trail and avoids the planned mining area and water treatment plant. This should also be included in policy WA 15.2. To the north of I-680, the trail will need to utilize the under crossing of I-680 adjacent to SFPUC lands and transition to the Water Temple area with an ultimate connection to Niles Canyon Trail and Pleasanton Ridge. This should be cited in the Action sun 14 section with more detail.

Current uses of the Ohlone Wilderness Trail include hiking and equestrian travel with overnight camping. Within some of the lease areas the District has with SFPUC in Sunol proper, mountain biking is also allowed. It should be noted that in the development of the Sunol to Pleasanton Ridge Trail, the District would want to continue managing the trail as a multi-use facility where feasible. This would be consistent with existing trail use patterns we now manage on SFPUC lands. This should be better defined in Policy WA 15.3 and 15.4.

The regional trail planned for Niles Canyon will require cooperative planning between the District and SFPUC. Management issues as well as alignment considerations will require close coordination between our agencies. There is limited reference to the disposition of these SFPUC properties in the canyon, long-term planning issues, possible uses and management strategies.” (East Bay Regional Parks District)

Comment G-2: ‘The Plan and EIR contain a variety of statements that are supportive of some expansion in access to the Alameda Watershed, including trails around the Sunol Temple and along Sunol Valley, and access to reservoirs for fishing and boating, however there is no specific information about proposed alignments or locations for these new access facilities, or any proposed time frames for construction of such facilities. While we are pleased that SFPUC is proposing such access improvements, and we support SFPUC’s efforts, we are concerned about statements in the EIR which do not commit SFPUC to actually making the proposed improvements. For example, on page III.B-11, the EIR states that “recreational uses such as public access, fishing and boating may be allowed at some time in the future at one of the reclaimed mining pits” (emphasis added). We request that, when possible, the Plan and EIR contain more specific information about proposed access facilities, including maps of proposed trail alignments and reservoir access points, and that there be specific affirmative language to construct these improvements within an appropriate time frame.’ (East Bay Regional Parks District)

Comment G-3: “The EIR and Plan also contain policy statements stating SFPUC’s intention to remove certain types of access from the interior of the Watershed, namely equestrian and bicycle access. The EIR proposes that these uses be relocated to the perimeter of the Watershed. Are these uses to be replaced with equal trail mileage? What would be the impact on other open space areas, such as Sunol or Mission Peak, if displaced trail uses are not replaced on SFPUC Watershed lands?

Management Action roa 2 in the Plan calls for relocating existing high use roads that are located near streams and causing excessive erosion. The Plan and EIR should specify which roads may be affected by this management action. How would this policy affect or apply to existing District-managed roads and trails within the Watershed? What affect would this have upon existing recreational uses? Would this policy also be applied to the 2.8 mile segment of SFPUC Watershed roads that are under easement for the Apperson Ridge Quarry? If so, what is the significance of the potential relocation of applicable road segments?” (East Bay Regional Parks District)

Response: In response to these comments, it is noted that the permitted uses of Watershed lands leased to the EBRPD are subject to the requirements, terms, and conditions of the lease. Future changes in lease conditions would be guided by the Management Plan. The project specific impacts of road relocation would be evaluated when such projects are proposed. The Management Plan is intended to provide broad management objectives and policies to guide future actions and projects in the Watershed. The plan is not a trail plan, and is therefore not intended to designate specific project details such as trail alignments and facilities. Regarding future East Bay Regional Parks District facilities, the Management Plan and the DEIR contemplates new trail construction in areas of low vulnerability. This could include Sunol Valley and Niles Canyon, which are downstream of the primary watershed. The Management Plan does not propose specific projects for public use facilities or trail alignments, but provides a management framework for providing increased opportunities, where compatible with the protection of watershed resources. The East Bay Regional Parks District is correct in its

statement that cooperative planning between the East Bay Regional Parks District and the SFPUC is required. Such planning would assist the SFPUC in developing specific projects, project locations, and implementation schedules for the public use facilities and trails described in the Management Plan.

Comment G-4: ‘In Section 4.2, Secondary Goals and Policies (page II-10), the DEIR lists 24 activities that “would be prohibited because they are deemed detrimental to Watershed resources.” This list is similar to the list of Incompatible and Prohibited Uses found later in the document. More than half of these activities have the likely potential to occur with increased public access on watershed land. Furthermore, Management Policies such as WA16 that states “all individuals allowed entrance into the Watershed, either by permit or open access, be informed of the Watershed’s primary purpose and the rules and regulations governing Watershed activities” do not insure that these prohibited activities will not occur. The Department recommends that the impacts associated with these activities should be addressed in the DEIR.’ (California Department of Fish and Game)

Response: As requested by the Department of Fish and Game, the DEIR does evaluate the potential impacts associated with unauthorized use of the Watershed associated with increased public use opportunities. The EIR does not solely rely on the provision of public information regarding Watershed rules to ensure that prohibited activities do not occur (see DEIR Tables III.D-2 and III.E-4 in particular). As described in DEIR Section III.I, public and agency outreach actions would provide increased public education and awareness of Watershed resource sensitivity, while safety and security actions would provide for inspection, maintenance, and enforcement of public use areas. Implementation of these actions would reduce the likelihood of unauthorized Watershed use, and reduce associated impacts to Watershed resources to a less than significant level. It should be noted that increased public use opportunities associated with the Management Plan would be located in areas of lower resource vulnerability (i.e., Sunol Valley). As such, public use areas would not be connected to sensitive resource areas located in the primary watershed.

Comment G-5: ‘There is mention throughout the document that no body contact, fishing, or boating will be allowed on “reservoirs” or water supply sources. Mining pits that are not backfilled with silt and other waste products are supposed to be reclaimed as water storage pits, which San Francisco may choose to use as reservoirs, presumably for backup supply during drought.

However, the Sunol Element provides for various recreational activities at the SMP-32 site, north of the freeway. Is it San Francisco’s intent to provide services north of the freeway that are different from south of the freeway?

Alternatively, is it possible that some of the uses including commercial development, recreation, and education, may be precluded by the need to maintain the usefulness of the reclaimed water storage pits? Is there a part of the definition of the primary and secondary watershed that

distinguishes the water storage facilities and allows certain uses in certain cases?’ (Alameda County Community Development Agency, Planning Department)

Response: The definition of the primary and secondary watershed is based on drainage areas. As indicated in DEIR Section II.A.2.0 and Figure II-2, the primary watershed includes lands that drain directly to San Antonio and Calaveras Reservoirs. Secondary watershed lands are those that do not drain into the SFPUC water supply system for drinking water uses. Sunol Valley, including the mining areas north and south of I-680, is within the secondary watershed. Commercial, recreational, or educational uses would not be precluded by reservoir operations. However, such uses would have to be designed and implemented to prevent water quality degradation, consistent with the primary goal of the Management Plan. The SMP-32 conditions of approval require preparation of a conceptual recreation plan for the quarry area prior to any site disturbance, in order to assist the SFPUC in determining the viability of recreational use in conjunction with mining. The SFPUC has prepared this conceptual plan – the *Sunol Landscape and Recreation Plan*. As indicated in DEIR Figure III.B-3, the majority of public use facilities would be located north of I-680, near the Sunol Water Temple. The proximity to the temple and the open space available make this area more conducive to recreational use. South of I-680 facilities would consist of trail connections, a commercial site, and an overnight nature study area. Plans for commercial uses south of I-680 and some of the later phases north of I-680 are conceptual at this time. If pursued, they would be subject to project-level environmental analysis.

2.0 GENERAL IMPACTS ASSOCIATED WITH INCREASED ACCESS

Comment G-6: “Increased public access and enlargement of golf courses will result in water quality degradation, and increase traffic and air and water pollution.” (Golden Gate Audubon Society)

Comment G-7: “Increased public access and enlargement of golf courses will result in the destruction of native plants and grasses. This impact on vegetation will result in a diminution of habitat for endangered wildlife, such as the burrowing owl, the red legged frog and others.” (Golden Gate Audubon Society)

Comment G-8: “New trails, even in low impact areas, may fragment already limited wildlife habitat, and increase fire hazards.” (Golden Gate Audubon Society)

Comment G-9: “Excessive construction of new facilities such as kiosks and information and education centers will result in erosion, water degradation, habitat destruction and invasion of non-native vegetation.” (Golden Gate Audubon Society)

Comment G-10: ‘The access to SFPUC lands has been historically forbidden. There is now an attempt to permit some recreational use. The DEIR lists more mitigations and discussions of what will negatively affect the environment surrounding the recreation component that there is regarding the quarry proposal for the north side of I-680! How can a jogger affect the habitat more negatively than a quarry? “In general, researchers found that human recreational use of an

area will lower its wildlife productivity and diversity over time. Human intrusion can also reduce the effectiveness of foraging bald eagles, a Watershed special-status species, when feeding young or on wintering grounds (Garret, 1981)” Page III.E-32. If this was really an issue, then explain why you find an active Bald Eagle’s nest located in a heavily public used park like Del Valle? Quarry operations completely destroy habitat and leaves nothing to harass. Would the proposed East Bay Regional Park District’s trail segment from Sunol to Pleasanton Ridge the “Calaveras Ridge Trail” be compromised if SMP 32 was permitted?’ (Maryanne Canaparo)

Response: The DEIR evaluates the program-level impacts associated with increased public use opportunities. It is noted that public use opportunities would be located in areas of low vulnerability, primarily within the Sunol Valley, in the secondary watershed. At a program-level, the DEIR recognizes that golf course expansion could be associated with water quality and hazardous materials impacts, but that the area of expansion could be located such that impacts could be minimized (DEIR page III.D-32). In addition, hazardous materials management procedures included in the Management Plan would reduce potential impacts (DEIR Section III.M). At a program-level, the DEIR recognizes that increased public use and the construction of public use facilities could be associated with soil erosion and other geologic impacts (DEIR Section III.C), water quality impacts (DEIR Section III.D), natural resources impacts such as wildlife disturbance and spread of invasive species (DEIR Section III.E), construction-related air pollutant emissions (DEIR Section III.F), increased fire hazards (DEIR Section III.G), cultural resources impacts (DEIR Section III.H), aesthetics impacts (DEIR Section III.I), transportation impacts (DEIR Section III.J), and construction-related noise impacts (DEIR Section III.L). The DEIR and the Management Plan include measures that would reduce the potential impacts associated with construction and operation of public use facilities at a program-level. However, the project-level impacts associated with increased public use, and mitigation recommendations, would be evaluated at the time specific projects are proposed for implementation.

As noted in the responses in Section II.E above, most of the potential impacts of SMP-32 were evaluated in a separate EIR. The SMP-32 EIR discusses the potential effects of the quarry on the planned Pleasanton Ridge to Sunol Ridge trail (SMP-32 EIR, pages 115 and 116). That EIR noted that SMP-32 would be visible from the planned trail, based on the 1989 East Bay Regional Park District Master Plan’s schematic alignment through SFPUC lands near the temple, and would be visible from Pleasanton Ridge. Views from Pleasanton Ridge are at some distance (the middle-ground view) and would be in the context of existing adjacent visible quarry operations. Mitigation measures were adopted to minimize visual impacts on the possible trail alignment (berming, landscaping, trail planning by EBRPD and SFPUC, and other measures) and were found to reduce visual impacts to a less than significant level. The Management Plan EIR evaluates the potential impacts associated with changes to SMP-32 and changed conditions since the SMP-32 EIR was certified (see DEIR pages III.E-35 through III.E-38, in particular). No substantial adverse impacts to the planned trail segment have been identified in association with these changes. Management Action sun11, which calls for a ¼ mile backfilled buffer area adjacent to the temple, would further reduce visual impacts on a possible trail in the temple area.

3.0 ACCESS PREFERENCES

Comment G-11: “I would like to commend you for restricting public access to the upper areas of the watershed. I think that is one of the things that has kept it as pristine as it is...” (Jeff Miller – Pleasanton Public Meeting)

Comment G-12: “I urge the Water District to allow access to the Crystal Springs watershed. ... I would add that the same argument is valid for the lands in the East Bay, especially those adjacent to Sunol Regional Park, near Calaveras Reservoir. I am aware that the SFWD has made available limited trail access in the Ohlone wilderness. However, the lands east of Alameda Creek near Calaveras Reservoir are beautiful, and I believe pose minimum or no danger to the reservoir. As the major landowner in Alameda County, I think it behooves you to do a public service in that county. ... Incidentally, I hold no brief for access to cyclists at both locations. I believe that hikers willing to put out the effort are responsible trail users.” (Albert J. Rothman)

Response: These comments regarding public access preferences are noted. The DEIR evaluates the potential impacts of implementation of the Management Plan at a program level, including increased public use opportunities in the Sunol Valley (secondary watershed) and new trails in low vulnerability zones. The project-level impacts of public use opportunities will be evaluated when specific projects are proposed. Under the Management Plan, group access to the internal portions of the Watershed would be allowed through the establishment of a reservation program for docent led tours. However, greater public use opportunities located on watershed lands would not be provided within in the primary drainage areas for Calaveras and San Antonio reservoirs, due to the sensitivity of these areas.

4.0 TRANSPORTATION

Comment G-13: “Please note, on page III.J-1, mining access also is available from Athenour Way / Andrade Road.” (Alameda County Community Development Agency, Planning Department comments)

Response: Text on page III.J-1 describes the major roadways that are within the Watershed and their uses. Andrade Road is acknowledged as a mining haul route on DEIR page III.J-5.

H. HYDROLOGY AND WATER QUALITY

Comment H-1: “ACWD has a strong interest in protecting and preserving the water quality in Alameda Creek, and, therefore is especially interested in the SFPUC’s policies and programs as they relate to watershed issues in the Alameda Creek watershed. Because 36,000 acres of property owned by the SFPUC is within the southern portion of the Alameda Creek watershed (which is a source of ACWD’s local water supplies), ACWD is concerned with potential impacts that management policies may have on downstream water quality. As you know, ACWD has maintained a long term commitment to watershed protection and to assuring the health and safety of water supplies on which our customers depend.

Based on our review of the Alameda Watershed Management Plan and the DEIR, we commend the SFPUC on the effort and quality of work put forth in developing the Plan. The policies and programs in the Plan appear to meet the stated goal of maintaining and protecting water quality for the SFPUC and its suburban customers. However, we also encourage SFPUC to continue active participation in other local watershed planning efforts, including the on-going development of the Upper Alameda Creek Watershed Management Program. This effort is critical in ensuring that the beneficial uses of Alameda Creek and all of its tributaries are maintained and protected throughout the greater watershed.” (Alameda County Water District)

Comment H-2: “Management Action **con2** includes the use of reclaimed water for various uses. The Department would consider the use of reclaimed water in the watershed as a potentially significant impact to water quality with potentially significant adverse physical effects. The Department makes recommendations to the Regional Water Quality Control Board regarding uses of reclaimed water. The Department would, through its own authority, reevaluate the effectiveness of SFPUC treatment facilities if reclaimed water were used on the watershed.” (Department of Health Services, Drinking Water Field Operations Branch)

Comment H-3: “Management Action **des8** and **sun17** and Policies WA15.2 and WA15.4 could have a significant impact on water quality. Specific implementation information is not included. Depending on implementation, these activities could directly affect water quality through the introduction of contaminants, pathogenic organisms and sediments. Section III.D (page III D14) states that these impacts would indirectly affect water quality.” (Department of Health Services, Drinking Water Field Operations Branch)

Comment H-4: “**Golf Course Expansion** – Careful golf course design and management are important to reduce adverse impacts to water quality caused by sedimentation, pesticides, fertilizers, and other course maintenance. A chemical application and management plan (CHAMP) and/or an integrated golf course management plan (IGCMP) should be prepared and utilized by the course management staff to ensure compliance with state water quality standards.” (Regional Water Quality Control Board)

Comment H-5: “**Project Planning** – We encourage the project proponent and the lead agency to obtain a copy of *Start at the Source*, a design guidance manual for storm water quality

protection. The manual illustrates several innovative ways to design structures, parking lots, drainage systems, and landscaping to protect water quality. It may be obtained at most cities' planning departments or by calling Forbes Press, which distributes the manual for the Bay Area Stormwater Management Agencies Association, at 877-773-7247." (Regional Water Quality Control Board)

Comment H-6: '... regarding nurseries (page III.B-14) the DEIR states that "under the Management Plan, nurseries would be required to establish greater setbacks from Alameda Creek in order to better buffer the creek from any pollutants that could be inadvertently discharged." The Management Plan fails to identify the distance of the increased setbacks. The Department recommends that this information should be included in the DEIR.' (California Department of Fish and Game)

Response: Alameda County Water District's comments regarding participation in local planning efforts, including the Upper Alameda Creek Watershed Management Program are noted.

Many proposed Management Plan actions reviewed in this programmatic EIR are intended only to establish direction or guidelines for implementing future projects. They are not yet associated with project level proposals or locations. The Department of Health Services has concerns regarding Plan actions that call for the use of reclaimed water. Management Action con2 calls for a feasibility study and, therefore, represents a speculative project. Any specific use of reclaimed water would undergo further environmental assessment, including compliance with regulatory requirements set forth by the Department of Health Services and the Regional Water Quality Control Board. Similarly, additional environmental review would be required for specific implementation of access projects (des8, sun17, WA 15.2 and WA 15.4) mentioned in the above comment.

Golf course expansion and changes in the operation of nurseries are only speculative at this point. It should be noted that while golf course expansion may be considered under Policy 18.1, the Management Plan does not include a policy or management action that specifically calls for the expansion of the golf course. Should such a proposal be advanced, project level environmental review would be required. Any proposed golf course expansion would require implementation of Management Plan Action lea5, which addresses integrated pest management implementation, including the preparation of a chemical application and management plan by the lessee. In regard to changes in the operation of nurseries, the setback contemplated would be consistent with the Water Quality Vulnerability Zones shown in Figure 2-3 of the Management Plan (page 2-6). Nursery operations would not be permitted within high Water Quality Vulnerability Zones. As a general rule of thumb, the SFPUC Land and Resources Management Section would consider a minimum setback of 300 feet to be appropriate. The Regional Water Quality Control Board's jurisdiction and project planning guidance are noted with regard to these future projects.

Comment H-7: "Bentonite walls are not presently installed around all sides of all of the pits, as seems to be implied by discussion on page III.D-7. In fact, the walls are only installed around three sides of SMP-24, and no walls are installed around any of the RMC Pacific Materials pits.

The walls are only required by the operational preferences of the mining companies, based on the amount of groundwater seepage that interferes with excavation. Mission Valley prefers to minimize their pumping costs, and so installed the groundwater cut-off walls where groundwater was a concern. The fault trace along Calaveras Road acts as the fourth wall, limiting the amount of groundwater that flows into the site. It appears that RMC does not have as much groundwater flow, or prefers to pump rather than pay for cut-off walls.

We agree with the general conclusions of the discussion, however. The effect of the walls on the overall groundwater flow has been studied by San Francisco's own consultants (Ludorff & Scalmanini, Bookman-Edmonston), who concluded that no significant differences in flows or elevations were found. Groundwater that would have flowed through the location of the mining pits is diverted around the sites, and continues to flow with the overall trend of the valley from the southeast to the west. Water that enters the pits, despite the presence of bentonite walls or where no walls are present, is pumped into ponds and released into the streams or filters back into the ground, which also restores the flows that would have occurred without mining." (Alameda County Community Development Agency)

Comment H-8: "Chapter III page D-28, 3rd paragraph – The discussion of bentonite cutoff walls with regard to pit expansion needs clarification. The bentonite cutoff wall for SMP-24 was included as a design feature of the pit by Mission Valley Rock Co. (MVR). When Alameda County approved MVR's permit application, the cutoff wall became a permit requirement the same as the other features of the mining plan proposed by MVR. Alameda County did not require cutoff walls as a standard feature to be incorporated in all permit applications.

The bentonite cut off wall was not shown along the eastern limit of the quarry due to the proximity of the Calaveras fault which a geologic study (Harding Lawson August 11, 1987) indicated to be an impermeable barrier to ground water. Therefore expanding the pit to the east or deepening to 200 feet will not increase the existing ground water impacts and would not require the addition of a cutoff wall along the easterly side of SMP-24." (Mission Valley Rock Company)

Comment H-9: "Page III.D-28 / 3rd Paragraph "Increasing the area of mining south of I-680 would also require installation of bentonite cutoff walls in the upper 50 feet of the expanded perimeter of the mining pits in compliance with existing permit and lease conditions. Similar to the existing mining pits, the bentonite cutoff walls in the expanded pits would be expected to prevent the flow of shallow groundwater into the pits, thereby maintaining the groundwater flow to the Alameda Creek channel and within the groundwater system."

It is questionable whether bentonite cutoff walls south of I-680 in the expanded areas would provide any benefit towards groundwater movement. Any expansion areas not existing south of I-680 are quite small and would have little effect on groundwater movement. Bentonite cutoff walls would merely trap existing water and lower groundwater intrusion within these areas, and water would need to be removed throughout the mining process.

It is also questionable that a hydrology study has actually been done to evaluate what potential affects these bentonite cutoff walls would have on groundwater movement within these proposed expanded mining areas south of I-680.’ (RMC Pacific Materials)

Comment H-10: ‘The EIR claims that bentonite in the quarry pits prevents inflow of shallow ground water (page III.D-7), but inflow of shallow ground water appears to be visible at the site. A previous report prepared for SFPUC contradicts this claim, noting that “Gravel mining in this area has probably further increased the depth to water table since the pits created by such excavation tend to draw down the water table in their vicinity. There has been some attempt to isolate these draw down effects by requiring the construction of clay cutoff walls between the creek channel and the mining pits but this effort has been localized and incomplete.” (Bookman-Edmonston 1995D).’ (Alameda Creek Alliance)

Response: Text on page III.D-7 will be changed as follows to clarify the use of bentonite cutoff walls.

1.6 GRAVEL MINING

Historical and current gravel mining operations in the Sunol Valley have removed a large quantity of the valley’s alluvium, which has altered surface and ground water flow as well as groundwater storage. Mining operations involve major earthmoving and excavation activities, and historical mining has resulted in several excavations along Alameda Creek between the San Antonio Pump Station and I-680 (see Figure III.B-2). Before mining operations began in the 1960s, Alameda Creek apparently flowed naturally through an area now occupied by one of the largest excavations. The current creek alignment has been relocated along the western edge of one of the excavations, and mining has extended to depths of 100 to 140 feet. As part of **SMP-24** the mining operations, slurry cutoff walls made of bentonite have been constructed in the upper 50 feet or so around the perimeter of ~~most~~**the excavations on three sides of SMP-24 to prevent** limit the inflow of shallow groundwater to the pits. **The fault trace along Calaveras Road acts as an impermeable barrier to groundwater and serves as a fourth wall.** ~~The mining pits with bentonite cutoff walls~~**SMP-24** requires minimal dewatering to reach the total pit depths (Luhdorff and Scalmanini Consulting Engineers, 1993). **Other mining operations in the Sunol Valley area remove groundwater inflow out of the pits through pumping.**

As noted in the comments above, the RMC Pacific Materials pits are not lined. However, installing slurry cutoff walls would be considered by SFPUC in the event of lease renewal that expands or deepens mining in these pits in accordance with the *Sunol Valley Resource Management Element*.

As was noted in the comments above, Alameda County agrees with the general conclusions of the Bookman-Edmonston and Luhdorff & Scalmanini reports that “[o]verall the gravel quarries’ water use does not significantly affect the general pattern of groundwater flow beneath the

valley.” (Luhdorff and Scalmanini Consulting Engineers, 1993). As the comments of Alameda Creek Alliance point out, the Bookman-Edmonston report does note that the depth to water table may have been increased by mining. It should also be noted that both previously mentioned reports support the use of the slurry cutoff walls. Cutoff walls in the Mission Valley Rock Company pits seem to have prevented most inflow from the Creek through the shallow alluvium into the pits. The shallow alluvium is the primary aquifer in this area. The deeper Livermore formation is more dense and has lower transmissivity. These facts explain the Luhdorff and Scalmanini observation that “...once the upper alluvium has been cut off from groundwater inflow [by the installation of a cutoff wall], excavation to 140 feet has been possible with limited dewatering.”

Although CEQA does not require analysis of a project’s possible impacts on future environmental restoration projects, the possibility of impacts cannot be ruled out due to the potential for changed conditions in the future (e.g., the re-establishment of an anadromous run of steelhead trout in Alameda Creek). In addition, possible impacts cannot be ruled out due to the lack of comprehensive groundwater information and/or absence of specific information about future mining proposals south of I-680. Future installation of cutoff walls at the expanded pits may divert groundwater from the creek system around the pits, although further study is needed regarding site-specific groundwater flow patterns and the need for and/or effectiveness of bentonite cutoff walls. Although any groundwater flow entering the expanded pits may ultimately be returned to the creek via pumping, there may be impacts associated with the timing and quality of water returned to the creek. For example, subsurface percolation of water from the creek (likely water released from SFPUC reservoirs for this purpose) during the spring out-migration period for steelhead smolts could adversely affect the species by reducing available flow in the creek during that period. Therefore, because of the concern about potential future impacts to Alameda Creek and its resources, the following text revisions have been made to DEIR pages III.D-29 through III.D-30:

Changes to Gravel Mining Operations

The Management Plan would allow continuation of mining activities in the Sunol Valley (Policy WA37) as well as consideration of amending the existing mining permits to expand mining south of I-680, either in depth or in both depth and area, or modifications in the timing and sequence of mining and mining reclamation north of I-680 (Actions sun1, sun2a/2b). As described previously under Setting, Section 1.6, Gravel Mining, mining operations have historically affected hydrologic and water quality conditions in the Sunol Valley. These impacts are currently being addressed through conditions of approval for the operating permits and lease requirements for SMP-32, SMP-30, and SMP-24. However, implementation of Actions sun1 and sun2a/2b could result in modifications of existing mining permits that could result in potentially significant effects on water quality and groundwater.

As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in

accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (~~extending~~**shortening** the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new water quality impacts beyond those disclosed and mitigated in the EIR prepared for SMP-32. Alameda County's conditions of approval for SMP-32 include controls for drainage, erosion, and sedimentation that mitigate proposed related mining impacts to a less than significant level. ~~Given the change of timing and sequence of mining under the Management Plan, impacts would take place over a longer period of time.~~

Extending the area of mining south of I-680 could affect both surface water and the groundwater system. A larger pit would require redirecting the drainage around the expanded perimeter and would require construction of associated drainage controls for the runoff that would eventually flow to Alameda Creek. There would be a negligible decrease in the volume of runoff from the perimeter of the pit to the creek, with the associated slight increase directly entering the mining pit. Similar to existing conditions, runoff directly entering the mining pit would likely either be directed for mining process water or discharged to Alameda Creek in compliance with any discharge permits. On a program level, continued implementation of required drainage, erosion, and sedimentation controls, as required by the conditions of approval for SMP-30 and SMP-24, as well as compliance with regulatory discharge permits, would reduce any impact associated with runoff draining to Alameda Creek to a less than significant level.

Increasing the area of mining south of I-680 would also require installation of bentonite cutoff walls in the upper 50 feet of the expanded perimeter of the mining pits, **where appropriate**, in compliance with existing permit and lease conditions. **In some locations, the fault trace along Calaveras Road acts as an impermeable barrier to groundwater, precluding the need for a cutoff wall along the eastern limit of the mining pits in that area. Bentonite cutoff walls at the Mission Valley Rock Company SMP-24 area have been effective in diverting groundwater flow around the pits and in maintaining the overall flow of groundwater to the Alameda Creek channel.** Similar to the ~~SMP-24 existing~~ mining pits, the **installation of bentonite cutoff walls along the north, west, and south sides of** ~~in~~ the expanded pits ~~would be expected to prevent the flow of shallow groundwater into the pits and protect, thereby maintaining the groundwater flow to the Alameda Creek channel and within the groundwater system.~~ ~~Therefore, on a program level, the expanded pits would not result in significant changes to the existing groundwater system.~~

If groundwater were present, extending the depth of mining in existing mining pits (Actions sun2a and sun2b) could further alter groundwater flow patterns within the

Sunol Valley. However, groundwater sampling in the valley has indicated limited groundwater below 50 to 60 feet, and the Management Plan would allow for extending mining from 140 to 200 feet. **ThusTherefore, at these depths, groundwater flows should not be affected. On a program level, the expanded pits would not be expected to affect Alameda Creek flow and the groundwater system, based on studies conducted to date. However, a comprehensive groundwater and hydrologic study has not been conducted for all of the proposed expanded mining areas south of I-680. Therefore, potentially significant groundwater impacts from expansion of mining pits south of I-680, and subsequent impacts to Alameda Creek and associated resources, cannot be ruled out.**~~In addition, the requirement for bentonite cutoff walls in the upper 50 feet of the pits has resulted in diversion of shallow groundwater away from the mining pits. Therefore, on a program level, extending the depth of mining would not be expected to significantly affect groundwater.~~

The top portion of Table III.D-5 lists those policies and management actions related to gravel mining operations that could result in significant water quality impacts, while the bottom portion of the table lists the full range of policies and management actions that could be required to reduce the potential impacts. Not every action would be necessary to mitigate the effects of the associated potential impact-causing management action. Because implementation information is not yet known, the table indicates a program-level maximum number of measures that could possibly be required to avoid significant impacts. On a program level, implementation of these impact-reducing measures, as described below, would reduce any water quality impacts associated with existing or planned mining operations to a less than significant level.

The Management Plan includes policies and management actions that require continued and expanded water quality control measures for all existing and new mining operations. Watershed Activities Policy WA5 prohibits instream mining and/or development along reservoir shorelines and tributary streams that are located within primary Watershed lands. Watershed Activities Policy WA32 specifies that a reclamation plan be required and adhered to for all existing and any new mineral, sand, and gravel extraction sites, and that the reclamation plan be approved by the SFPUC and other applicable state and local agencies, prior to any new or expanded development. Watershed Activities Policy WA24 requires that proposed development involving grading of land include the submittal of a grading plan to SFPUC to retain the existing topography where feasible, minimize grading, and minimize off-site soil loss from erosion. Because the gravel mining operations are located within the Alameda Creek drainage area in the secondary Watershed, water quality protection is directed at fishery resource uses. Wildlife Policy W6 aims to maintain the integrity of the Watershed creeks to retain their value as riparian ecosystems and wildlife corridors. Fire Policy F3 requires all lessees to conduct fire

TABLE III.D-5
SUMMARY OF POTENTIALLY SIGNIFICANT WATER QUALITY IMPACTS
DUE TO CHANGES TO GRAVEL MINING OPERATIONS

Impact-Inducing Policies or Management Actions^a:

- Policy WA37: Allows the continuation of mining activities in the Sunol Valley.
- Actions sun1, 2a, and 2b: Allow continuation of mining in existing permitted areas according to SMP-32 as well as consideration of amending the permits to expand mining south of I-680 either in depth or in area.

Policies or Management Actions that Could be Required to Reduce Potential Impacts to Less Than Significant^a:

- Policy WA5: Prohibit instream mining and/or development along reservoir shorelines and tributary streams which are located within primary Watershed lands.
- Policy WA32: Require a reclamation plan for all existing and new mining operations.
- Policy WA24: Require a grading plan to minimize off-site soil loss.
- Policy W6: Maintain the integrity of the Watershed creeks to retain their value as riparian ecosystems and wildlife corridor.
- Policy F3: Require all lessees to conduct fire hazard reduction activities.
- Policy AR10: Prohibit or limit certain activities within high water-quality vulnerability zones.
- Actions lea3, lea4, and lea5: Ensure that land use leases would include water quality protection measures and monitoring plan.
- Actions lea6 and lea8: Require review of the reclamation plan for mineral, sand, and gravel leases that would include drainage/erosion control features to be employed and requires assignment of a lease coordinator.
- Action sta6: Provide specific water quality training for staff.
- Action fic2: Authorize or prohibit specific lease or permit activities based partially on impacts to water quality.
- Action inf3: Record and update water quality data.

^a See Table II-1 for a description of each action.

hazard reduction activities and Aquatic Resource Policy AR10 prohibits or limits certain activities within high water quality vulnerability zones. In addition, Actions lea3, lea4, and lea5 ensure that land use leases include water quality protection measures and monitoring plans. More specifically, Actions lea6 and lea8 require review of the reclamation plan for mining leases to ensure proper erosion and drainage control. Action sta6 provides specific water quality training for staff, Action fic2 authorizes or prohibits specific lease or permit activities based partially on impacts to water quality, and Action inf3 records and updates water quality data. These policies and management actions would apply to gravel mining operations and would provide water quality protection within the secondary Watershed.

On a program-level, implementation of the policies and management actions described above, and as described in Section IV.D, would reduce potential water quality impacts associated with gravel mining to a less than significant level. **However, expansion of mining pits south of I-680 could result in potentially significant impacts to groundwater, which in turn could affect Alameda Creek and associated resources, as described above. Implementation of the mitigation measure described in Section IV.D would reduce this impact to a less than significant level.** However, a Amendment of existing permits would be subject to additional environmental review by Alameda County.

A mitigation measure has been added to DEIR Section IV.D, in association with text revisions to DEIR Section IV.D:

2.0 MITIGATION MEASURES IDENTIFIED IN THIS REPORT

The following mitigation measure addresses potential hydrologic impacts from proposed mining operations.

1. **Prior to approval of new or amended Surface Mining Permits or mining leases for expansion of mining south of I-680, an independent study of Alameda Creek resources shall be completed by a qualified expert and approved by the Alameda County Planning Director and the SFPUC Watershed Manager. The study shall focus on potential impacts to groundwater and surface water hydrology and fish and wildlife species of special status concern from such future mining and shall propose mitigation measures applicable to mining, if warranted, to avoid significant impacts. If warranted, such measures may include establishment of barriers to prevent adverse changes to groundwater or surface water hydrology and the resources supported by groundwater and surface water; special measures to avoid impact to steelhead trout (if established in Alameda Creek) or other fisheries resources; and special measures to avoid impacts to listed species dependent on Alameda Creek for its riparian habitat or use as a migration corridor. All feasible mitigation measures shall be incorporated into future Surface Mining Permit conditions of approval and mining leases.**

Implementation of this mitigation measure would reduce the potentially significant hydrologic impact from proposed mining operations to a less than significant level.

In addition, text in DEIR Section IV.E.2.0, page IV-4 has been revised:

Implementation of these mitigation measures, **in addition to the mitigation measure listed in Section IV.D.2.0, above**, would reduce the significant impacts to natural resources from proposed mining operations to a less than significant level.

Comment H-11: “SFPUC apparently did not correspondingly review for discharge water quality violations. However, the Alameda Creek Alliance viewed the records on file at the Regional Water Quality Control Board and noted many self-reported violations of water quality permits for RMC Pacific Materials, including exceedances of allowed turbidity levels, and non-reporting violations. Mission Valley Rock Company had not filed self-monitoring reports for the past five years.

How can the SFPUC be considering expansion of quarrying leases, let alone continuation of existing leases to leaseholders which violate the terms of their permits and the terms of their leases (which require compliance with all permits)?” (Alameda Creek Alliance)

Response: It is unclear from the above comment which RMC Pacific Materials permits the commentor is referring to. RMC Pacific Materials’ water discharge regulatory requirements are covered by NPDES (National Pollutant Discharge Elimination System) permit Number CA0005363, adopted by RWCQB Order Number 94-095, on August 17th, 1994. There have been no notices of violations of this permit and no exceedances of permit conditions during the period January 1, 1994 to March 15, 2000.

Two NPDES permits cover Mission Valley Rock’s water discharge regulatory requirements. Operations in Sunol are covered by a storm water discharge permit under the Industrial Activities Storm Water General Permit (WQ Order 97-03-DWQ) adopted 4/17/97, WDID #2015012002. Mission Valley Rock Co. files an annual report and is inspected annually under this permit. The second Mission Valley Rock NPDES permit was adopted by RWQCB Order #97-037 in March of 1997. The NPDES permit Number is CA 0030066. Mission Valley Rock began discharging under this permit March 18, 1998. This permit requires sampling to be conducted weekly at each active discharge point for substances established by the above-mentioned order. Monthly and annual reports are filed under this permit. There has been no history of violations of either of these permits.

I. NATURAL RESOURCES

1.0 SPECIAL STATUS PLANTS

Comment I-1: “The discussion of special-status plant species is not supported by recently documented field surveys and appears to rely upon data base searches and other analyses, many of which were performed prior to 1994. A comprehensive botanical survey of the Watershed has probably not been performed since Sharsmith’s work in the 1940’s. The District has performed numerous surveys of its lands in the Ohlone and Sunol Wilderness areas and at Del Valle Reservoir during which many populations of special-status plant species have been documented. We are also aware of numerous other studies which were performed by other agencies and environmental consultants, or existing herbarium records, that document species occurrences within and near the Alameda Watershed. These records are routinely submitted to the Department of Fish and Game for inclusion in the California Natural Diversity Data Base, however it may take some time for these records to be included in the data base.

In our scoping letter of November 20, 1996 (attached), we identified several special-status species that we knew to be in or near the Watershed and requested that they be considered in the EIR. Unfortunately, at least seven of these species were not included in the discussion and tables contained in the EIR. Should field surveys be performed of other areas in the Alameda Watershed, it is highly likely that numerous, previously unknown populations of special-status plants would be documented. If the positive results from District surveys on adjacent lands are any indication, SFPUC-conducted botanical surveys would likely conclude that the Alameda Watershed is still a botanically rich and diverse area, and that this flora is susceptible to land use changes or changes in current land management practices which sustain these plants. Land use decisions based upon the current level of information in this EIR will likely result in significant impacts to undocumented populations of special-status plants within the Watershed.” (East Bay Regional Park District)

Response: The surveys recorded in the EIR for the Management Plan were included to provide a general probability of the existence of a species or habitat. This level of detail was intended to provide a programmatic view of the plant and wildlife communities on the Watershed. New comprehensive surveys of the Watershed were not performed as part of the Management Plan process, nor were they deemed necessary for environmental review because the details and timing of actions that could occur under the Management Plan are mostly unknown at this time. Even if conducted now, surveys would likely be out of date at the time specific projects or actions may be proposed that could affect sensitive species. At the time such projects or actions are proposed, additional review, including species surveys, would be undertaken for the affected locations as warranted to determine potential impacts. Such surveys would occur pursuant to CEQA and would be carried out as specified in Management Plan actions such as veg1, veg3, beg6.1, and wil9.

Comment I-2: ‘...there’s a reference in that same section to the clearing [of] the area surrounding the storage ponds of vegetation, and I’m kind of assuming that’s not non native vegetation, but it doesn’t say that. And I’m trying to think how is that going to preserve the environment. If it’s going to have that, the statement should say “nonnative vegetation” because we should be encouraging native vegetation to try to save as much habitats as we can.’ (Joanne Freemire – Pleasanton Public Meeting)

Response: This comment refers to mitigation measures that were designed to keep special status plant communities from establishing in disturbed areas where chances of long-term survival are low. It is unlikely that native plants or special status species would establish and/or prosper in these already disturbed areas (areas where ongoing mining is occurring). Removal of non-native plant species will most probably be the predominant action under this mitigation measure. The point of this measure is to keep these areas clear of all vegetation and wildlife.

2.0 SPECIAL STATUS WILDLIFE

2.1 SPECIAL STATUS WILDLIFE SPECIES

Comment I-3: ‘The Service believes several of the proposals within the management plan may result in take of federally listed species. Take is defined by the Act as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect” any listed wildlife species. “Harm” in this definition includes significant habitat modification or degradation where it actually kills or injures wildlife, by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

If a Federal agency is involved with the permitting, funding, or carrying out of this project, then initiation of formal consultation between that agency and the Service pursuant to section 7 of the Act, may be required. Such consultation would result in a biological opinion addressing anticipated effects of the project to listed and proposed species and may authorize a limited level of incidental take. If a Federal agency is not involved with the project, and federally-listed species may be taken as part of the project, then an “incidental take” permit pursuant to section 10(a)(1)(B) of the Act should be obtained. The Service may issue such a permit upon completion by the permit applicant of a satisfactory conservation plan for the listed species that would be affected by the project. The completion of a Habitat Conservation Plan by the SFPUC is discussed within the management plan. We encourages the SFPUC to begin working with us to achieve this goal.’ (United States Fish and Wildlife Service)

Response: USFWS regulatory requirements are noted with respect to the federal Endangered Species Act. Consultation will occur as appropriate when specific projects are proposed and considered by the SFPUC. The USFWS support of the Management Plan action calling for a Habitat Conservation Plan is also noted.

Comment I-4: “The Draft Environmental Impact Report has some serious failings in its assessment of the natural resources of the watershed. Section III.E inadequately addresses the

presence of numerous special-status wildlife species found in the watershed. It is also acknowledged that a comprehensive special-status species survey has not been conducted on the Watershed. Without knowledge of the presence and extent of special-status species, it is impossible to analyze or mitigate for potentially significant impacts to those species.” (Alameda Creek Alliance)

Comment I-5: “The discussion in the EIR focuses on just a few species which have been documented to occur within the Watershed, yet it does not provide adequate information on other special-status wildlife species which are also known, or highly likely to be present, in the Watershed. Without evidence of recent field surveys following adopted resource agency protocols, it seems inappropriate for so many special-status wildlife species to be listed in a table and then summarily dismissed on the basis of such an analysis. The EIR should reconsider potential impacts to the following species.

Bald Eagle: A pair of bald eagles have been successfully nesting at Del Valle Reservoir for the past four years. These birds are the first known nesting pair, and currently the only pair of bald eagles documented nesting in the San Francisco Bay Area. They have nested successfully since 1996 with fledged young in 1996, 1998 and 1999. This location is protected and no public access is allowed during nesting periods. California Department of Fish and Game records since the early 1980’s document annual use of all three Watershed area reservoirs by wintering bald eagles with as many as twenty birds present.

The highest percentage of bald eagle diet consists of fish from the reservoir of which the majority are probably injured fish from the active recreational fisheries stocking and subsequent angler impacts. It is possible that one or both of these eagles may have also been observed at San Antonio Reservoir, as noted on page III.E-23 of the EIR. Changes in operations at this reservoir may have adverse effects on bald eagle foraging. The EIR should also consider preserving potential nesting locations, such as snags, near the two reservoirs. One beneficial effect of allowing public fishing and stocking of native fish is the increased potential for bald eagle nesting at the two SFPUC reservoirs.

Golden Eagle: Eastern Alameda County contains some of the most significant populations of golden eagles in the United States. Surveys conducted in the Altamont Hills have documented some of the densest numbers of individuals on record. As with bald eagle, golden eagles are susceptible to land use changes, including changes in the abundance of prey species, suitable nesting locations and disturbance by humans. The Alameda Watershed provides large expanses of open space habitat for this species. We recommend that SFPUC perform surveys to document occurrences of this species and identify protective measures. (East Bay Regional Park District)

Comment I-6: “*California Red-Legged Frog:* The EIR on page III.E-22 notes red-legged frog occurrences in Alameda Creek, both above and below Calaveras Reservoir, and at Little Yosemite in Sunol Regional Wilderness. The District has documented numerous other populations of red-legged frog at Sunol and Ohlone Wilderness areas, Mission Peak, Del Valle Reservoir and Pleasanton Ridge. Most of these locations occur within stock ponds in grazed

habitat. It is highly likely that they are abundant at locations elsewhere in the Alameda Watershed which have not been documented in the EIR. For instance, adult red-legged frogs were observed in upper San Antonio Creek in 1999. Many existing and proposed land uses within the Watershed are likely to affect this species. We recommend that SFPUC perform surveys to document occurrences and identify protective measures.

Foothill Yellow-Legged Frog: The EIR includes this species on Table III.E-3, but provides no discussion in the text. The District has documented populations of yellow-legged frog in the Sunol/Ohlone areas and in Alameda Creek. It is likely present within the Alameda Watershed. We recommend that SFPUC perform surveys to document occurrences of this species and identify protective measures.

California Tiger Salamander: The EIR includes this species on Table III.E-3, but provides no discussion in the text. The District has documented populations of tiger salamander at Del Valle Reservoir and other nearby locations. It is likely present within the Alameda Watershed. We recommend that SFPUC perform surveys to document occurrences of this species and identify protective measures.

Alameda Whipsnake: As noted in the discussion on page III.P-5, the Apperson Ridge Quarry is likely to result in previously unforeseen impacts to listed species, including Alameda whipsnake. Use of 2.8 miles of Watershed roads through potential whipsnake habitat to access this quarry may result in significant, cumulative impacts to whipsnake and other special-status species. In particular, documented unnatural deaths to whipsnake have occurred on roads which would be experiencing lower traffic volumes than is proposed for this quarry. We recommend that SFPUC perform surveys to document occurrences of this species and identify protective measures. The District has documented the presence of whipsnakes and the abundance of high quality whipsnake habitat at both Sunol and Ohlone Wilderness areas. Numerous other studies have also documented whipsnake along Pleasanton Ridge. The Alameda Watershed likely contains extensive occupied habitat for this species as it falls in the US Fish and Wildlife Service's Sunol-Cedar Mountain recovery area." (East Bay Regional Park District)

Comment I-7: "Pacific lamprey (*Lampetra tridentata*). The EIR does not mention the Pacific lamprey, a native anadromous (migratory) species that has been documented historically in the watershed (Gunther et al. 2000). Larval lampreys (ammocetes) were documented in 1998 throughout upper Alameda Creek between the Sunol Water Treatment Plant and Leyden Creek (Trihey 1999). Adults have been seen in the last few years in Sunol Regional Wilderness (Joanne Freemire, EBRPD Naturalist, pers. comm., 1999), and the species is reported to occur downstream through Niles Canyon (Smith 1998). At least 3 adult lampreys have been captured below the BART weir and moved into Niles Canyon this year (Pete Alexander, EBRPD Fisheries Specialist, pers. comm, 2000). The Pacific lamprey is a Federal Species of Concern. The potential impacts of SFPUC management actions on Pacific lamprey and their habitat in Alameda Creek and its tributaries, including impacts from dams, water capture and diversion, and gravel mining need to be analyzed, and the significant impacts avoided or mitigated. This has not been done." (Alameda Creek Alliance)

Comment I-8: “Alameda whipsnake (*Masticophis lateralis euryxanthus*). The EIR assumes a high potential for the Alameda whipsnake to occur in the watershed, but does not confirm the presence of the species. The SFPUC has done no surveying for the presence of the Alameda whipsnake within the watershed (Mark Muller, San Francisco Water Department, pers. comm. 1999). However, the Sunol-Cedar Mt. population (Wauhab Ridge to Cedar Ridge area) of the species, one of only five significant sub-populations remaining, occurs adjacent to and within SFPUC lands in the Alameda watershed (U. S. Fish and Wildlife Service (FWS) files, 1999). The East Bay Regional Park District (EBRPD) reports that whipsnakes are known to currently occur in Sunol and Ohlone Regional Wildernesses, which are within SFPUC watershed lands (Joe DiDonato, EBRPD Wildlife Specialist, Threatened and Endangered Species list, 1999). A quick review by the Alameda Creek Alliance of FWS files on historic sightings revealed two adults were observed in Alameda Creek by EBRPD personnel upstream of Camp Ohlone in 1990; a snake was collected from Indian Joe Creek in 1975; another was collected from Alameda Creek in Sunol Regional Park in 1972; and one collected 10 miles south of Livermore on the road to Mt. Hamilton in 1956 (FWS files 1999).

The species is known to occur historically and there is suitable habitat throughout much of the SFPUC Alameda watershed lands. The EIR acknowledges that suitable resident habitat and travel corridors occur for the species around both San Antonio and Calaveras Reservoirs (page III.E-22). The species has been well-documented on Pleasanton Ridge. Alameda whipsnakes have been shown to be associated with native Diablan sage scrub, to forage in adjacent grasslands, and to migrate along riparian corridors. The U. S. Fish and Wildlife Service, in listing the whipsnake as a threatened species in 1997, identified important dispersal corridors within SFPUC watershed lands (Alameda Creek where it crosses under Hwy. 680 and at Scott’s Corner along Vallecitos Creek) necessary for genetic interchange among sub-populations (62 Federal Register 64306, at 64308). Comprehensive protocol surveys for the species need to be conducted throughout SFPUC watershed lands. The EIR acknowledges that inappropriate grazing practices and alteration of suitable habitat from fire suppression are primary reasons for the decline in population numbers of the species. The potential impacts of SFPUC management actions on the Alameda whipsnake and its habitat in the watershed, including impacts from gravel mining and roads need to be analyzed, and the significant impacts avoided or mitigated. This has not been done. The analysis of the potential impacts from cattle grazing and fire suppression are completely inadequate.” (Alameda Creek Alliance)

Comment I-9: “Foothill yellow-legged frog (*Rana boylei*). The EIR assumes a high potential for the foothill yellow-legged frog to occur in the watershed, but does not confirm the presence of the species. Foothill yellow-legged frogs are present along Alameda Creek in Sunol and Ohlone Regional Parks, which are within SFPUC watershed lands (Joe DiDonato, EBRPD Threatened and Endangered Species list, 1999; Pete Alexander, EBRPD, pers. comm. 1999; Jennings and Hayes 1994). These frogs are a Federal Species of Concern and a State Species of Special Concern. The management needs of the Foothill yellow-legged frog are different than those of the California red-legged frog, in that they generally require faster water and rock pools and riffle habitat. In streams with foothill yellow-legged frogs, poorly timed water releases from upstream reservoirs can scour egg masses, and decreased water flows can force adult frogs to move into

permanent pools where they may be more susceptible to predation (Hayes and Jennings 1988). The SFPUC should presume the species is present within the watershed, and conduct comprehensive protocol surveys for the species. The potential impacts of SFPUC management actions on the foothill yellow-legged frog and its habitat in the watershed, including impacts from dam operation, water diversions, cattle grazing, gravel mining, and pesticide use need to be analyzed, and the significant impacts avoided or mitigated. This has not been done.” (Alameda Creek Alliance)

Comment I-10: “Callippe silverspot butterfly (*Speyeria callippe callippe*). The EIR assumes a moderate potential for the Callippe silverspot to occur in the watershed. Populations of the Callippe silverspot found within the Livermore Valley, which are presumed to be intermediate between two subspecies of silverspot are mentioned. However, a recently discovered butterfly population in Happy Valley in southern Pleasanton, adjacent to SFPUC watershed lands, was identified by entomologist Dick Arnold to be Callippe silverspot (David Wright, FWS entomologist, pers. comm., 1999). The U. S. Army Corps of Engineers (Public Notice #23275S, November 8, 1999) and FWS (David Wright, FWS entomologist, pers. comm., 1999) are treating this population as *Speyeria callippe callippe* for regulatory and management purposes. The SFPUC should presume the species has a high potential to be present within the watershed, and conduct comprehensive protocol surveys for the species. As mentioned in the EIR, excessive livestock grazing is a threat to the species, because of the risks of trampling, cattle eating food and host plants, and creating disturbed soil conditions that favor the spread of invasive weedy plants at the expense of native species necessary for the survival of the butterfly (62 Federal Register 64306). Also, the adult and early larval stages of the Callippe silverspot are prone to mortality from dust because their respiratory apparatus (spiracles) are easily clogged, and FWS believes that dust from nearby quarrying operations may adversely affect the species (62 Federal Register 64306, at 64310). According to FWS, the use of insecticides would threaten the callippe silverspot if use occurred in proximity to occupied habitat. Silverspot butterfly larvae are extremely sensitive to pesticides, and even the accumulation of runoff in the soil after spraying has proven lethal to larvae of butterflies of the same genus (*Speyeria*) (62 Federal Register 64306, at 64314). The potential impacts of SFPUC management actions on the Callippe silverspot and its habitat in the watershed, including impacts from gravel mining and pesticide use need to be analyzed, and the significant impacts avoided or mitigated. This has not been done. The analysis of the potential impacts from cattle grazing is completely inadequate. (Alameda Creek Alliance)

Comment I-11: “Berkeley kangaroo rat (*Dipodomys heermanni berkeleyensis*). The EIR makes no mention of the Berkeley kangaroo rat. The Berkeley kangaroo rat is a Federal Species of Concern which was decimated by ground squirrel poisoning campaigns in the 1940’s and 1950’s. It was presumed extinct by some biologists, with the last reported sightings of the species occurring in the 1980’s near Mt. Diablo and San Pablo Reservoir. However, biologist Gary Beeman, a local expert on the species, believes it may still be extant, and that the areas around Calaveras Reservoir may have the best remaining population (Gary Beeman, pers. comm., 1999). Beeman believes the species has not been detected during other rodent trapping because improper survey methods are used, including not using the preferred foods of the species in traps (Beeman, pers. comm., 1999). If shown to still exist, the species would certainly be a candidate for federal

listing. The SFPUC should presume the species has a moderate potential to be present within the watershed, and conduct comprehensive protocol surveys for the species. If found to be extant, the potential impacts of SFPUC management actions on the Berkeley kangaroo rat and its habitat in the watershed, including impacts from cattle grazing, construction activities, and roads need to be analyzed, and the significant impacts avoided or mitigated.” (Alameda Creek Alliance)

Comment I-12: “California tiger salamander (*Ambystoma californiense*). The EIR assumes a high potential for the California tiger salamander to occur in the watershed, but does not confirm the presence of the species. California tiger salamanders are present in ponds and nearby refugia in Sunol and Ohlone Regional Parks, which are within SFPUC watershed lands (Joe DiDonato, EBRPD Threatened and Endangered Species list, 1999; Jennings and Hayes 1994). The California tiger salamander is a Federal Candidate Species and is currently under litigation to compel listing under the Endangered Species Act. The SFPUC should presume the species to be present within the watershed, and conduct comprehensive protocol surveys for the species. The potential impacts of SFPUC management actions on the California tiger salamander and its habitat in the watershed, including impacts from dam operation, water diversions, and cattle grazing need to be analyzed, and the significant impacts avoided or mitigated. This has not been done. The analysis of the potential impacts from gravel mining is completely inadequate.” (Alameda Creek Alliance)

Comment I-13: “California horned lizard (*Phrynosoma coronatum frontale*). The EIR assumes the California horned lizard has a low potential to occur within the watershed (Table IX.B-2). The California horned lizard is known to be present in Sunol Regional Park, which is within SFPUC watershed lands (Joanne Freemire, EBRPD, pers. comm., 2000). Additionally, Jennings and Hayes (1994) document several known collected specimens and verified sightings within SFPUC watershed lands. The California horned lizard is a Federal Species of Concern and a State Species of Special Concern. The species can occur in several habitat types, including areas with exposed gravelly-sandy substrate containing scattered shrubs, and in clearings in riparian woodlands. The SFPUC should presume the species to be present within the watershed, and conduct comprehensive protocol surveys for the species. The potential impacts of SFPUC management actions on the California horned lizard and its habitat in the watershed, including impacts from gravel mining and cattle grazing need to be analyzed, and the significant impacts avoided or mitigated. This has not been done.” (Alameda Creek Alliance)

Comment I-14: “Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). The EIR makes no mention of the Western yellow-billed cuckoo. The Western yellow-billed cuckoo is known to be present in Sunol Regional Park, which is within SFPUC watershed lands (Joe DiDonato, EBRPD Threatened and Endangered Species list, 1999). The cuckoo is listed as a State Endangered Species, and is currently under petition for federal listing, with a listing decision from FWS due in early 2000. This bird is a riparian-dependent species (typically nests in willows), and Sunol Park is one of the few areas in California where it is still present. According to CDFG, the major threat to the species is loss and degradation of its riparian habitat, including adverse impacts from water projects and livestock grazing (CDFG 1992). The SFPUC should presume the species to be present within the watershed, and conduct comprehensive protocol

surveys for the species. The potential impacts of SFPUC management actions on the Western yellow-billed cuckoo and its habitat in the watershed, including impacts from dam operation, water diversions, and cattle grazing need to be analyzed, and the significant impacts avoided or mitigated. This has not been done.” (Alameda Creek Alliance)

Comment I-15: “Townsend’s big-eared bat (*Plecotus townsendii*) and the Pallid bat (*Antrozous pallidus*). Both of these bat species, which are Federal Species of Concern, are presumed in the EIR to have a moderate potential to occur within the watershed. However, both species are known to be present in Sunol Regional Park, which is within SFPUC watershed lands (Joanne Freemire, EBRPD, pers. comm., 2000). The SFPUC should presume the species to be present within the watershed, and conduct comprehensive protocol surveys for the species. The potential impacts of SFPUC management actions on the Townsend’s big-eared bat and the Pallid bat and their habitat in the watershed need to be analyzed, and the significant impacts avoided or mitigated. This has not been done.” (Alameda Creek Alliance)

Comment I-16: “American badger (*Taxidea taxus*). The American badger is presumed in the EIR to have a moderate potential to occur within the watershed. However, the species has been sighted at Flag Hill in Sunol Regional Park, which is within SFPUC watershed lands (Joanne Freemire, EBRPD, pers. comm., 2000). The SFPUC should presume the species to be present within the watershed, and conduct comprehensive protocol surveys for the species. The potential impacts of SFPUC management actions on the American badger and its habitat in the watershed need to be analyzed, and the significant impacts avoided or mitigated. This has not been done.” (Alameda Creek Alliance)

Comment I-17: “California red-legged frog (*Rana aurora draytonii*). The EIR confirms that the California red-legged frog is present within the watershed. Sightings along Alameda Creek in 1993 and 1997 are mentioned (page III.E-22). Sightings were also made in 1998 in upper Alameda Creek at two locations below Little Yosemite and near the confluence with Welch Creek near the site of the proposed recapture facility (Trihey & Associates, Inc. 1999) and frogs were also seen in this area in 1999 (Tom Taylor, Entrix, Inc., pers. comm., 1999). The species was also seen at several sites along upper Alameda Creek in 1999 during electro shocking surveys by EBRPD personnel (Pete Alexander, EBRPD, pers. comm., 1999). FWS believes that the timing and duration of water releases from reservoirs can render a stream unsuitable for California red-legged frog reproduction and maintain populations of exotic predators in downstream areas (61 Federal Register 25813, at 25825). FWS has also published considerable information about the threats to the frog due to habitat alteration from livestock grazing (61 Federal Register 25813, at 25826-25827). This information is attached as Appendix 2. The potential impacts of SFPUC management actions on the California red-legged frog and its habitat in the watershed, including impacts from dam operation, water diversions, and cattle grazing need to be analyzed, and the significant impacts avoided or mitigated. This has not been done. The analysis of the potential impacts from gravel mining is completely inadequate.” (Alameda Creek Alliance)

Comment I-18: “Bay checkerspot butterfly (*Euphydryas editha bayensis*). The Bay checkerspot butterfly is noted in the EIR to have a moderate potential to be present in the watershed. However, no mention is made of the fact that livestock grazing and invasion by exotic plants (acknowledged in the EIR to result from livestock grazing) have helped to greatly reduce its numbers (Murphy and Weiss 1988). Overgrazing by livestock has been implicated in extinctions of several colonies of the butterfly, and grazing can adversely affect plant species of serpentine grasslands which are food plants for the species (52 Federal Register 35366). According to FWS, Bay checkerspot have been documented to have been crushed by cattle (Elam, et al. 1998), and research has shown that a substantial fraction of eggs, larvae and pupae could be lost to crushing in areas that are heavily grazed (White 1986). Comprehensive protocol surveys for the species should be conducted. If the species is found to occur, the potential impacts of SFPUC management actions such as cattle grazing on the Bay checkerspot butterfly and its habitat in the watershed need to be analyzed, and the significant impacts avoided or mitigated. This has not been done.

Myrtle’s silverspot butterfly (*Speyeria zerene myrtleae*). The Myrtle’s silverspot butterfly is noted in the EIR to have a moderate potential to be present in the watershed. However, no mention is made of the fact that livestock grazing and invasion by exotic plants (acknowledged in the EIR to result from livestock grazing) have helped to greatly reduce its numbers (U. S. FWS 1997). According to FWS, overgrazing can reduce the abundance of native nectar sources, which influences the number of eggs produced by female butterflies. Grazing disturbance eliminates the native plant species and disturbs the site, allowing the establishment of invasive non-native weedy plant species. Comprehensive protocol surveys for the species should be conducted. If the species is found to occur, the potential impacts of SFPUC management actions such as cattle grazing on the Myrtle’s silverspot butterfly and its habitat in the watershed need to be analyzed, and the significant impacts avoided or mitigated. This has not been done.” (Alameda Creek Alliance)

Comment I-19: “Pacific lamprey. The potential impacts of the proposed mining on the hydrology of the creek mentioned above may limit the migratory ability of Pacific lamprey. This potential impact has not been analyzed.

California red-legged frog. California red-legged frogs have been found just upstream of the quarries, near the Sunol Water Treatment Plant. The EIR claims that the quarry site is not suitable habitat for the frog, but SFPUC has not surveyed for the species in Alameda Creek in the area of the quarries or downstream, or in Pirate Creek. Altering the surface flow and ground water in the area of the quarries could have negative impacts on the breeding, sheltering, and foraging of the species in nearby creek areas. An additional problem is the proposed mitigation if frogs move in to colonize the site. The EIR proposes to relocate these frogs, which would constitute illegal take of the species. SFPUC would need an Incidental Take Permit to do this legally, and would have to analyze the impacts of moving any frogs. The issuance of this permit is not a foregone conclusion, as the EIR assumes. Moving individual frogs may pose a problem, as the frogs may be moved into habitat that is already occupied by other individuals of the species, and displace them or be unable to survive. The mitigations also propose to survey for

frogs on an annual basis, in other words, once a year. What about frogs that may colonize the site between the yearly visits, who may get crushed, run over, or ground up by mining equipment? The EIR does not mention the time of year which surveys would be conducted, which could influence visibility and location of frogs. Merely moving pesky listed species out of the way is not adequate mitigation. These mitigations are completely inadequate, and many impacts have not been analyzed.

Alameda whipsnake. The EIR claims that the quarry site is not suitable habitat for the Alameda whipsnake, but SFPUC has not surveyed for the species. As noted above, this area may be a critical dispersal route for genetic interchange between subpopulations of the species. One of the biggest threats to the survival of the whipsnake is lack of genetic interchange due to fragmentation of its habitat. Whipsnakes can occupy home ranges up to 25 acres, and have been documented to move over one mile while traversing their ranges (62 Federal Register 64306). There is potential for the species to occur on the proposed quarry expansion site. The heavy equipment, machinery, roads, noise, and human presence associated with quarrying may prevent whipsnake dispersal through this area.

California tiger salamander. The EIR claims that the quarry site is not suitable habitat for the California tiger salamander, but SFPUC has not surveyed for the species in Alameda Creek in the area of the quarries or downstream, or in Pirate Creek. Altering the surface flow and ground water in the area of the quarries could have negative impacts on the breeding, sheltering, and foraging of the species in nearby creek areas. An additional problem is the proposed mitigation if salamanders move in to colonize the site. The EIR proposes to relocate these salamanders. Moving individual salamanders may pose problems, as the salamanders may be moved into habitat that is already occupied by other individuals of the species, and displace them or be unable to survive. The mitigation proposing to survey for salamanders on an annual basis is inadequate, for the reasons mentioned for the frog above.

California horned lizard. The proposed quarry site may have suitable habitat for the California horned lizard. The SFPUC has not conducted surveys to determine the presence of this species in the area, nor analyzed the potential impacts of the proposed quarrying.

American badger. The proposed quarry site may have suitable habitat for the American badger. The SFPUC has not conducted surveys to determine the presence of this species in the area, nor analyzed the potential impacts of the proposed quarrying.

Callippe silverspot butterfly. As noted above, the Callippe silverspot butterfly has been documented near SFPUC watershed lands, not far from the proposed quarry. SFPUC has not surveyed for the species in the area. As noted above, dust from quarrying operations could have a significant impact on this species, and quarrying may remove host or food plants for the butterfly.” (Alameda Creek Alliance)

Comment I-20: “Many other native species which are not special status species occupy or travel through the proposed quarrying area. Bobcats, coyotes, and deer have all been seen within the

last year near the Sunol Water Temple (Jeff Miller, Alameda Creek Alliance, pers. obs., 1999). The proposed quarrying activities will likely disrupt migration, and possibly feeding and sheltering of these species.” (Alameda Creek Alliance)

Comment I-21: “California red-legged frog and Foothill yellow-legged frog. Due to the general impacts of grazing on aquatic and riparian habitat mentioned above, cattle grazing decreases frog abundance. Grazing results in a decline in the structural richness of the vegetative community, with a loss of thermal cover and protection from predators. Vegetation is a crucial component of the frog’s habitat. Grazing increases aridity and raises water temperatures to levels lethal to early life stages of the frog. The frogs can also lose much of their prey base, as aquatic insects are negatively impacted by grazing. Emergent vegetation, upon which the frogs deposit their egg masses can be trampled and eaten. Eggs can be smothered by sedimentation, and deep pools necessary for escape cover filled in. For California red-legged frogs, the loss of undercut banks and reduced water levels is particularly critical because refuge plunge pool habitat is reduced or eliminated. Frogs run the risk of being trampled by cattle, especially in the egg and early larval stages. Frogs require rodent burrows for estivation, which are often trampled by cattle. Cattle grazing also creates conditions favorable to colonization by bullfrogs, which predate on red-legged frogs, and can eliminate frogs from entire drainages. These impacts are discussed in depth in the FWS listing decision for the frog, attached as Appendix 2.

California tiger salamander. Since it is also a species which inhabits aquatic habitat, many of the above mentioned impacts of grazing on frogs are similarly detrimental to the salamander. The decrease in leaf litter and woody debris in heavily grazed areas also reduces habitat for the salamander, as does trampling of rodent burrows required for estivation..

Western yellow-billed cuckoo. As mentioned above, the cuckoo is a riparian dependent species, and usually nests in willows. Cattle damage to riparian areas eliminates habitat for this species.

Callippe silverspot butterfly. The Callippe silverspot requires *Viola* (a native wildflower) as its host plant. Overgrazing and the resultant soil erosion (plus loss of the soil seed bank and the mycorrhizal layer) has reduced or extirpated this species from much of the watershed. This plant should be common in the watershed. Cattle both eat this host plant and create disturbed soil conditions which favor invasive species, and eliminate the native wildflowers. The documented threat of trampling by cattle has been noted above.

Bay checkerspot butterfly. The Bay checkerspot requires *Plantago erecta* and *Castilleja exserta* (native wildflowers) as host plants. Overgrazing and the resultant soil erosion (plus loss of the soil seed bank and the mycorrhizal layer) has reduced or extirpated these species from much of the watershed. Cattle both eat these host plants and create disturbed soil conditions which favor invasive species, and eliminate the native wildflowers. The documented threat of trampling by cattle has been noted above.

Alameda whipsnake. Livestock grazing that significantly reduces or eliminates shrubs and grass cover can be detrimental to the whipsnake. The species avoids such open areas because of the

increased danger from predators and the lack of prey (McGinnis 1992). Soil disturbance from grazing may replace native vegetation with non-native plants, potentially degrading the habitat and reducing the prey base. Inappropriate grazing practices are cited as a specific threat to the Sunol-Cedar Mountain sub-population of the snake by FWS (62 Federal Register 63406).

California horned lizard. The California horned lizard utilizes small mammal burrows or burrows into loose soils under surface objects during extended periods of inactivity or hibernation (Zeiner et al. 1988). Soil compaction and trampling of rodent burrows by cattle can degrade habitat for this species.” (Alameda Creek Alliance)

Comment I-22: “Tule elk. Tule elk are negatively affected by cattle grazing, due to competition with cattle for preferred forage and browse, the possibility of disease spread by livestock, and the effects of fences on their mobility. Numerous studies have documented that elk will leave an area where cattle are introduced and prefer those areas ungrazed by cattle (Wagner 1978). A study by Jon Skovlin (1968) found that elk use was significantly lower on ranges cohabitated by cattle than in those where cattle use was restricted. Cattle serve as vector to spread disease and parasites, both native and exotic, to wild animals. Cattle have been documented to pass numerous diseases to wildlife, such as brucellosis, circling disease, encephalitis, tuberculosis, pneumonia, and bluetongue. Wyoming Game and Fish Department officials believe that widespread ranching that forces elk to concentrate in localized areas is the main reason the number of elk calves born in the state has declined in recent years (previous from Jacobs 1991). The elk herd in the watershed has not increased significantly in population since it migrated from Mt. Hamilton (EBRPD Sunol Naturalist, pers. comm., 1999). Cattle grazing may be a factor.” (Alameda Creek Alliance)

Comment I-23: “I am writing with corrections and additional information relating to our comments on the Draft Environmental Impact Report for the SFPUC Alameda Watershed Management Plan (letter of January 28, 2000). This information is from personal communication with Joe DiDonato, the Wildlife Specialist for the East Bay Regional Park District.

Page 7 – Western yellow-billed cuckoo: The species is not known to nest in Sunol Regional Park, and sightings are thought to be of migratory birds. However, the species utilizes riparian habitat when not nesting, and the impacts of SFPUC management actions on riparian habitat for the cuckoo should be analyzed.” (Alameda Creek Alliance)

Comment I-24: “Page 21 – Impacts of grazing on Tule Elk: Apparently the elk herd in the watershed has increased in numbers since it migrated from Mt. Hamilton. Whether or not this increase has been significant is open to interpretation. Nonetheless, the mentioned potential impacts of transmission of diseases, competition for forage, and effects of fences due to cattle grazing should be analyzed and mitigated.” (Alameda Creek Alliance)

Comment I-25: “There’s some under species that are also left out and I’ll go through the ones that are left out. I won’t go into any detail. The Foothill yellow-legged frog is known to occur in watershed and that was in Ohlone Park.

The Western yellow-billed cuckoo which is a federally threatened species, also. And then there's a number of species that were presumed to be likely to be present which we know are present for a fact, Alameda whipsnake in the watershed.

Calliope Silverspot butterfly has been seen nearby. California Tiger salamander, which is a species of concern, currently a candidate for the federal candidate species and is currently under litigation. And the California red-legged frog. I think you have that confirmed. These are all special-status species. There are a number of species.” (Jeff Miller – Pleasanton Public Meeting)

Comment I-26: “I am a biologist and naturalist and I notice on your list of plants and animals where they were rated as there's a low potential, medium potential, or high potential of them being on the project plan. You did very well on the plants.

So I went carefully through the list and it looks pretty much included of everything I know of it and put it in the correct potential, but the animals needs some work.

There are several animals that I know for a fact that are on this property that should be switched to high potential. So those animals are steelhead trout somebody mentioned, the California monitor lizard, Pallet bat, Townsends big bat, badger and California Silverspot butterfly.” (Joanne Freemire – Pleasanton Public Meeting)

Comment I-27: “It says winter and spring surveys will be conducted to confirm or deny the presence of California Salamanders. And if the species are present, additional off-site habitat should be preserved and/or enhanced at a one to one ratio.

In other words, that means if a ratio is destroyed, if an acre somewhere else would be purchased as habitat, well, that's good in a way. I mean, it's probably the best that can be done if you're going to build. But you can't see it as a one for one replacement because you know that other piece of land that they're buying for habitat probably already is habitat, so you're destroying one acre and you're buying another acre, but really you've lost one of the two acres.

Okay, so you're trying your best, but it still is not preserving all the habitat possible.

Anyway the last sentence then says implementation of these mitigation measures would reduce the significant impacts from proposed mine operations to a low significant level and I happen to agree with that.” (Joanne Freemire – Pleasanton Public Meeting)

Response: The above comments focused on the EIR's lack of specific species surveys, particularly for special status wildlife species. In many cases, specific species information is given in these comments. As was the case with special status plants, wildlife surveys recorded in the EIR for the Management Plan were included to provide a general probability of the existence of a given species or habitat. This level of detail was intended to provide a programmatic view of the plant and wildlife communities on the Watershed. Complete surveys of Watershed lands at the level needed to support specific projects or major land use decisions would be prohibitively expensive and would also be potentially out of date for specific projects proposed in the later

phases of Management Plan implementation. Management Plan actions such as veg1, veg3, veg6.1, and wil9 were developed to ensure that location-specific data is collected prior to specific project implementation.

Some of these comments indicated that although a species was mentioned in the DEIR text, the impacts to that species were not completely analyzed. In programmatically discussing impacts, primary attention was given to that portion of the resource or those species or species guilds most likely to be affected by the impact (i.e., impact to nesting birds was discussed in association with removal of non-native forests). In this analysis, other “lesser” impacts were not fully discussed unless the mitigating Management Plan Actions or added mitigation measures would not reduce the adverse impacts to a less than significant level.

The EIR identifies potential impacts on natural resources that could result from proposed modifications of operations and maintenance activities, and construction activities; increased public access and use; increased invasive plant species; grazing; and mining operations under the Management Plan. Eight mitigation measures (see DEIR pages IV-3 through IV-4) are proposed that would reduce potentially significant natural resource impacts to a less than significant level. Many of the specific impact reducing measures are included within the Management Plan, as noted in the EIR tables included in DEIR Section III.E. Particularly critical are action veg3 (survey for special status plants prior to any Watershed activity that may affect an ecological sensitivity zone) and Action wil1 (conduct site-specific review of new structures, parking lots, roads, or trails to avoid adverse impacts to wildlife). These focused project- and site-specific surveys are the best means for identifying species of concern that may potentially be affected by future actions in the Watershed. Project-level CEQA review would be required for any project with the potential to significantly affect special status species, as would compliance with all applicable laws and regulations, such as the federal and state Endangered Species Acts, that protect special status species. Overall, at a program level, implementation of the Management Plan should lead to a reduction in historical baseline species impacts because the Management Plan would provide a management policy framework that more explicitly takes overall natural resource protection into account.

Many of the comment letters noted above discuss impacts from historical and ongoing Watershed operation and maintenance practices which, as noted in Section II.A.3.0 of this document, are part of the existing condition. These practices represent the status quo. Many Management Plan actions are designed to lessen the impact that past operation and maintenance practices might have on the environment. Beyond these actions, the Management Plan does not address or change ongoing operation and maintenance of the water supply facilities within the watershed; therefore, the EIR does not analyze impacts of past or ongoing water facility operations. Regarding potential impacts of the Apperson Ridge Quarry on the Alameda whipsnake, the Apperson Ridge Quarry is fully approved and entitled, and is not located on Watershed lands. The SFPUC is not in a position to require special status species surveys or further CEQA mitigation for that project.

Several commentors expressed fears that overgrazing would affect habitat of some wildlife species (particularly butterflies). The *Grazing Resources Management Element* was developed and implemented to ensure that this type of overgrazing does not occur. Please see Section II.K of this document for additional details of the grazing program.

As was discussed in the DEIR (page III.E-37), particular attention was given to verifying biological conclusions reached in the EIR for SMP-32, particularly regarding those species whose status has been changed since that analysis was completed. These species included burrowing owl, Alameda whipsnake, California red-legged frog, and California tiger salamander. As described on pages IV-3 and IV-4, additional mitigation measures were included in the DEIR to ensure protection of these species. Since publication of the DEIR, the corridor between Pleasanton Ridge and Sunol/Cedar Ridge has been proposed as critical habitat for the Alameda whipsnake. This proposed designation terms the area not as habitat per se, but as a possible dispersal corridor. In response to this potential designation, paragraph 4 of DEIR page III.E-37 has been revised:

No special status plants are expected to occur within the proposed mining area due to the disturbed nature of the site and the absence of appropriate soil, such as serpentine soils, and native plant communities such as scrub chaparral or woodlands. The area may provide breeding habitat for burrowing owl, a federal and state species of special concern, since this species can survive in a disturbed environment and can utilize ground squirrel burrows. This species could be present during mining activities and implementation of Mitigation Measures D-3(b) and D-3(c) for SMP-32 would require preconstruction surveys for burrowing owls and passive relocation if burrowing owls are found. These mitigation measures would reduce impacts from Management Plan expansion south of I-680 as well. The current conditions at the proposed mining area do not provide suitable habitat for Alameda whipsnake, California red-legged frog, or California tiger salamander. **However, the corridor between Pleasanton Ridge and Sunol/Cedar Ridge has been proposed as critical habitat for the Alameda whipsnake. This proposed designation terms the area not as habitat per se, but as a possible dispersal corridor. The loss of, or disturbance to this species during mining operations would be considered a significant impact. Section IV.E presents a mitigation measure that would reduce this impact to a less than significant level.**

Alameda Creek is not accessible to the federally threatened Central California coast steelhead (*Oncorhynchus mykiss*) due to downstream impoundment. Lower Alameda Creek contains a small population of steelhead, which is currently known to extend as far upstream as a barrier associated with the Bay Area Rapid Transport (BART) tracks in Fremont. In addition, as described in the SMP-32 and conditions of approval, mining activities, including discharges, will not occur in or impact Alameda Creek and will be buffered from riparian areas.

A mitigation measure has been added to EIR Section IV.E.2.0, in association with text revisions to DEIR Section III.E:

4. **In new leases entitling mining, require mining and reclamation operations to follow U.S. Fish and Wildlife Survey protocol for the Alameda whipsnake critical habitat designation. Protocols for the protection of Alameda whipsnake have not yet been finalized. However, at a minimum, pre-construction surveys will be required, and will involve walking parallel transects 25 to 50 feet apart across the entire site. If found, snakes would be released into appropriate nearby habitat. The area of disturbance in any mining operation within designated critical habitat will be enclosed in snake-proof fencing.**

Comment I-28: ‘Page IV-3 / Last Paragraph “Require mining and reclamation operations north and south of I-680 to have surveys conducted by a qualified biologist within storage pit ponds and other basins that store water at proposed mining and reclamation areas on an annual basis. Surveys would be completed for all life cycle stages of the California red-legged frog (e.g., egg masses, tadpole, juveniles, adults) and California tiger salamander.”

It is certainly reasonable and prudent to conduct surveys by qualified biologists for any special status species when permitting a new area for mining, expansion of a new phase of mining, or permitting for any other land use. It is very unlikely that any of these special status species would exist on property already disturbed by mining or other land uses. We have not seen a requirement from any public agency proposing surveys for special status species on an annual basis. Certainly before any property is disturbed these surveys are important and necessary, but it is extremely unlikely that they would be needed after a project has been established.’ (RMC Pacific Materials)

Comment I-29: ‘The mitigation that was given that was suppose to be above and beyond the mitigation that was suggested in the SMP-32 EIR. And if I could read it to you here.

Let’s see, it’s on page section numeral 4, and it starts on page 3. Let’s see. Under natural resources the last sentence in that section says “Additional mitigation would be necessary to avoid a potentially significant effect, see section 2 0 below.”

So [section] 2 0 says mitigation are measured in this report. The following mitigation measures address potential natural resources impacts from proposed mining operations.

Well, one thing it says it’s going to require surveys conducted annually by qualified biologist of storage pit ponds and others, since that’s at the proposed mining and recreation areas.

Surveys would be completed for all life stages, of the California red-legged frog and the California Tiger Salamander. It says if no red-legged frogs or salamanders are detected, then the operation mining operation shall continue.

If adult or tadpoles or the California Salamanders are found within a specific body of water under the mining, the frogs or salamanders would be immediately moved or captured and moved to suitable upstream sites by a biologist.

Okay. Well, I'm not sure what passive means, but what comes to my mind – "shoo, salamanders, go upstream," and then encaptures it.

Well, there are a couple of problems with this mitigation. One, it's only done annually, so what about all those frogs that wonder in between the pits, in between the yearly visits. And furthermore, when you do relocate annually like that, you may be putting it into territory that may be taken up by others of its kind. So, it will be competing with the ones that's already there and probably will be competing until they die.' (Joanne Freemire – Pleasanton Public Meeting)

Response: The annual surveys proposed in the DEIR are designed to ensure that special status species have not taken up residence in areas of ponded water within mining lease boundaries, and to establish protocols for how to avoid impacts to the species in the event they do colonize these areas. Guidelines for establishing mitigation acreage provide for instituting new mitigation areas contiguous with existing habitat but not overlapping so that the kind of competition for resources described in the comment above does not occur.

Comment I-30: "Loss of agricultural land will result in loss of habitat for raptors and other birds." (Golden Gate Audubon Society)

Comment I-31: "It [SMP-32] will result in the loss of habitat for wildlife and it will destroy 140 acres of prime agricultural land, farmland, sorely needed to grow food to feed hungry people." (Patricia Stillman – Pleasanton Public Meeting)

Comment I-32: "There are a number of endangered species that are present on the [SMP-32] site that were completely ignored. The wishes of the town of Sunol were completely ignored. It will probably go down in history as one of the worse pieces[uses] of land in Alameda County." (Bob Frillman – Pleasanton Public Meeting)

Response: Loss of prime agricultural land due to mining under SMP-32 was found to be an unavoidable significant impact in the Management Plan EIR. Based on the EIR's analysis of natural resources, with adoption of suggested mitigation measures, significant impacts on wildlife habitat or endangered species would not occur from SMP-32 implementation and no evidence to the contrary has been received.

2.2 STEELHEAD/FISHERIES

Comment I-33: "*Steelhead:* Landlocked steelhead have been identified within the Alameda Watershed. Populations located within the two SFPUC reservoirs (i.e. Calaveras and San Antonio) utilize the reservoir tributaries above these two reservoirs. Alameda Creek and many of its tributaries are also utilized by steelhead. Recent studies have determined that these fish are part of the Central Ecologically Significant Unit (ESU) for this federally-threatened species.

Recent surveys have also identified local anadromous steelhead attempting to access the Alameda Watershed streams. Plans are underway to facilitate steelhead access to the upper Watershed areas via Alameda County Flood Control District. As noted in the EIR, steelhead migrational barriers also exist on Watershed lands.

In addition to physical barriers, water diversion and riparian habitat impacts constitute two major impacts to this species. Alameda Creek within Sunol Regional Wilderness and the Alameda Watershed above Little Yosemite have been identified as the best habitat for spawning and rearing of steelhead within the Alameda Creek Watershed. Expansion of gravel quarrying adjacent to Alameda Creek will further divert surface flows from the creek (and groundwater) into the quarry ponds. These diverted flows are necessary for successful native fish and amphibian reproduction and survival in the Watershed.” (East Bay Regional Park District)

Comment I-34: “Our organizations are profoundly disappointed that neither the management plan nor the DEIR have addressed the restoration of steelhead trout (*Oncorhynchus mykiss*) in the Alameda Creek watershed. The analysis correctly states (III.P-1) that the geographic scope for the cumulative analysis includes the entire boundary of the physical watershed, but then fails to recognize downstream and upstream impacts of its management plan on the steelhead trout, a Federally recognized threatened species, and its supporting habitat. Impacts to evaluate include adequate flows for all life stages of the steelhead trout and supporting habitat, proper timing of flows, barriers to migration, geomorphology and gravel recruitment, and effects of cattle grazing, mining, stables, and nursery operations on water quality parameters and instream habitat required by steelhead.

The document inappropriately dismisses steelhead from its analysis by disavowing their presence (II.E-17 and IX.B-2). It fails to include, reference, or incorporate studies that would indicate the occurrence of steelhead in the watershed. It fails to include, reference, or incorporate studies that would indicate the genetic similarity of trout locked above SFPUC impoundments with the anadromous steelhead that are known to enter lower Alameda Creek (Jennifer Neilsen, 1999). The document fails to acknowledge current efforts to convey migrating adult steelhead trout above lower Alameda Creek barriers, or efforts that are underway to remove or ladder those barriers.

Fish migration barriers within the watershed serve only the purpose of providing SFPUC an excuse for not managing the restoration of steelhead trout and other species of concern. The management plan and DEIR should include the proposal to remove Niles and Sunol dams. The proposed new barrier to fish migration, an inflatable rubber bladder dam, should be reviewed as a potential barrier to steelhead migration.” (California Sportsfishing Protection Alliance and the Northern California Council/Federation of Fly Fishers)

Comment I-35: “Perhaps the most serious deficiency of the DEIR is its failure to recognize stream flow requirements under 5937 of the State Fish and Game Code. The code section states that adequate stream flows must be maintained downstream of dams and diversions to maintain fish in good condition. It is clear that this standard has not been met by the San Francisco Water

Department within the Alameda Creek Watershed. If SFPUC has conducted fisheries related stream flow studies, they should be incorporated or referenced in the DEIR. If the studies have not been conducted, interim flows should be provided as recommended by the California Department of Fish and Game and the National Marine Fisheries Service until such studies are completed and reviewed for implementation.” (California Sportsfishing Protection Alliance and the Northern California Council/Federation of Fly Fishers)

Comment I-36: ‘Reference is made to the notice of availability of the Draft Environmental Report, Alameda Watershed Management Plan. We have reviewed the Draft Environmental Report and offer the following comment:

On Page IX.B-9, for Steelhead trout under the heading “Potential to Occur Within the Watershed,” we recommend changing “low” potential to “probable.” There is much interest in the community for the restoration of the Steelhead population in Alameda Creek. Also, the County of Alameda has contracted with a consultant, Applied Marine Sciences, to prepare a feasibility plan for restoration of Steelhead within the Alameda Creek Watershed. Based on work done to date, it appears that it is probable that a viable Steelhead population can be re-established in Alameda Creek.’ (County of Alameda Public Works Agency)

Comment I-37: ‘Anadromous Fisheries – The Regional Water Quality Control Board is the State agency responsible for protecting the beneficial uses of Waters of the State. All activities that may result in adverse impacts to Waters within the Region are regulated under the San Francisco Bay Basin Water Quality Control Plan (Basin Plan). The Basin Plan defines the beneficial uses of Waters (including surface waters and ground waters) and establishes numeric and narrative water quality objectives for the protection of beneficial uses. (The San Francisco Bay Regional Water Quality Control Board and the Basin Plan should have been included in EIR Section III.A-3.1, Existing Plans and Policies, State Agencies.)

The Basin Plan defines the beneficial uses of Alameda Creek (and all tributaries thereto) to include *cold freshwater habitat, fish migration, fish spawning, and wildlife habitat*. Regarding fish migration, the Basin Plan states “...particular attention must be paid to maintaining zones of passage. Any barrier to migration or free movement of migratory fish is harmful. [...] A water quality barrier, whether thermal, physical, or chemical, can destroy the integrity of the migration route and lead to the rapid decline of dependent fisheries.” Regarding fish spawning, the Basin Plan states: “Dissolved oxygen levels in spawning areas should ideally approach saturation levels. Free movement of water is essential to maintain well-oxygenated conditions around eggs deposited in sediments. Water temperature, size distribution and organic content of sediments, water depth, and current velocity are also important...” Among the narrative objectives established to maintain beneficial uses, the Basin Plan states: “...the health and life history characteristics of aquatic organisms in waters affected by controllable water quality factors shall not differ significantly from those for the same waters in areas unaffected by controllable water quality factors.”

Historically, the upper reaches of Alameda, San Antonio, Calaveras, and Arroyo Hondo creeks provided spawning and rearing habitat for steelhead trout and coho salmon (Jeff Miller, Alameda Creek Alliance, pers. comm.). While native-run coho salmon have not been documented in the creek for many years, steelhead trout have been seen in recent years trying to migrate upstream from the lower reaches of Alameda Creek. A recent study¹ concluded that the returning steelhead are genetically similar to the native rainbow trout populations, and that the native rainbow trout “should be managed as part of the threatened population of Central California Coast steelhead.” Another recent study² determined that restoring viable steelhead populations in the Alameda Creek watershed is biologically and economically feasible, without significant disruption to current beneficial uses (including water supply and recreation). Under a current agreement between the Alameda County Flood Control District, East Bay Regional Parks District, the California Department of Fish and Game, and the National Marine Fisheries Service, steelhead, including a radio-tagged gravid female, have been hand-carried past barriers in the lower Alameda Creek and are believed to be spawning upstream (Miller, pers. comm.). Also, the Alameda County Flood Control District is preparing a grant proposal to construct a fish ladder to allow passage of migrating fish past a major drop structure in the lower flood control channel eight miles upstream from the Bay (Richard Wetzig, Alameda County Public Works, pers. comm.).

These and other activities on Alameda Creek suggest the likelihood that there will be steelhead, and perhaps salmon, migrating upstream as far as SFPUC property in the not-to-distant future, well within the planning horizon of the Management Plan. Because of this probability, the threatened Central California steelhead trout (*Oncorhynchus mykiss*) should be listed in EIR Table III.E-3 with “moderate” or “high” potential to occur within the watershed, and their needs should be fully considered in the Management Plan and the EIR. The Management Plan and EIR should guarantee implementation of management actions that will:

1. Assure sufficient, appropriately timed, flows for fish passage through Alameda, San Antonio, and Calaveras creeks. Stream flow studies should be conducted to determine what flows are necessary, and should include an evaluation of necessary flows downstream.
2. Protect water quality to a level protective of target fish populations (including steelhead) and the vertebrates and invertebrates that support them.
3. Remove fish passage barriers where possible and provide adequate passage where barriers are required for operation of the water supply system.

¹ Nielsen, Jennifer L. and Monique C. Fountain. 1999. Microsatellite analyses of Alameda Creek rainbow/steelhead trout. Alaska Biological Science Center, Anchorage, Alaska. Report prepared for Applied Marine Sciences, Inc., Livermore, CA.

² Gunther, Andrew J., Jeffrey Hagar, and Paul Salop. 1999. [Draft] An assessment of the feasibility of restoring a viable steelhead trout population in the Alameda Creek watershed. Applied Marine Sciences, Inc., Livermore, CA and Hagar Environmental Science, Richmond, CA. Report prepared for the Alameda Creek Fisheries Restoration Work Group.

4. Prevent livestock from entering the creek or grazing within or too near the riparian corridor. Livestock cause extensive damage to fish and their habitat by trampling or smothering redds, altering stream flow levels, increasing sediment, etc. (see Item 3 below).
5. Support proper distribution of spawning gravels (frequently trapped behind dams) and provide “flushing” flows to move fine sediments from spawning beds.
6. Restore riparian habitat and stabilize the stream system, particularly through the Sunol Valley (see Item 2 below).

The Management Plan includes a few actions (fis1 through fis7) which will potentially benefit resident fish but which do not support anadromous fisheries. Also, none of these actions have been considered as possibly “required to reduce potential physical effects” of any of the potentially detrimental actions (EIR Tables III.E-4 through III.E-8) and, as mentioned above, there is no other assurance that they will be implemented. As a result, it would be inappropriate to consider these as adopted “mitigation measures” within the meaning of CEQA.’ Regional Water Quality Control Board)

Comment I-38: “Reclamation of the gravel-mining areas in the Sunol Valley should include measures to restore functions of Alameda and San Antonio creeks that support beneficial uses for fish and wildlife. This would include restoring geomorphic form and function to the creek (through reestablishing meanders, creating step-pools, or other methods) based on an analysis of the appropriate hydraulic geometry parameters, and establishing a protected riparian corridor and sufficient buffer zone.” (Regional Water Quality Control Board) [**Comment L-5**]

Comment I-39: ‘Central California Coast (CCC) steelhead and Central Valley steelhead (*Oncorhynchus mykiss*), Central Valley Spring-Run Chinook (*Oncorhynchus tshawytscha*) are listed as threatened under the Endangered Species Act (ESA) by the National Marine Fisheries Service (NMFS) and are likely to occur in the action area and need to be considered in developing this management plan. NMFS realizes that the comment period for this DEIR has expired, so the substance and not the specific language is addressed in these comments.

A review of the DEIR indicates that the Management Plan does not adequately address salmonid issues in Alameda Creek. While there are management actions to address fishery concerns, steelhead are specifically excluded with the statement, “Due to a downstream impoundment in Alameda Creek, this stream is not accessible to steelhead.” Steelhead currently exist below this impoundment and there has been an ongoing CDFG permitted fish transport past these barriers in the lower creek.

With regard to habitat above the impoundment, a recently released report by the Alameda Creek Fisheries Restoration Workgroup, of which SFPUC is an active participant, states that “Suitable habitat exists within the Alameda Creek watershed to support spawning and rearing of steelhead.” Additionally, the recently released NMFS Final Rule (65 FR 7764) has defined critical habitat for the CCC Steelhead in Alameda Creek to extend to San Antonio Reservoir and Calaveras

Reservoir. These dams are presently listed as the upstream extent because they currently are impassable barriers and block upstream passage.

In designating critical habitat, NMFS considers the following requirements of the species: (1) space for individual and population growth, and for normal behavior; (2) food, water, air, light, minerals, or other nutritional or physiological requirements; (3) cover or shelter; (4) sites for breeding, reproduction, or rearing of offspring; and, generally (5) habitats that are protected from disturbance or are representative of the historic geographical or ecological distributions of the species (see 50 CFR 424.12(b)). In addition to these factors, NMFS also focuses on the known physical and biological features (primary constituent elements) within the designated area that are essential to the conservation of the species and that may require special management considerations or protection. These essential features may include, but are not limited to, spawning sites, food resources, water quality and quantity, and riparian vegetation.

In accordance with the stated intent of the Management Plan to “. . . establish comprehensive policies and actions for managing the land and resources of the Alameda Watershed . . .”, NMFS encourages the SFPUC to expand the scope of the DEIR to more comprehensively address the management issues surrounding listed salmonids in the Alameda Watershed. The eventual recovery of these depleted populations depends on the efforts of federal, state, and local agencies working collectively to enhance the quality and increase the quantity of habitat required by listed salmonids to survive and recover to healthy, sustainable levels. A revised management plan would be the appropriate planning document to address salmonid issues in this watershed, and could make a significant contribution to this effort. Such a plan would help focus federal, state, and local resources needed to restore salmonids in the Alameda Creek watershed. Specific areas where the DEIR could be improved in this regard include: (1) address adequate stream flows to support juvenile and adult salmonids throughout the stream reach (2) protect water quality from cattle grazing and gravel mining operations, (3) protection and repair of riparian habitat, and (4) provide passage around or removal of fish passage barriers, (5) manage watershed operations to limit downstream impacts on critical habitat outside of the SFPUC Alameda watershed.’ (National Oceanic and Atmospheric Administration)

Comment I-40: ‘The presence of central California coast (CCC) steelhead, a Federally Threatened Species, is dismissed on page II.E-17. The report states: “Due to a downstream impoundment in Alameda Creek, this stream is not accessible to steelhead. Lower Alameda Creek contains a small population of steelhead, which is currently known to extend upstream to a barrier associated with the Bay Area Rapid Transit (BART) tracks in Fremont.” Table IX.B-2 lists steelhead trout as having a low potential to occur within the watershed. These assertions are incorrect.

The EIR needs to analyze the impacts of SFPUC management actions on CCC steelhead for the following reasons:

- Juvenile CCC steelhead are documented to already be present in upper Alameda Creek within SFPUC watershed lands;

- The best currently available science indicates that native rainbow trout in Alameda Creek within SFPUC watershed lands should be managed as part of the CCC steelhead population, and resident native rainbow trout below major dams have the ability to become anadromous steelhead;
- Ongoing fish transport efforts of CCC steelhead past barriers in the lower creek (under permit from the California Department of Fish and Game and the National Marine Fisheries Service, in cooperation with the East Bay Regional Park District and the Alameda County Flood Control District) have moved adult steelhead into Niles Canyon the past 3 winters, and will likely continue to move adult fish in the foreseeable future;
- Management agencies in the lower creek are pursuing funding and permits to construct fish passage facilities past barriers in the lower creek, to ensure long-term access for adult steelhead to the upper watershed. As the EIR addresses a 20 year management plan, CCC steelhead of all age classes are highly likely to continue to be present within SFPUC watershed lands during the time period analyzed by this EIR;
- The EIR needs to address and analyze the downstream impacts of SFPUC management actions on steelhead habitat. The impacts of dam operation, water diversions, cattle grazing, and gravel mining do not stop at the boundaries of SFPUC watershed lands.

Through its involvement with the Alameda Creek Fisheries Restoration Workgroup (Fisheries Workgroup), the SFPUC is well aware of steelhead restoration measures being proposed by management agencies which will allow steelhead to bypass the mentioned barriers in the lower creek, as well as ongoing efforts to transport adult steelhead attempting to migrate upstream past these barriers until fish passage structures are constructed. The SFPUC is also well aware that CCC steelhead are already present within Alameda Creek within watershed lands managed by the SFPUC, and downstream within stream reaches impacted by upstream land and water management actions undertaken by SFPUC. A feasibility study prepared for the Fisheries Workgroup has been released which documents and details steelhead restoration efforts in the creek. The SFPUC participated in preparation of this study, “An Assessment of the Potential for Restoring a Viable Steelhead Trout Population in the Alameda Creek Watershed” (Gunther et al. 2000).

The Fisheries Workgroup, which is a stakeholders group composed of representatives of all the management agencies on the creek, including SFPUC, is preparing to undertake restoration measures in the lower creek which will ensure that CCC steelhead have a high potential to occur within the watershed within the short-term and long-term framework of the proposed watershed management plan. If the report is indeed a “long-term regulatory framework for decision-making” as claimed by the SFPUC, and covers up to 20 years of implementation, then the impacts of management actions on CCC steelhead habitat should be analyzed on this basis alone.

At least 15 adult CCC steelhead have been moved over the barriers in the lower creek and into Niles Canyon since 1998. The East Bay Regional Park District, under permit from the California

Department of Fish and Game (CDFG) and the National Marine Fisheries Service (NMFS), is likely to continue to move adult migrants over these barriers until permanent fish passage facilities are constructed. Additionally, SFPUC is aware that over 250 juvenile CCC steelhead were restored to upper Alameda Creek within Sunol Regional Wilderness in 1998, with the approval of CDFG and NMFS.

Resident rainbow trout below major dams in the watershed may have ability to become anadromous steelhead. Genetic studies by a leading salmonid genetics expert (Neilsen 1999) which analyzed fin clips from returning adult steelhead in Alameda Creek in 1998 and 1999 showed that these fish were part of the listed CCC population. The over 250 fry referred to above were offspring of these CCC fish. Additionally, rainbow trout from numerous creeks within SFPUC watershed lands (Upper Alameda Creek, Indian Joe Creek, Pirate Creek, Welch Creek, and W-Tree Creek) were shown to have close genetic affinity with CCC steelhead. Dr. Jennifer Neilsen recommended managing for these trout populations as part of the listed CCC steelhead population (Neilsen 1999). Dr. Neilsen's report is attached as Appendix 1.

NMFS cites water diversions and mining as factors affecting the decline of the species (62 Federal Register 43937, at 43942). NMFS also considers the following activities very likely to injure or kill steelhead, which by July of 2000 (when the 4(d) rules go into effect) may result in a violation of 4(d) of the Endangered Species Act (64 Federal Register 73479):

- “physical disturbance or blockage of the streambed where spawners or redds are present concurrent with the disturbance...from creating push-up dams, gravel removal, mining, or other work within a stream channel, trampling or smothering of redds by livestock in the streambed”;
- “blocking fish passage through...dams...”;
- “water withdrawals that impact spawning or rearing habitat”;
- “land-use activities that adversely affect salmonid habitat (e.g. ...grazing...)”; and
- “pesticide and herbicide applications that adversely affect the biological requirements of the species.”

The potential impacts of SFPUC management actions on CCC steelhead and their habitat in Alameda Creek and its tributaries, including impacts from dams, water capture and diversion, cattle grazing, gravel mining, and pesticide use need to be analyzed, and the significant impacts avoided or mitigated. This has not been done.’ (Alameda Creek Alliance)

Comment I-41: ‘The SFPUC needs a fisheries management study to analyze the impacts of the dams on fisheries downstream and mitigate for any significant impacts. SFPUC’s own study of the stream reach of Alameda Creek from Calaveras Dam to Sunol Water Treatment Plant determined that the “primary factors affecting creek ecology in this area are therefore grazing and the historic reduction in the water supply due to Calaveras Dam. Reduction in the water supply

has resulted in insufficient flow to keep water temperatures within an acceptable range for trout in many parts of this reach”; and that “Probably the most serious problem limiting a trout fishery in the study area is the lack of sufficient stream flow resulting from the construction of Calaveras Dam.” (Bookman-Edmonston 1995D). SFPUC dams divert the majority of the natural stream flow in Alameda and Calaveras Creeks. As a result, many of the downstream reaches are no longer perennial and have higher water temperatures than historical conditions. As mentioned above, the timing, duration, and volume of water releases can have significant impacts on the ability of steelhead and red-legged and yellow-legged frogs to survive downstream. Steelhead need suitable flows to complete all of their life-cycle - for spawning, rearing, and migration. SFPUC needs to analyze and mitigate for the impact of its dams on special-status species downstream.

Inadequate flows below SFPUC dams and diversions constitute a potential violation of California Fish and Game Code 5937. Fish and Game Code 5937 reads:

5937. Passage of Water Through Fishway or Over Dam For Fish Below Dam

The owner of any dam shall allow sufficient water at all times to pass through a fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in good condition any fish that may be planted or exist below the dam. During the minimum flow of water in any river or stream, permission may be granted by the department of the owner of any dam to allow sufficient water to pass through a culvert, waste gate, or over or around the dam, to keep in good condition any fish that may be planted or exist below the dam, when, in the judgement of the department, it is impractical or detrimental to the owner to pass water through the fishway.

The SFPUC needs to ensure compliance with 5937. Flow release from Calaveras Reservoir to benefit trout populations downstream are planned by SFPUC, under the terms of a Memorandum of Understanding signed with CDFG. The SFPUC needs to begin these flow releases immediately.’ (Alameda Creek Alliance)

Comment I-42: ‘The EIR acknowledges that Niles and Sunol Dams may block upstream steelhead migration if fish are able to surmount downstream barriers (page III.E-1). These dams may also block migration of Pacific lamprey. As noted above, adult CCC steelhead have already bypassed the downstream barriers during the last 3 years with human assistance and are highly likely to be able to bypass them in the near future due to the planned construction of fish passage facilities. Neither dam has a functioning fish ladder. The maintenance of these dams in their current condition is an SFPUC management action which meets the significance criteria of having a substantial adverse impact on a threatened species, as they substantially interfere with the migratory corridor of native fish.

These dams may also violate California Fish and Game Code 5901, which makes it unlawful to prevent or impede fish passage upstream or downstream. Fish and Game Code 5901 reads:

5901. Prevent or Impede Fish from Passing in Streams: Unlawful

Except as otherwise provided in this code, it is unlawful to construct or maintain in any stream in Districts 1, 1 ½, 2, 2 ½, 2 ¾, 3*, 4, 4 ½, 23, and 25, any device or contrivance which prevents, impedes, or tends to prevent or impede, the passing of fish up and down stream.

* SFPUC watershed lands and Alameda Creek are in District 3.

These dams may also soon violate section 4(d) of the Endangered Species Act (ESA). The National Marine Fisheries Service has proposed 4(d) rules for threatened steelhead which would consider blocking fish passage through dams or impassable culverts illegal “take” of the species (64 Federal Register 73479).

SFPUC considers these structures to be “attractive nuisances”, in that they draw people who trespass, swim, drink alcohol, and leave behind trash and graffiti, and pose a potential liability risk for the SFPUC. They currently serve no purpose for water supply or infrastructure for the SFPUC. The SFPUC has expressed interest in removal of these structures and has produced a cost estimate for this (previous from Josh Milstein, City and County of S. F., pers. comm. 1999). The Alameda Creek Alliance has proposed removal of these structures to the SFPUC. Removal of these dams, allowing steelhead and lamprey to migrate upstream to spawning and rearing habitat would promote the SFPUC’s stated primary goal of maintaining and improving source water quality by meeting policy WQ 27 (which is to prohibit swimming and body contact activities), would promote the stated secondary goal of protecting and enhancing aquatic resources by meeting policies AR1 (which is preserving biodiversity) and AR2 (which is protecting special-status species), and would promote the stated secondary goal of promoting safety and security by meeting policy S3 (which is reducing the likelihood of a dangerous condition liability).

Not analyzed in the EIR are the impacts of Calaveras, San Antonio, and Upper Alameda Creek Diversion Dams as barriers to steelhead and other anadromous fish migration. These dams will definitely block upstream steelhead and lamprey migration when fish are able to bypass barriers in the lower creek. Although removal of these dams has not been proposed, SFPUC needs to analyze and mitigate for the impact of these dams on steelhead. These dams block access to best historic spawning and rearing habitat in the watershed. The maintenance of these dams in their current condition is an SFPUC management action which also meets the significance criteria of having a substantial adverse impact on a threatened species, and substantially interferes with the migratory corridor of native fish. These dams may also violate California Fish and Game Code 5901 and section 4(d) of the ESA.

The maintenance of Calaveras, San Antonio and Upper Alameda Creek Diversion Dams by the SFPUC is an ongoing management action which results in barriers to genetic interchange between steelhead/rainbow trout populations in Alameda Creek, except during reservoir spills. It is well documented that landlocked descendants of the original steelhead run in Alameda Creek

persist above both dams. These dams prevent genetic interchange between these fish and rainbow/steelhead trout populations in upper Alameda Creek and its tributaries below the dams. This is contrary to the SFPUC stated secondary goal of protecting and enhancing aquatic resources, through policy AR1 (which is to conserve the biodiversity, genetic integrity, and habitat of aquatic resources). The SFPUC needs to analyze this impact to determine if it meets the significance criteria, and if so, to mitigate for this ongoing management action.’ (Alameda Creek Alliance)

Comment I-43: “SFPUC maintenance of Calaveras, San Antonio, and Upper Alameda Creek Diversion Dams all block to some degree the recruitment of spawning gravels downstream of the dams. Steelhead/rainbow trout need suitable gravels for successful spawning and emergence of fry. This is an ongoing management action which potentially meets the significance criteria, in that it adversely affects the habitat of threatened steelhead/rainbow trout. SFPUC needs to analyze and mitigate for this potential impact on trout habitat.

SFPUC maintenance of Calaveras, San Antonio, and Upper Alameda Creek Diversion Dams all block to some degree the recruitment of woody debris in the stream reaches downstream of the dams. Steelhead/rainbow trout need woody debris in the stream for cover and development of deep pools. This is an ongoing management action which potentially meets the significance criteria, in that it adversely affects the habitat of threatened steelhead/rainbow trout. SFPUC needs to analyze and mitigate for this potential impact on trout habitat.” (Alameda Creek Alliance)

Comment I-44: “SFPUC storage of peak winter flows behind Calaveras and San Antonio Dams, and diversion of flows behind Upper Alameda Creek Diversion Dam prevents to some degree periodic scouring of the stream channel reaches downstream necessary to maintain healthy habitat for steelhead/rainbow trout. Due in large part to water capture behind these dams, and lower than historic flows below the dams, the system is unable to move sediment downstream as efficiently, which tends to eliminate spawning habitat and can smother trout eggs and fry. Without periodic scouring flows, spawning gravels can become significantly embedded with fine sediment. This is an ongoing management action which potentially meets the significance criteria, in that it adversely affects the habitat of threatened steelhead/rainbow trout. SFPUC needs to analyze and mitigate for this potential impact on trout habitat.

Diversion of flows from Alameda Creek by the Upper Alameda Diversion Dam and detention of water in Calaveras Dam may impact upstream fish passage in the Sunol Valley and in the Little Yosemite areas of Alameda Creek. The SFPUC also needs to analyze whether sufficient flows are being provided downstream of the dams for successful out-migration of steelhead smolts.

Flows below the reservoirs can impact the extent of riparian vegetation. Sufficient flows for healthy riparian zones is important, especially with the impacts of cattle grazing. Insufficient flows can potentially impact riparian-dependent species such as steelhead, frogs and salamanders, and the cuckoo.” (Alameda Creek Alliance)

Comment I-45: “The EIR states that Alameda Creek is not accessible to CCC steelhead. As noted above, this is incorrect, and there are also downstream impacts of the quarrying operations that have not been analyzed. As noted above, mining of the current leases and the proposed expansion will alter surface flows and ground water in a manner likely to be harmful to CCC steelhead. The stream will dry out sooner in the spring and begin flowing later in the fall, impairing migration, rearing, and possibly breeding of steelhead. These impacts are not limited to the footprint of the mines, as they have the potential to impact hydrology both upstream and downstream of the quarries. CCC steelhead/rainbow trout are currently known to migrate, spawn, and rear in nearby Pirate Creek, and are currently known to migrate and possibly rear in Niles Canyon downstream. SFPUC has not surveyed the creek for current spawning, rearing or migration of CCC steelhead/rainbow trout in the area of the quarries, nor analyzed the potential impacts of quarrying on CCC steelhead habitat. CCC steelhead/rainbow trout potentially could migrate, spawn, and rear in the portions of Alameda Creek adjacent to the quarries in the near future. Discharge from the quarries contributes sediment to the creek (sometimes in excess of legal limits, as noted below), posing the risk of smothering or silting any trout redds downstream. None of these potential impacts has been analyzed.” (Alameda Creek Alliance)

Comment I-46: “However, what stood out most for me, has been omitted in the inadequate analysis of the impact on special-status species. So, I’d like to go into a few of those.

First, is steelhead trout, and the EIR dismisses any discussions of steelhead trout by asserting that the current run stops at the BART. Those refer to the lower creek. This is not the case.

Basically, the four reasons why steelhead trout impact this should be analyzed in this EIR. The first is that we know for a fact that juvenile steelhead trouts which is part of the list of the Central Alameda Creek is documented to already be present in upper Alameda Creek and as well, is we put them there in 1998. Still, we’re asking they should be managed as part of the CCC steelhead population for below BART by the fifth grade Pleasanton class.

Under permit from the California Department of Fish and Game and the National Marine Fisheries Service and as of 1998, there were over 250 juvenile central California coast steelheads within SFPUC watershed.

The second issue is that the best, currently available science indicates that native rainbow trout in Alameda Creek ought to be considered and managed as part of the central California coast steelhead population.

And I’m basing this on genetics analysis by Dr. Jennifer Neilsen on the west coast. She analyzed clips from the returning steelheads and she, during the last few years, compared those to other genetic types on the west coast and compared them to fin clips from the returning adult steelhead in the upper watersheds below major dams.

And her conclusion is that those two, the adults and the natives were similar and they are central California coast steelhead. And her recommendation, which is that rainbow trout and water trout should be managed as central California coast steelheads.

Third. The third reason is that there's, you know, efforts -- in fact, we moved, last week, adult steelhead over in the lower Niles Canyon. These are permits from Fish and Game, cooperation of the East Bay Regional Park District and the Alameda County Flood Control District. There's an ongoing policy to transport adult steelhead upstream into the lower Niles Canyon Road where the tension can be within and certainly are influenced by management actions, and the SFPUC watershed rules.

The major reason though is, as Jim pointed out, this is a 20 year plan and there's currently management agencies in the lower creek pursuing some fundings and permits to build fish passages facilities past a number of barriers in the lower creek and there's a few of the community release basically and this pretty much ensures that adult steelhead has access to the watershed in the foreseeable future, certainly in the next 20 years." (Jeff Miller – Pleasanton Public Meeting)

Comment I-47: "For more than 50 years, this creek has been abused, devastated, damned, dug, killed by cities, counties, water departments and residents.

As the Alliance has gone in, we have cleaned out tons of junk. This creek has every right to be dead, but it's not. This creek is still alive. It's head water teem with trout.

Have you ever seen a steelhead trying to get up this creek. I brought a few pictures. I know the Court Reporter can't record them, but I thought maybe you would be interested in what an Alameda Creek steelhead looks like. These were captured last year.

For more than two years now, we have been working to restore this creek. The cities don't care about it. The City of San Ramon didn't even know San Ramon Creek ran into Alameda Creek.

They thought it went north when they did their plan of the Circle Ranch development. The chief planner felt the same, until she was informed differently. The other cities use it as an open drainpipe, and as long as it doesn't cost them money, they're happy. The gravel company uses it as a source of profit. The water departments take its lifeblood. The cattle tromp in and around. This stream can be restored. It needs to be addressed in EIR.

One of the primary goals of this water shed management is the preservation of this stream. This is a 20 year plan you're working on. It makes no provision for a fish at the BART structure, it just says the fish has to stop there. The fish ladders can be built. The damage can be undone, and I would ask your help in addressing this." (James Levy – Pleasanton Public Meeting)

Comment I-48: "I am concerned that the two EIRs noted above do not address wildlife (particularly wild steelhead trout) needs in either the San Mateo Creek and lower Pilarcitos Creek

watershed downstream from Crystal Springs reservoir or in the Alameda Creek Watershed downstream and upstream from the Alameda SFPUC impoundment.

I strongly support the comments submitted by Richard Izmirian on behalf of several California conservation organizations and fly fishing clubs.” (Tripp T. Diedrichs)

Response: As noted above, many comments were received regarding potential impacts to anadromous fisheries, particularly steelhead, within the project area. The DEIR states that “...healthy populations of resident rainbow trout are landlocked behind the Watershed dams” (DEIR page III.E-1). The DEIR also points out that although resident rainbow trout and steelhead are related forms of the same species, the resident rainbow trout are not part of the population listed as threatened. The DEIR further points out that “due to a downstream impoundment in Alameda Creek, this stream is not accessible to steelhead” (DEIR page III.E-17). These conclusions are verified in the recently completed *Assessment of the Potential for Restoring a Viable Steelhead Trout Population in the Alameda Creek Watershed*. This document was developed by the Alameda Creek Fisheries Restoration Workgroup (Workgroup) to assess the potential of restoring the steelhead population in Alameda Creek and identify actions that would need to be taken to begin restoration. The document notes that while suitable habitat exists within the Alameda Creek watershed to support spawning and rearing of steelhead, this habitat is in upper Alameda Creek. The Sunol Valley is characterized in the Workgroup’s document primarily as a migratory corridor. This is due to permeable channel conditions, which causes water to percolate into the shallow alluvium and brings about water levels that are often too shallow for spawning and rearing. These natural conditions have also contributed to a historical lack of natural riparian habitat.

Some comment letters discuss ongoing operations of the SFPUC, some of which have resulted in less surface water flowing downstream of the SFPUC’s dams. Many Management Plan actions are designed to lessen the impact that operation and maintenance practices might have on the environment. Beyond these actions, the Management Plan does not and is not intended to address or change ongoing operation of the water supply facilities within the Watershed. CEQA requires examination of a project’s potential impacts on the existing environment, defined in CEQA Guidelines Section 15125(a) as the baseline physical conditions extent at the time the notice of preparation was issued. Although CEQA does not require analysis of a project’s possible impacts upon future potential environmental restoration projects, there is no evidence that implementation of the Management Plan would significantly impede efforts to restore anadromous steelhead to the Alameda Creek watershed. Nor would Management Plan implementation adversely impact existing reservoir populations of resident rainbow trout. Management Plan Action fis1 (maintain access for fish species of concern from reservoirs to upstream spawning grounds) and other proposed Fisheries actions are designed to benefit this species. The potential for restoration of viable anadromous steelhead populations in the Watershed is recognized and supported by the SFPUC. Certain changes are being proposed by the SFPUC as a separate project to assist steelhead restoration efforts, as described below.

As discussed on DEIR page III.P-3, the SFPUC intends to implement the Alameda Fisheries Enhancement project, which will result in greatly improved rearing habitat for steelhead. This project was designed in part to address the issue of water releases from SFPUC reservoirs. Participation in this project may change current practices (i.e., the potential removal of Niles and/or Sunol Dams). However, the impacts of those changes would be addressed at the time these changes are proposed. The Alameda Fisheries project (the “rubber dam” project) will be the subject of an EIR to be released later this year. Neither the Management Plan nor the EIR attempts to address barriers to fish migration that are owned and operated by others (e.g. the BART structure).

The SFPUC has been participating as part of the Alameda Creek Steelhead Restoration Workgroup. The SFPUC has committed resources to fund studies of water supply operational scenarios designed to create better conditions for an anadromous steelhead run. The Workgroups current estimate for removal of the lower Alameda Creek barriers is fall of 2003; the SFPUC’s Niles and Sunol dams could be removed or modified by that time, following appropriate environmental review. The SFPUC adopted Resolution No. 00-0076 on February 29, 2000 that directs staff to continue to participate in Workgroup discussions in a constructive fashion consistent with the needs of its water customers and larger environmental concerns, expeditiously develop appropriate recommendations related to options and costs addressing possible restoration of an anadromous steelhead run to the Alameda Creek watershed in a manner consistent with the continued reliable supply of water to the SFPUC service area, and undertake the necessary steps required to define a project to remove or modify Niles and Sunol Dams and proceed with the project as soon as possible following identification of funding and appropriate environmental review.

Since publication of the DEIR, the National Marine Fisheries Service designated Critical Habitat: Critical Habitat for 19 Evolutionarily Significant Units of Salmon and Steelhead in Washington, Oregon, Idaho, and California (February 16, 2000). This designation includes establishing minimum riparian zone widths for maintaining specific riparian functions (e.g., sediment control and large woody debris recruitment) and overall watershed processes. The designation notes that riparian zones in the range of 30 meters (98 feet) appear to be the minimum needed to maintain the biological integrity of stream elements. The designation also notes that site-specific conditions may warrant substantially larger or smaller riparian management zones. This recent National Marine Fisheries Service regulation may require federal agencies to consider habitat impacts in the event that the SFPUC needs a 404 permit or other federal entitlement (Section 7 consultation) within the boundaries of critical habitat. If there is no federal involvement, the SFPUC might be required to do a Section 10 consultation with the National Marine Fisheries Service for future projects in the area. As has been described in the DEIR and in this document, riparian habitat in Sunol Valley proper is limited because of percolation of surface water into the shallow aquifer and rocky conditions.

As required by CEQA, this EIR does not analyze impacts from past and ongoing permitted mining operations, which constitute the environmental baseline setting, but rather analyzes potential impacts of future mining entitlements called for under the Management Plan

(i.e., SMP-32 and changes in permitted mining operations south of I-680). It is unlikely that mining under future entitlements would impact steelhead habitat since mining would not occur in the limited riparian zone (as described above) and mining operations would not affect flows in the creek. The only activity proposed in or around the creek would be the placement of a portable conveyor belt under the freeway, which would be removed during high flows and would not constitute a barrier to fish migration. The conveyor would not interfere with fish migration or other activity at other times of the year because it would not be within the water channel where it could interfere with fish in-or-out migration. In addition, various SMP-32 permit conditions are designed to prevent impacts to Alameda Creek, including construction of a continuous slurry wall to direct groundwater around the site toward the creek channel. Notwithstanding the lack of substantial evidence that any significant impacts from future mining would occur to Alameda Creek and its existing or potential resources, the possibility of such impact cannot be ruled out at the program level. Therefore, a mitigation measure has been added to address possible hydrologic impacts from mining (see the response to Comments H-7 through H-10 in Section II.H). The mitigation measure would require a resource study, specifically including examination of measures to avoid impacts to steelhead trout (if established) as well as other resources, and incorporation of all feasible mitigation measures into future surface mining permits and mining lease conditions of approval.

Comment I-49: “The DEIR describes the Memorandum of Understanding (MOU) between the Department and the SFPUC incorrectly by stating that the purpose is to establish a fish release. One purpose of the MOU is to establish a water release from Calaveras Reservoir, not a fish release. This should be corrected in the DEIR.” (California Department of Fish and Game)

Response: In response to this comment, text on DEIR page II-21, paragraph 2 has been revised:

1.0 ALAMEDA CREEK WATER RESOURCES STUDY

The *Alameda Creek Water Resources Study* (ACWRS) was developed to investigate the conditions of Alameda Creek, particularly with respect to fisheries enhancement. The ACWRS was completed in January 1995 and was not prepared as part of the *Alameda Watershed Management Plan*. However, the goals of the ACWRS and the Management Plan were coordinated, and the recommendations set forth in the ACWRS were developed to consider the broad goals of the Management Plan. The ACWRS resulted in the establishment of a Memorandum of Understanding (MOU) with the California Department of Fish and Game (CDFG). The MOU obligates the SFPUC to move forward with the recommendations for establishing a ~~waterfish~~ release and recapture facility for fisheries enhancement along Alameda and Calaveras Creeks between the Calaveras Dam and the vicinity of the Sunol WTP. The project-level description, construction information, and other critical details are being developed. Separate environmental review will be prepared for this project.

3.0 RIPARIAN AREAS

Comment I-50: “Sedimentation – The Management Plan should include actions to achieve long-term stability of the creek system through enhancing and supporting natural processes. A step in this direction would be to implement a watershed analysis that examines upland and instream stressors to stream stability. A stable system will require less active sediment management, will distribute appropriate sized sediments where they are needed for fish spawning, and will provide for the storage, transport and exchange of sediment and water while minimizing excessive bank erosion, channel incision or excessive aggradation. The watershed plan should include recommended best management practices for activities likely to impact creek stability.” (Regional Water Quality Control Board)

Comment I-51: “Stream Rehabilitation –Bioengineering techniques should be considered wherever possible for rehabilitation of shoreline areas (actions aqu5-aqu7). We also recommend that training in these techniques be provided under action sta6.” (Regional Water Quality Control Board)

Response: The recommendation to use bioengineering techniques is noted. The Management Plan includes actions to reduce sedimentation and protect water quality (aqu6, aqu7, aqu8) and thus to protect riparian corridors. Due to the nature of the shallow alluvium in this area (as discussed above), there is evidence that the Sunol Valley never supported substantial riparian habitat. It should also be noted that the Management Plan proposes selective improvements in watershed management.

Actions and studies recommended by commentors could be considered by the SFPUC in periodic reviews and updates of the Management Plan, but are not proposed at this time, nor analyzed in this EIR.

4.0 INVASIVE PLANTS AND WILDLIFE

Comment I-52: “Page III.E-23 of the EIR notes a concern about the potential impacts of non-native vegetation on the larval host plant for Callippe silverspot butterfly, which is violet (*Viola pedunculata*). This is one plant that favors sites which have natural low productivity or where competition with non-native grasses are reduced by active vegetation management. When management is removed from such sites, violets and other herbs are usually out competed by taller and faster growing non-native grasses.

In contrast to statements in the EIR, we have also found that serpentine areas are in many instances resilient to invasion by non-native vegetation. Very few non-native plants are adapted to the harsh edaphic conditions that occur in serpentine derived soils.

Feral pig populations have been dramatically increasing in numbers and range within Alameda County. They are likely abundant within the Alameda Watershed. Pigs forage within wetlands, floodplains and along shoreline habitat on the available green forage. They regularly wallow

within wet and muddy areas along reservoir shorelines. There is a high potential for an increase in the amount of pig feces into the reservoirs, a source of *Cryptosporidium* and *Giardia*, as the pigs increase their use of the shoreline habitat. This is a potentially significant impact that was not adequately evaluated in the EIR.

Red fox populations have also been dramatically increasing in numbers and range within Alameda County. They have been observed on Calaveras Road, Interstate 680 and at Pleasanton Ridge. They are likely present at other locations within the Alameda Watershed. Because they may prey upon other listed species in the Watershed, the EIR should evaluate measures to control this problem species.” (East Bay Regional Park District)

Response: The comment regarding invasive plants and wildlife within the Watershed is noted. The comment does not have specific reference to Management Plan actions or impacts but rather provides some information about existing conditions.

J. AIR QUALITY

Comment J-1: “Chapter III F Air Quality page III F-7 first paragraph – The sentence regarding citations should be corrected to read as follows: ----- Mission Valley Rock Company has received a total of three Notices of Violation (NOV) in the past five years. BAAQMD records show that Mission Valley Rock Company received two NOV’s for excessive particulate emissions and one NOV for exceeding through put limit in the past five year period.” (Mission Valley Rock Company)

Comment J-2: “The EIR notes a review of records indicating that both leaseholders for quarrying on SFPUC lands have violated their air quality permits over the last five years (page III.F-7). RMC Pacific Materials was cited for 2 permit violations in 1994, and Mission Valley Rock Company had 15 violations, 10 of which were in 1993. ... How can the SFPUC be considering expansion of quarrying leases, let alone continuation of existing leases to leaseholders which violate the terms of their permits and the terms of their leases (which require compliance with all permits)?” (Alameda Creek Alliance)

Response: In response to these comments, and based on an additional records search, text on DEIR page III.F-7 has been revised as follows:

Sources of Air Pollutants and Air Quality Violations

Quarries have been operating within the Alameda Watershed since the 1950s. The SFPUC currently has two major leases for quarries, with all of the current operations confined to areas south of I-680. A total of 750 acres of Watershed land are leased to Mission Valley Rock Company, while 300 acres are leased to RMC Pacific Materials (formerly RMC Lonestar). Both of these mining operations are subject to BAAQMD permitting. BAAQMD Compliance Division records were reviewed for air quality violations ~~that may have occurred over the past five years~~. Records indicate that **between January 1, 1994 and February, 2000, RMC Pacific Materials was cited for two violations of its Permit to Operate in 1994. Both violations occurred on April 27th, 1994 and were issued for equipment or stockpile conditions, rather than an emissions violation. Between February, 1993 and February, 2000, Mission Valley Rock Company was cited for a total of 1513 violations in the last five years, ten of which occurred in 1993. None of the violations occurred on lands leased to Mission Valley Rock Company by SFPUC. Four of the violations involved visible emissions due to equipment failures or operator error. The Mission Valley Rock Company remaining violations were for have ranged from failure to meet BAAQMD permit conditions (i.e., Permit to Operate and Authority to Construct permit requirements), exceedances of established throughput limits (five violations), lack of permit (two violations), or visible emissions limits, and violations of closed container requirements for diesel fuel (one violation), and lack of production record (one violation).** Records show that each of these violations has been addressed.

Other sources of air pollutants in the project area consist primarily of mobile sources, automobiles in particular. No other significant sources of odors or toxic air contaminants currently exist or are planned in the project vicinity.

Comment J-3: “The impact on the newly restored Water Temple. Dust will destroy the work now being done to the Water Temple finish.” (Maryanne Canaparo)

Comment J-4: ‘The health and safety issues for the children and teachers that attend Sunol Glen Elementary School. The mitigation’s provided in the Alameda County EIR regarding dust emissions are not adequate in preventing increased air pollution for the children and the school located nearby. The Valley air currently causes enough problems with allergies and asthma that affects many of the children presently attending Sunol Glen school. “Conditions of approval from the SMP-32 include the use of chemical dust suppressants that could increase dust control efficiency.” Great news – another chemical in the air!!! “The conditions of approval also require that particulate emissions be minimized by scheduling activities when soil moisture is greatest and by ceasing activities during periods of high wind.” Page III.F-14. Who will monitor this? Do you really believe this will occur? This proposed operation can have very serious consequences to the children adjacent to this operation that may affect them for the rest of their lives.’ (Maryanne Canaparo)

Comment J-5: “It [mining] will produce...unhealthy dust particles into the air close to our school where our children will be adversely affected.” (Patricia Stillman – Pleasanton Public Meeting)

Response: Mining activities north of I-680 would be located closest to the Sunol Water Temple and the Town of Sunol. The distance from the mining area closest to the Sunol Glen School is about 1,260 feet, the distance to the school playyard is about 930 feet. The type of mining excavation proposed is associated with a low level of dust emission because operations occur in a wet condition. The EIR prepared for SMP-32 indicated that with emission controls, the operations could generate an average of approximately 85 pounds of particulate per day, which is less than the BAAQMD significance threshold of 150 pounds per day. The majority of dust emission associated with mining activities is associated with plant operation and truck transport of raw and refined materials. However, under the proposed project, excavated material would not be transported to the existing processing plant by truck, but by a conveyor belt. The existing processing plant is located south of I-680, further away from the Sunol Water Temple and the Town of Sunol. As noted on DEIR page III.F-7, mining operations are subject to BAAQMD permitting. The BAAQMD is responsible for monitoring mining operations, and issuing air quality violations, if found.

The Alameda County SMP-32 conditions of approval require several measures specifically related to air quality. These conditions are repeated in this document for informational purposes, to address the ongoing concerns about dust and other air quality issues:

Condition 61. Measures shall be taken to reduce dust emissions to the maximum extent possible. In addition to using water as a dust suppressant, other measures shall be used if practicable, such as commercially available dust suppressants, and temporarily halting stripping activities during high wind periods that create a visible dust plume. Permittee shall describe measures undertaken in each Annual Report furnished to the Director of Public Works and Bay Area Air Quality Management District.

Condition 62. Adequate soil moisture shall be maintained in all activity areas within the site or watered to reduce dust to an insignificant level, as determined by the Director of Public Works and Bay Area Air Quality Management District.

Condition 63. All surface mining operations emitting smoke, vapors, dust and other airborne contaminants shall be provided with all necessary control measures and devices as required by the Director of Public Works, Alameda County Health Care Services Agency and the Bay Area Air Quality Management District to prevent the occurrence of nuisance and undue pollution of the air.

Condition 64. If, at any time, high wind or dry weather create potentially hazardous conditions on surrounding roads and highways or in the town of Sunol as a result of windblown dust from the site, the causative activity must cease and corrective measures must be taken. Adequate water and equipment shall be maintained on-site for this purpose. The event must also be reported to the California Highway Patrol and the County Planning Department and Public Works Agency within 48 hours.

Condition 65. Permittee shall maintain all quarry-operated equipment in accordance with manufacturers' recommendations to reduce exhaust emissions from heavy equipment and haul trucks.

Condition 66. Permittee shall ensure that the quarry conforms to all requirements of the Bay Area Air Quality Management District, and shall document compliance as part of the Annual Report.

Condition 67. If complaints about off-site dust are received by the County, an investigation shall be conducted to determine whether a reasonable nuisance or hazard exists, if the SMP-32 quarry and/or surrounding buffer lands on the project site is the cause of the dust, and, if so, what corrective actions are required to correct the problem. Permittee shall comply with the decision of the Planning Director regarding the appropriate corrective action, which may include but is not limited to changes in the method of operation, hours of operation, or other elements of the project.

The practicable use of chemical dust suppressants, in addition to use of water, was required as SMP-32 Condition 61 (see above) by Alameda County to control particulate emissions from on-site vehicle travel on unpaved roads. RMC Pacific Materials indicates that chemical dust suppressants have not been used at their Sunol mining facility. If a chemical suppressant were

used, the suppressant would be “Dust Off Anticorrosive Dust Suppressant,” a non-hazardous salt-metal based (magnesium chloride and magnesium sulfate) product, or an equivalent product. Potential health effects of this product are associated with ingestion of large amounts (gastrointestinal upset and irritation of the stomach). The mist of this chemical may cause slight irritation of the nose, but inhalation is considered an unlikely entry route. Given that this suppressant is not frequently used, the distance of the mining area from the Town of Sunol, and the low level of potential health effects associated with this product, the potential health impact on the students at the Sunol Glen School and residents of the Town of Sunol would be less than significant.

While Sunol residents’ concerns are understandable, the data and analysis indicated that the actual air quality effects will be less than significant and no new evidence or information has been received that would warrant reanalysis of SMP-32 air quality issues.

K. GRAZING

Comment K-1: “Livestock Grazing – Research has shown that the environmental impacts from livestock grazing in and near streams can be serious and far-reaching¹. The Management Plan includes several actions that would help to reduce these impacts if the actions are implemented. However, we note that the primary motivations for implementing the grazing actions are reducing the risk of viable pathogen discharges and ensuring control of vegetation growth, apparently for fire control. There are many other important reasons that grazing should be managed to protect the creeks and the riparian areas. For example poorly managed grazing denudes the stream banks, compacts soil, causes erosion, and increases water temperature. Trampling within the streambed causes widening and deepening of the streambed, increases siltation, decreases dissolved oxygen, damages spawning beds, and destroys fish eggs and redds. All of these conditions directly impact the beneficial uses of Waters of the State. We strongly recommend implementation of environmentally protective grazing management methods that restrict cattle and other livestock from creeks and riparian corridors, and that reduce erosion, compaction and devegetation of nearby lands.” (Regional Water Quality Control Board)

Comment K-2: ‘Under the Land Use section regarding grazing (page III.B-11) the DEIR states that “implementation of the management plan would reduce historic grazing levels by more than 50%.” However, the DEIR only refers to the Alameda Watershed Grazing Resources Management Element and does not provide any description of how this reduction will occur. If implementation of the Management Plan would reduce grazing, which has significant and long-term resource impacts, then the DEIR should describe the grazing plan and impacts associated with it, including but not limited to, erosion, introduction of exotic species, vegetation damage, etc.’ (California Department of Fish and Game)

Comment K-3: ‘The District has previously submitted comments on the Grazing Resource Management Plan (GRMP). In particular, we are concerned about how the GRMP and the Watershed Plan may affect existing grazing leases and vegetation management in the Watershed. While many of these issues are addressed in the GRMP, they are not thoroughly addressed in the Watershed Plan or subject EIR. As previously noted in this comment letter, potential changes in land uses, such as livestock grazing, should be evaluated against existing environmental conditions and not against the historical conditions in the Watershed. The EIR also should consider the following concerns:

- The EIR on pages III.E-14 and 16 notes the value of annual grassland and grazed pasture land as important wildlife habitat, although the distinction between “annual grassland” and “grazed pasture land” is unclear. The EIR on the one hand attributes a decline in wildlife diversity to livestock grazing, then takes the position that annual grasslands that have been grazed for the past 200 years are good wildlife habitat. These two conflicting positions should be reconciled.

¹ Belskey, A.J., A. Matzke, and S. Uselman. 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States. *J. Soil and Water Conservation* 54(1)419-431.

- The contention on page III.E-1 that “grazing has had a tremendous effect on ecological resources” is later contradicted on page III.E-35 of the EIR which states that “the Grazing Resources Element of the Management Plan would significantly ... enhance ecological resources” without explaining how (emphasis added).
- The EIR should address how livestock grazing and other vegetation management methods can be used to maintain a balance between the non-native vegetation and the native plant species that remain, given changes in the flora that have occurred as a result of human settlement.
- The EIR should provide a discussion about the changes in plant composition, fuel loading, and wildlife populations that would result if grazing were eliminated or severely reduced.
- The EIR correctly notes on page III.G-8 that absent livestock grazing, other, far more costly management methods would need to be employed to meet the vegetation management objectives. Besides significantly increased costs, the EIR should evaluate the feasibility of actually implementing some of these other methods over 30,000 plus acres of Watershed lands.
- The EIR should include a discussion of the adverse and beneficial effects of grazing and other vegetation management techniques on special-status plant and animal species. Such a discussion is predicated by the need for more field surveys to document the presence and extent of special-status species within the Watershed.
- The EIR discusses the *Cryptosporidium* issue as it relates to livestock, but does not acknowledge that wildlife are also carriers which may adversely affect water quality.’ (East Bay Regional Park District)

Comment K-4: “Livestock grazing receives remarkably little discussion in the DEIR, referring instead to a plan adopted in 1997. In spite of this plan, cattle are still wallowing and defecating in our drinking water, destroying riparian habitat and canopy, collapsing banks, silting stream beds, and generally degrading stream habitat and water quality for fish, humans, and other species. Elimination of cattle in the SFPUC owned lands would significantly address the primary goal of the management plan: maintain and improve source water quality to protect public health and safety. Removing cattle would also support secondary goals of maximizing water supply, preserving and enhancing the ecological and cultural resources of the watershed, and providing educational, recreational, and scientific uses.” (California Sportsfishing Protection Alliance and the Northern California Council/Federation of Fly Fishers)

Comment K-5: “SFPUC maintains cattle grazing leases on the majority of its Alameda Creek watershed lands. Habitat degradation due to grazing has potentially significant impacts on listed aquatic and riparian-dependent species within the watershed such as steelhead/rainbow trout, Pacific lampreys, Foothill yellow-legged and California red-legged frogs, California tiger salamanders, and the Western yellow-billed cuckoo. Cattle grazing in riparian corridors has well-documented negative effects on riparian and aquatic ecosystems. Cattle can eat and trample riparian vegetation, erode streambanks, increase sediment loads, alter stream channel morphology, add excessive nutrients and pollutants to creeks, and alter hydrology, with

cumulatively significant impacts that negatively affect riparian and aquatic wildlife. Nowhere in the EIR are the negative aquatic and hydrologic impacts of grazing analyzed.” (Alameda Creek Alliance)

Comment K-6: “Ecologist A. J. Belsky (1999) recently conducted a systematic literature review of peer-reviewed experimental studies on the effects of livestock grazing on stream and riparian ecosystems in the west. Livestock grazing was found to negatively affect water quality and seasonal quantity, stream channel morphology, hydrology, riparian zone soils, instream and streambank vegetation, and aquatic and riparian wildlife. These impacts obviously have significant cumulative negative effects for aquatic and riparian special-status species. No positive environmental impacts were found. This study is included as Appendix 3. The following assertions about grazing impacts are based on verifiable scientific data, have been published in peer-reviewed technical and scientific journals, and are referenced in Appendix 3. The negative influences of cattle grazing on riparian and aquatic ecosystems can be summarized as follows:

- **Water quality**
Cattle grazing increases nutrient concentrations and bacteria and protozoa. Sediment load and turbidity are increased, as well as water temperature. Dissolved oxygen levels possibly decline.
- **Stream channel morphology**
Channel width increases, and water depth decreases with cattle grazing. Gravels in the channel bed tend to be lost in the erosional environment and fine sediments increased in the depositional environment. Streambank stability is reduced, streambank undercuts are reduced in quality and quantity, and pools decrease in number and quality.
- **Hydrology (stream flow patterns)**
With cattle grazing, overland flow from runoff increases, and peak flow and flood water velocity also increase. Summer and late-season flows decrease, and the water table is lowered.
- **Riparian zone soils**
Grazing increases erosion, the amount of bare ground, and soil compaction. Infiltration of water decreases. Litter layer decreases and soil fertility declines.
- **Instream vegetation**
Algae growth increases with grazing, but higher plants (submerged and emergent) often decline in abundance.
- **Streambank vegetation**
Herbaceous cover, biomass, productivity, and native plant diversity decline due to grazing. Overhanging vegetation and tree and shrub biomass and cover decline. Plant species composition is altered and plant structure (horizontal and vertical) is simplified. Plant age structure becomes even-aged and plant succession is impeded.

Although these are generalizations, these effects are well-documented in the scientific literature, and most of these effects can be found to occur in the watershed where there is cattle grazing. Cumulatively, these impacts can be devastating to aquatic and riparian species. The potential impacts of all these negative effects of cattle grazing on special-status species within the watershed will be considered below.” (Alameda Creek Alliance)

Comment K-7: ‘Documented site-specific impacts of grazing in the watershed. Site-specific damage of this nature has been documented in several surveys in Alameda Creek and brought to the attention of SFPUC.

In 1993 fisheries biologist Peter Moyle recommended excluding cattle from the riparian zone below Calaveras Dam to allow riparian plants to shade the stream and provide cover for native fish (Moyle 1993). Moyle noted that fencing the stream alone would likely increase trout populations because the water would be cooler in the summer.

In 1992, fisheries biologists with Bookman-Edmonston Engineering, Inc. walked the length of Alameda Creek from its confluence with Calaveras creek downstream to about Welch Creek, as part of a fisheries habitat survey for the SFPUC for the proposed Calaveras stream release project. Degradation of riparian habitat due to cattle grazing was noted (Bookman-Edmonston 1995). The lower reach surveyed had a “lack of deep-water habitat for adults and some degradation of the riparian community because of grazing in certain areas” (3-22), and the biologists observed that “cattle access to the streambed adversely affected riparian vegetation which could impact the fisheries” (7-2). They recommended restricting cattle access to the streambed and riparian zone. Cattails were observed to be numerous in Sunol Regional Park which may hinder fish movement and occupy habitat that would otherwise be suitable for fish. The report recommended increased riparian vegetation to help exclude cattails from the stream.

In 1992 a riparian vegetation assessment along Alameda Creek from the confluence with Calaveras Creek downstream to Hwy. 680 noted severe impacts to riparian vegetation at the downstream end of the study (Bookman-Edmonston 1995C), a “result from cattle grazing and trampling.” The assessment noted that “Cattle browse the herbaceous plants and tree saplings which initiate the re-vegetation of open portions of the creek. They also trample the vegetation and creek banks causing erosion and siltation...The greatest level of disturbance attributable to cattle activity appears to be from the western property boundary of the Sunol Regional Park downstream to the Rosedale Bridge. Cattle activity in some areas has severely reduced vegetative cover and has greatly disturbed the creek banks and bottom.”

An Alameda Creek re-vegetation and restoration report in 1993 reached the same conclusions (Bookman-Edmonston 1995D). The report stated “Cattle grazing has denuded many areas of vegetation cover along the creek causing increased siltation detrimental to trout spawning and also resulting in higher water temperatures due to lack of vegetation cover” (p. 3). Significant damage was also documented from Calaveras Dam to the Sunol Water Treatment Plant; “There are no barriers preventing cattle grazing on the lease areas west of the creek from crossing the creek and entering onto the wilderness areas to the east...Grazing practices on the western side of

the creek have created continuing degradation of riparian vegetation in all areas of this reach where cattle can reach the creek edges. As a result most areas of riparian vegetation found through this reach show either less than 50 percent canopy cover or disturbance...Cattle grazing has continuously degraded vegetation along the edges of the creek and in some sections has done damage to the bank structure. Complete removal of grazing from this reach is recommended...Grazing along the creek has denuded banks in many areas and degraded stream bank profiles...The extensive beds of cattails and thick algal mats found in this reach are probably the result of lowered water flows resulting in sedimentation and stagnant water conditions combined with higher water temperatures brought on by lack of vegetation cover due to grazing.”

A stream inventory study of Alameda Creek conducted by the California Department of Fish and Game in 1995 documented damage to stream banks, erosion and sedimentation, and water pollution caused by cattle (Murphy and Sidhom 1996). CDFG biologists walked Alameda Creek from upstream of Calaveras Creek to the confluence with Welch Creek. The report stated “large areas of bank erosion were noted which were actively depositing sediment in the stream, especially in the lower reaches...the result of the presence of cattle in and near the stream. Numerous stream banks have been broken down as the direct result of cattle entering the stream.” The report expressed concern that if cattle were not excluded from the stream, then spawning areas could become significantly embedded by fine sediment and useable spawning habitat limited. The report noted large amounts of cow manure in the stream median, leaching pollutants into the stream.’ (Alameda Creek Alliance)

Comment K-8: “Steelhead trout. Due to the general impacts of grazing on aquatic and riparian habitat mentioned above, cattle grazing decreases steelhead/rainbow trout abundance and productivity. Higher water temperatures increase salmonid mortality (by breaking down physiological regulation of vital processes such as respiration and circulation), and negatively affect fish spawning, rearing, and passage. Greater water turbidity, increased siltation bacterial counts, lower summer flows, and low dissolved oxygen in the water column and intragravel environment reduce fish survival. Sedimentation and actual trampling damage spawning beds. There is less protective plant cover, and fewer insects and other food items. Streambank damage and filled in pools due to sedimentation decreases the hiding cover for steelhead.” (Alameda Creek Alliance)

Comment K-9: ‘The EIR asserts that implementation of the *Grazing Resources Management Element* of the Alameda Watershed Management Plan “would reduce the potential physical effects from overgrazing by livestock to a less than significant level” (page III.E-35), and concludes that “mitigation measures are not required” for grazing impacts. The EIR has deferred mitigation for grazing impacts, in an attempted shell game with mitigation measures that has not worked. The *Grazing Resources Management Element* does not even mention, let alone analyze or mitigate for any impacts to special-status wildlife species, nor does it address or mitigate for any of the significant impacts mentioned above.

The mitigations offered in the *Grazing Resources Management Element* which could possibly begin to reduce impacts to special-status species (although not to a less than significant level) are

the proposed structural protection measures, primarily stream and reservoir buffers restricting all cattle access, and development of off-stream water improvements. Figure 2 in this element shows the creek areas which would be fenced, which appears to be along all of Alameda Creek proper within cattle grazing allotments on SFPUC lands, from above the Upper Alameda Diversion Dam downstream to approximately the confluence with Welch Creek. The portions of Alameda Creek through Sunol Valley or in Niles Canyon do not appear to be proposed for these stream buffers, although there are grazing leases adjacent to the stream in these areas. Nor do any tributaries to Alameda Creek within the Calaveras watershed appear to be proposed for stream buffers.

These buffers would be a positive step if implemented. However, they apparently have not been implemented as promised by the *Grazing Resources Management Element*. The actions for the San Antonio Watershed Area were supposed to be completed by November 1, 1997 (page 6). How much of this has been done? The actions for the Calaveras Watershed Area were supposed to be completed by November 1, 1998. These have not been completed. Cattle have been observed standing in Alameda Creek at the confluence of Welch Creek numerous times in 1999 (Jeff Miller, pers. obs., 1999), and in Alameda Creek above Little Yosemite in 2000 (Jeff Miller, pers. obs., 2000). EBRPD and Alameda County fisheries biologists noted cattle damage and cow feces in the upper creek in late 1999 throughout upper Sunol and Ohlone Parks (Pete Alexander, EBRPD, pers. comm., 1999). A quick tour of upper Alameda Creek will demonstrate that cattle have unlimited access to most of the creek. The actions for the Lower Alameda Creek Area were supposed to be completed by November 1, 1999. How much of this has been done?

The *Grazing Resources Management Element* mentions funding for these improvements, but speaks of applying for funding and loans (page 13). Are these funding sources guaranteed? There is no discussion of how these actions will actually be implemented; no timetable, no plan, no commitment, no mechanism, no identified funding. The proposed watershed monitoring to ensure implementation speaks in terms of “ideally” and “future monitoring”, which “could” or “would” verify completion of watershed protection improvements (page 13). There is no mechanism to ensure these improvements actually happen, and they cannot be relied on as mitigation measures. Indeed, these measures have not been implemented within the promised time period. Additionally, were these measures to actually be implemented, they still would not address many of the significant impacts to special-status species, nor mitigate for them. Additionally, all of the proposed mitigations for grazing (listed in Table II-1 of the EIR as grazing 1 - grazing 14) are also qualified by the statement that “Inclusion does not ensure that funding, staff, or equipment will be made available to implement these actions, nor does it obligate the SFPUC to implement actions it chooses not to,” essential rendering the mitigations meaningless. The EIR needs to state clearly how much grazing will be done, and what the mitigations are. The current EIR is inadequate regarding grazing impacts.’ (Alameda Creek Alliance)

Comment K-10: ‘Water quality. The EIR purport to improve water quality through these management actions, which would be true if the protection measures are actually implemented. However, even the “reduced” level of grazing would still have impacts on water quality, since cattle will have access to tributary streams, and the SFPUC has not shown that these impacts

would be less than significant, especially for aquatic special-status species.’ (Alameda Creek Alliance)

Comment K-11: “Invasive plant species. The EIR acknowledges the role of cattle grazing in spreading invasive habitat species such as star thistle as a result of land disturbance (page III.E-31). The EIR acknowledges this increase in invasives could cause a decline in distribution of native wildlife habitat, especially for special-status butterfly species, decrease plant diversity, modify plant communities, and transform native perennial grasslands to non-native weedy grasslands (already occurring throughout the watershed). The EIR proposes to mitigate for these significant impacts through management actions veg1 and veg6, implementing a Vegetation Management Plan, and removing non-native species. Aside from the fact that these mitigations are subject to the famous SFPUC qualifier, and may never be implemented, the SFPUC would have to hire an army of employees to follow the cattle around mitigating for the damage from cattle to actually make an impact on invasive plants in the watershed. The Vegetation Management Plan is not implemented, and can not be relied upon to reduce impacts to a less than significant threshold.” (Alameda Creek Alliance)

Comment K-12: ‘Random comments on grazing. The EIR has not analyzed the potential impacts of the 24 miles of fencing proposed in the *Grazing Resources Management Element* to create the stream and reservoir buffer zones. This fencing may hinder the movement of wildlife. Page 2 of the *Grazing Resources Management Element* claims that without cattle grazing, the rodent population will increase 50%. There is no citation for this estimate - where did it come from? Without grazing and its associated infrastructure, populations of predators which feed on rodents would likely increase. Additionally, the watershed has one of the densest concentrations of raptors in the western U. S., which would keep rodent populations in balance. On page III.B-11, decreased grazing intensity is cited. What is the “historic” level and what is the new level of grazing? On page III.B-11, grazing impacts on erosion, vegetation and wildlife habitat are not cited. For coherence and to avoid confusion, the mitigations included in the *Grazing Resources Management Element* should be incorporated by reference in this EIR.’ (Alameda Creek Alliance)

Comment K-13: “The last reason is that the impacts, the downstream impacts of management actions of the SFPUC on steelhead habitat do not stop at the watershed. Some of the impacts from cattle raising in the operation near dams from the water diversions and from gravel mining are going to impact so that’s yet another. So obviously, there’s no analysis in the EIR and that’s a major omission.” (Jeff Miller – Pleasanton Public Meeting)

Response: The *Alameda Watershed Grazing Resources Management Element* (Grazing Element) was adopted by the SFPUC on July 27, 1997. Implementation of the stated policies and specific projects contained in the Grazing Element has been underway since 1997, as described further below. Actions related to the Grazing Element, therefore, are continuing activities and as such, are part of the existing environmental setting and do not constitute a proposed program or project under CEQA. The impacts referred to by commentors are historic and/or ongoing and would not be affected by implementation of the draft *Alameda Watershed Management Plan*, as

analyzed in the EIR. The Grazing Element description presented in the EIR is for informational purposes only.

Notwithstanding the CEQA status of the Grazing Element as a continuing activity, historic environmental impacts related to grazing have been reduced since the adoption of the Grazing Element. The stated goal of the Grazing Element is to ensure the proper management and control of grazing to protect, maintain, and enhance source water quality and to reduce adverse environmental effects, such as those referred to by commentors. In addition, the SFPUC was also interested in grazing as an effective and fiscally responsible method to control fire hazard and to maintain the overall health of the land. Prior to the adoption and implementation of the Grazing Element, it could be fairly stated that some adverse environmental impacts from past grazing activities were evident, as noted by commentors. These impacts were generally linked to the intensity of grazing permitted at that time and included degradation of water quality, erosion, sedimentation, spread of invasive plants, loss of riparian vegetation, damage to streambanks and stream hydrology, and effects on special status wildlife and plant species. In addition, potential water contamination by the pathogen *Cryptosporidium parvum* was a concern, as noted by many members of the public. *Cryptosporidium* has been found to cause illness in humans and is of greatest concern to immuno-compromised individuals.

The adoption of the Grazing Element was the culmination of an extensive public participation process and represents a negotiated compromise among various stakeholders, including the SFPUC, environmentalists, the Alameda County Resource Conservation District, the Alameda County Water District, the California Cattlemen's Association, the University of California, San Francisco (representing the concerns of immuno-compromised individuals), and the USDA Natural Resource Conservation Service. In addition, the Grazing Element was developed based on a Hazard Analysis Critical Control Points (HACCP) approach, as well as on other technical reports that include recommendations for scientifically-based grazing best management practices.

A grazing lease strategy was key to the implementation of the Grazing Element. This strategy consisted of lessee selection criteria, which interested parties were required to meet prior to bid submittal. The selection criteria and terms included stocking rate requirements, annual operating plans, water quality protection, timing of calving, staffing, fee structure, and other lease terms. By November 1999, 14 new leases had been executed under the terms and conditions required by the Grazing Element.

The most important shift in grazing practices since the adoption and implementation of the Grazing Element has been the reduction of cattle permitted on watershed lands (as defined by Animal Unit Months or AUMs). The Grazing Element contains policies that require cattle reductions of at least 40% compared to pre-1991 stocking levels. With the exception of the East Bay Regional Park District, all tenants have complied with the stocking levels set in the Grazing Element. Lease negotiations with the East Bay Regional Park District are underway and discussions include compliance with the provisions of the Grazing Element. The pre-1991 stocking level on lands leased to these tenants was approximately 33,486 AUMs. In fiscal year 1997-1998, this level was reduced to approximately 21,006 AUMs through the implementation of

new lease agreements. This represents an approximately 38% reduction in annual AUMs. The estimated AUMs for fiscal year 1998-1999 was 18,346, which represent an approximately 45% reduction in annual AUMs.

In addition to cattle reduction, the Grazing Element includes policies to reduce the risk of viable pathogen discharges into watershed streams and reservoirs, including the requirement to restrict calving to August through October annually. Calving must be 80% complete by September 30th and 100% complete by October 31st of each year. As of November, 1998, all tenants (except the East Bay Regional Park District) have complied with the pasture management and utilization restrictions for calves less than 4 months of age, and have adjusted breeding seasons to restrict all calf births to occur prior to October 31st annually.

Many Grazing Element policies are designed to maintain and improve ecological resources, such as the following structural protection measures to restrict all cattle access: fenced reservoir buffers, stream zone buffers, fenced riparian pastures (to restrict access by calves), and fenced stock water ponds on key water courses (to prevent direct access by cattle). These structural protection measures also serve to protect water quality.

The Grazing Element also calls dispersal of cattle away from riparian areas through intensive development of water collection and distribution improvements in Watershed Protection Areas. These areas would be open to general grazing by cows and calves, thus minimizing grazing in critical riparian areas. The Grazing Element also calls for the development of off-stream water improvements for cattle and wildlife (deer, elk, and feral pigs) to disperse animals away from key water courses and sensitive riparian pastures. To date, the following improvements have been completed:

- New water has been developed in several locations, including the installation of a 12,000 gallon steel storage tank, which will provide water to several trough sites. These water sources will eliminate the use of the stream corridor through Hay Press Canyon by livestock. This stream corridor will be fenced and managed as a riparian area set aside for protection from grazing. In addition, an untapped spring was located, boxed and piped as a water supply source, and a concrete trough was installed.
- Corral facilities and fences have been constructed by two of the lessees. As part of the projects, approximately 2,000 linear feet of new fencing was constructed and an additional 5,000 linear feet of existing fencing on the north side of San Antonio Creek was repaired and incorporated into the riparian management area. This completed the fencing required for riparian management of San Antonio Creek west of San Antonio Reservoir.
- Stock pond spillways have been re-constructed at two locations to prevent erosion.
- Fence repair and construction has been substantially completed for the establishment of Indian Creek as a managed riparian area.
- Negotiations with the East Bay Regional Park District have commenced, which include discussions related to the implementation of the Grazing Element.

- The first year of the feral pig control program has been completed; the second year is underway.

The Grazing Element was designed to provide a balance between protecting source water quality and minimizing environmental damage and providing for grazing levels to achieve desired goals (such as fire control and revenue generation). While commentors may disagree on the extent to which grazing in the Watershed should be restricted, the implementation of the Grazing Element has clearly resulted in a substantial environmental improvement compared to pre-1997 conditions.

L. FIRE MANAGEMENT

Comment L-1: ‘This is a response to CDF review of the Alameda Watershed Management Plan DEIR, specifically the Fire Management element. The DEIR adequately covers the impacts and provides mitigations to a less than significant level.

Page 11-30 Fire Management. Fir10 states, “Initial response shall be made if a fire appears to be easily suppressed. If the fire is large or intense, evacuate and report situation to Watershed dispatch”. Recommend language be added to the statement to include notification of CDF upon initial response, regardless of apparent fire size or appearance.

Page III.A-22. In item 3.2, the last sentence should be changed to state that CDF is the agency responsible for suppression.

Page III G-13. Policy 11 states, “Use prescribed fire to control fuels where appropriate.” Recommend this statement be changed to include the use of shaded fuel breaks and mechanical manipulation to manage fuels. Additionally, given the mechanical treatment choice between mowing or discing a fuel reduction area, discing is the recommend option.’ (California Department of Forestry and Fire Protection)

Response: The SFPUC will consider these suggested changes to Management Plan policies and actions (Policy F11 and Action fir10) prior to adoption of the Management Plan.

In response to the comment regarding DEIR page III.A-22, the following text revision has been made:

3.2 CALIFORNIA DEPARTMENT OF FORESTRY

The Alameda Watershed is designated by the California Department of Forestry and Fire Protection (CDF) as a State Responsibility Area and, as such, is protected by the CDF. Services provided by CDF include emergency fire response, hazardous materials spills response, medical aid, and wildland fire suppression training. The CDF station, located on 11345 Pleasanton-Sunol Road, is less than one-half mile from the main Sunol maintenance yard and can provide an immediate response to fire emergencies on SFPUC Watershed lands. ~~In the event of a fire emergency, CDF is the agency in charge of fire response.~~ **The CDF is the agency responsible for fire suppression.**

Comment L-2: “Increased fire management in sensitive grass areas will result in further loss of habitat.” (Golden Gate Audubon Society)

Response: The DEIR evaluates, at a programmatic level, the impact of fire management activities on natural resources (DEIR Section III.E, pages III.E-24 through III.E-30). As identified in the EIR, the Management Plan includes actions that call for the preparation of a

Vegetation Management Plan, review of the GIS database to identify specific vegetation communities, including grassland communities, prior to planning or initiation of any watershed activity, and development of a native planting program for implementation in disturbed areas in coordination with fire management activities. Implementation of these actions in conjunction with fire management activities would reduce potential program level natural resources impacts to less than significant.

M. CULTURAL RESOURCES/SUNOL WATER TEMPLE

Comment M-1: “The San Francisco PUC has recently committed to the restoration of the water temple on those grounds. They’ve already put a big chunk of dollars into it and are going to do more.

We cannot understand for the life of us how the same bureaucracy could either consider strip mining next to a monument that should by all rights be a national, historic monument.

We feel that San Francisco has stalled in seeking national status for the award of temple because it would then be under the roles of the Department of the Interior, which absolutely in black and white, forbids mining anywhere near such monuments.” (Bree James – Pleasanton Public Meeting)

Comment M-2: “The historical Willis Polk Water Temple that is presently being restored by San Francisco for a considerable sum of money will be subjected to the indignity of a strip mine operating next to it.

What a travesty it is to subject this reverent, historical landmark to such a harsh ugly environment. People will be hampered from fully enjoying the monument and its nearby picnic grounds.” (Patricia Stillman – Pleasanton Public Meeting)

Comment M-3: “In 1994, the EIR produced a report for SMP-29 [sic]. I don’t believe we had an opportunity to do much on the SMP-32 report before it was approved, but we came, as a community, out with the same issues we’re still facing today and when I saw this recent EIR, I was flabbergasted that it was even worse than the one that was put out by Alameda County.

In the last six years since 1994 the community has worked with San Francisco Water and we’ve been on this like back and forth committee, back and forth communication about how we could work together and they’ve been dangling the cookie of the Water Temple and that’s where we’ve been pushing our energies about getting the Water Temple restored because it is a national monument.

Alameda County has sat on making Niles Canyon an aesthetic corridor which would also prevent mining along the side of it. There’s been these sorts of issues that we’ve been talking about back and forth for the six-year period, that’s why it’s such a shock to put that amount of money in the temple is like throwing it away. You can’t use it for a wedding site. You can’t use it for picnics. No one would like to be there. It’s the dust and sound of unsightly noise.” (Maryanne Canaparo – Pleasanton Public Meeting)

Response: Regarding elevating the state and federal status of the temple, during preparation of the Management Plan, it was determined that the temple was eligible for listing on the National Register of Historic Places, which this EIR analysis took into account.

As indicated in DEIR Section III.H, the Sunol Water Temple is a historic structure and based on the significance criteria included in that section, irreversible damage or disruption to the Sunol Water Temple would be considered a significant effect. The potential impacts of mining on cultural resources were evaluated in the EIR prepared for SMP-32. Pertinent mitigation measures adopted by Alameda County as conditions of approval for SMP-32 include requirements for a landscape plan and berming to provide a visual barrier to the Sunol Water Temple, as well as noise reduction. In addition, the Management Plan includes backfilling of an additional quarter-mile buffer on the east side of the Sunol Water Temple (the side closest to mining activity) after mining is completed in order to provide additional mitigation for cultural resources impacts. The *Sunol Valley Resources Management Element* and the *Sunol Valley Landscape and Recreation Plan* includes other restoration and reclamation measures that would enhance the temple area (see DEIR Section III.B and Figure III.B-3). See Sections II.J and II.O of this report regarding air quality and noise effects associated with mining. Implementation of the mitigation measures associated with mining activities would avoid significant impacts to the Sunol Water Temple, and would preserve restoration efforts and future recreational use planning.

As noted above, the Alameda County SMP-32 conditions of approval require several measures that specifically related to protection of the Sunol Water Temple and surrounding areas. These conditions are repeated in this document for informational purposes, to address the ongoing concerns about the Sunol Water Temple:

Condition 58. Engines on all equipment used for surface mining operations shall be equipped with manufacturer-recommended mufflers, and no muffler or exhaust system shall be equipped with a cutout, bypass, or similar device intended to thwart quieting.

Condition 59. Site preparation and mining shall be conducted in substantial conformance with the proposed phasing plan prepared by Spinardi Associates, dated November 21, 1994, as amended by this permit and subsequent revisions. The plan provides for the construction of berms and landscape buffers prior to aggregate mining in a manner that will effectively shield the surrounding areas from visual and noise impacts. Topsoil removal, overburden stripping, and berm construction, once begun in the northwest portion of the site within 1,600 feet of sensitive noise receptors, shall proceed as quickly as possible to further minimize noise. Activity in this area shall be conducted during summer months to minimize noise received at the school-related areas. These operations shall begin no earlier than 7 AM.

Condition 68. A detailed landscape and phasing plan shall be prepared and approved prior to site disturbance based on the conceptual plans approved as part of this permit.The landscape plan shall include timing, responsibilities, and guarantees, and shall be approved by the Planning Director prior to commencement of soil disturbance and planting. The Planning Director shall forward the plan to the Sunol Citizens' Advisory Committee for comments prior to approval of the plan. Permittee shall guarantee maintenance of the landscaping in accordance with the plan. On-going maintenance of the landscaping shall be monitored by an independent landscape architect/contractor under the supervision of the

Alameda County Planning Department and contract to the permittee, with reports supplied as part of the Annual Report. The success of the plantings shall be reviewed by the Sunol Citizens' Advisory Committee.

Condition 69. Permittee shall construct a continuous berm around the perimeter of the quarry pit as shown in the revised plans prepared by Gates & Associates, revised October 1994, subject to amendment under these conditions of approval, to provide a visual barrier to sensitive areas including but not limited to I-680, Paloma Road, and the San Francisco Water Department water temple and access road. The engineered appearance of the final use of the site (water storage for the San Francisco Water Department) shall be minimized through the use of a meandering berm with varying dimensions and through suitable landscape planting design...

Condition 70. Permittee shall coordinate quarry operations, buffering land uses, conveyor belt location and design, fencing, and landscape berms with the San Francisco Water Department as necessary to facilitate the implementation of public access to the watershed lands, if such access and trails are found to be desirable by the San Francisco Water Department. Modifications to the conveyor belt, landscaping, or other operational concerns, would be subject to approval by the Planning Director. In the event the San Francisco Water Department opens its lands for public access, permittee shall cooperate with the eventual operator of the recreation and trail facilities.

Condition 71. Landscaping shall be reviewed periodically to ensure the adequacy of the plan and the plantings. Permittee shall survey and stake the location of the pit perimeter, berms, hillocks, and other major features of the plan for an initial inspection by the Alameda County Planning Department and the Sunol Citizens' Advisory Committee, prior to any site disturbance. In consultation with the permittee, Department of Public Works, Sunol Citizens' Advisory Committee, and other responsible parties, the Planning Director shall approve a program for interim inspections as the buffer areas are constructed, berms are constructed, and other features and landscaping are installed, in order to ensure that the features are achieving the intended goal of screening views and providing a pleasing setting....Screen landscaping shall be permanently installed at least four years in advance of activity in areas of active mining to ensure adequate growth, and shall have a minimum success of 75 percent.

Condition 72. Stockpiles of materials from mining activity shall be allowed only within the pit, and shall be limited to a one-week supply if visible from surrounding areas. During site preparation, stockpiles as required due to activity such as topsoil removal and bentonite wall construction shall be stored for a maximum of 30 days, except as approved by the Planning Director. The height of all visible stockpiles shall be limited to 25 feet.

Condition 73. Permittee shall restrict and minimize lighting for night operations. Where lighting is necessary, permittee shall utilize light shades, directional lighting, and other measures so as to minimize visibility off site.

While Sunol residents' concerns are understandable, the data and analysis indicated that the actual cultural resources effects will be less than significant and no new evidence or information has been received that would warrant reanalysis of SMP-32 cultural resources issues.

N. AESTHETICS

Comment N-1: “On page III.I-5, mention should be made that changes in mining activity would have a less than significant impact on aesthetics, as determined by the EIR for SMP-32 and other environmental review documents for mining projects south of I-680. Although mining has influenced the visual character of the areas south of I-680, and would occur north of I-680, page III.I-3 correctly states that nursery plants are more dominant in many of the views, and mitigation has been required for areas near the public view. Deepening existing pits would not adversely affect aesthetics because it would be out of view. Where visible, widening of excavation areas would be addressed through an appropriate landscape plan.” (Alameda County Community Development Agency)

Comment N-2: “There are several important issues regarding the DEIR that don’t make sense in the overall mission of this document. These issues surround the quarry operation that currently exists and the proposed implementation of SMP 32 on the north side of I-680.

I didn’t find mitigation for the current pits, whether they stay at their present size or expand, that would encourage some aesthetic improvements. These facilities are eyesores to everyone traveling the MUCH USED (now considered one of the busiest of Bay Area freeways) I-680 corridor. The only relief that currently exists on this freeway is on the West Side where no quarry mares the landscape. Vegetation has difficulty taking hold because of the dust that clogs their pores and stunts their growth. It is possible that it was difficult to describe a mitigation procedure for this area since this type of operation results in the massive scarring of the land it sets upon – with no means to make it aesthetically acceptable.” (Maryanne Canaparo)

Comment N-3: “[SMP-32] **Affects on local community.** Loss of property value, aesthetics and pride in the entrance to the Town. A large landscaped berm does not adequately replace what is currently there.” (Maryanne Canaparo)

Comment N-4: “The [SMP-32] **aesthetics** that affect travelers on I-680 and Hwy. 84, visitors on Pleasanton Ridge and residents in the Sunol community. People that are stuck in traffic every morning and evening will no longer have at least one side to gaze at that is beautiful and calming. A continuous eyesore for the residents of the area.” (Maryanne Canaparo)

Comment N-5: “Now, a lot of us talk about the community, however, it [SMP-32] affects a lot more, thousands more people than just the people that live there. The people that use that 680 corridor, they use the Niles Canyon corridor. It will affect everyone. Lights from quarry go 24 hours. It will affect who hike Pleasanton ridge. Because of the view shed, it’s completely changed.

Overall, it’s a big detriment to all of Alameda County and it’s something that shouldn’t be allowed to occur. It’s something that we, as a community, and as the whole Bay Area, will actually reap results from this.” (Maryanne Canaparo – Pleasanton Public Meeting)

Comment N-6: “I’ve been a Pleasanton resident for 30 years. In those thirty years I can see no way we can mitigate gravel pits. A gravel pit is ugly. Please don’t let Sunol become a standing gravel pit.” (Emily Carson – Pleasanton Public Meeting)

Comment N-7: “The aesthetic impacts to a community of not addressing the true impacts of this quarry are mind boggling. If you’ve ridden past 680 and seen quarry to the south of our small, beautiful community, you can see the wreckage that it creates.” (Bree James – Pleasanton Public Meeting)

Comment N-8: “We are here to speak to the draft of the EIR as it specifically applies to Mission Valley Rock to expand its quarry operation to the area up to the Willis Polk Water Temple at the entrance to our community 300 yards from our school. It will greatly impact Sunol in several negative ways.

This quarry operation will disrupt our visual landscape, increase the traffic with gravel trucks and heavy industrial machinery including a conveyor belt under the Sunol grade that is considered the worse, traffic mess in the whole Bay Area.” (Patricia Stillman – Pleasanton Public Meeting)

Comment N-9: “This quarry operation will contradict a scenic highway designation for Niles Canyon and I-680. It does not have the support of Sunol citizens who believe that that will drastically impact our quality of life.” (Patricia Stillman – Pleasanton Public Meeting)

Comment N-10: “I don’t have technical knowledge. I can’t respond to what you would refer a lot of technical aspects of EIR, but I think the message that a number of people have already stated is the question of what is it going to do to the environment and especially aesthetically what is it going to do to the environment. And it seems like the EIR totally ignores that issue.

And it’s somewhat ironic that the city of San Francisco prides itself on its environment, its BART, its parks and has done a lot and is currently doing a lot to make maximum use of the land, and they’re being very careful in terms of how they develop that.

Would San Francisco put this kind of development in part of Golden Gate Park the way they would treat the parts of Sunol? I don’t think so.

And so that’s sort of alarming in terms of why is this decision or this recommendation being made. Why are we even talking about this kind of decision.

I would think that the visual impact and the esthetic environment and the impact on the environment is a very critical omission that is not addressed. In fact, I think it really raises questions in terms of negativity in terms of the report itself.” (Jim O’Laughlin – Pleasanton Public Meeting)

Comment N-11: “The report specifically refers to the fact that recreational uses would have a negative impact on the aesthetics and the visual environment.

And how someone in good conscience could make that statement to the EIR and then turn around and say that a quarry would have no negative impact is ridiculous.

I would suggest that if you took any group of rational people across this country or across the world and you showed them two video clips, if you took a video clip going down 680 looking in one direction, you would see a beautiful pristine valley.

If you’re there by going up Mission grade and then you turned around and then you came down and made a video clip of the other side, I would challenge you to show us two video clips to any group of people around the country who didn’t know where this was and what the real issues were and basically said in terms of the impact on this environment which has a positive impact [and] which has a negative impact.

There is no one who could look at those two clips and not say that the one side is a beautiful pristine valley that has a lot of potential in terms of human value and esthetic value and look at the other side and have to say that is a disgrace. It’s a destruction of the environment that is visually there.

I think we should perhaps get some people, who are not involved, to look at that and provide some input. I think that’s factual data that should be addressed, you know, in this report.

My grandmother grew up where Mission Valley Rock apparently is and then she moved up the freeway on Mission Grade. My grandfather, somewhere at the golf course.

I wonder what they would think if they could come back now and look down on the valley that they looked at for so many years and look at the lands that they lived on and see what happened to it. I think they would be appalled for good reason. They would see the one side of the freeway in its current condition and they’d see the other side in its destroyed condition and then suggest that we were going to do the same to the other side that we did on the other side, but it certainly is hard to say that there are any human values reflected in the kind of decision which would say that we can do this to the other side and it’s not going to have any negative impact on the environment.

That is what your report says, and I think a lot of people strongly disagree with it and I think if you analyze that from a scientific analysis in terms of human reaction to that destruction, you would find that there is no question whatsoever, but that this recommendation and that this says there’s no negative impact, is extremely flawed and should be corrected.” (Jim O’Laughlin – Pleasanton Public Meeting)

Response: In response to these comments, the following impact discussion has been added to DEIR Section III.I, Aesthetics, page III.I-13:

Changes to Gravel Mining Operations

As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigation measures set forth in the conditions of approval for Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (shortening the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new impacts on aesthetics beyond those disclosed in the EIR prepared for SMP-32. Pertinent measures adopted by Alameda County as conditions of approval for SMP-32 include requirements for landscape plan approval and berming to provide a visual barrier to the Sunol Water Temple. In addition, the *Alameda Watershed Management Plan* includes backfilling of an additional quarter-mile buffer after mining on the east side of Sunol Water Temple, which is closest to proposed mining activity, to provide additional mitigation for aesthetics impacts.

Options presented under Actions sun2a and sun2b would require amendments to existing permits south of I-680. The increase in mining depths proposed in both Actions sun2a and sun2b would not be likely to substantially impact aesthetics of these existing quarries because the increased mining depth would not be visible from public view areas. Although mining has influenced the visual character of the areas south of I-680, nursery plants are more dominant in many of the views, and mitigation measures have been required for areas near the public view. Should increasing the mining width under Action sun2a result in increased public views of the mining areas, it may reasonably be assumed that Alameda County would apply conditions of approval to the permit modifications consistent with those applied to SMP-24 and SMP-30, such as requiring an appropriate landscape plan. Amendment of the existing permits could be subject to project-level environmental review by Alameda County, which would analyze potential impacts and identify detailed mitigation measures, if warranted.

The Alameda County SMP-32 conditions of approval require several measures that specifically relate to aesthetics protection, as listed in Section II.M of this document for informational purposes. Management Plan implementation would further mitigate aesthetic effects beyond the SMP-32 permit conditions by requiring a ¼ mile landscaped buffer to the east of the temple. While Sunol residents' concerns and disagreement with the conclusion is understandable, the analysis indicates that the actual aesthetic effects will be less than significant and no new evidence or information has been received that would warrant reanalysis of the aesthetics issues.

O. NOISE

Comment O-1: “Increased noise as a result of construction, enlargement of golf courses, increased public access and activities, such as fishing, will have a significant negative impact on birds within the watershed.” (Golden Gate Audubon Society)

Response: DEIR Section III.E evaluated, at a programmatic level, the effects of increased public use on natural resources. DEIR pages III.E-30 and III.E-31 describe the potential for bird harassment, alteration of nesting behavior, and increased human disturbance. The DEIR describes Management Plan actions that would reduce potential program level impacts to a less than significant level. However, the potential impacts of specific public access projects would be evaluated at the time they are proposed. If project-specific analysis demonstrated that a significant impact would occur with project implementation, mitigation measures would be recommended or the SFPUC would need to adopt findings of overriding considerations per CEQA requirements prior to implementing the project.

Comment O-2: “It [SMP-32] will produce unacceptable noise levels, ... close to our school where our children will be adversely affected.” (Patricia Stillman – Pleasanton Public Meeting)

Comment O-3: “The increase in noise pollution. NO MITIGATION. I guess SFPUC wants everyone to enjoy the consistent hum of the quarry machinery...” (Maryanne Canaparo)

Response: As described in DEIR Section III.L, the potential impacts associated with mining under SMP-32 were evaluated in the EIR prepared for that project. SMP-32 mining activities would be closer to the Town of Sunol than the existing operations south of I-680. A detailed noise analysis was performed by Alameda County for the SMP-32 EIR and is summarized here for informational purposes. That analysis assumed a worst-case condition, that quarry equipment will be operating at the existing ground elevation and in the northwestern corner of the site, at the closest possible point to surrounding sensitive receptors such as Sunol Glen school. (In actuality, this scenario would occur only for a very short time. For the vast majority of the quarry’s life, operations would occur below grade and further from sensitive receptors.) The noise analysis found that quarry-generated noise levels would not exceed Alameda County’s overall daily exposure limit of 60 decibels, day-night level (dB DNL) for residential/school exterior areas, or the limit of 67.5 dB DNL for commercial exterior areas. However, noise exposure for short-term periods would be exceeded at a few locations. In response to these findings, Alameda County imposed conditions of approval for SMP-32 that eliminate the short-term noise exposure impacts. The conditions, which are listed in Section II.M of this document, include establishing a temporary noise mitigation berm in the northwestern portion of the site to reduce noise at Sunol Glen school and other sensitive receptors; limiting hours of operation; phasing requirements that specifically minimize noise exposures; and conducting surface operations (overburden stripping) in the northwest portion of the site as quickly as possible to minimize noise impacts. Construction of the berm and overburden stripping is required to be done in the summer months to minimize impacts to the school and its play area. An additional condition was imposed: if technical investigation determines that, despite all mitigation, the quarry is causing adverse

impacts for the SFPUC residence and Sunol Glen School, the permittee would be required to provide noise-insulating double-paned windows and a mechanical ventilation system for these buildings.

Measures established to mitigate impacts from traffic would also reduce noise impacts from planned mining activities. These include the use of a conveyor belt for storage, processing, transportation, and disposal of mined materials. In addition, no new access points would be established along new haul roads. The existing access points are located south of I-680. Processing equipment and trucking would continue to occur at the existing plant on the south side of I-680. Based on the SMP-32 EIR and CEQA Findings, the data and analysis indicate that noise impacts will be less than significant and no new evidence or information has been received that would warrant reanalysis of SMP-32 noise issues.

P. HAZARDOUS MATERIALS/HAZARDOUS WASTE

Comment P-1: “With regard to Management Actions **haz1** to **haz12**, we have previously recommended that the SFPUC either maintain its own hazardous material spill response equipment and staff with the specific ability to control spills into reservoirs in the local watershed areas or assist local agencies with the acquisitions of this equipment and training.” (California Department of Health Services)

Response: In response to this comment, which is not directed to the EIR or its analysis, the SFPUC will consider the suggested change prior to adoption of the Management Plan.

Comment P-2: “Nurseries on leased SFPUC land in the watershed use a number of pesticides and insecticides adjacent to the creek, as revealed by a SFPUC survey (Bookman-Edmonston 1995D). Many of the pesticides currently used by nurseries in the Sunol Valley, such as diazinon, malathion, durzban, and Rice Mollinate are known to be toxic to frogs. Pesticide residues in water, sediment, and aquatic vegetation can harm amphibians in aquatic environments by delaying or altering larval development or by reducing breeding or feeding activity (Hall and Henry 1992, Berrill et al. 1993). Insecticides obviously have harmful effects on butterflies, which are insects, even in minute concentrations. The impacts of pesticide and insecticide runoff on macroinvertebrates in Alameda Creek which are the food base for fish and amphibians has not been studied or analyzed. Alameda Creek was declared an impaired water body in 1999 by the U. S. Environmental Protection Agency due to diazinon poisoning. The Management Plan proposes to expand nursery use in the valley and expand the existing golf course, which will increase diazinon and other pesticide runoff to the creek. Pesticide use should be discontinued, especially since downstream water is used for municipal water supply, and Integrated Pest Management methods of pest control should be employed.” (Alameda Creek Alliance)

Response: As noted on DEIR page II-1, the EIR assesses the potential impacts of the Management Plan, and not the impacts of existing facilities and operations, which constitute the environmental baseline for the EIR. Currently, nurseries in the Sunol Valley are required to provide reports to the SFPUC regarding their use of pesticides and fertilizers. The Management Plan calls for development of hazardous chemical management procedures for SFPUC operations and operations on leased SFPUC lands, including nurseries and the golf course. In addition, the Management Plan would require a greater setback of nurseries from Alameda Creek or other water bodies, as a best management practice. (Please see DEIR pages III.D-30 and III.D-31 for a discussion of nursery operations impacts on water quality.) Implementation of this practice would depend on lease agreements. The following discussion summarizes the SFPUC management of pesticide use.

The SFPUC has been on the San Francisco County Agricultural Commissioners Office task force and the San Francisco Department of the Environments Integrated Pest Management (IPM) task force since the City’s IPM ordinance was approved in October 1996. The SFPUC has complied with the requirements of the ordinance by submitting monthly reports of pesticide use, submitting annual reports of Department use, designating IPM coordinators, submitting a Department IPM

Plan (which has been accepted by the Department of the Environment), conducting posting and noticing for pesticide use, establishing a IPM hotline, establishing a monitoring program, and establishing demonstration plots. The SFPUC has received exemptions for specific pesticide use, when necessary. The SFPUC has also participated on the technical advisory group to establish the Department of the Environment's IPM Program list 2000.

Each operating division of the SFPUC has implemented the SFPUC's IPM. The on-site IPM coordinators monitor the use of pesticides and report use as structural (for facilities, buildings, offices, plants, etc.) and other operations (for exotic or invasive species, etc.). Where possible, alternative methods of pest management are employed, such as mechanical, physical, biological, or cultural. The SFPUC documents the results of each control method employed. In addition, the SFPUC works cooperatively with private companies to reduce the use of pesticides on adjacent properties. SFPUC personnel did not use pesticides within the Alameda Watershed hydrologic boundary in 1998. According to the 1999 Annual Pesticide Use Report, 36 applications took place, totaling 13.78 pounds and 13.94 gallons of chemicals. Most of the applications took place in the Sunol yard and turf area and were for weed control (Roundup Pro Herbicide) and gopher control (Wilco 'Gopher Getter' TY).

The SFPUC Bureau of Commercial Land has included IPM ordinance language into new or renewed leases. The bureau sent letters to all lessees/permittees in Fall 1999 requesting a list of pesticides used on SFPUC properties. The bureau sent follow-up letters in Spring 2000 informing all lessees/permittees of the Department of the Environment IPM Program List 2000. Specifically, the nurseries and Sunol Golf Course report pesticide use to the Alameda County Agriculture Office and the SFPUC on a monthly basis. The nurseries and golf course are included as part of the annual report of SFPUC pesticide use, submitted to the Department of the Environment. The chemical application management program for leased lands includes annual inspections, review of application methods, chemicals used and changes to existing programs.

Under Action sun16, the feasibility of developing a working farm, a vineyard, nurseries, row crops, aquaculture, and/or wetlands would be explored. These uses would be considered in conjunction with restoration and reclamation of mining permit areas. The feasibility of agricultural or wetland uses would consider pesticide use and the potential for water quality impacts. If agricultural or wetland uses are considered feasible, a specific project may be proposed. The project-level impacts associated with agricultural or wetland use, and mitigation recommendations, would be evaluated at the time a specific project is proposed for implementation.

The DEIR evaluates the program-level impacts associated with golf course expansion. At a program-level, the DEIR recognizes that golf course expansion could be associated with water quality and hazardous materials impacts, but that the area of expansion could be located such that impacts could be minimized (DEIR page III.D-32). In addition, hazardous materials management procedures included in the Management Plan would reduce potential impacts (DEIR Section III.M). A golf course expansion project has not been proposed at this time. The project-level impacts associated with golf course expansion, and mitigation recommendations, would be evaluated at the time a specific project is proposed for implementation.

Q. GROWTH INDUCEMENT/WATER RIGHTS

Comment Q-1: “**Water Rights** – The plan for increasing water storage within the Sunol Valley should include a discussion of water rights, and the SFPUC should demonstrate the water rights under which it is proposing to increase its water storage.” (California Regional Water Quality Control Board)

Response: A discussion of water rights is not appropriate or warranted for this program-level DEIR. As described in DEIR Section III.O, the source of water to fill the reservoirs is not known. Possible water sources for storage are local water, including local runoff; imported water from the Hetch Hetchy Project or the Delta using the South Bay Aqueduct; and recycled water from the Livermore Valley. When a water storage project is identified, the SFPUC will identify the pertinent water rights. The reservoir system for such a project would be phased over an approximately 50-year period and thus it would not make sense to attempt to identify source water and various water rights that may be involved at this time. Furthermore, the timing of such a project is uncertain as it depends on the rate of depletion of the aggregate resource, which is dependent on such fluctuating factors as market demand.

Comment Q-2: ‘Section III.O-1 of the EIR claims that creating water storage reservoirs from reclaimed mining pits will not induce growth because the source of water to fill the reservoirs is not known. These pits are intended to be filled as water reservoirs, and will be likely be filled - just because the source of water is not known does not mean there is no growth-inducing potential. Growth is not possible without additional water, and creating additional water storage almost ensures that the water will be used. The EIR also claims that the created reservoirs would be used as a supply resource in dry years. However, the EIR references a future SFPUC project, the Sunol Valley Water Treatment Plant Improvement Project (page III.P-3). The description of this project states that the “purpose of phase 2 is to develop a Future Facilities Plan for the Sunol Valley to accommodate increasing water demand...” This seems contrary to the claim that the planned reservoirs will not induce growth.’ (Alameda Creek Alliance)

Response: As noted above, the source of water to fill the reservoirs is not known. Regardless, the possible yield from quarry reservoirs (about 7 million gallons per day [mgd]) would not meet or come close to the design drought water demand of 300 mgd (see DEIR Section III.O, page III.O-1). The firm yield of the entire existing water system is about 240 mgd. There would be no growth inducing impact associated with future use of the quarry reservoirs for water storage since the water would be used to meet a small portion of the water shortfall in dry years and could not be used to serve new growth, as explained in the DEIR. In regard to the comment regarding phase 2 improvements at the Sunol Valley Water Treatment Plant, this project is speculative in nature. Phase 1 improvements at the Sunol Valley Water Treatment Plant involve bringing the capacity of the plant up to its rated capacity. If a phase 2 improvement project were to be proposed, phase 2 would require environmental review, including an examination of growth inducing potential.

SECTION C

STAFF-INITIATED TEXT CHANGES

The following corrections and/or clarifications have been made to the EIR text, in addition to those changes listed in Chapter II of this document. These corrections include: minor corrections made by the EIR authors to improve writing clarity, grammar, and consistency; or staff-initiated text changes to update information presented in the DEIR. The text revisions are organized by the chapter and page number that appear in the DEIR. ~~Deleted text~~ presented in this section indicates text that has been deleted from the EIR. Text that has been added to this EIR is presented as **bold**.

The changes listed below primarily relate to two issues: the time period for SMP-32 mining under implementation of the Management Plan and the adoption date for the *Grazing Resources Management Plan*. The Draft EIR stated that the Management Plan's proposed modification of the timing and sequencing of mining north of I-680 would extend the SMP-32 mining date. In actuality, the Management Plan calls for an SMP-32 completion date of 2035, rather than the completion date of 2045 approved by Alameda County. Therefore, the timeframe for mining SMP-32 would be shortened. However, the Management Plan proposal to allow existing mines south of I-680 to extend deeper and/or wider than currently permitted would extend the period of mining in those areas, as stated in the Draft EIR. The Draft EIR incorrectly stated the adoption date for the *Grazing Resource Management Element*. The correct adoption date is July 27, 1997.

DEIR page I-4 (and page I-5), paragraph 6:

Actions proposed in the Management Plan for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in Alameda County's conditions of approval for SMP-32. The Management Plan incorporates the SMP-32 conditions of approval and proposes modifications in the timing and sequencing of mining (~~extending~~**shortening** the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new impacts beyond those disclosed in the Environmental Impact Report (EIR) certified for SMP-32. As described in that EIR, permitted mining under SMP-32 would bring about the loss of 140 acres of prime agricultural lands. The EIR for SMP-32 found this loss of prime agricultural land to be an unavoidable significant impact of that project, and implementation of the Management Plan would include approval of a new lease between SFPUC (as land owner) and the mining operator, entitling mining that would also lead to the unavoidable significant impact.

DEIR page II-20, paragraph 4:

The preferred alternative was derived from an evaluation of the three alternatives and was approved through a SFPUC resolution in January 1995. The direction of the SFPUC on the preferred Management Plan was general in nature and applied to both the Alameda and Peninsula Watersheds (with the exception of several Watershed-specific issues, such as grazing and mining). This direction provided the basis for development of the details of the plans. Subsequent elements further refining the *Draft Alameda Watershed Management Plan* include the *Sunol Valley Resources Management Element* (May 1996) and the *Alameda Watershed Grazing Resources Management Element* (~~June~~**Adopted July 27, 1997**).

DEIR page III.B-10, paragraph 2:

Access to Public Use Areas

The primary land use changes that would result from implementation of the *Alameda Watershed Management Plan* are associated with increased public access and the expansion ~~and extended timing~~ of mining north and south of I-680. Under the proposed Plan, a Watershed Visitor Education Center, public recreation area, commercial site, and overnight nature study area (Actions pub4, sun14, sun19, and sun20) could be developed on the Watershed. These uses are designed as generally low intensity recreation and are more fully described in the preliminary *Sunol Landscape and Recreation Plan*, which has been prepared to plan recreational activities and landscape concepts for the Sunol Valley in order to develop lease terms and conditions for mining under SMP-32. The Management Plan provides for the establishment of new trails around the Sunol Temple and in the Sunol Valley as connectors to the Sunol-Ohlone Regional Park areas (Policies WA15.2 and WA15.4 and Actions sun14 and sun21). New trails would be restricted to areas of low vulnerability and risk to protect water quality and ecological resources. Areas of low vulnerability would be in the secondary Watershed (away from existing reservoirs) and in the Sunol Valley near the Town of Sunol, the only adjacent developed area. These trails would allow for general public access to the Watershed (no permit required). Access to existing internal roads and fire roads in the Watershed is currently restricted. Under the Management Plan, a docent-led program would be developed to allow individuals access to selected areas of the Watershed that are generally closed to the public (Policy WA10 and Action pub1). In addition, the Management Plan calls for provision of universal access to recreation facilities and trails, which could increase public use of the Watershed (Actions des8 and sun17).

DEIR page III.B-12, paragraph 4:

As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for

Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (~~extending~~**shortening** the completion date for water storage pits) and mining reclamation (resulting in increased public access around the Sunol Water Temple). These modifications may require amendment of the existing permit but would not bring about any significant land use impacts beyond those disclosed in the EIR prepared for SMP-32. ~~However, given the change of timing and sequence of mining under the Management Plan, mining would take place over a longer period of time.~~ Permitted mining under SMP-32 would bring about the loss of 140 acres of prime agricultural lands. In approving SMP-32, Alameda County found this loss of prime agricultural land to be an unavoidable significant impact of that project, and implementation of the Management Plan would include approval of a new lease between SFPUC (as land owner), and the mining operator, entitling mining that would also lead to the unavoidable significant impact.

DEIR page III.C-13, paragraph 3:

The impacts to geology and soils from proposed mining activities north of I-680 were analyzed in the *Mission Valley Rock Company Surface Mining Permit and Reclamation Plan SMP-32 EIR*. The potential impacts identified would be mitigated through implementation of pertinent mitigation measures that were adopted as conditions of approval of SMP-32 by Alameda County. Actions proposed in the Management Plan would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. These include requirements for grading, erosion control, and slope maintenance as mentioned above. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new geology and soils impacts beyond those disclosed in the EIR prepared for SMP-32. ~~Given the change of timing and sequence of mining under the Management Plan, impacts would take place over longer period of time.~~ Amendment of the existing permit, if required, would be subject to additional environmental review by Alameda County.

DEIR page III.D-27 (and III.D-28), paragraph 5:

As *described* earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (~~extending~~**shortening** the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new water quality impacts beyond those disclosed and

mitigated in the EIR prepared for SMP-32. Alameda County's conditions of approval for SMP-32 include controls for drainage, erosion, and sedimentation that mitigate proposed related mining impacts to a less than significant level. ~~Given the change of timing and sequence of mining under the Management Plan, impacts would take place over a longer period of time.~~

DEIR page III.E-35, paragraph 5:

As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (**shortening**~~extending~~ the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit and could bring about new (but mitigable) natural resources impacts beyond those disclosed and mitigated in the EIR prepared for SMP-32, as described below. Alameda County's conditions of approval for SMP-32 include requirements for revegetation and restoration, as well as controls to be implemented during mining operations, that ensure impacts from mining would be less than significant.

DEIR page III.F-14, paragraph 4:

As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (~~extending~~**shortening** the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new air quality impacts beyond those disclosed and mitigated in the EIR prepared for SMP-32. Alameda County's conditions of approval for SMP-32 include measures to reduce dust emissions and requirements to maintain all quarry-operated equipment to reduce exhaust emissions. These conditions reduce air quality impacts from mining to a less than significant level. ~~Given the change of timing and sequence of mining under the Management Plan, impacts would take place over a longer period of time.~~ Amendment of the existing permit, if required, would be subject to project-level environmental review by Alameda County.

DEIR page III.G-8, paragraph 4:

The approved *Grazing Resources Management Element* under the *Alameda Watershed Management Plan* was ~~implemented~~**adopted** in ~~late~~**July** 1997. The grazing management actions, in particular Actions **gra1** through **gra5**, primarily address water quality, erosion, disturbance of native vegetation, and displacement of wildlife. Implementation of those actions would control grazing through leases and structural improvements rather than by reducing or prohibiting the amount of grazing allowed.

DEIR page III.H-16 (and page III.H-17), paragraph 4:

As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (~~extending~~**shortening** the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new cultural resources impacts beyond those disclosed in the EIR prepared for SMP-32. ~~However, given the change of timing and sequence of mining under the Management Plan, impacts would take place over a longer period of time.~~ Pertinent measures adopted by Alameda County as conditions of approval for SMP-32 include requirements for landscape plan approval and berming to provide a visual barrier to the Sunol Water Temple. In addition, the *Alameda Watershed Management Plan* includes backfilling of an additional quarter-mile buffer after mining on the east side of Sunol Water Temple, which is closest to mining activity, to provide additional mitigation for cultural resources impacts. Amendment of the existing permit, if required, would be subject to project-level environmental review by Alameda County.

DEIR page III.J-5, paragraph 4:

As described earlier in this document, actions proposed in the *Alameda Watershed Management Plan* for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in the conditions of approval for Alameda County's SMP-32. The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (~~extending~~**shortening** the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new transportation and access impacts beyond those disclosed in the EIR prepared for SMP-32. ~~However, given the change of timing and sequence of mining under the Management Plan, impacts would take place over a longer period of time.~~

DEIR page III.L-9, paragraph 5:

The Management Plan incorporates SMP-32 conditions of approval and proposes modification in the timing and sequencing of mining (~~extending~~**shortening** the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new noise impacts beyond those disclosed in the EIR prepared for SMP-32. ~~However, given the change of timing and sequence of mining under the Management Plan, impacts would take place over a longer period of time.~~ Amendment of the existing permit, if required, would be subject to project-level environmental review by Alameda County.

DEIR page V-1 (and page V-2), paragraph 4:

Actions proposed in the Management Plan for mining north of I-680 would take place substantially in accordance with limits and mitigations set forth in Alameda County's conditions of approval for Surface Mining Permit (SMP) 32. The Management Plan incorporates the SMP-32 conditions of approval and proposes modifications in the timing and sequencing of mining (~~extending~~**shortening** the completion date for water storage pits) and mining reclamation. These modifications may require amendment of the existing permit but would not bring about any new impacts beyond those disclosed in the EIR prepared for SMP-32. As described in that EIR, permitted mining under SMP-32 would bring about the loss of 140 acres of prime agricultural lands. The EIR for SMP-32 found this loss of prime agricultural land to be an unavoidable significant impact of that project, and implementation of the Management Plan would include approval of a new lease between SFPUC (as land owner) and the mining operator, entitling mining that would also lead to the unavoidable significant impact.