

Chapter 4

OTHER STATUTORY CONSIDERATIONS

4.1 Introduction

This chapter describes the irreversible impacts, significant and unavoidable impacts, growth-inducing impacts, and cumulative impacts of the Proposed Project as required by the State CEQA Guidelines.

4.2 Irreversible Impacts

State CEQA Guidelines Section 15126.2(c) requires that an environmental impact report (EIR) must identify any irreversible impacts, also referred to as irreversible environmental changes that may be caused by a proposed project, including current or future commitments to using non-renewable resources, secondary, or growth-inducing impacts that commit future generations to similar uses. Section 15126 of the State CEQA Guidelines states that significant, irreversible environmental changes associated with a proposed project may include:

- uses of non-renewable resources during the initial and continued phases of the project which may be irreversible because a large commitment of such resources makes removal or nonuse thereafter unlikely;
- primary impacts and, particularly, secondary impacts (such as highway improvement that provides access to a previously inaccessible area) that commit future generations to similar uses; and
- irreversible damage, which may result from environmental accidents associated with the project.

An irretrievable commitment of nonrenewable resources would occur as a result of the Proposed Project. Implementation of the Proposed Project would involve maintenance activities, requiring the temporary use of heavy equipment, which would require the use of fossil fuels, and permanent use of raw materials, including nonrenewable resources. Future use of such resources would not be compulsory if alternative means of flood protection were implemented to alleviate the need for the SMP Update. The practices under the Proposed Project should reduce the need for maintenance over time. In addition, the SMP Update is not anticipated to have secondary impacts that would commit future generations to similar uses or result in irreversible damage.

4.3 Significant and Unavoidable Impacts

Section 15126.2(b) further requires an EIR to describe any significant impacts that cannot be mitigated to a level of insignificance. All of the impacts associated with the Proposed Project would be maintained/reduced to a less-than-significant level by implementation of identified BMPs (described in Chapter 2, *Project Description*) and mitigation measures, with the exception of the impacts discussed below.

The following impacts have been identified as significant and unavoidable. Please refer to the impact analysis sections in Chapter 3, *Environmental Setting and Impact Analysis*, and cumulative impact analysis in Chapter 5, *Alternatives Analysis* for a full description of impacts.

- **Impact AES-3:** Temporary Alteration of Visual Character or Quality from Maintenance Activities
- **Impact AES-4:** Permanent Alteration of Visual Character or Quality from Maintenance Activities
- **Impact AIR-1:** Temporary Increase in ROG, NO_x, PM₁₀, and PM_{2.5} Emissions during Maintenance Activities
- **Impact Bio-45:** Habitat Fragmentation
- **Impact GCC-1:** Temporary Increase in GHGs during Maintenance Activities
- **Impact NZ-1:** Temporary Exposure of the Public to Noise Levels in Excess of City or County Standards
- **Impact NZ-3:** Temporary Substantial Increase in Noise above Ambient Levels
- **Cumulative Impact AIR-1:** Emissions of ROG, NO_x, PM₁₀, and PM_{2.5}
- **Cumulative Impact AIR-2:** Emissions of Greenhouse Gases
- **Cumulative Impact Bio-2:** Habitat Fragmentation

4.4 Growth Inducing Impacts

Section 15126.2(d) of the State CEQA Guidelines requires an EIR to include a detailed statement of a proposed project's anticipated growth-inducing impacts. The analysis of growth-inducing impacts must discuss the ways in which a proposed project could foster economic or population growth or the construction of additional housing in the project area. The analysis also must address project-related actions that, either individually or cumulatively, would remove existing obstacles to population growth. A proposed project is considered growth inducing if it induces growth directly (through the construction of new housing or increasing population) or indirectly (increasing employment opportunities or eliminating existing constraints on development). Under CEQA, growth is not assumed to be either beneficial or detrimental.

The Proposed Project would not involve new development that could directly induce population growth, nor would it involve the extension of infrastructure that could indirectly induce population growth. The Proposed Project would not involve construction of new housing or create a demand for additional housing, such as through commercial development. Minimal additional staff are expected to be required to carry out the proposed maintenance activities under the SMP Update. Furthermore, the Proposed Project on its own would not displace any existing housing units or persons. The proposed maintenance activities would be limited to SCVWD-owned lands, easements, or parcels approved for work activities by the Board of Directors. Furthermore, if SCVWD were to stop maintaining SMP Update channels, this could result in increased flood risk, impeding potential future development in areas that currently are undeveloped and subject to such flooding. However, under baseline conditions, no known flooding issues are impeding development that would be resolved by maintenance activities conducted under the Proposed Project. As such, the SMP Update is not anticipated to remove any obstacles to growth.

4.5 Cumulative Impacts Analysis

A cumulative impact refers to the combined effect of “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (State CEQA Guidelines Section 15355). As defined by the State of California, cumulative impacts reflect “the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.” (State CEQA Guidelines Section 15355[b])

Under CEQA, an EIR must discuss the cumulative impacts of a proposed project when the project’s incremental contribution to the group effect is “cumulatively considerable.” An EIR does not need to discuss cumulative impacts that do not result in part from the project evaluated in the EIR. The State CEQA Guidelines (Section 15130[a]) require that an EIR address the cumulative impacts of a proposed project when:

- the cumulative impacts are expected to be significant; and
- the project’s contribution to the cumulative impact is expected to be cumulatively considerable, or significant in the context of the overall (cumulative) level of effect.

To meet the adequacy standard established by Section 15130 of the State CEQA Guidelines, an analysis of cumulative impacts must contain the following elements:

- A. an analysis of related future projects or planned development that would affect resources in the project area, similar to those affected by the proposed project;
- B. a summary of the environmental effects expected to result from those projects, with specific reference to additional information, stating where that information is available;
- C. a reasonable analysis of the combined (cumulative) impacts of the relevant projects; and

- D. an evaluation of a proposed project’s potential to contribute to the significant cumulative impacts identified, and a discussion of feasible options for mitigating or avoiding any contributions assessed as cumulatively considerable.

The discussion of cumulative impacts is not required to provide as much detail as the discussion of the effects attributable to the project alone. Rather, the level of detail needs to be guided by what is practical and reasonable. In addition, Section 15130(e) of the State CEQA Guidelines directs that if a cumulative impact is adequately addressed in a prior EIR for a general plan, and the proposed project is consistent with that general plan, the project EIR need not further analyze that cumulative impact.

Lead agencies may use a “list” approach to identify related projects, or may base the identification of cumulative impacts on a summary of projections in an adopted general plan or related planning document (State CEQA Guidelines Section 15130[b]), the “projection” approach.

4.5.1 Methods Used in this Analysis

The cumulative impact analysis utilizes the projection approach. Table 4-1 provides an overview of the planning documents used in the analysis. Santa Clara County was the geographic area considered for the cumulative impact analysis, except where an alternative geographic area was appropriate (e.g., global climate change was considered on a regional and global scale). Additional information on each planning document is provided in the regulatory setting sections in Chapter 3, *Environmental Setting and Impact Analysis*. Table 4-2 shows population and housing growth projections in the County.

SCVWD’s 5-year capital improvement program (CIP) for fiscal years 2011–2015 includes numerous projects that would occur throughout Santa Clara County that could affect resources similar to those affected by the Proposed Project. Table 4-3 lists those 5-year CIP projects that could affect resources similar to the Proposed Project and project activities that could potentially affect resources similar to the Proposed Project. Other operations and maintenance projects also would be conducted by the District, such as canal operations, which could have similar effects.

The cumulative impact analysis in the following section provides an assessment as to whether the projections described above, along with the projects listed in SCVWD’s CIP and other operations and maintenance projects, would result in significant cumulative impacts, and whether the SMP Update would make a considerable contribution to those significant cumulative impacts. Some of the projects listed in Table 4-3 have been completed. SCVWD is preparing a 2012–2016 CIP to update the current CIP by noting completed projects and projects added. Note that the State CEQA Guidelines state that lead agencies “should define the geographic scope of the area affected by the cumulative effect” (Section 15130[b][3]). The geographic scope of the analysis in this document varies depending upon the particular resource topic. For instance, greenhouse gas emissions are considered at a global scale; air quality emissions are considered at the scale of the air basin; the scale of analysis for noise would be limited to those areas that could potentially be affected by Proposed Project-related noise.

Internal Draft—Not for Public Review

Table 4-1. Planning Documents Considered for Cumulative Impact Analysis

Document	Summary
Santa Clara County General Plan 1995–2010 (1994)	<p>The 1995-2010 General Plan is the most current adopted general plan. The broad purpose of the Santa Clara County General Plan is to express policies which will guide decisions on future growth, development, and conservation of resources through 2010. It specifically addresses the unincorporated areas of the County. The vision for the General Plan consists of the following four basic themes that encompass and articulate the fundamental policy directions of the Plan. Within these four themes the plan established major planning goals, as identified below.</p> <p><i>Social and Economic Well-Being</i></p> <ul style="list-style-type: none"> ▪ Equality of Opportunity and Respect for Diversity ▪ A Healthy, Diverse Economy and Adequate Employment Opportunities ▪ Educational Excellence ▪ Community Participation in Decision Making ▪ Sense of Belonging and Contribution to Community ▪ Well-Functioning Families ▪ Personal Safety and Security ▪ Support for Those with Special Needs ▪ Adequate, Accessible Health Care and Social Services <p><i>Managed, Balanced Growth</i></p> <ul style="list-style-type: none"> ▪ Coordinate Countywide Planning and Cooperative Plan Implementation ▪ Balanced Development ▪ Planned, Orderly Urban Expansion ▪ Urban Development Appropriately Located ▪ Rural Development Appropriate to Rural Areas ▪ Compact, Transportation-Efficient Urban Development <p><i>Livable Communities</i></p> <ul style="list-style-type: none"> ▪ Adequate and Affordable Housing ▪ Convenient Transportation ▪ Accessible Parks and Public Open Space ▪ Cultural and Recreational Amenities ▪ Efficient and Adequate Urban Services ▪ Attractive Communities Enhanced by their Natural Surroundings ▪ Safety from Natural and Other Hazards

Table 4-1. Planning Documents Considered for Cumulative Impact Analysis

Document	Summary
	<p><i>Responsible Resource Conservation</i></p> <ul style="list-style-type: none"> ▪ A Healthy, Well-Functioning Natural Environment ▪ Healthful Air Quality ▪ Water Supply Resources Conserved and Protected ▪ Special Water Environmental Protected and Restored ▪ Heritage Resources Protected ▪ Productive Agriculture ▪ Mineral Resources Conserved and Responsibility Extracted ▪ Energy Resources Conserved ▪ Solid Waste Effectively Managed
City of Campbell General Plan (2001)	<p>The purpose of a city's General Plan is to guide decisions regarding physical growth and development, provision of public services and facilities, and conservation and enhancement of natural resources. Therefore, Campbell's General Plan:</p> <ul style="list-style-type: none"> ▪ Outlines a vision of long-range physical and economic development and resource conservation that reflects the aspirations of the community; ▪ Provides strategies that will allow this vision to be accomplished; ▪ Establishes a foundation upon which the City Council and Commissions can base policy decisions and a basis for judging whether specific development proposals and public projects are in harmony with community desires; ▪ Allows City departments, other public agencies, and private developers to design projects that will enhance the character of the community, preserve and enhance critical environmental resources, and minimize hazards; ▪ Provides the basis for establishing and setting priorities for detailed plans and implementing programs, such as the Zoning Ordinance, specific plans, and the Capital Improvement Program; and ▪ Addresses the issue of land availability to meet the City's economic development objectives, the need for housing in the community, and State law requirements for Campbell to accept its "fair share" of the regional housing needs.
City of Cupertino General Plan 2000–2020 (2005)	<p>The Cupertino General Plan is a roadmap to the future that encompasses the hopes, aspirations, values and dreams of the community. It provides a vision of the City's future by integrating the aspirations of residents, businesses and officials into a comprehensive strategy for guiding future development and managing change. The General Plan describes the long-term goals for the City's future and guides daily decision-making. The time frame of the Plan is 2000-2020. The Plan contains the City's official policies on land use and community design, transportation, housing, environmental resources and public health and safety. It provides guidance about growth, housing, transportation, neighborhood improvement and municipal service delivery.</p>
City of Gilroy 2002–2020 General Plan (2002)	<p>The Gilroy General Plan is a statement of community values and priorities. The General plan does the following:</p> <ul style="list-style-type: none"> ▪ Considers the issues and trends affecting the City today; ▪ Describes the type of community we want to be in the future; ▪ Sets forth goals, policies and implementing actions across a wide range of issue areas to help us achieve our aims; ▪ Describes how the General Plan should be managed over time;

Table 4-1. Planning Documents Considered for Cumulative Impact Analysis

Document	Summary
	<ul style="list-style-type: none"> ▪ Identifies near-term priorities for putting the General Plan into action; and ▪ Articulates our vision of the future and how we intend to realize it.
City of Los Altos General Plan (2002)	The Los Altos General Plan serves as a blueprint for future growth and development. As such, the plan contains policies and programs designed to provide decision makers with a solid foundation for land use and development decisions. The Los Altos General Plan represents the values and outlines the vision of the community. The Plan organizes the desires of Los Altos residents with respect to the physical, social, economic, and environmental character of the City. It embodies what the City is now and what it hopes to be in 2020.
Town of Los Altos Hills General Plan Update 2007 (2007)	<p>The Los Altos Hills General Plan focuses on the major aspects of community development and change. The General Plan is “comprehensive” in that it is the one document that sets forth ALL of the major physical parameters of development in the Town and assures that all aspects are consistent with each other. Finally, the General Plan deals primarily with the physical development of the community and land use issues. This does not mean, however, that non-physical aspects of the community are ignored. General Plan goals and policies sometimes address non-physical aspects of the community, such as social, economic and public interest concerns.</p> <p>The General Plan is the basis for a wide range of community actions. These include the establishment of community development regulations such as zoning, site development, and subdivision ordinances as well as public safety programs.</p>
City of Milpitas General Plan (2002)	The Milpitas General Plan describes the City’s ideas for its future and the ways in which it intends to transform these ideas into reality. The General Plan incorporates the Midtown Specific Plan and Transit Area Plan which establish the nature, character and location of activities and development; guide the orderly growth of the Midtown area and southern area near transit; define the nature of development and the physical framework of those areas; and provide a basis for future implementing actions to improve and beautify the areas.
Monte Sereno General Plan (2008)	<p>The General Plan is the principal policy document to guide future conservation, enhancement and development in Monte Sereno. It represents the basic policy direction of the City Council on community values, ideals and aspirations to govern a shared environment through 2025. The General Plan addresses all aspects of development including land use, transportation, housing, public facilities and infrastructure and open space. The following Guiding Principles serve as the foundation to this General Plan:</p> <ul style="list-style-type: none"> ▪ Community Character ▪ Environmental Sustainability ▪ Enhanced Mobility ▪ Quality Public Services ▪ Community Safety
Morgan Hill General Plan (2001)	The General Plan envisions Morgan Hill keeping its small-town character while offering new opportunities for businesses and amenities for residents. Agriculture will continue at the outskirts, and new housing for a range of incomes will be accommodated in a variety of locations. Urban land uses will be encouraged around the downtown, and incentives would foster infill development instead of sprawl.

Table 4-1. Planning Documents Considered for Cumulative Impact Analysis

Document	Summary
City of Mountain View 1992 General Plan (1992)	<p>The General Plan looks to the future, including projections for accommodating the growth of both housing and business, based on the most current available information. It is the City’s framework for future decisions, especially for community development and preservation and environmental conservation until 2005. This framework is built on the Plan’s Goals, Policies, and Actions, which provide a carefully balanced, internally consistent set of statements to guide the future polices of the community. Two basic premises of the General Plan are that growth can be directed to achieve beneficial ends, and the magnitude and location of growth is of direct concern to the residents, businesses, and taxpayers of the community. Three basic themes are woven throughout the 1992 General Plan:</p> <ul style="list-style-type: none"> ▪ Celebration of the community as it is now; ▪ Diversity of opportunities, past and present; and ▪ The evolution of the community, building on accomplishments while consciously preparing for the future.
City of Palo Alto Comprehensive Plan (2007)	<p>The Palo Alto Comprehensive Plan contains the City’s official policies on land use and community design, transportation, housing, natural environment, business and economics, and community services. Its policies apply to both public and private properties. Its focus is on the physical form of the City. The Plan has seven major themes, as follows:</p> <ul style="list-style-type: none"> ▪ Building community and neighborhoods; ▪ Maintaining and enhancing community character; ▪ Reducing reliance on the automobile; ▪ Meeting housing supply challenges; ▪ Protecting and repairing natural features; ▪ Meeting residential and commercial needs; and ▪ Providing responsive governance and regional leadership.
City of San Jose 2020 General Plan (2010)	<p>The Major Strategies of this General Plan establish the basic framework for planning in San José. The strategies also express the philosophy that the City should take a leadership role in the planning process, while encouraging community and private sector participation. Major strategies include:</p> <ul style="list-style-type: none"> ▪ Economic Development ▪ Growth Management ▪ Downtown Revitalization ▪ Urban Conservation/Preservation ▪ Greenline/Urban Growth Boundary ▪ Housing ▪ Sustainable City

Table 4-1. Planning Documents Considered for Cumulative Impact Analysis

Document	Summary
City of Santa Clara 2010–2035 General Plan (2010)	<p>This General Plan’s vision is long-range, supported by a spectrum of strategies and policies to deal with changing priorities and development pressures that the City will face through the coming years. Because this Plan looks forward 25 years into our future, it recognizes that changing circumstances may alter collective choices as we move toward that far-time horizon. This General Plan has been designed as a “Progressive Plan” that breaks down the 25-year horizon into three planning phases that are more manageable and responsive to change and future needs.</p> <p>In order to provide a structure for decision-making for development in the City, the General Plan outlines Major Strategies that provide the foundation for defined goals and policies. Together, these guide decisions that affect land use, neighborhood conservation, transportation, parks, and other aspects of the City’s physical form. The major strategies are as follows:</p> <ul style="list-style-type: none"> ▪ Enhance the City’s High Quality of Life ▪ Preserve and Cultivate Neighborhoods ▪ Promote Sustainability ▪ Enhance City Identity ▪ Support Focus Areas and Community Vitality ▪ Maintain the City’s Fiscal Health and Quality Services ▪ Maximize Health and Safety Benefits
City of Saratoga General Plan (2007)	<p>Several elements of the General Plan have been updated since 1983. The General Plan represents the wishes and desires of the citizens of Saratoga and will be the basis of future decisions within the City for the next five to ten years. The document provides citizens, public bodies and staff the needed direction to make decisions about the future development and character of the city. The format of the General Plan was designed in such a manner to allow the citizens to ascertain the guiding goals and polices, without having to comb through the entire document.</p>
City of Sunnyvale General Plan (2009)	<p>This General Plan’s vision is long-range, supported by a spectrum of strategies and policies to deal with changing priorities and development pressures that the City will face through the coming years. Because this Plan looks forward 25 years into the future, it recognizes that changing circumstances may alter collective choices as we move toward that far-time horizon. It is the vision and goals of the General Plan which give meaning and direction to all of the major decisions made by the City. It provides the context within which the City executive management team regularly undertakes short-range strategic planning, which translates the long-range, somewhat abstract goals of the General Plan into action strategies which address the current issues facing the City. These action strategies, in turn, guide the rational allocation of resources through the operating budget, projects budget and study issue process to those actions and services which can most cost-effectively meet the needs of the community.</p>

Source: Data compiled by Horizon Water and Environment in 2011

Table 4-2. Projected Santa Clara County Population and Housing Growth, 2010–2030

Jurisdiction	Population			Projected Annual Population Growth (%)	Housing			Projected Annual Housing Growth (%)
	2010	2020	2030		2010	2020	2030	
Campbell	40,500	44,100	45,900	0.7	16,890	18,360	19,350	0.7
Cupertino	55,200	56,300	57,100	0.2	19,830	20,360	21,100	0.3
Gilroy	49,800	58,700	66,000	1.6	14,330	16,710	18,870	1.6
Los Altos	28,400	29,400	30,200	0.3	10,670	11,030	11,420	0.4
Los Altos Hills	8,800	8,800	9,000	0.1	3,070	3,120	3,180	0.2
Los Gatos	29,600	30,000	30,100	0.1	12,430	12,600	12,900	0.2
Milpitas	69,000	82,300	98,100	2.1	19,030	23,090	27,990	2.4
Monte Sereno	3,400	3,600	3,600	0.3	1,220	1,230	1,250	0.1
Morgan Hill	38,200	42,200	45,800	1.0	12,400	13,820	15,180	1.1
Mountain View	72,100	80,200	87,300	1.1	32,110	36,090	40,120	1.2
Palo Alto	61,600	70,400	80,400	1.5	26,700	29,910	34,890	1.5
San Jose	981,000	1,137,700	1,299,700	1.6	305,140	356,470	409,640	1.7
Santa Clara	114,700	128,800	148,200	1.5	43,410	48,940	56,620	1.5
Saratoga	31,400	31,400	31,400	0.0	11,000	11,030	11,080	0.0
Sunnyvale	135,200	147,300	157,900	0.8	54,170	59,170	64,310	0.9
Unincorporated Santa Clara County	103,100	111,900	120,100	0.8	31,600	34,600	37,190	0.9
<i>Santa Clara County Total</i>	<i>1,822,000</i>	<i>2,063,100</i>	<i>2,310,800</i>	<i>1.3</i>	<i>614,000</i>	<i>696,530</i>	<i>785,090</i>	<i>1.4</i>

Source: ABAG 2009

Table 4-3. SCVWD 5-Year Capital Improvement Program and Project Activities that could potentially affect resources similar to the Proposed Project in fiscal years 2011–2015

CIP Project	Activities that Could Potentially Affect Resources Similar to the Proposed Project
Water Supply Capital Improvements	
Storage Facilities	
Almaden Dam Outlet Works Improvements	Modify and/or construct new intake structure and fix energy dissipation structure. Work within waters of U.S.
Calero/Fellows Dike Improvement	Aims to rescind the Department of Water Resources, Division of Safety of Dams restriction, which limits storage capacity. Project could increase storage capacity.
Dam Safety Program Seismic Stability Evaluation	Funding for construction of seismic stability improvements at one dam.
San Tomas Well Field	Preserve and improve groundwater extraction capacity.
Small Capital Improvements, San Felipe Reach 1-3	Infrastructure development including tunnels, large diameter pipelines and valve structures, pumps and associated equipment, as well as a large above-ground storage tank.
Transmission Facilities	
Alamitos Diversion Dam Improvements	Construct improvements at dam on the Guadalupe River.
Almaden–Calero Canal Rehabilitation	Improvements along canal.
Cathodic Protection of SCVWD-Owned Pipelines	General construction activities typical for pipeline improvements.
Cathodic Protection of U.S. Bureau of Reclamation-Owned Pipelines	General construction activities typical for pipeline improvements.
Coyote Diversion Dam Improvements	Percolation dam improvements.
East Pipeline Rehabilitation	Major pipeline repairs. Pipeline crosses several creeks and could include repairs to creek crossings.
Water Infrastructure Reliability Plan, Phase 2 (IRP2) Additional Line Valves	Installation of large, new line valves on existing pipelines.
IRP2 Well Fields	Construction of approximately 20 new wells to provide up to 80 million gallons per day of emergency supply.
Kirk Diversion Dam & Fish Screen Improvements	Dam improvements including to the flashboard system, as well as reducing entrainment, and maintenance.
Main & Madrone Avenue Pipelines Restoration	Pipeline restoration to utilize a reliable water source.
Penitencia Fish Facilities Modifications	Prevent exotic species introduction and develop water supplies and exercise water rights
Santa Clara Conduit Rehab, S Valve 1 to Coyote Pumping Plant	Construction of improvements to 11 miles of the Santa Clara Conduit.
Stevens Creek & Vasona Raw Water Distribution	Raw water conveyance system improvements.
Treatment Facilities	
IRP2 Seismic Study and Retrofit of Water Treatment Plant Operations Building	Construction of buildings.
Penitencia Water Treatment Plant (PWTP) Maintenance Building	Construction of buildings.
PWTP Washwater Clarification Facility	Construction of new washwater facility to improve treated water quality.

Table 4-3. SCVWD 5-Year Capital Improvement Program and Project Activities that could potentially affect resources similar to the Proposed Project in fiscal years 2011–2015

CIP Project	Activities that Could Potentially Affect Resources Similar to the Proposed Project
RWTP Facility Renewal Program (FRP) Residuals Management	Retrofitting of washwater recovery basins.
RWTP FRP Site Improvement	Roadway widening.
RWTP Reliability Improvement	Significant improvements to treatment plant.
RWTP Standby Power System Upgrade	Construction of permanent power facility.
Small Capital Improvements, Water Treatment	Small projects resulting in new disturbances and repair of water control facilities.
Recycled Water Facilities	
South Bay Advanced Recycled Water Treatment Facility	Construction of recycled water plant.
Recycled Water Master Plan	Construction of pipeline and 3 million gallons reservoir.
Flood Protection Capital Improvement Projects	
Lower Peninsula Watershed	
Adobe Creek, El Camino Real to Rhus Ridge (Reach 1-13)	Stream improvements for flood and erosion protection, sediment transport and fish passage. Work within streams.
Permanente Creek, San Francisco Bay to Foothill Expressway	Flood protection, reduce erosion and sedimentation, environmental restoration, and recreation enhancements. Work within streams.
San Francisquito Creek, San Francisco Bay through Searsville Dam	Flood protection, reduce bank erosion and sedimentation, avoid impacts to fish and wildlife habitat, and restore riparian corridor. Work within streams.
West Valley Watershed	
Calabazas Creek, Bollinger Bridge	Flood protection; restore vegetation and habitat, some construction for infrastructure improvements. Work within streams.
Calabazas Creek, Miller Avenue to Wardell Road	Flood protection; and reduce erosion and sedimentation. Work within streams.
San Tomas Creek, Quito Road Bridges Replacement	Construct bridge replacements.
Sunnyvale East and West Channels	Flood protection, recreation enhancements, reduce erosion and sedimentation, and protect fish and wildlife. Work within streams.
Guadalupe Watershed	
Guadalupe River-Downtown, Interstate 880 to Interstate 280	Flood protection, improve water quality, and enhance fish and wildlife habitat. Work within streams.
Guadalupe River-Upper, Interstate 280 to Blossom Hill Road	Flood protection, increase riparian forest acreage, improve wildlife habitat, access to upstream spawning and rearing habitat, and reduce bank erosion and sedimentation. Work within streams.
Coyote Watershed	
Berryessa Creek, Calaveras Boulevard to Old Piedmont Road	Flood protection, reduce sedimentation, and improve stream habitat. Work within streams.
Berryessa Creek, Lower Penitencia Creek to Calaveras Boulevard	Flood protection and improve structural integrity of levees. Work within streams.
Coyote Creek, Montague Expressway to Interstate 280	Flood protection and mitigation of project impacts to stream habitat and fisheries. Work within streams.
Lake Cunningham Improvements	Flood protection. Work within streams.
Lower Penitencia Creek, Berryessa to Coyote Creeks	Flood protection. Work within streams.

Table 4-3. SCVWD 5-Year Capital Improvement Program and Project Activities that could potentially affect resources similar to the Proposed Project in fiscal years 2011–2015

CIP Project	Activities that Could Potentially Affect Resources Similar to the Proposed Project
Lower Silver Creek, I-680 to Cunningham (Reach 4-6)	Flood protection. Work within streams.
Upper Penitencia Creek, Coyote Creek to Dorel Drive	Flood protection, mitigation of project impacts, improve stream habitat, and reduce sedimentation. Work within streams.
Uvas Llagas Watershed	
Llagas Creek-Lower, Capacity Restoration, Hwy 152 to Pajaro River	Restore flood capacity in lower creek, and integrate flood protection with habitat protection to satisfy Endangered Species Act regulations. Work within streams.
Llagas Creek-Upper, Buena Vista Road to Wright Avenue	Flood protection. Work within streams.
Water Resources Stewardship Capital Improvements	
Environmental Enhancement	
Clean Safe Creeks Soap Lake Floodplain Property Acquisition	Create wetlands, riparian habitat, and favorable stream conditions for fisheries and wildlife. Work within streams.
Fish and Aquatic Habitat Collaborative Effort (FAHCE) Stevens Creek Fish Passage Enhancement	Restore and maintain steelhead population, provide suitable spawning and rearing habitat via operations plan, and provide steelhead passage. Work within streams.
Jacques Gulch Restoration	Remove mercury calcine deposits, stabilize stream banks, and restore habitat. Work within streams.
Pond A8 Applied Study Final Design and Construction	Restore tidal influence and wetland habitat.
Mitigation	
Ogier Ponds Separation from Coyote Creek	Construct pond improvements including eliminating temperature and predation traps and improving passage for Chinook and steelhead.
SMP Mitigation, Laguna Seca Freshwater Wetland	Create 30 acres of freshwater wetlands.
SMP Mitigation, Pajaro Basin Freshwater Wetland	Create 4 acres freshwater wetlands.
SMP Mitigation, Stream and Watershed Land Preservation	Environmental restoration of 10 acres.
Stewardship	
Alviso Sough Restoration	Vegetation removal for 3.7 acres and dredging to 8 feet depth to restore channel widths and expand open water habitat. Work within wetlands.
Regnart Creek Stream Stabilization, Bubb to Stelling Roads	Erosion repairs to reduce sedimentation. Work within streams.
Thompson Creek Stream Stabilization, Quimby to Aborn Roads	Restore low-flow channel and riparian habitat, and provide erosion protection. Work within streams.

Source: SCVWD 2010

4.5.2 Cumulative Impact Analysis

Cumulative Setting

The following key impacts are considered cumulatively significant in the context of current and future projects. The cumulative impact discussion is limited to these topics only.

Air Quality. The San Francisco Bay Area Air Basin (SFBAAB) has been designated by the Bay Area Air Quality Management District (BAAQMD) as being in non-attainment under both federal and state standards for ozone. Particulate matter (PM)₁₀ and PM_{2.5} also are designated as in non-attainment under state standards. Several pollutants are undesignated at either the federal or state level: 24-hour PM₁₀ and PM_{2.5} concentrations under federal standards, and hydrogen sulfide and visibility-reducing particles under state standards. As growth occurs in the county, increased emissions of these and other pollutants could result in continued non-attainment status or new non-attainment designations.

In addition, as discussed in Section 3.5, *Global Climate Change*, anthropogenic emissions of greenhouse gases (GHGs) are widely accepted in the scientific community as contributing to global warming.

The BAAQMD has adopted specific quantitative and qualitative criteria that they recommend using to evaluate air quality impacts. The BAAQMD adopted CEQA thresholds for construction and operation are summarized in Tables 3.2-5 and 3.5-1. The BAAQMD's cumulative operation criteria for air pollutant and precursor emissions, including GHGs, are identical to their individual project thresholds. These thresholds represent the levels at which a project's individual emissions of criteria air pollutants, precursors, or GHGs would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions.

As described in Section 3.2, *Air Quality*, proposed SMP maintenance activities would result in increased air pollutant emissions from on-road and off-road vehicles, including increases in nitrogen (NO_x) emissions. These activities are estimated to result in the emission of 27.8 tons of nitrogen per year in 2012. Although daily vehicle activity would not change between 2012 and 2022, daily emissions are expected to decrease over this period as existing vehicles are replaced with lower-emission vehicles. Consequently, average daily vehicle emissions are expected to be much lower in 2022 (10.2 tons/year) compared to 2012. A portion of airborne NO_x emissions are converted into forms that can fall to earth as depositional nitrogen. Weiss (1999) concluded that such nitrogen deposition effectively "fertilizes" serpentine habitats to the point that non-native annual grasses are better able to invade these nutrient-poor habitats, resulting in degradation of serpentine plant communities and the subsequent loss of the Bay checkerspot butterfly's native larval host plants.

The Santa Clara Valley Habitat Plan (ICF Jones & Stokes 2010) includes an analysis of the degree to which implementation of the Habitat Plan will increase nitrogen deposition. NOx emissions from sources within Santa Clara County were calculated at 42,340 tons/year in 2000, although total emissions from Santa Clara County as well as neighboring counties that could potentially contribute to nitrogen deposition on Bay checkerspot butterfly habitat in the Habitat Plan area was calculated at 934,801 ton/year. Based on these estimates, nitrogen emissions resulting from the SMP Update are expected to contribute a maximum of 0.07 percent of the total nitrogen emissions from sources within Santa Clara County and only 0.003 percent of total emissions from Santa Clara County and neighboring counties. Thus, the SMP Update is not expected to make a cumulatively considerable contribution to any cumulative impacts of nitrogen deposition on serpentine plant or animal communities.

Biological Resources. Although the various County and jurisdictional general plans (see Section 3.8, *Land Use and Planning*) contain policies addressing conservation and preservation of open space, ongoing development in the county is anticipated to result in the loss of riparian habitat, wetlands, and other sensitive natural communities. These outcomes likely will lead to direct take or loss of habitat for both common and special-status species.

As discussed in Section 3.3 *Biological Resources*, under Impact BIO-41, SCVWD currently is pursuing preparation of the Santa Clara Valley Habitat Plan, together with five other partners located in the county. The intent of this plan is to protect, enhance, and restore ecosystem integrity and functionality for threatened and endangered species; enhance the diversity of plant and animal communities; and conserve habitat and contribute to the recovery of species listed or likely to be listed under the federal ESA or the California ESA. In addition, SCVWD is pursuing preparation of the Three Creeks Habitat Conservation Plan, intended to cover ongoing operations and maintenance of eight existing dams and reservoirs in the Guadalupe River, Coyote Creek, and Stevens Creek watersheds. The goal of this plan is to restore and maintain healthy salmonid populations as appropriate to each of the three watersheds.

Because of the urban and agricultural context in which many creeks within the Project Area occur, the riparian, aquatic, and wetland habitats along these creeks represent the only (or at least highest-quality) habitat available to many species on the Valley floor. As a result, development within the county could lead to the cumulative fragmentation effects to habitat connectivity for plants and animals.

Cultural Resources. Similar to biological resources, the various County and jurisdictional general plans contain policies regarding preservation of important cultural resources. Regardless, ongoing development could lead to the cumulative loss of significant historic, archeological, or paleontological resources.

Land Use and Planning. As the county develops, land use conflicts or incompatibilities, such as those between agriculture or other non-urban uses and urban development at the urban growth boundary, could intensify.

Noise. As the county grows, the number of noise sources will multiply, and ambient noise levels are likely to increase in a variety of locations, particularly in urban areas and along transit corridors.

Public Services and Utilities. Similar to transportation infrastructure, provision of adequate water, wastewater, stormwater, and solid waste infrastructure will be key issues as the county continues to grow.

Traffic and Transportation. Automobile traffic congestion is already a severe problem throughout the county. Provision of an adequate automotive transportation network and reducing automobile traffic by providing alternative means of transportation are identified as key issues to be addressed in various County and jurisdictional general plans. Traffic conditions may worsen as development in the county continues.

Water Resources. Increased development in the county may lead to a variety of impacts on water resources, including increased demand for water supplies, new sources of point source and non-point source pollution, increased area of impervious surface and volume of stormwater runoff, and potential flooding impacts.

The geographic scope of the area potentially affected by the Proposed Project for water quality would include various surface waters in the county and downstream receiving waters, listed for water quality impairments under the CWA Section 303(d). Listed waterbodies and impairments include: Guadalupe River and San Francisco Bay for mercury; San Francisco Bay for polychlorinated biphenyls; San Francisco Bay Area Urban Creeks for pesticide toxicity; Pajaro River for fecal coliform (including Pajaro River, San Benito River, Llagas Creek and Tequisquita Slough), sediment (including San Benito River, Llagas Creek and Rider Creek), and nitrates (including Llagas Creek); and San Francisquito Creek for sediment.

Proposed Project-related sediment that is not reused by SCVWD or transferred to other entities for reuse would be disposed at a landfill. As discussed in Chapter 2, *Project Description*, collected sediment will be: reused at Bay Pond A8 or other ponds to support tidal habitat restoration efforts; disposed at a local landfill or an appropriate hazardous waste facility (e.g., Buttonwillow hazardous waste landfill); or disposed at other upland or aquatic sites (e.g., the abandoned quarry pond next to the Coyote Parkway site, the U.S. Fish and Wildlife Service refuge at Bair Island, and Phase 2 of the South Bay Salt Pond restoration effort). Reuse could have direct effects but also may have indirect effects if the reuse was part of a larger project.

4.5.3 Cumulative Impacts

Cumulative Impact AIR-1: Emissions of ROG, NO_x, PM₁₀, and PM_{2.5} (Less than Significant with Mitigation or Significant and Unavoidable)

Because of the non-attainment status for particulates (PM₁₀ and PM_{2.5}) and ozone precursors (ROG and NO_x) in the SFBAAB, emissions of these contaminants would be a significant cumulative impact. The discussion below describes how the Proposed Project activities could potentially contribute to this impact.

Vegetation Management

Vegetation management activities would involve the application of pesticides and vehicle use. Both of these activities would potentially emit particulates and ozone precursors. Use of zinc phosphide also could emit phosphine gas.

Other Maintenance Activities

All other proposed maintenance activities (bank stabilization, sediment removal, minor maintenance, management of animal conflicts, and canal maintenance activities) would include the use of vehicles and may require the use of heavy equipment. In addition, all of these activities may involve ground disturbance during the removal of sediments, stabilization of banks, site grading, or reconstruction of levee side slopes. Soil disturbance related to these activities would cause temporary emissions of particulate matter. Fuel combustion involved with operating heavy equipment, generators, and on-road vehicles used to dispose debris also would release particulate matter and other contaminants associated with motor vehicle operation, including carbon monoxide and ozone precursors (ROG and NO_x).

Applicable Best Management Practices

The following BMPs would be implemented as part of the SMP Update to provide dust management during all Proposed Project activities. Descriptions of each BMP are provided in Chapter 2, *Project Description*.

BMP GEN-4: Minimize the Area of Disturbance

BMP GEN-29: Dust Management

Conclusion

With implementation of the BMPs above, emissions of criteria air pollutants other than NO_x from the Proposed Project would occur at levels below the BAAQMD's cumulative significance thresholds. However, average daily and annual emissions of NO_x from the Proposed Project would exceed the BAAQMD's cumulative significance thresholds, as described in Section 3.2, *Air Quality*. Therefore, the Proposed Project would make a considerable contribution to this significant cumulative air quality impact.

The District would implement Mitigation Measure AIR-1A, reducing NO_x emissions by 20 percent, which would lower NO_x emissions below the significance threshold in 2020, but not in 2012. As a result, this impact would remain significant after this mitigation.

Therefore, the District would implement either Mitigation Measure AIR-1B or AIR-1C to offset remaining annual NO_x emissions in exceedance of BAAQMD significance thresholds. Implementation of either Mitigation Measure AIR-1B or AIR-1C would reduce this impact to a less-than-significant level. However, it is possible that these mitigation measures may not be feasible because of the considerations discussed below. If the District found these mitigation measures to be infeasible, then this impact would be considered significant and unavoidable.

Mitigation Measure AIR-1A Reduction in Fleet Emissions

Mitigation Measure AIR-1B Off-site NO_x Emissions Mitigation Program

Mitigation Measure Air-1C: NO_x Emissions Offsets

***Cumulative Impact AIR-2: Emissions of Greenhouse Gases
(Less than Significant with Mitigation or Significant and Unavoidable)***

Emission of GHGs that would contribute to global climate change would be considered a significant cumulative impact. All of the Proposed Project's maintenance activities (vegetation management, sediment removal, bank stabilization, management of animal conflicts, minor maintenance, and canal maintenance) would release GHGs from the combustion of fossil fuels in on- and off-road vehicles, and portable power generators.

Conclusion

The Proposed Project's net emissions increase would exceed the BAAQMD's cumulative significance threshold of 1,100 metric tons CO₂e, as discussed in Section 3.5, *Global Climate Change*. Therefore, the Proposed Project would make a considerable contribution to this significant cumulative GHG impact. The District would implement Mitigation Measure AIR-1A, which would reduce NO_x emissions by 20 percent, and also may reduce other GHG emissions. Although possible, this measure is not expected to reduce GHG emissions below the threshold. Therefore, this impact would remain significant after this mitigation.

Therefore, the District would implement either Mitigation Measure GCC-1A or GCC-1B, or a combination of both measures, to offset annual GHG emissions in exceedance of BAAQMD significance thresholds. Implementation of either Mitigation Measure GCC-1A or GCC-1B, or a combination of both measures, would reduce this impact to a less-than-significant level. However, it is possible that these mitigation measures may not be feasible because of the factors discussed below. If the District found these mitigation measures to be infeasible, then this impact would be considered significant and unavoidable.

Mitigation Measure AIR-1A Reduction in Fleet Emissions

Mitigation Measures: GCC-1A On-site or Off-site GHG Emissions Mitigation Program

Mitigation Measure GCC-1B: GHG Emissions Offsets

***Cumulative Impact BIO-1: Effects on Biological Resources
(Less than Significant with Mitigation)***

The Proposed Project could potentially affect biological resources through habitat alterations or losses, as described further below.

All Proposed Project Activities

The proposed maintenance activities would involve sediment removal, bank stabilization, minor maintenance, management of animal conflicts, vegetation management, and canal maintenance. Any of the Proposed Project's activities could have the potential for impacts to a variety of biological resources, including the following:

- temporary disturbance or permanent loss of aquatic and upland natural communities;
- temporary disturbance or permanent loss of potential habitat for, and loss of individuals of, special-status plants, including:
 - serpentine-associated species (Santa Clara Valley dudleya, Metcalf Canyon jewel-flower, big-scale balsamroot, pink creamsacs, Mt. Hamilton thistle, San Francisco collinsia, fragrant fritillary, Loma Prieta hoita, woolly-headed lessingia, smooth lessingia, and most beautiful jewel-flower);
 - non-serpentine associated species (Franciscan onion, bent-flowered fiddleneck, Anderson's manzanita, brittlescale, round-leaved filaree, Congdon's tarplant, Santa Clara red ribbons, Hospital Canyon larkspur, western leatherwood, Hoover's button-celery, Satan's goldenbush, showy golden madia, arcuate bush-mallow, Davidson's bush-mallow, Hall's bush-mallow, Oregon meconella, Mt. Diablo cottonweed, robust monardella, hooked popcorn-flower, and saline clover);
- temporary disturbance or permanent loss of potential habitat for, and loss of individuals of, special-status animals, including:
 - special-status invertebrates (Bay checkerspot butterfly, Hom's micro-blind harvestman, Jung's micro-blind harvestman, and Opler's longhorn moth, mimic tryonia);
 - special-status fish (Central California Coast and South-Central Coast steelhead, Pacific lamprey, Monterey roach, longfin smelt, and green sturgeon);
 - special-status amphibians (California tiger salamander, California red-legged frog, and foothill yellow-legged frog);
 - special-status reptiles (western pond turtle and California horned lizard);
 - special-status birds (western snowy plover, black skimmer, California clapper rail, California black rail, redhead, American peregrine falcon, golden eagle, bald eagle, burrowing owl, short-eared owl, long-eared owl, northern harrier, white-tailed kite, Alameda song sparrow, Bryant's savannah sparrow, San Francisco

common yellowthroat, Least Bell's vireo, yellow warbler, yellow-breasted chat, grasshopper sparrow, loggerhead shrike, Vaux's swift, tricolored blackbird, and olive-sided flycatcher);

- special-status mammals (salt marsh harvest mouse, salt marsh wandering shrew, San Francisco dusky-footed woodrat, pallid bat, Townsend's big-eared bat, western red bat, American badger, ringtail, San Joaquin kit fox, and Pacific harbor seal);
- temporary disturbance or permanent loss of potential nesting habitat for, and active nests of, migratory birds, including raptors; and
- loss of heritage-sized trees.

The cumulative impact on biological resources resulting from the Proposed Project in combination with other projects in the Project Area would be dependent on the relative magnitude of adverse effects of these projects on biological resources compared to the relative benefit to these resources of impact avoidance and minimization efforts prescribed by planning documents, CEQA mitigation measures, and permit requirements for each project; compensatory mitigation and proactive conservation measures associated with each project; and the benefits to biological resources accruing from the habitat conservation plans (HCPs) being pursued by SCVWD and others. In the absence of such avoidance, minimization, compensatory mitigation, and conservation measures, cumulatively significant impacts to biological resources would occur.

Applicable Best Management Practices

The following BMPs would be implemented as part of the SMP Update to minimize potential cumulative impacts on biological resources. Descriptions of each BMP are provided in Chapter 2, *Project Description*.

GEN-4: Minimize the Area of Disturbance

GEN-5: Mitten Crab Control Measure

GEN-6: Minimize Impacts to Nesting Birds via Site Assessments and Avoidance Measures

GEN-6.5: Protection of Nesting Least bell's vireo

GEN-7: Protection of Burrowing Owls

GEN-8: Protection of Sensitive Fauna Species from Herbicide Use

GEN-9: Avoid Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities

GEN-10: Avoid Impacts to Bay Checkerspot Butterfly and Associated Critical Habitat

GEN-11: Protection of Salt Marsh Harvest Mouse and California Clapper Rail

GEN-12: Protection of Special-Status Amphibian and Reptile Species

GEN-13: Protection of Bat Colonies

GEN-14: Protection of San Francisco Dusky-Footed Woodrat

GEN-15: Salvage Native Aquatic Vertebrates from Dewatered Channels

GEN-15.5: Avoidance of Impacts on the San Joaquin Kit Fox

Conclusion

Each of the County and jurisdictional general plans considered for this cumulative impact assessment contains conservation measures that would benefit biological resources, as well as measures to avoid, minimize, and mitigate impacts to these resources. Likewise, the two regional HCPs with which SCVWD is involved will result in a net benefit to biological resources. As a result, through CEQA documents and permit conditions (including the conditions of these HCPs), each project in the region would mitigate its contribution to biological resources, reducing cumulative impacts. Section 3.3, *Biological Resources* identifies a number of mitigation measures that would be implemented to reduce impacts to sensitive habitats and to both common and special-status species: Collectively, implementation of the Proposed Project's mitigation plan and CEQA mitigation measures would ensure that the Proposed Project's contributions to cumulative impacts on biological resources would not be considerable, with one exception (habitat fragmentation, which is considered separately in Cumulative Impact BIO-2: Habitat Fragmentation, below). With implementation of the following mitigation measures, the Proposed Project's contributions would be less than considerable.

Mitigation Measures:

- Mitigation Measure BIO-1:** Implement Compensatory Mitigation for Wetlands and Other Waters
- Mitigation Measure BIO-2:** Implement Compensatory Mitigation for Woody Riparian Vegetation
- Mitigation Measure BIO-3:** Implement Compensatory Mitigation for Serpentine Communities
- Mitigation Measure BIO-4:** Implement Compensatory Mitigation for Serpentine-Associated Special-Status Plant Species
- Mitigation Measure BIO-5:** Implement Compensatory Mitigation for Impacts to Non-Serpentine Special-Status Plant Species
- Mitigation Measure BIO-6:** Implement Compensatory Mitigation for Impacts to Serpentine-Associated Special-Status Invertebrates
- Mitigation Measure BIO-7:** Tree Replacement
- Mitigation Measure BIO-8:** Augmentation of Spawning Gravel
- Mitigation Measure BIO-9:** Augmentation of Instream Complexity for Non-Tidal Stream Fish
- Mitigation Measure BIO-10:** Implement Compensatory Mitigation for the California Tiger Salamander
- Mitigation Measure BIO-11:** Implement Compensatory Mitigation for the California Red-Legged Frog
- Mitigation Measure BIO-12:** Implement Compensatory Mitigation for the Least Bell's Vireo
- Mitigation Measure BIO-13:** Implement Compensatory Mitigation for the Burrowing Owl
- Mitigation Measure BIO-14:** Implement Compensatory Mitigation for the Yellow Warbler
- Mitigation Measure BIO-15:** Provide Alternative Bat Roost
- Mitigation Measure BIO-16:** Invasive Plant Species Management Program

***Cumulative Impact BIO-2: Habitat Fragmentation
(Significant and Unavoidable)***

Impacts to habitat connectivity as a result of habitat fragmentation would be a significant cumulative impact in Santa Clara County. As described in Impact BIO-40 in Section 3.3, *Biological Resources*, all of the Proposed Project activities would contribute to the Proposed Project's adverse habitat-related effects, including habitat loss and fragmentation of habitat connectivity.

Applicable Best Management Practices

The following BMPs would be implemented as part of the SMP Update to minimize potential cumulative impacts on habitat connectivity. Descriptions of each BMP are provided in Chapter 2, *Project Description*.

BMP GEN-4: Minimize the Area of Disturbance

BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream

Conclusion

After the implementation of the compensatory mitigation described in Section 3.3, *Biological Resources*, impacts may remain for those species that could not easily move to undisturbed areas or mitigation sites. Because of the widespread nature of Proposed Project activities and the importance of riparian habitats and creeks in providing habitat connectivity throughout Santa Clara County, the combined effect of Proposed Project activities could have a considerable contribution to this significant cumulative impact. Conservation elements of other projects, such as general plans and the aforementioned HCPs, would reduce the effects of those projects on habitat connectivity, but those conservation elements are not expected to reduce cumulative impacts on habitat connectivity to less-than-significant levels. Therefore, the SMP Update's contribution to the cumulative impact on habitat connectivity resulting from habitat fragmentation would be considerable. No feasible mitigation would be possible except for that already identified to further reduce the Proposed Project's contribution to this cumulative impact. Therefore, this impact would remain significant and unavoidable.

Mitigation Measures: No mitigation is required in addition to those measures previously identified in Section 3.3, Biological Resources.

Cumulative Impact CR-1: Effects on Cultural Resources (Less than Significant)

Impacts on cultural resources, including historic, archeological, or paleontological resources, could occur primarily through ground disturbances associated with the Proposed Project activities.

Vegetation Management and Management of Animal Conflicts

Vegetation management and animal conflicts management generally would not involve activities that may affect cultural resources. Although unlikely, discing as part of vegetation management or physical habitat alterations for animal conflicts management could potentially result in demolition or modification of significant historic, archeological, or paleontological resources.

Sediment Removal and Bank Stabilization

Although unlikely, the use of heavy equipment for sediment removal and bank stabilization activities and the ground disturbances associated with these activities, including the potential creation of new access ramps, potentially could substantially affect cultural resources.

Minor Maintenance and Canal Maintenance

Minor maintenance activities could involve grading of small areas and potentially would result in similar effects on cultural resources as described above for sediment removal and bank stabilization. Because routine canal maintenance activities would include all general work activities, effects would be the same as described above for routine maintenance activities.

Applicable Best Management Practices

The following BMPs would be implemented as part of the SMP Update to minimize potential cumulative impacts on cultural resources. Descriptions of each BMP are provided in Chapter 2, *Project Description*.

BMP GEN-4: Minimize the Area of Disturbance

BMP GEN-23: Stream Access

BMP GEN-40: Discovery of Cultural Remains or Historic or Paleontological Artifacts

BMP GEN-41: Review of Projects with Native Soil

Conclusion

With the BMPs identified above, the Proposed Project is not anticipated to make a considerable contribution to cumulative impacts related to cultural resources. Therefore, the Proposed Project's contributions would be less than significant, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Cumulative Impact LU-1: Land Use Conflicts (Less than Significant)

In Santa Clara County, land use conflicts between urban uses and lands adjacent to the urban growth boundary are considered a potentially significant cumulative impact.

Sediment Removal/Bank Stabilization

The location of sediment removal and bank stabilization activities would be limited to SCVWD-owned lands, easements, or on parcels approved by the Board of Directors. In addition, as described in Section 3.8, *Land Use and Planning*, Proposed Project-related disturbances to adjacent land uses would be temporary and would cease on completion of the maintenance activities. These activities would not cause permanent land use incompatibilities or conflicts with adopted plans or policies. Sediment removal and bank stabilization activities would not include the development of any housing or utilities and would not induce substantial population growth, directly or indirectly.

Other Maintenance Activities

Other SMP maintenance activities (vegetation management, management of animal conflicts, minor maintenance, and canal maintenance) would have similar effects as those described above for sediment removal and bank stabilization activities.

Applicable Best Management Practices

All of the BMPs described in Chapter 2, *Project Description*, would be applicable to the Proposed Project's compliance with applicable land use plan and policy categories.

Conclusion

Because the Proposed Project would be consistent with existing plans and would not interfere with adjacent land uses, the Proposed Project would not make a considerable contribution to cumulative impacts related to land use and planning. Therefore, the Proposed Project's contributions would be less than significant and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Cumulative Impact NZ-1. Project-Related Noise Emissions (Less than Significant)

Noise generated from past, present, and reasonably foreseeable future growth in Santa Clara County is considered a potentially significant cumulative impact.

Sediment Removal and Bank Stabilization

Equipment used to conduct sediment removal and bank stabilization activities, such as bulldozers, excavators, front-end loaders, dump trucks, gradalls, and tractor mowers would generate noise. Although construction noise in any given location would be short term, many Proposed Project activities could increase ambient noise levels by 3 decibels or more, and/or result in exterior noise levels in excess of 75 dBA (A-weighted decibels), within 50 feet of residences that may be sensitive to noise. Noise impacts of the Proposed Project would be dispersed throughout the county.

Vegetation Management

Vegetation management activities would include the use of mowers and hand-held devices (chainsaws, hand sprayers, etc.) that would generate noise at levels similar or less than those described above for sediment removal and bank stabilization activities.

Other Maintenance Activities

The other Proposed Project activities (minor maintenance, canal maintenance, and management of animal conflicts) also would involve various noise-generating activities. Minor maintenance activities may involve the use of heavy equipment for grading of small areas or minor sediment removal. Because routine canal maintenance activities would include all general work activities, effects would be the same as described above for other routine maintenance activities. In general, animal conflict management activities would not be very loud but could require the use of heavy equipment to physically alter facilities (e.g., levee surface compaction or reconstruction of levee side slopes).

Applicable Best Management Practices

The following BMPs would be implemented as part of the SMP update to reduce cumulative impacts from noise. Descriptions of each BMP are provided in Chapter 2, *Project Description*.

BMP GEN-36: Public Outreach

BMP GEN-38: Minimize Noise Disturbances to Residential Areas

Conclusion

The Proposed Project would require maintenance workers to employ noise reducing practices in residential areas or to notify the public before the start of maintenance activities. Because the Proposed Project would not result in any long-term increases in noise in any particular location, the Proposed Project is not considered to make a considerable contribution to cumulative impacts related to noise generation. Therefore, the Proposed Project's contributions would be less than significant, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Cumulative Impact TR-1: Disruption to Automobile Traffic Patterns (Less than Significant)

Automobile traffic congestion in Santa Clara County resulting from past, present, and reasonably foreseeable future growth is considered a potentially significant cumulative impact.

Sediment Removal/Bank Stabilization

Sediment removal and bank stabilization activities would generate traffic in the form of maintenance equipment, deliveries of materials, sediment disposal, fill hauling, and worker trips. Additionally, maintenance activities may require temporary road or lane closures. Traffic effects in any given location would be short term.

Other Maintenance Activities

Similar to sediment removal and bank stabilization activities, other proposed maintenance activities (vegetation management, minor maintenance, management of animal conflicts, and canal maintenance) would generate traffic related to maintenance equipment and worker trips, and would require temporary lane or road closures.

Applicable Best Management Practices

The following BMPs would be implemented as part of the SMP Update to minimize potential cumulative impacts on traffic and transportation. Descriptions of each BMP are provided in Chapter 2, *Project Description*.

BMP GEN-36: Public Outreach

BMP GEN-37: Implement Public Safety Measures

BMP GEN-39: Planning for Pedestrians, Traffic Flow, and Safety Measures

Conclusion

The Proposed Project would minimize effects on traffic, including public outreach, maintenance of two-way traffic flow on public roadways, and maintenance of public safety. Accordingly, the Proposed Project would not make a considerable contribution to cumulative impacts related to traffic. Therefore, the Proposed Project's contribution would be less than significant, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Cumulative Impact PSU-1: Effects on Public Services and Utilities (Beneficial)

The Proposed Project could affect public services and utilities if it resulted in an increased demand for additional water, wastewater, or stormwater infrastructure, or generated solid waste that would exceed the capacity of landfills or other receiver sites.

Bank Stabilization

The proposed bank stabilization activities would require limited quantities of water, which would be provided by SCVWD water trucks, for dust control and/or vehicle cleaning during the activities. As described in Section 3.10, *Public Services and Utilities*, no water infrastructure would be needed for bank stabilization activities. Portable restrooms would be used during these short-term activities and no long-term wastewater infrastructure would be required. Bank stabilization activities would enhance the functioning of current

stormwater infrastructure by repairing unstable stream or channel banks. These activities would provide flood management benefits and could reduce the likely threat of flooding. Bank stabilization activities may require the disposal of sediments, which would be reused for wetland restoration projects (e.g., Pond A8) or disposed at local landfills (or, for hazardous materials, disposed at the Buttonwillow landfill). Local landfills would have sufficient capacity to accept solid waste from the Proposed Project and other generators, as shown in Table 3.10-1. As described in Section 3.6, *Hazards and Hazardous Materials*, the Buttonwillow landfill was built with a capacity of 13,325,000 cubic yards and has used less than 10 percent of this capacity (Clean Harbors 2010a, DTSC 2008). The landfill is capable of accepting large quantities of waste (Winwood, pers. comm., 2011). The disposal of any sediments from the Proposed Project's bank stabilization activities would not result in a cumulative exceedance of the capacity of a landfill.

Sediment Removal

Effects on water and wastewater utilities from the proposed sediment removal activities would be similar to those described above for bank stabilization activities. Sediment removal activities would have a beneficial effect on stormwater infrastructure by removing sediments from canals and creeks and restoring the conveyance capacity of flood protection channels of the Project Area. As described in Section 3.10, *Public Services and Utilities*, sediments would be disposed at Pond A8 or the Buttonwillow landfill, depending on the sediment quality. As described above, Buttonwillow has sufficient capacity to accept the Proposed Project's anticipated sediment quantities as well as contributions from other sediment generators.

Vegetation Management

Effects on water, stormwater, wastewater utilities from vegetation management activities would be similar to those described above for bank stabilization activities. As described in Section 3.10, *Public Services and Utilities*, the Proposed Project likely would involve the removal of other materials, including vegetation that could be disposed at local Santa Clara County landfills.

Other Maintenance Activities

Minor maintenance, canal maintenance, and management of animal conflicts may result in a need for sediment or solid waste disposal. As described previously, local landfills and regional hazardous waste landfills would have sufficient capacity to accept these wastes, in addition to the wastes of other generators. Furthermore, effects related to water, stormwater, and wastewater utilities would be similar to that described for bank stabilization activities.

Applicable Best Management Practices

The following BMPs would be implemented as part of the SMP Update to minimize potential cumulative impacts on public services and utilities. Descriptions of each BMP are provided in Chapter 2, *Project Description*.

- BMP GEN-3: Avoid Exposing Soils with High Mercury Levels
- BMP GEN-4: Minimize the Area of Disturbance
- BMP GEN-23: Stream Access
- BMP GEN-27: Existing Hazardous Sites
- BMP GEN-36: Public Outreach
- BMP GEN-37: Implement Public Safety Measures
- BMP GEN-39: Planning for Pedestrians, Traffic Flow, and Safety Measures
- BMP GEN-42: Investigation of Utility Line Locations

Conclusion

During maintenance activities, the Proposed Project would be implemented to minimize any potential interruptions to public services and utilities systems, and would not require the construction of any additional public services and utilities systems. The Proposed Project would not generate the need for water or wastewater infrastructure, or result in solid waste disposal needs that would exceed the capacity of landfills or other receiver sites. Furthermore, the Proposed Project would make a positive contribution with respect to maintaining stormwater infrastructure. Therefore, the Proposed Project would be beneficial from the standpoint of cumulative impacts related to public services and utilities systems, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Cumulative Impact WQ-1: Effects on Water Quality (Less than Significant)

Under CWA Section 303(d), further degradation to impaired surface waters constitutes a significant cumulative impact. Ground-disturbing or sediment-disturbing activities associated with the Proposed Project potentially could result in discharges of sediment or other sediment-adsorbed contaminants.

Sediment Removal/Bank Stabilization/Minor Maintenance

Sediment removal, bank stabilization, and minor maintenance activities would involve a variety of mostly in-channel, ground-disturbing activities, including grading, development of new access ramps to creek channels, bank stabilization, and/or sediment removal activities. Grading activities for minor maintenance also may be performed outside of stream channels. Installation and removal of flow diversion structures for these activities would involve streambed and bank disturbance that could cause increased turbidity in the water column surrounding the work site and migration of sediment downstream. Although sediment or contaminant waste discharges only would occur at any particular site when maintenance activities occurred and would be short term, discharges could reach impaired downstream water bodies.

Vegetation Management

Vegetation removal and discing could occur as part of vegetation management activities and potentially would have similar water quality effects as other ground-disturbing activities described above for other routine maintenance activities.

Management of Animal Conflicts

Management of animal conflicts potentially could affect water quality via ground-disturbing activities related to physical alteration of habitats, such as levee side slope reconstruction. Potential effects of these sediment-disturbing activities would be similar to those described above for other routine maintenance activities.

Canal Maintenance

Because routine canal maintenance activities would include all general work activities, effects would be the same as described above for other routine maintenance activities.

Applicable Best Management Practices

The following BMPs would be implemented as part of the SMP Update to minimize potential cumulative impacts on water quality. Descriptions of each BMP are provided in Chapter 2, *Project Description*.

- BMP GEN-1: In-Channel Work Window
- BMP GEN-4: Minimize the Area of Disturbance
- BMP GEN-16: In-Channel Minor Activities
- BMP GEN-20: Erosion and Sediment Control Measures
- BMP GEN-23: Stream Access
- BMP GEN-24: On-Site Hazardous Materials Management
- BMP GEN-25: Existing Hazardous Materials
- BMP GEN-26: Spill Prevention and Response
- BMP GEN-30: Vehicle and Equipment Maintenance
- BMP GEN-32: Vehicle and Equipment Fueling
- BMP GEN-33: Dewatering for Non-Tidal Sites
- BMP GEN-34: Dewatering in Tidal Work Areas
- BMP GEN-35: Pump/Generator Operations and Maintenance
- BMP SED-1: Groundwater Management
- BMP SED-2: Prevent Scour Downstream of Sediment Removal
- BMP SED-3: Restore Channel Features
- BMP SED-4: Berm Bypass
- BMP VEG-1: Minimize Local Erosion Increase from In-Channel Vegetation Removal
- BMP VEG-3: Use Appropriate Equipment for Instream Removal
- BMP BANK-1: Bank Stabilization Design to Prevent Erosion Downstream
- BMP BANK-2: Concrete Use near Waterways
- BMP BANK-3: Bank Stabilization Post-Construction Maintenance
- BMP REVEG-1: Seeding
- BMP REVEG-2: Planting Material

Conclusion

As discussed in Section 3.13, *Water Quality*, the Proposed Project would minimize potential impacts from maintenance activities to water quality and 303(d) listed streams. The Proposed Project would therefore not make a considerable contribution to cumulative impacts related to water quality. On this basis, the Proposed Project's contribution would be less than significant, and no mitigation would be required.

Mitigation Measures: No mitigation is required.

5.1 Introduction

This chapter describes alternatives to the Proposed Project and evaluates their environmental impacts. This alternatives analysis was developed to serve three regulatory purposes: (1) CEQA compliance; (2) National Environmental Policy Act (NEPA) compliance; and (3) Clean Water Act Section 404(b)(1) permitting requirements. Although this DSEIR addresses CEQA requirements, NEPA and 404(b)(1) environmental review activities for the Proposed Project are occurring in parallel as part of the U.S. Army Corps of Engineers (USACE) permitting process. The analysis in this chapter is anticipated to be used by the USACE to develop its NEPA documentation and 404(b)(1) analyses. Therefore, this chapter considers those NEPA regulatory requirements and provides a consistent evaluation for each.

A detailed description of the regulatory requirements for consideration of alternatives is provided in Section 5.2, *Regulatory Requirements*. The chapter continues with a description of the alternatives development process, alternatives that were considered, and alternatives that were considered but dismissed from detailed analysis. The chapter concludes with identification of the environmentally superior alternative.

5.2 Regulatory Requirements

CEQA/NEPA Requirements

CEQA requires that an EIR, and NEPA requires that an environmental assessment (EA) or environmental impact statement (EIS), evaluate a reasonable range of alternatives to the proposed action, including an alternative where no project would be developed. Although no clear rule exists for determining a reasonable range, CEQA and NEPA provide guidance that can be used to define the range of alternatives for consideration in the environmental document. According to NEPA, the range of alternatives required is governed by the rule of reason, which requires an EA or EIS to set forth only those alternatives necessary to allow for a reasoned decision regarding the proposed action. An EA or EIS must consider a reasonable range of options as defined by the specific facts and circumstances of the proposed action. First, alternatives must fulfill the basic purpose and need for the action. Second, alternatives to be analyzed should not have more significant impacts on the environment than the proposed action or result in impacts that are indistinguishable from those of the proposed action. Furthermore, alternatives must be able to be feasibly carried out in the context of technical, economic, environmental, and other factors. If alternatives have been eliminated from detailed study, the EA or EIS must briefly discuss the reason for their elimination (40 CFR 1502.14[a]; Forty Questions No.1[a]).

The range of alternatives under CEQA is similarly governed by the rule of reason. Alternatives under CEQA must meet the basic project objectives, should reduce or eliminate one or more of the significant impacts of the proposed project (although the alternative can have greater impacts overall), and must be feasible. In determining whether alternatives are feasible, lead agencies are guided by the general definition of feasibility found in State CEQA Guidelines Section 15364: “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.” In accordance with State CEQA Guidelines Section 15126.6[f], the lead agency must consider site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, jurisdictional boundaries, and the proponent’s control over alternative sites in determining the range of alternatives to be evaluated in an EIR. An EIR must briefly describe the rationale for selection and rejection of alternatives and the information that the lead agency relied on in making the selection. It should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reason for their exclusion (State CEQA Guidelines Section 15126[d][2]). These guidelines were used in developing the alternatives and their evaluation, as described below.

A No Action (NEPA)/No Project (CEQA) Alternative also is required to be considered. The No Action/No Project alternative allows decision makers to compare the impacts of approving the action against the impacts of not approving the action.

Clean Water Act Section 401(b)(1)

Under 40 CFR Part 230 Section 401(b)(1), discharge of dredged or fill material will not be permitted if a practicable alternative exists to the proposed discharge that will have a lesser adverse impact on the aquatic ecosystem. However, the alternative cannot have other significant adverse environmental consequences that are greater than that of the proposed discharge.

For the purpose of this requirement, practicable alternatives include, but are not limited to:

- activities that do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters; and
- discharges of dredged or fill material at other locations in waters of the United States or ocean waters.

Because Proposed Project activities would be necessarily water-dependent, alternatives which would not involve a discharge of dredged or fill material into waters of the United States were not considered. Additionally, the Project Area is specifically defined, based on maintenance needs for the region’s flood protection channels. Because the Project Area was determined by fundamental Proposed Project needs, this precluded consideration of alternative locations for discharges outside of the Project Area. An alternative is practicable if it is available and capable of being undertaken after taking into consideration cost, existing technology, and logistics in light of overall project purposes. If it is otherwise a practicable alternative, an area not presently owned by the applicant that can reasonably be

obtained, utilized, expanded or managed to fulfill the basic purpose of the proposed activity may be considered.

For actions subject to NEPA, where the U.S. Army Corps of Engineers (USACE) is the permitting agency, the analysis of alternatives required for NEPA environmental documents, including supplemental USACE NEPA documents, will in most cases provide the information for the evaluation of alternatives under the Section 401(b)(1) guidelines. On occasion, these NEPA documents may not have considered the alternatives in sufficient detail to respond to the requirements of the 401(b)(1) guidelines, and it may be necessary to supplement the NEPA documents with this additional information.

5.3 Alternatives Development Process

Alternatives to the SMP Update were developed as programmatic alternatives to implementation of the Proposed Project as a whole. Some of the alternatives considered would limit the extent of Proposed Project implementation by altering the frequency of maintenance activities or prohibiting maintenance activities from occurring on specific stream reaches. As a result, the programmatic alternatives would provide varying levels of flood protection. Alternatives were developed by considering the Proposed Project's overall goals and objectives as well as by its potential environmental impacts. Alternatives would seek to achieve similar goals as the Proposed Project, although the alternatives may reach these goals to a greater or lesser extent than the Proposed Project. The alternatives also would seek to reduce the significance of anticipated adverse environmental impacts associated with the Proposed Project. A reasonable range of alternatives is presented in Section 5.4, *Alternatives Considered*, describing their potential impacts as well as benefits.

5.3.1 Project Goals and Objectives

The SMP Update was developed to achieve the following goals and objectives:

- Maintain the design flow or appropriate conveyance capacity of SCVWD facilities
- Maintain the structural and functional integrity of SCVWD facilities
- Remove sediment to maintain the hydraulic, safety, and habitat functions of creek systems
- Manage vegetation to maintain the hydraulic, safety, and habitat functions of creek systems, and allow for levee inspections and maintenance access
- Stabilize beds and banks of creeks and canals to protect existing infrastructure, maintain public safety, reduce sediment loading, protect water quality, and protect habitat values
- Avoid, minimize, or mitigate impacts on the environment by incorporating stream stewardship principles into maintenance activities

5.3.2 Significant Environmental Impacts of the Proposed Project

The following impacts have been identified as potentially significant, but they would be mitigated to a less-than-significant level by implementation of mitigation measures:

- **Impact BIO-1:** Loss or Disturbance of Wetlands and Other Waters
- **Impact BIO-2:** Loss or Disturbance of Woody Riparian Vegetation
- **Impact BIO-3:** Disturbance of Sensitive Plant Communities
- **Impact BIO-4:** Impacts to Serpentine-Associated Special-Status Plant Species
- **Impact BIO-5:** Impacts to Non-Serpentine Special-Status Plant Species
- **Impact BIO-6:** Impacts to Serpentine-Associated Special-Status Invertebrates
- **Impact BIO-7:** Loss of Ordinance Trees
- **Impact BIO-8:** Impacts on Steelhead
- **Impact BIO-9:** Impacts on the Pacific Lamprey and Monterey Roach
- **Impact BIO-10:** Impacts on the Longfin Smelt and Green Sturgeon
- **Impact BIO-11:** Impacts on the California Tiger Salamander
- **Impact BIO-12:** Impacts on the California Red-Legged Frog
- **Impact BIO-14:** Impacts on Non-Special-Status Fish and Amphibians
- **Impact BIO-16:** Impacts on the Western Pond Turtle
- **Impact BIO-20:** Impacts on the California Clapper Rail and Alameda Song Sparrow
- **Impact BIO-23:** Impacts on the Least Bell's Vireo
- **Impact BIO-24:** Impacts on the Burrowing Owl
- **Impact BIO-27:** Impacts on the Yellow Warbler
- **Impact BIO-28:** Impacts on the Yellow-Breasted Chat
- **Impact BIO-35:** Impacts on the Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew
- **Impact BIO-37:** Impacts on the Pallid Bat
- **Impact BIO-44:** Introduction of Invasive Species
- **Cumulative Impact BIO-1:** Effects on Biological Resources

5.3.3 Significant and Unavoidable Environmental Impacts of the Proposed Project

The following impacts have been identified as significant and unavoidable:

- **Impact AES-3:** Temporary Alteration of Visual Character or Quality from Maintenance Activities
- **Impact AES-4:** Permanent Alteration of Visual Character or Quality from Maintenance Activities
- **Impact AIR-1:** Temporary Increase in ROG, NO_x, PM₁₀, and PM_{2.5} Emissions during Maintenance Activities
- **Impact Bio-45:** Habitat Fragmentation
- **Impact GCC-1:** Temporary Increase in GHGs during Maintenance Activities
- **Impact NZ-1:** Temporary Exposure of the Public to Noise Levels in Excess of City or County Standards
- **Impact NZ-3:** Temporary Substantial Increase in Noise above Ambient Levels
- **Cumulative Impact AIR-1:** Emissions of ROG, NO_x, PM₁₀, and PM_{2.5}
- **Cumulative Impact AIR-2:** Emissions of Greenhouse Gases
- **Cumulative Impact Bio-2:** Habitat Fragmentation

5.4 Alternatives Considered

The following alternatives were considered because they would meet most of the Proposed Project objectives, would be feasible, and would avoid or substantially reduce one or more significant impacts of the Proposed Project:

- No Project Alternative
- Reduced Frequency Alternative
- Limited Work in Unmodified Channels Alternative
- Limited Activities Alternative

Table 5-1 provides a comparison of alternatives to the Proposed Project, focusing on notable changes in characteristics and adverse and beneficial impacts.

Internal Draft—Not for Public Review

Table 5-1. Comparison of Alternatives

Alternative	Notable Comparisons to Proposed Project		
	Changes in Characteristics	Adverse Impacts	Beneficial Impacts
No Project Alternative	<ul style="list-style-type: none"> • Either use of existing BMPs, or BMPs varying on a project-by-project basis • Uses current maintenance period; no extension • If project-by-project permits are sought, some maintenance may not occur in the year it was needed because of increased time and effort to conduct CEQA compliance and obtain permits annually • If project-by-project permits are sought, biological impacts would be mitigated annually instead of comprehensively 	<ul style="list-style-type: none"> • If work could not be conducted in a timely manner because of permit constraints, potential failure to maintain the design flow, or appropriate conveyance capacity of facilities resulting from sediment accumulation • Various impacts could increase because existing BMPs may not be as protective as proposed BMPs 	<ul style="list-style-type: none"> • Slight reduction in annual impacts associated with SMP Update activities if less annual maintenance would be conducted
Reduced Frequency Alternative	<ul style="list-style-type: none"> • Recurrence of sediment removal and vegetation management activities at any location would be half as frequent as under the Proposed Project • The amount of maintenance done during each event likely would need to be greater to fulfill maintenance needs 	<ul style="list-style-type: none"> • Temporary failure to maintain the design flow or appropriate conveyance capacity of facilities between maintenance activities • Temporary increased fire risk on roads and levees • Various impacts likely to increase in intensity because larger maintenance events would occur 	<ul style="list-style-type: none"> • Impacts of sediment removal and vegetation management would occur less frequently
Limited Work in Unmodified Channels Alternative	<ul style="list-style-type: none"> • Maintenance activities that could be done in unmodified channels would be limited to within 100 feet up- and downstream of human-made structures • Maintenance activities in unmodified channels located away from human-made structures would not occur 	<ul style="list-style-type: none"> • Potential failure to maintain the design flow or appropriate conveyance capacity of facilities resulting from increased sediment accumulation in locations where no work was allowed • Potential adverse impacts to water quality from increased sediment accumulation because of bank failures in areas where no work was allowed 	<ul style="list-style-type: none"> • Potentially would reduce impacts to plant and animal species, riparian habitat, and wetlands in unmodified reaches • Various impacts would be reduced overall because less annual maintenance would be conducted

Table 5-1. Comparison of Alternatives

Alternative	Notable Comparisons to Proposed Project		
	Changes in Characteristics	Adverse Impacts	Beneficial Impacts
Limited Activities Alternative	<ul style="list-style-type: none"> • Only “soft” bank stabilization measures would be used; no hardscape would be allowed • Equipment for sediment removal would always be located at the top of the bank and would not be allowed in the stream channel • No herbicides would be used for vegetation management; only mechanical methods or hand removal would be utilized • No rodenticides would be used for management of animal conflicts 	<ul style="list-style-type: none"> • Potential failure to maintain the design flow or appropriate conveyance capacity of facilities resulting from the inability to remove sediment inaccessible from top of bank • Likely greater impacts to vegetation/habitat from trampling because of repeated hand or mechanized vegetation removal • Potential variety of new/or greater impacts related to alternative methods of implementing maintenance activities • Direct loss of riparian habitat and sediment discharges potentially resulting from repeated bank failures where soft methods were not sufficient • Non-native species and species densities likely to increase because of less effective control methods; longer term result would be a loss of native flora and conversion to higher density non-natives 	<ul style="list-style-type: none"> • Potentially reduced impacts to water quality from eliminating the use of herbicides and rodenticides • Reduced instream impacts from not allowing large equipment in the channel for sediment removal • Increased ecological value at bank stabilization sites where soft measures were used successfully

Source: Data compiled by Horizon Water and Environment in 2011

5.4.1 No Project Alternative

Characteristics of this Alternative

Under the No Project Alternative, SCVWD would pursue one of two options: (1) continue conducting maintenance activities, including CEQA compliance and project-by-project permitting on an annual basis, following practices under the existing SMP; or (2) seek to extend or renew existing SMP programmatic permits, following practices under the existing SMP and utilizing previous CEQA documentation. SCVWD would continue conducting the same maintenance activities under the existing SMP, using existing operation and maintenance guidelines and BMPs. A primary difference between this alternative and the Proposed Project is that the Proposed Project would include an extension of the end date of the maintenance period, from October 15 to December 31, as long as weather remained dry. In addition, this alternative would conduct maintenance projections to determine future work locations and extent. If project-by-project permitting was conducted, the BMPs may be

modified on a project-by-project basis, as dictated by mitigation contained in CEQA compliance documents and the terms contained in annually renewed permits.

The No Project Alternative could require SCVWD to conduct CEQA compliance and obtain permits on an annual basis, requiring more time and effort annually compared to the Proposed Project. Because of the lead time needed to obtain regulatory permits, some needed maintenance likely would not be conducted during the same season as the need for it was identified, resulting in the potential for failure to maintain the design flow or appropriate conveyance capacity of facilities. Therefore, possibly less maintenance work would be accomplished each year. If less sediment removal were to occur, sediment removal activities (such as truck trips for hauling and disposal/reuse) also would be reduced. Additionally, under this alternative over the 10-year planning horizon (2012-2022), annual environmental compliance costs required for the No Project Alternative would be expected to be higher than the one-time compliance costs associated with the Proposed Project.

Impact Analysis

The type and nature of environmental impacts resulting from the No Project Alternative could be expected to be similar to those of the Proposed Project. However, if less maintenance work was completed each year, then maintenance activities would be performed at each reach less frequently and/or less work would be completed overall. As a result, impacts related to aesthetics, air quality, biological resources, cultural resources, noise, recreation, traffic, geomorphology, and water quality would be slightly reduced. For instance, a longer period between maintenance activities would allow biological systems more time to restore ecological structure and function, resulting in somewhat reduced impacts to wetland and riparian habitats and other biological resources, when compared to the Proposed Project. To the extent that maintenance activities would improve ecological structure and function or remediate problems (for instance, bank stabilization to reduce sediment discharges to creeks), these benefits would not be realized to the same extent as under the Proposed Project.

If project-by-project permitting occurred, sediment discharges from areas requiring bank stabilization, combined with increased sediment accumulation resulting from the longer period between maintenance activities, would result in a greater temporary reduction in conveyance capacity than the Proposed Project. Consequently, the No Project Alternative would not be expected to maintain the design flow or appropriate conveyance capacity of facilities to the same extent as the Proposed Project. This would certainly be the case in channels that are included in the Proposed Project but not a part of the existing SMP.

Continued use of the BMPs in the current SMP, to the extent they are not as protective as the BMPs proposed for the SMP Update, may not reduce the impacts of maintenance to the same extent as under the Proposed Project. Furthermore, because SCVWD may not know what the mitigation requirements would be more than one year in advance, biological impacts then would need to be mitigated on an annual basis. Therefore, because mitigation would be undertaken in smaller increments, the overall mitigation may be less ecologically significant than the comprehensive approach proposed in the SMP Update, where

maintenance projects are pooled together annually or over a longer timeframe for the purpose of identifying mitigation opportunities.

5.4.2 Reduced Frequency Alternative

Characteristics of this Alternative

Under the Reduced Frequency Alternative, the types of maintenance activities undertaken by SCVWD would not change, but the recurrence of sediment removal and vegetation management activities would occur less frequently than under the Proposed Project. However, bank stabilization, management of animal conflicts, and minor maintenance activities would continue to occur as needed. All other aspects of the Proposed Project (e.g., the proposed BMPs) would be implemented under this alternative.

Under the Proposed Project, the recurrence of activities is projected for a 10-year period and would be influenced by a variety of factors, including the type of maintenance activity, where that activity would occur (e.g., levee or bank; unmodified channel or canal), and the site-specific factors at a particular location (e.g., rate of sediment accumulation or vegetation growth). The need for sediment removal or instream vegetation management typically would be based on field observations of reduced channel capacity from sediment accumulation or vegetation growth; non-instream vegetation management would be based on managing annual growth, including the removal of vegetation using both pre-emergent and post-emergent herbicides. Under the Reduced Frequency Alternative, the recurrence of sediment removal and vegetation management activities at any particular location would be half as frequent as under the Proposed Project. For example, if a stream reach was projected in the Proposed Project to need sediment removed in 4 out of 10 years, under the Reduced Frequency Alternative, sediment would be removed in 2 out of 10 years. Table 5-2 shows the 10-year average recurrence of sediment removal and instream and non-instream vegetation management activities under the Proposed Project and the Reduced Frequency Alternative.

Although maintenance activities would occur less frequently, the amount of maintenance done during each event likely would need to be greater to fulfill maintenance needs. For instance, a greater amount of sediment removal or instream vegetation management would need to occur during a maintenance event to maintain the design flood flow conveyance capacity during the longer periods between maintenance episodes. A greater amount of non-instream vegetation management also would need to occur during a maintenance event, to address fire hazards on roads and levees associated with a greater amount of vegetation growth. Similarly, different types of maintenance may be necessary (e.g., removal of larger trees may require larger equipment).

Table 5-2. Reduced Frequency Alternative 10-Year Recurrence of Sediment Removal and Vegetation Management Activities

Maintenance Type	Proposed Project 10-Year Average Recurrence	Reduced Frequency Alternative 10-Year Average Recurrence
Sediment Removal	2.8	1.4
<i>Instream Vegetation Management</i>		
Herbicide	8.9	4.5
Hand Removal	3.0	1.5
Hand Pruning	2.1	1.1
<i>Non-Instream Vegetation Management</i>		
Mowing	9.6	4.8
Herbicide	14.2	7.1
Hand Removal	2.6	1.3
Hand Pruning	2.4	1.2
Discing	10	5

Note:

In reality maintenance events would not occur as fractions. This table is intended to demonstrate the average rate that these activities would occur over the entire Project Area.

Source: Data compiled by Horizon Water and Environment in 2011

Impact Analysis

The type and nature of environmental impacts resulting from the Reduced Frequency Alternative is expected to be very similar to those of the Proposed Project. Compared to the Proposed Project, impacts theoretically would be reduced because maintenance events would occur less frequently; however, this may be offset by the increased intensity associated with the less frequent, larger maintenance events. The frequency and intensity of maintenance events would affect impacts related to aesthetics, air quality, biological resources, cultural resources, noise, recreation, traffic, geomorphology, and water quality. For instance, the longer period between maintenance activities would allow biological systems more time to restore ecological structure and function, resulting in somewhat reduced impacts to wetland and riparian habitats and other biological resources, when compared to the Proposed Project. To the extent that maintenance activities support or improve ecological structure and function (for instance, create conditions unfavorable to invasive exotic species), these benefits would not be realized to the same extent as under the Proposed Project.

Increased sediment accumulation and instream vegetation caused by the longer period between maintenance activities would result in a greater temporary reduction in conveyance capacity, and thus a reduction in the maintenance of the design flow or appropriate conveyance capacity of facilities, than under the Proposed Project. However, because larger maintenance events would occur, flood flow conveyance capacity would be retained over the long term. Increased non-instream vegetation growth caused by the

longer period between maintenance activities would result in greater temporary fire hazards on roads and levees than under the Proposed Project. Local fire code requirements would not be able to be met annually.

5.4.3 Limited Work in Unmodified Channels Alternative

Characteristics of this Alternative

Under the Limited Work in Unmodified Channels Alternative (Limited Work Alternative), maintenance activities that could be done in unmodified channels would be limited to within 100 feet up- and downstream of human-made structures, such as bridges, road crossings, stream gages, outfalls, and trash racks. As a result, a reduced amount of annual maintenance would occur under this alternative. Maintenance near human-made structures would be necessary because it would keep these structures functioning properly and safely. Necessary maintenance activities in unmodified channels located away from human-made structures would not occur, resulting in a reduction in the maintenance of the design flow or appropriate conveyance capacity of facilities, or in unaddressed maintenance needs. If less sediment removal and vegetation management were to occur, specific aspects of the work associated with these activities (such as truck trips for hauling and disposal/reuse) also would be reduced. All other aspects of the Proposed Project (e.g., the proposed BMPs) would be implemented under this alternative. To help illustrate this alternative, Figure 5-1 shows the locations of the unmodified channels.

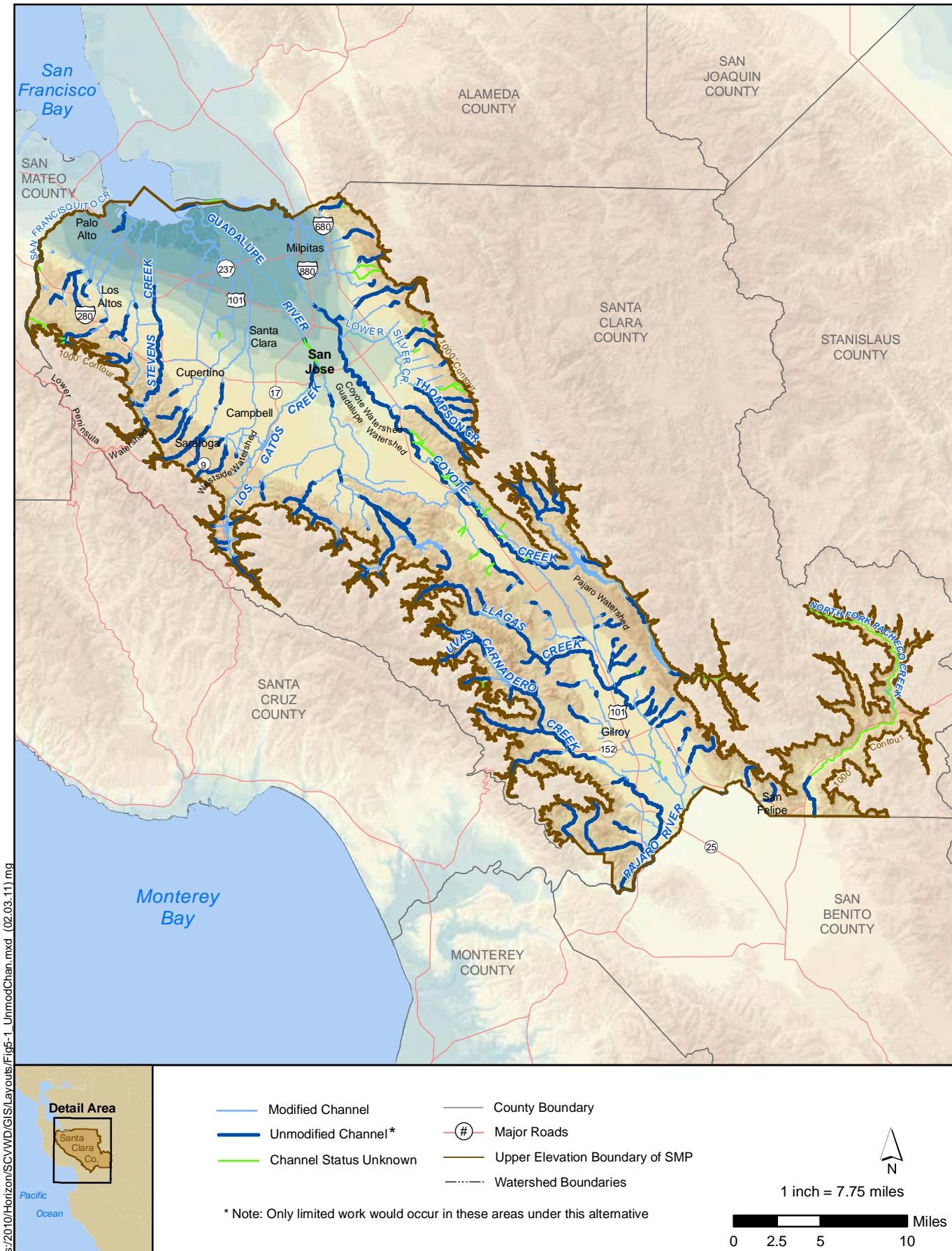
Impact Analysis

The primary goal of the Limited Work Alternative would be to reduce impacts to biological resources in unmodified channels. Although a range of ecological values would exist in both modified and unmodified channels, portions of the unmodified channels are believed to be among the channels which provide some of the greatest ecological value overall. The majority of impacts to biological resources in unmodified channels would be eliminated, but some disturbance and impact to unmodified channels would be necessary to maintain human-made structures. Compared to the Proposed Project, the Limited Work Alternative may promote the ecological structure and function of unmodified reaches by reducing impacts to plant and animal species, riparian habitat, and wetlands. To the extent that maintenance activities would support or improve ecological structure and function (for instance, create conditions unfavorable to invasive exotic species), these benefits would not be realized to the same extent as under the Proposed Project.

Under the Limited Work Alternative, the overall amount of maintenance likely would be reduced. As a result, impacts related to aesthetics, air quality, biological resources, cultural resources, noise, recreation, traffic, geomorphology, and water quality would be reduced compared to the Proposed Project.

Sediment discharges from bank failures that would not be addressed under this alternative would result in a greater temporary reduction in conveyance capacity than under the Proposed Project, and they would have adverse water quality (sedimentation) impacts. In addition, because flood flow capacities would not be maintained in these unmodified channels, flood risk may increase in these reaches.

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Figure 5-1: Limited Work in Unmodified Channels Alternative

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5.4.4 Limited Activities Alternative

Characteristics of this Alternative

Under the Limited Activities Alternative, the five types of maintenance activities proposed in the Proposed Project would occur, except those maintenance activities with the greatest biological impacts would be eliminated or modified. For bank stabilization activities, no hardening of stream banks would be allowed and only “soft” stabilization measures would be used. For sediment removal activities, equipment always would be located at the top of the bank and would not be allowed in the stream channel. For vegetation management activities, no herbicide use would be allowed, and only mechanical vegetation management methods would be utilized. For management of animal conflicts, no rodenticide use would be allowed. Minor maintenance activities would be conducted as described under the Proposed Project.

The methods included in the Proposed Project currently are used by SCVWD because they are the most effective methods for accomplishing maintenance. Relying on alternative methods would result in increased effort to accomplish the same degree of necessary maintenance. Alternative methods also may result in higher implementation costs and/or less maintenance work getting accomplished each year.

Impact Analysis

Under the Limited Activities Alternative, avoidance of the most impactful activities would eliminate impacts but may increase others. For instance, eliminating the use of herbicides and rodenticides would reduce potential for impacts on water quality. However, repeated hand vegetation removal likely would result in greater trampling of vegetation/habitat than single events of herbicide application. Likewise, the growth of some species of undesirable vegetation may not be effectively controlled without the use of herbicides.

In addition, SCVWD would not always be able to complete needed maintenance by relying solely on the limited activities. For instance, conducting sediment removal from the top of the stream bank may not allow for removal of sediment from certain channels that could not be accessed from the top of the bank. Therefore, this alternative would be likely to impede sediment removal that would be necessary to maintain flood flow conveyance capacity. As a result, the potential flooding risk would increase at these locations.

Furthermore, reliance on alternative methods for implementing maintenance activities could result in new and/or increased environmental impacts, compared to the Proposed Project. For instance, relying solely on mechanical vegetation management as opposed to herbicides could result in greater noise and air quality impacts.

Finally, restricting bank stabilization to “soft” methods could result in inadequate bank protection in instances where hard methods are needed for bank stability. This could result in repeat bank failures, with adverse impacts on habitat and water quality through direct loss of riparian habitat as well as sediment discharges. The need for repeat bank repairs

could increase the impacts associated with such maintenance activities (e.g., increased air emissions, noise impacts).

5.5 Alternatives Considered and Dismissed

The following alternatives were considered but ultimately were dismissed from further analysis for one or more of the following reasons: (1) they were not substantively different from one of the considered alternatives; (2) they would not sufficiently meet the Proposed Project objectives; (3) they were determined to be infeasible; or (4) they would not avoid or substantially reduce one or more significant impacts of the Proposed Project:

- Geomorphic Alternative
- Watershed Approach Alternative
- Return to As-Built Conditions Alternative
- Modified Pajaro River Basin Alternative
- No Herbicides Alternative
- Reduced Extent Alternative
- Alternative Locations
- Reduced Time Frame Alternative

5.5.1 Geomorphic Alternative

This alternative would improve habitat complexity and function in Project Area streams by restoring geomorphic functions. Restoration of geomorphic functions would include allowing channel meander and sediment transport within Proposed Project streams, by widening stream rights-of-way, creating flood benches where flood flows could disperse, removing hardscape elements, and restoring more natural hydrographs to stream flows.

Although it is anticipated that this alternative would reduce individual maintenance activities in the SMP Update, it would involve implementation of new capital projects. Because it would focus on capital projects rather than maintenance, it would not meet the fundamental goal of the SMP Update as a maintenance program for current infrastructure.

Development of these new capital projects would result in substantial additional construction and costs (land, design, and construction) for SCVWD. In addition, along many streams, especially in the Valley floor areas, channels would be very narrow and development would have encroached to the edge of the right of way, making the acquisition of additional right of way to allow channel meandering or create flood plains very difficult and expensive, if not impossible. The capital improvements and associated operational changes could result in a variety of new environmental impacts that would need to be mitigated by measures outside of the scope of the BMPs included in the Proposed Project.

Because this alternative would not meet the project objective and would have limited feasibility, it was dismissed. However, SCVWD does engage in capital projects which are rooted in geomorphic design considerations, but such activities would be outside the scope of the SMP Update.

5.5.2 Watershed Approach Alternative

This alternative would attempt to reduce or eliminate the need for future sediment removal activities by using watershed management approaches to reduce sediment inputs to Proposed Project streams. To reduce sediment inputs, SCVWD would implement erosion control activities in the upper watersheds of Proposed Project streams. These erosion control activities could include bank stabilization, restoration or replanting of creek banks and surrounding lands, and installing fencing to exclude grazing animals from streams.

Although conceptually the watershed management approach should reduce the need for proposed sediment removal activities, this alternative would be unlikely to eliminate the need for future sediment removal. Because many Proposed Project streams would have confined channels, their capacity to transport or store sediment would be greatly diminished. Thus, to eliminate the need for sediment removal, upstream sediment inputs would need to be reduced to a very large extent (i.e., below pre-European settlement conditions). Furthermore, this alternative would not alleviate the need to conduct other aspects of the Proposed Project (i.e., bank stabilization, vegetation management, management of animal conflicts, and minor maintenance).

Finally, feasibility of this alternative may be limited because SCVWD would not necessarily own the land or have the necessary easements to conduct watershed-based sediment control. Overall, this alternative would have feasibility constraints and would not be likely to substantially reduce the scope of the Proposed Project or its related significant environmental impacts.

5.5.3 Return to As-Built Conditions

This alternative would maximize flood protection for residents by focusing solely on restoring design flow conveyance capacity rather than balancing flood protection needs with environmental needs. SCVWD would implement the SMP Update by focusing on restoring flood flow conveyance capacity, with minimal or no restrictions to protect biological or cultural resources. Sediment removal would be conducted in modified channels without regard for the presence of sensitive species or habitats and could occur as frequently as desired to maintain flood flow conveyance. Vegetation management would be conducted using the most cost effective methods, which likely would focus on herbicide use, tree removal, and removal of all vegetation from the channel.

This alternative would not meet the primary Proposed Project objective of incorporating stream stewardship principles into maintenance activities, to avoid, minimize, or mitigate impacts on the environment. Furthermore, it would be more challenging for SCVWD to obtain environmental permits from regulatory agencies because of the significant environmental impacts likely to be associated with this alternative, especially when less damaging alternatives existed, such as the Proposed Project.

5.5.4 Modified Pajaro River Basin Alternative

This alternative was considered in the 2002 SMP EIR, to reduce environmental impacts on biological resources by limiting herbicide use for vegetation management in the Pajaro River Basin. Because an alternative already existed which considered limiting herbicide use (the Limited Activities Alternative), this alternative was not considered further.

5.5.5 No Herbicides Alternative

This alternative would reduce environmental impacts on biological resources by excluding herbicide use for vegetation management in the Project Area. Because an alternative already existed which considered limiting herbicide use (the Limited Activities Alternative), this alternative was not considered further.

5.5.6 Reduced Extent Alternative

This alternative would preserve the structure and functions of certain areas of high biological value by prohibiting maintenance activities with potential for adverse impacts on stream reaches with sensitive habitats. Sensitive habitat is defined as that which supports endangered species. Streams are by their nature sensitive habitats, and a large portion of Project Area streams provide some sensitive habitat. As a result, in large sections of Project Area streams, the SCVWD would not be able to perform SMP Update activities needed to maintain flood flow conveyance capacity. Therefore, this alternative would not meet the basic Proposed Project goal/objective of maintaining the appropriate flood conveyance capacity of Project Area streams.

5.5.7 Alternative Locations

This alternative would reduce environmental impacts by conducting maintenance activities at locations where fewer sensitive environmental resources were located. Although the SMP Update activities could restore flood conveyance capacity in any reach where they were conducted, the Proposed Project specifically would target stream reaches where the design conveyance capacity had been reduced. Conducting these activities at unnecessary locations would not address the needs for maintenance activities in reaches where conveyance capacity had decreased. This alternative could increase flood conveyance capacity in reaches beyond the design capacity, resulting in a capital project and activities outside of the scope/intent of the SMP Update. This alternative would not meet the basic Proposed Project goal/objective of maintaining the appropriate flood conveyance capacity of Project Area streams.

5.5.8 Reduced Time Frame Alternative

This alternative would reduce environmental impacts by limiting sediment removal, instream vegetation management, herbicide application, and bank stabilization activities to the period from June 15 to October 15. The Proposed Project would allow these activities to occur from October 15 to December 31, as long as the weather remained dry. Because the No Project Alternative already considered limiting work to the period from June 15 to October 15, this alternative was not considered further.

5.6 Environmentally Superior Alternative

Weighing all issues, the Proposed Project is considered to be environmentally superior. Compared to any of the alternatives, it would strike the most appropriate balance among maintaining the design flow or appropriate conveyance capacity of facilities, protecting the ecological integrity of channels, and addressing other short- and long-term impacts associated with the proposed maintenance activities.

This fact notwithstanding, CEQA requires that an environmentally superior alternative be selected from among the alternatives to the Proposed Project. The Reduced Frequency Alternative is considered the environmentally superior alternative because by limiting the amount of all annual maintenance activities, it would reduce the impacts associated with these activities. However, this alternative would maintain the design flow or appropriate conveyance capacity of facilities to a lesser extent than the Proposed Project. Although flood flow capacity would be retained in the long term from conducting larger maintenance events, flood risk would increase in the interim because needed maintenance events would be delayed so that they occurred no more frequently than every 5 years.

The other alternatives were not selected as the environmentally superior alternative for the following reasons:

- ***No Project Alternative.*** Although this alternative would provide only a slight reduction in the maintenance of the design flow or appropriate conveyance capacity of facilities, maintenance would not necessarily be conducted in a timely manner to avoid flood hazards. Furthermore, maintenance activities may not be implemented along with a comprehensive mitigation approach and consistent set of BMPs. Therefore, flood risk would be greater and, at the same time, more residual impacts likely would remain.
- ***Limited Work Alternative.*** As a result of reduced maintenance activities in unmodified reaches, this alternative would promote the ecological structure and function of these reaches and, therefore, would reduce a variety of impacts related to the Proposed Project in those locations. However, this alternative would result in increased flood risk along unmodified channels and resulting impacts on downstream creek systems.
- ***Limited Activities Alternative.*** This alternative would slightly reduce impacts to biological resources. However, new/increased impacts also could result from the use of alternative maintenance methods. This alternative also could result in a reduction in the maintenance of the design flow or appropriate conveyance capacity of facilities at locations where sediment removal could not occur solely from the top of the bank, and increased water quality and habitat impacts where soft bank stabilization methods were not effective.

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