

3.13 Water Quality

3.13.1 Introduction

This section describes the regulatory setting, environmental setting, and potential impacts of the Proposed Project as related to water quality.

Data sources used to prepare this section include sediment and water quality monitoring reports by SCVWD (2008, 2009, 2010); the basin plans of the San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB 2007) and the Central Coast RWQCB (2006b); the Santa Clara Basin Watershed Management Initiative's watershed management plan (2000); and the California Department of Water Resources' (DWR) Bulletin 118, California's Groundwater Bulletin (2003). Other applicable regulations and background documents also were reviewed.

The Proposed Project activities focus on managing streams, flood protection channels, and other flood management-related facilities. Several Proposed Project activities are directly related to and influenced by hydrologic and water quality processes. The following define the key hydrologic and water quality concepts and terminology used in this section.

Dissolved Oxygen

Dissolved oxygen (DO) is a measure of the amount of oxygen dissolved in water. DO is an important water quality parameter for aquatic invertebrates and fish, which depend on such oxygen to survive. DO levels depend on various factors, such as temperature, aeration factors (i.e., inflow, wind, waves), salinity, and the relative amount of oxygen generation (caused by photosynthesis by plants) and oxygen use (caused by respiration by animals and biodegradation of organic matter) that takes place in the water. Low DO levels also can occur during low flow conditions because water temperatures are higher and because of the absence of aeration caused by mixing during higher flows. Hypersaturated conditions (DO that is well above 100 percent saturation) can be indicative of excessive plant growth and eutrophic conditions. Large daily fluctuations in DO also can be an indicator of eutrophication because DO levels can drop to toxic levels at night as aquatic plants respire.

Mercury

Mercury (Hg) is a toxic constituent that bioaccumulates in the food chain of aquatic organisms and terrestrial wildlife, and is ultimately a human health concern primarily through the consumption of Hg-contaminated fish. Methylmercury (MeHg) is a more bioavailable form of Hg that is produced from inorganic Hg by specific types of bacteria in the sediments of rivers and reservoirs. The major pathway for human exposure to methylmercury (MeHg) is consumption of Hg-contaminated fish. Dietary MeHg is almost completely absorbed into the blood and is distributed to all tissues including the brain. In pregnant women, it also readily passes through the placenta to the fetus and fetal brain. MeHg is a highly toxic substance with a number of adverse health effects associated with its exposure in humans and animals. High-dose human exposure results in mental retardation,

Public Review Draft

cerebral palsy, deafness, blindness, dysarthria (a motor speech disorder) in utero, and in sensory and motor impairment in adults.

Nutrients

Nutrients, specifically nitrogen and phosphorus, are essential for life and play, having a primary role in ecosystem functions. Nitrogen and phosphorus are naturally occurring inorganic ions present within the atmosphere and in fixed forms within organic matter, such as plants and soils. In addition to naturally present concentrations, nutrients are introduced to water bodies through human or animal waste disposal or agricultural application of fertilizers.

Nutrients are commonly the limiting factor for growth in aquatic systems. Nutrient concentrations change seasonally, as aquatic plants respond to changes in the amount and duration of sunlight and either sequester or release nutrients as they grow or decompose. Agricultural fertilizers, domestic and native animal waste (e.g., manure), and human waste (e.g., leaky septic systems) can lead to elevated nutrients above background levels and stimulate plant growth. Rainfall, stream flow, and air and water temperature all influence nutrient concentrations in the watershed.

Pathogens

Pathogens are microorganisms that cause diseases in other organisms. Bacteria are the primary indicator organisms of pathogens, particularly for the detection of waterborne diseases. Waterborne diseases threaten the health of recreational users of waters and wildlife. Pathogenic bacteria contained within fecal waste are the most common source of waterborne diseases. Fecal contamination can be detected by bacterial indicators, such as total coliforms, fecal coliforms, *Escherichia coli* (*E. coli*), and fecal *enterococci*. High concentrations of these indicator bacteria—resulting from poor waste management and disposal, agricultural activities (i.e., grazing), and sometimes from homeless encampments along the creek banks—can degrade water quality for human consumption, recreation, and wildlife use.

Pesticides

Pesticides are chemicals designed to control, destroy, repel, or attract a target pest and are purposely introduced into the environment to manage insects, bacteria, weeds, rodents, or other pests. Pesticides may enter surface waters through direct application (i.e., aquatic pesticides) or through surface runoff. Farmers use pesticides to control the pests that can destroy or damage food and other crops. Aquatic pesticides typically are used to combat insects and other organisms known to carry disease (like West Nile virus) or for aquatic vegetation management. (CDPR 2010)

Salinity

Salinity typically is measured by the concentration of anions (salts) dissolved in water. This is determined by measuring total dissolved solids in water and the electrical conductivity of water. Changes in salinity levels can adversely affect beneficial uses, such as agricultural water supply, fish migration, and estuarine habitat.

Public Review Draft

Sediment

The concentration of suspended sediment in the water column is influenced by stream inflows, bank erosion, and the re-suspension of sediments by wind or tidal mixing. Water quality contaminants, such as metals or toxic chemicals, sequestered in bottom sediments or adjacent upland areas can adsorb (attach) to suspended sediments in the water column. Where contaminants can be adsorbed to suspended sediments, higher concentrations of suspended sediments can lead to higher concentrations of contaminants in the water. Because suspended sediments are highly mobile, they provide a transport mechanism that can cause the spreading and deposition of water quality contaminants.

Temperature

Temperature affects aquatic organisms and their biological processes. Extreme water temperatures can have deleterious effects on organism life history and reproduction, especially for sensitive species such as salmonids. Parameters that influence stream temperature include ambient air temperature, humidity, riparian vegetation, topography, surrounding land uses, and the amount of flow. Additionally, inflows from cold water seeps and from groundwater can moderate stream water temperatures. Water temperature influences a number of chemical processes within water bodies. Dissolved oxygen capacity is inversely related to water temperature.

3.13.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

Clean Water Act

The Clean Water Act (CWA) is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The key sections of the CWA that pertain to water quality regulation are Section 303, 401, and 402 (discussed hereunder). Section 404 of the CWA regulates the discharge of dredged and fill materials into waters of the United States, and is overseen by the U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers. Section 404 requirements are discussed further in Section 3.3, *Biological Resources*.

Section 303

Under CWA Section 303[d], states are required to identify "impaired water bodies" (those that do not meet established water quality standards), identify the pollutants causing the impairment, establish priority rankings for waters on the list, and develop a schedule for development of control plans to improve water quality. Following listing, USEPA then approves the state's recommended list of impaired waters or adds and/or removes water bodies to the list. Each Regional Water Quality Control Board (RWQCB) must update the Section 303[d] list every 2 years. Water bodies on the list have no further assimilative capacity for the identified pollutant, and the Section 303[d] List identifies priorities for development of pollution control plans for each listed water body and pollutant.

The pollution control plans triggered by the CWA Section 303[d] List are called Total Maximum Daily Loads (TMDL). The TMDL is a "pollution budget" designed to restore the

Public Review Draft

health of a polluted body of water. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, thereby ensuring the protection of beneficial uses. A TMDL also contains the target reductions needed to meet water quality standards and allocates those reductions among the pollutant sources in the watershed (point sources, non-point sources, and natural sources). The TMDL process quantifies water quality problems, identifies pollutant sources, and recommends pollutant load reductions or control actions needed to restore and protect the beneficial uses of the impaired water body. The calculation of a TMDL includes a margin of safety and considers seasonal variations. (40 CFR Section 130.2)

CWA Section 303 is overseen by USEPA and administered by the State Water Resources Control Board (SWRCB) and its nine RWQCBs. Once a TMDL is developed and approved by the RWQCB, SWRCB, and USEPA, the implementation plan (if included in the TMDL) can be enacted. The TMDL implementation plan includes: pollution prevention, control, and restoration actions; responsible parties; and schedules necessary to attain water quality standards. The implementation plan also identifies enforceable measures (e.g., prohibitions) and triggers for RWQCB action (e.g., performance standards). One method of TMDL enforcement utilized by states and RWQCBs is to require responsible parties to comply with pollution control actions as part of permits issued under the National Pollutant Discharge Elimination System (NPDES) program (see the CWA Section 402 discussion below). If an NPDES permit signatory, or third party covered under a signatory, is found to be out of compliance with the permit requirements, including TMDL compliance requirements, penalties may be assessed by the signatory (in the case of third party lapses) or by the state (in a case where a signatory is out of compliance, as determined by USEPA). At the state level (in California), once a TMDL is incorporated into an RWQCB's basin plan as an amendment, the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act) authorizes the agency to issue Waste Discharge Requirements (WDRs) to responsible parties named in the TMDL. Discharge requirements, whether issued under CWA or Porter-Cologne Act authority, may include implementation of BMPs to meet performance standards. The current effective, USEPA-approved 303(d) list is from 2006. The SWRCB and the RWQCBs have prepared a 2008 303(d) list, but this list is not effective until USEPA approves it. Impaired water bodies identified on the current 303(d) list within the Project Area are discussed in *Surface Water Quality* under Section 3.13.3 below.

The San Francisco Bay RWQCB and the Central Coast RWQCB have prepared or are in the process of preparing TMDLs applicable to water bodies in Santa Clara County. USEPA has approved the following TMDLs that are currently implemented by the San Francisco Bay RWQCB: Guadalupe River Watershed Mercury, San Francisco Bay Mercury, San Francisco Bay polychlorinated biphenyls (PCBs), and Urban Creeks Pesticide Toxicity. USEPA-approved TMDLs within those portions of Santa Clara County under the jurisdiction of the Central Coast RWQCB include: Pajaro River Fecal Coliform (including Pajaro River, San Benito River, Llagas Creek, and Tequisquita Slough); Pajaro River Sediment (including San Benito River, Llagas Creek, and Rider Creek); and the Pajaro River Nitrate (including Llagas Creek) (Central Coast RWQCB 2010a). Additional details regarding these USEPA-approved TMDLs in the Project Area are provided below under the *State Plans, Policies, Regulations, and Laws* section. Additionally, the San Francisco Bay RWQCB is currently developing a TMDL for sediment impairment in San Francisquito Creek.

Public Review Draft

Section 401, Water Quality Certification

The goal of CWA Section 401 is to allow for evaluation of water quality when considering activities associated with dredging or placement of fill materials into waters of the United States. In California, the SWRCB and its nine RWQCBs issue water quality certifications. Each RWQCB is responsible for implementing Section 401 in compliance with the CWA and with its water quality control plan (also known as a basin plan).

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of dredged and fill materials into surface waters of the United States (including wetlands) must obtain a water quality certification (or Section 401 certification) to ensure that any such discharge will comply with the applicable provisions of the CWA, including Sections 301, 302, 303, 306, and 307, and state water quality standards. The water quality certification is issued by the state in which the discharge would originate; or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, compliance with CWA Section 401 is required for all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a CWA Section 404 permit).

Section 402, National Pollutant Discharge Elimination System

CWA Section 402 regulates discharges to surface waters (other than dredge or fill material) through the NPDES, administered by USEPA. The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits for discharges to waters of the U.S. This regulation is implemented at the state level and is further described below.

State Plans, Policies, Regulations, and Laws

California's Porter-Cologne Water Quality Control Act is the primary state regulation governing water quality. The water quality control plans (or basin plans) and policies established by the two RWQCBs with jurisdiction in the Project Area (the Central Coast and San Francisco Bay RWQCBs) are discussed below. In addition, the SWRCB also has responsibility for implementing CWA Section 402 and has established general NPDES permits for the regulation of discharges from construction, municipal, and herbicide application activities, which are also discussed below. The General NPDES Aquatic Pesticide Use permit is described in Section 3.6, *Hazards and Hazardous Materials*.

California Porter-Cologne Water Quality Act

The Porter-Cologne Act was passed in 1969, and together with the CWA, provides regulatory guidance to protect water quality and water resources. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by an RWQCB. The Porter-Cologne Act established regulatory authority over "waters of the state," which are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Division 7, Section 13050). More specifically, the SWRCB and its nine RWQCBs have jurisdiction over the beds and banks of stream channels, their riparian corridors, and their beneficial uses. The Porter-Cologne Act also assigned responsibility for implementing CWA Sections 303, 401, and 402 to the SWRCB and RWQCBs.

Public Review Draft

The Porter-Cologne Act requires the development and periodic review of water quality control plans (basin plans) for the protection of water quality in each of the state's nine regions. A basin plan is unique to each region and must identify beneficial uses, establish water quality objectives for the reasonable protection of the beneficial uses, and establish a program of implementation for achieving the water quality objectives. To ensure currency, basin plans must be updated every 3 years. Basin plans must also comply with Section 303 of the CWA, which requires states to establish their own water quality standards. Basin plans provide the technical basis for the RWQCBs to determine waste discharge requirements, take enforcement actions, and evaluate grant proposals. Santa Clara County is within the jurisdiction of the San Francisco Bay Basin Plan (2007) and the Central Coast Region Basin Plan (2006a). The beneficial uses established for each surface water body and groundwater basin in the Project Area, as established in these basin plans, are provided in Table 3.13-1, located on page 3.13-13.

NPDES Construction General Permit

Construction-related stormwater discharges to waters of the U.S. are regulated under the SWRCB's General Permit for Discharges of Storm Water Associated with Construction and Land Disturbance Activities (Construction General Permit) (2009). Projects disturbing more than 1 acre of land during construction, including linear projects, are required to file a Notice of Intent and submit a Storm Water Pollution Prevention Plan to the SWRCB to be covered by the Construction General Permit before the onset of construction. Construction activities resulting in soil disturbances of less than 1 acre also are subject to the Construction General Permit, if the construction activity is part of a larger common plan of development that encompasses 1 or more acres of soil disturbance, or if significant water quality impairment will occur from the activity.

This permit does not cover linear routine maintenance projects. As defined in the permit, routine maintenance projects are projects associated with operations and maintenance activities to maintain the purpose of the facility or hydraulic capacity and that are conducted on existing lines and facilities and within existing right-of-way, easements, franchise agreements, or other legally binding agreements of the discharger. Thus, this permit does not apply to SCVWD's stream maintenance activities.

Municipal Regional Stormwater NPDES Permit

The Municipal Regional Stormwater NPDES permit (Order R2-2009-0074, NPDES Permit No. CAS612008) covers municipal stormwater discharges from the majority of Bay Area counties and cities. The permit is applicable to Santa Clara County and the following cities and agencies within the county which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP): the cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale; the towns of Los Altos Hills and Los Gatos; and SCVWD. Multiple provisions in the permit address the urban runoff requirements of existing TMDLs, such as the San Francisco Bay Mercury and the Bay's PCBs TMDLs. The Municipal Regional Stormwater NPDES permit establishes discharge prohibitions, annual reporting requirements, construction site controls, water quality monitoring, pesticides toxicity control, and trash load reductions. The purposes of these measures are to: control and reduce the levels of pollution in both stormwater and non-stormwater discharges to storm drains and

Public Review Draft

watercourses; gather concentration and loading information for a number of pollutants of concern for which TMDLs are planned or are in the early stages of development; and ensure the implementation of appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects (San Francisco Bay RWQCB 2009).

The SCVURPPP incorporates regulatory, monitoring, and outreach measures aimed at reducing pollution in urban runoff to the "maximum extent practicable" to improve the water quality of South San Francisco Bay and the streams of Santa Clara Valley (SCVURPPP 2010). An Urban Runoff Management Plan (URMP), prepared by the SCVURPPP, includes both an area-wide plan and individual plans that detail the actions the fifteen co-permittees will take, collectively and individually, to reduce urban runoff pollution. In addition, the URMP describes the goals, objectives, and elements of the plan so that agencies may implement them in accordance with the Municipal Regional Stormwater NPDES permit (SCVURPPP 2010). The SCVWD's SMP Update would continue to comply with the requirements detailed in the URMP, including water quality monitoring and pesticide toxicity control.

Guadalupe River Mercury TMDL

On June 1, 2010, USEPA approved a basin plan amendment to incorporate into the San Francisco Bay Basin Plan, the Guadalupe River Mercury TMDL and the implementation plan for mercury. The basin plan amendment for mercury also establishes new water quality objectives for mercury. Elevated mercury concentrations in the tissue of Guadalupe River fish pose a human health threat and a threat to wildlife. Thus, the TMDL will examine this water quality problem and provide a watershed-wide mercury management strategy. The New Almaden Mining District, the largest-producing mercury mine in North America, is the primary source of mercury in the river's watershed. Other sources include atmospheric deposition from global and local sources, soil erosion from areas not known to contain mines, urban stormwater runoff, seepage from landfills, and Central Valley Project water stored in Calero Reservoir. Implementation of the Guadalupe River Mercury TMDL also will reduce the amount of mercury in the Bay, in accordance with the San Francisco Bay Mercury TMDL's proposed requirements. (San Francisco Bay RWQCB 2010a).

The Guadalupe River Mercury TMDL requires that SCVWD conduct technical studies related to MeHg production and control. SCVWD will continue to operate, maintain, and improve the performance of, or replace with newer technology, existing MeHg controls already in place on Lake Almaden, Almaden Reservoir, and Guadalupe Reservoir. In addition, SCVWD will evaluate and test additional methods of controlling MeHg production and bioaccumulation in shallow impoundments, if implementation actions in the reservoirs and lakes do not result in attaining targets downstream. The SMP Update activities, particularly sediment removal and disposal, generally would support the MeHg control activities. (San Francisco Bay RWQCB 2010a)

Public Review Draft

San Francisco Bay Mercury TMDL

A TMDL for mercury in San Francisco Bay and an implementation plan to achieve the TMDL were incorporated as an amendment into the San Francisco Bay Basin Plan on February 12, 2008, by USEPA. The purpose of the San Francisco Bay Mercury TMDL and implementation plan is to examine the mercury water quality situation in the Bay and identify sources of mercury. Mercury sources include runoff from historic mines, urban runoff, wastewater discharges, atmospheric deposition, and resuspension of historic deposits of mercury-laden sediment already in San Francisco Bay. Most of the historic mercury deposits date back to the Gold Rush of the 1800s, when mercury was mined throughout the Coastal Range and used in the Sierra Nevada to extract gold. A mercury load allocation has been assigned to the SCVURPPP and its related urban stormwater discharges. A load allocation is applicable to SCVWD and may be applicable to the SMP Update. (San Francisco Bay RWQCB 2008)

San Francisco Bay PCB TMDL

USEPA approved a TMDL and an implementation plan for PCBs in San Francisco Bay, to be incorporated as a basin plan amendment on March 29, 2010. PCBs were manufactured in the U.S. and widely used from the late 1920s through the 1970s. Because PCBs degrade very slowly in the environment, their toxic effects are still of concern, particularly because they are toxic, persist in the environment, and accumulate in the tissue of fish, wildlife, and humans. Since 1994, the State has advised that consumption of fish from the San Francisco Bay should be limited because its fish have accumulated high levels of several pollutants, including PCBs. Implementation of the San Francisco Bay PCBs TMDL will most likely involve a phased approach to pollutant reduction and cleanup to restore the beneficial uses of the Bay (San Francisco Bay RWQCB 2010b). The SMP Update would be in compliance with the TMDL because it would not contribute any new sources of PCBs to San Francisco Bay and could remove PCBs sequestered in the stream sediment during sediment removal activities.

Urban Creeks Pesticide TMDL

Stormwater runoff, particularly of the common insecticide diazinon, has impaired the water quality of San Francisco Bay area urban creeks such that the creeks exceed water quality standards for aquatic toxicity. Diazinon is a common insecticide used throughout the Bay Area to manage a broad spectrum of pests, such as ants and grubs. A small fraction of the diazinon applied reaches surface waters, but that fraction is sufficient to result in diazinon concentrations that are toxic to test organisms. Thus, an amendment incorporating a TMDL and implementation plan for Diazinon and pesticide-related toxicity in the Bay Area's urban creeks have been incorporated into the San Francisco Bay Basin Plan. The TMDL and its implementation plan will examine this water quality problem, identify sources of diazinon, and determine and implement actions that will lead to a solution (San Francisco Bay RWQCB 2006). The Proposed Project would not use pesticides, such as diazinon, that are covered by the Urban Creeks Pesticide TMDL and, therefore, would not contribute to the TMDL.

Public Review Draft

Pajaro River Fecal Coliform TMDL

On August 3, 2010, USEPA approved the incorporation of a Pajaro River Fecal Coliform TMDL and its implementation plan as an amendment to the Central Coast Region Basin Plan (2006a). The fecal coliform TMDL applies to the Pajaro River watershed, including the Pajaro River, San Benito River, Llagas Creek, Tequisquita Slough, San Juan Creek, Carnadero/Uvas Creek, Bird Creek, Pescadero Creek, Tres Pinos Creek, Furlong (Jones) Creek, Santa Ana Creek, and Pacheco Creek. As part of the basin plan amendment, a Domestic Animal Waste Discharge Prohibition applicable to the Pajaro River watershed, and a Human Fecal Material Discharge Prohibition applicable to the Pajaro River watershed will be incorporated. The purpose of this TMDL is to protect water contact recreation in the watershed, which the current levels of fecal coliform do not support (Central Coast RWQCB 2010b). The SMP Update would be in compliance with this TMDL because the Proposed Project would not introduce new sources of fecal coliform to the Pajaro River and could remove existing sources of fecal coliform during sediment removal.

Pajaro River Sediment TMDL

The Pajaro River watershed has experienced acute erosion and sedimentation problems as a result of urban and agricultural encroachment on streams, the poor condition of drainage infrastructure (i.e., ditches, culverts, and roads), streambank instability caused by the removal and/or loss of riparian vegetation. The sediment problems were affecting the watershed's ability to support the fisheries-related beneficial uses of its water bodies, including cold, fresh water habitat, migration, and spawning. Therefore, a Pajaro River Sediment TMDL and implementation plan, applicable to the Pajaro River, Llagas Creek, Rider Creek, and San Benito River, were incorporated by USEPA as an amendment to the Central Coast Region Basin Plan in May 2007. In addition to the adoption of a Pajaro River Sediment TMDL, a Pajaro River watershed Land Disturbance Prohibition applicable to pasture and range lands, roads, animal and livestock facilities, and hydromodification-related activities that result in streambank erosion was incorporated as a basin plan amendment. The Central Coast RWQCB also will use the following mechanisms to implement the TMDLs: the existing Conditional Waiver for Discharges from Irrigated Agricultural Lands and renewal of existing Waste Discharge Requirements for sand and gravel mining operations (Central Coast RWQCB 2007). The SMP Update would not contribute additional sources of sediment and would be beneficial to the implementation of this TMDL through sediment removal.

Pajaro River Nitrate TMDL

The Pajaro River and Llagas Creek have consistent nitrate violations that impair the ability of these water bodies to support their beneficial uses for municipal and domestic water supply. The primary source of these impairments is croplands. On October 13, 2006, USEPA approved a Pajaro River Nitrate TMDL and a corresponding implementation plan to be incorporated as an amendment to the Central Coast Region Basin Plan. The Nitrate TMDL is applicable to both the Pajaro River and Llagas Creek, and sets a maximum nitrate concentration of 10 milligrams per liter as nitrogen (mg/l-N) for each receiving water body. In addition, load allocations of 10 mg/l-N have been assigned to each source, including background and all watershed land uses, such as cropland and rangeland (Central Coast

Public Review Draft

RWQCB 2006b). The SMP Update would have no effect on the Pajaro River Nitrate TMDL because it would not introduce any new nitrate sources.

Regional and Local Plans, Policies, Regulations, and Ordinances

As described above, the Santa Clara County 15 co-permittees of the Municipal Regional Stormwater NPDES permit have developed an URMP. The URMP is a San Francisco Bay area-wide permit that lists 77 co-permittees. In addition, the southern portion of Santa Clara County's jurisdiction and the cities of Gilroy and Morgan Hill have obtained their own Phase II NPDES permit coverage for municipal stormwater activities. Implementation of the Phase II permit is guided by a Stormwater Management Plan, which describes pollution prevention activities for the communities to enforce. The Proposed Project would not be directly required to comply with these permits.

3.13.3 Environmental Setting

An overview of water quality and groundwater resources in the Project Area is presented next. Descriptions of watersheds and streams in the Project Area are provided in Section 3.7, *Hydrology and Geomorphology*. A discussion of climate in the Project Area also is provided in Section 3.7.

Surface Water Quality

Ambient water quality in the Santa Clara and Pajaro River basins is influenced by numerous natural and artificial sources, including soil erosion, stormwater runoff, agriculture, recreation activities, municipal point sources, mining, and agriculture. Land uses within the Santa Clara Basin range from residential, commercial, and industrial uses in the northern portion of the basin to a primarily rural southern portion, with cattle ranching, water-supply catchments, and scattered low-density residential development uses (SCBWMI 2000). Historically, agriculture was the dominant land use in the Pajaro River Basin and a major source of nutrient and sediment loading into the Pajaro River (SWRCB 2002). However, in recent years, substantial portions of the upper Pajaro River Basin have been developed into residential subdivisions. In addition to the residential and agricultural uses, historic mercury mining activities occurred near the Hernandez Lake area and gravel mining occurred along the Pajaro River (SWRCB 2002).

According to the 2006 303(d) list of Water Quality Impaired Water Bodies, 12 water bodies in the Santa Clara Basin and three in the Pajaro River Basin have water quality impairments (see Table 3.13-2, on page 3.13-15). The most common impairments in the Santa Clara Basin are mercury and diazinon. Both of these impairments are currently being addressed by adopted TMDLs for the San Francisco Bay and for urban creeks in the Bay Area. In the Pajaro River Basin, the primary impairments are nutrients, fecal coliform, and sediments, which also are currently being addressed by adopted TMDLs.

Public Review Draft

SMP Water Quality Monitoring

As part of its implementation of the existing SMP, SCVWD removed sediment from approximately 37 creeks, rivers, canals, or channels in the Project Area from 2007 through 2009, the most recent years for which data are available. SCVWD has been conducting water quality monitoring as required by permits (Order R2-2002-0028 and Order R3-2002-0008) issued by the San Francisco Bay and Central Coast Regional Water Boards for the multi-year sediment removal program. In general, turbidity, water temperature, dissolved oxygen, and pH were monitored upstream and downstream of any in-channel water diversions before, during, and following sediment removal activities in creeks. During 2007, the removal of approximately 33,523 cubic yards of sediment from 17 project sites on 15 creeks did not result in any water quality exceedances, unplanned releases, or episodes of noncompliance with permits (SCVWD 2008). The 2008 sediment removal activities removed 8,845 cubic yards of sediment from 14 project sites on 13 water bodies and did not result in any water quality exceedances, unplanned releases, or episodes of non-compliance (SCVWD 2009).

Approximately 13,163 cubic yards of sediment and other material were removed during the 2009 sampling activities from 17 sites on 9 surface water bodies. In 2009, four water quality exceedances related to pH (fluctuations that occurred because of influences beyond the SMP) or turbidity occurred during the sediment removal and streamflow diversion activities. The pH exceedances did not require intervention because they were observed upstream of the work area and, therefore, were not related to SMP activities. The turbidity exceedances occurred as a result of a bypass pump shut down and adjustment of a stream bypass. However, subsequent protocol sampling indicated that the exceedances were resolved. No other unplanned or noncompliance issues occurred during 2009. (SCVWD 2010)

SMP Sediment Sampling

In addition to its water quality monitoring, SCVWD has sampled the sediments removed as part of its SMP implementation. Sediment sampling is undertaken to: comply with SCVWD's current WDRs; characterize the sediments to establish if they are suitable for reuse as a construction material ("foundation limit"), a topsoil or soil amendment ("surface limit"); and determine what type of disposal may be required (e.g. reuse, landfill, hazardous waste collection site). An exceedance of a "hazardous limit" indicates that the soil should be considered hazardous waste.

In 2009 and 2010, SCVWD analyzed sediments that were removed as part of the SMP for total and dissolved metals, dissolved and total mercury, PCBs, polycyclic aromatic hydrocarbons (PAHs), and pesticides. Criteria to determine if a soil was considered a hazardous waste were established for Total PCBs; dissolved and total metals, including mercury; and nine pesticides. Soil samples were analyzed to determine if constituents exceeded the "surface limit," "foundation limit," and hazardous waste limits. No hazardous waste criteria have yet been established for the PAHs, or for most of the PCBs and pesticides analyzed. Dissolved and total metals included analysis for: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc. Twenty-six PAHs were analyzed by SCVWD. The nine analyzed pesticides with hazardous waste threshold criteria included: aldrin, dieldrin, endrin, methoxychlor, total chlordane, total "DDTs" total heptachlor, toxaphene, and

Public Review Draft

gamma-BHC (lindane). Total “DDTs” analyzes the total quantity of the chemicals dichloro-diphenyl-trichloroethane (DDT), dichlorodiphenyldichloroethylene (DDE), and dichlorodiphenyldichloroethane (DDD). DDE and DDD can enter the environment as breakdown products of DDT (ATSDR 2002).

As shown in Table 3.13-3 on page 3.13-19, the results of the 2009 and 2010 monitoring indicate that most surface water bodies had at least one impairment that would generally make the sediments unsuitable for topsoil or soil amendment use. Numerous surface waters also had sediments with constituents that exceeded the foundation limit thresholds. Hazardous waste impairments were only recorded once each year (for the Coyote-Alamitos Canal and the Guadalupe River) and both for chromium impairments. The most common impairments were for the pesticides Total Chlordane and Total DDTs and/or for total metals, including mercury.

Public Review Draft

Table 3.13-1. Beneficial Uses for Surface Water Bodies and Groundwater Basins in the Project Area

Water Body	Beneficial Uses ¹																		
	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC1	REC2	NAV
<i>Santa Clara Basin</i>																			
Calabazas Creek	E			E					E						E	E	E	E	
Coyote Creek				E					E			E	E	E	E	E	P	E	
Guadalupe Reservoir		E		E					E					E	E	E	E	E	
Los Gatos Creek		E	E	E					E			P		P	E	E		P	
Matadero Creek									E			E		E	E	E	E	E	
Permanente Creek									E					E		E	E	E	
San Francisquito Creek									E			E		E	E	E	P	P	
San Francisco Bay (South)					E		E	E		E		E	E	P		E	E	E	E
Saratoga Creek	E		E	E					E						E	E	E	E	
Smith Creek		E	E						E					E	E	E	E	E	
Stevens Creek			E						E			E		P	E	E	E	E	
<i>Pajaro River Basin</i>																			
Carnadero Creek		E		E			E		E			E	E		E	E	E	E	
Llagas Creek (above Chesbro Reservoir)	E	E	E	E			E		E				E		E	E	E	E	
Llagas Creek (below Chesbro Reservoir)	E	E		E	E		E		E			E	E	E	E	E	E	E	
Little Llagas Creek	E	E		E			E								E	E	E	E	
Pajaro River	E	E	E	E	E		E		E			E		E	E	E	E	E	
Uvas Creek, downstream	E	E		E	E		E		E			E	E	E	E	E	E	E	

Public Review Draft

Table 3.13-1. Beneficial Uses for Surface Water Bodies and Groundwater Basins in the Project Area

Water Body	Beneficial Uses ¹																		
	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC1	REC2	NAV
Groundwater Basins (Sub-Basin)																			
Santa Clara Valley (Santa Clara)	E	E			E	E													
Gilroy-Hollister Valley (Llagas Area)	E	E			E														

1 Beneficial uses are defined as:
Agr = Agricultural Supply; COLD = Cold Freshwater Habitat; COMM = Ocean, Commercial, and Sport Fishing; EST = Estuarine Habitat;
FRSH = Freshwater Replenishment; GWR = Groundwater Recharge; IND = Industrial Service Supply; MAR = Marine Habitat;
MIGR= Fish Migration; MUN = Municipal and Domestic Supply; NAV = Navigation; PRO = Industrial Process Supply;
RARE = Preservation of Rare and Endangered Species; REC1 = Water Contact Recreation; REC2 = Non-contact Water Recreation;
SHELL = Shellfish Harvesting; SPWN = Fish Spawning; WARM = Warm Freshwater Habitat; WILD = Wildlife Habitat;
E = existing beneficial use; P = potential beneficial use
Note: The basin plans do not include beneficial uses for all water bodies included in the Project Area. In addition, the Guadalupe Reservoir and San Francisco Bay (South) have been included for clarity although no activities would be performed in these water bodies under the Proposed Project..

Sources: San Francisco Bay RWQCB 2007, Central Coast RWQCB 2006a

Public Review Draft

Table 3.13-2. 303(d) List of Impaired Water Bodies and their Impairments in the Project Area

Water Body	TMDL Requirement Status ¹	Estimated Stream Length Affected (miles)	Pollutant	Pollutant Category	Potential Sources
<i>Santa Clara Basin</i>					
South San Francisco Bay	B (Mercury, PCBs), R ²	9,204 ³	<ol style="list-style-type: none"> 1. Chlordane 2. DDT 3. Dieldrin 4. Dioxin Compounds 5. Exotic Species 6. Furan Compounds 7. Mercury 8. PCBs 9. Selenium 	<ol style="list-style-type: none"> 1. Pesticides 2. Pesticides 3. Pesticides 4. Other Organics 5. Misc. 6. Other Organics 7. Metals/Metalloids 8. Other Organics 9. Metals/Metalloids 	<ol style="list-style-type: none"> 1. Nonpoint Source 2. Nonpoint Source 3. Nonpoint Source 4. Atmospheric Deposition 5. Ballast Water 6. Atmospheric Deposition 7. Atmospheric Deposition, Industrial, Municipal, and Natural Point Sources, Nonpoint Sources, Resource Extraction 8. Unknown Nonpoint Source 9. Agriculture, Domestic Use of Groundwater
<i>Lower Peninsula Watershed</i>					
Matadero Creek	B	7.3	Diazinon	Pesticides	Urban Runoff, Storm Sewers
Permanente Creek	B	13	Diazinon	Pesticides	Urban Runoff, Storm Sewers
San Francisquito Creek	B (Diazinon), R (Sediment)	12	<ol style="list-style-type: none"> 1. Diazinon 2. Sedimentation/Siltation 	<ol style="list-style-type: none"> 1. Pesticides 2. Sediment 	<ol style="list-style-type: none"> 1. Urban Runoff, Storm Sewers 2. Nonpoint Source
Stevens Creek	B (Diazinon), R (Toxicity)	20	<ol style="list-style-type: none"> 1. Diazinon 2. Toxicity 	<ol style="list-style-type: none"> 1. Pesticides 2. Toxicity 	<ol style="list-style-type: none"> 1. Urban Runoff, Storm Sewers 2. Source Unknown

Public Review Draft

Table 3.13-2. 303(d) List of Impaired Water Bodies and their Impairments in the Project Area

Water Body	TMDL Requirement Status ¹	Estimated Stream Length Affected (miles)	Pollutant	Pollutant Category	Potential Sources
<i>Coyote Watershed</i>					
Coyote Creek (Santa Clara Co.)	B	55	Diazinon	Pesticides	Urban Runoff, Storm Sewers
<i>West Valley Watershed</i>					
Calabazas Creek	B	4.7	Diazinon	Pesticides	Urban Runoff, Storm Sewers
Saratoga Creek	B	18	Diazinon	Pesticides	Urban Runoff, Storm Sewers
<i>Guadalupe Watershed</i>					
Alamitos Creek	R	7.1	Mercury	Metals/Metalloids	Mine Tailings
Guadalupe Creek	R	8.1	Mercury	Metals/Metalloids	Mine Tailings
Guadalupe River	B ²	18	1. Diazinon 2. Mercury	1. Pesticides 2. Metals/Metalloids	1. Urban Runoff, Storm Sewers 2. Mine Tailings
Los Gatos Creek	B	19	Diazinon	Pesticides	Urban Runoff, Storm Sewers
<i>Pajaro River Basin</i>					
Corralitos Creek	R	13	Fecal Coliform	Pathogens	Source Unknown

Public Review Draft

Table 3.13-2. 303(d) List of Impaired Water Bodies and their Impairments in the Project Area

Water Body	TMDL Requirement Status¹	Estimated Stream Length Affected (miles)	Pollutant	Pollutant Category	Potential Sources
Llagas Creek	R (Chloride, Fecal Coliform, Dissolved Oxygen, pH, Sodium, TDS ⁴ , B (Nitrate, Nutrients, Sedimentation/Siltation))	16	<ol style="list-style-type: none"> 1. Nitrate 2. Nutrients 3. pH 4. Sedimentation/Siltation 5. Sodium 6. TDS⁴ 	<ol style="list-style-type: none"> 1. Nutrients 2. Nutrients 3. Misc. 4. Sediment 5. Salinity 6. Salinity 	<ol style="list-style-type: none"> 1. Source Unknown 2. Agriculture (Agricultural Return Flows, Irrigation tailwater), Habitat Modification, Irrigated Crop Production, Municipal Point Sources, Nonpoint Source, Pasture Grazing, Unknown point source, Urban Runoff, Storm Sewers 3. Source Unknown 4. Agriculture, Habitat Modification, Hydromodification 5. Nonpoint Source 6. Nonpoint Source, Point Source

Public Review Draft

Table 3.13-2. 303(d) List of Impaired Water Bodies and their Impairments in the Project Area

Water Body	TMDL Requirement Status ¹	Estimated Stream Length Affected (miles)	Pollutant	Pollutant Category	Potential Sources
Pajaro River	B	32	<ol style="list-style-type: none"> 1. Fecal Coliform 2. Nitrate 3. Nutrients 4. Sedimentation/Siltation 	<ol style="list-style-type: none"> 1. Pathogens 2. Nutrients 3. Nutrients 4. Sediment 	<ol style="list-style-type: none"> 1. Natural and Nonpoint Sources, Pasture Grazing 2. Source Unknown 3. Agriculture (Agricultural Return Flows, Irrigation Tailwater, Storm Runoff), Channelization, Irrigated Crop Production, Nonpoint Source, Removal of Riparian Vegetation, Urban Runoff, Storm Sewers, Wastewater land disposal 4. Agriculture (Storm Runoff), Channel Erosion, Channelization, Habitat Modification, Hydromodification, Irrigated Crop Production, Range Grazing, Removal of Riparian Vegetation, Resource Extraction, Streambank Modification or Destabilization, Surface Mining.
<p>¹ TMDL status abbreviations are: B = Being Addressed by a USEPA-approved TMDL, R = a TMDL is still required. ² The 2006 303(d) list indicates that a TMDL is still required for Mercury. However, a TMDL has been developed since the publication of the list in 2007. ³ Units are in acres instead of miles. ⁴ TDS=total dissolved solids</p>					

Sources: SWRCB 2007; San Francisco Bay RWQCB 2006, 2008, 2010a, 2010b

Public Review Draft

Table 3.13-3. Exceedances of Sediment Constituent Thresholds by Surface Water Body for Sediments Removed as part of the SMP in 2009 and 2010

Surface Water from which Sediment was Collected	Threshold Types ^{1,2}		
	Surface Limit	Foundation Limit	Hazard Limit
2009³			
Alamitos Creek	Total Mercury, Total Metals (Chromium, Nickel)	Total Mercury, Total Metals (Nickel)	NR
Almaden-Calero Canal	Total Mercury, Total Metals (Chromium, Nickel)	Total Mercury, Total Metals (Chromium, Nickel)	NR
Calera Creek	Pesticides (Total Chlordane), Total Metals (Selenium)	NR	NR
Canoas Creek	Pesticides (Total Chlordane, Total DDTs), Total Mercury, Total Metals (Nickel, Selenium, Zinc), Polyaromatic hydrocarbons (PAHs) (Acenaphthene, Anthracene, Benzo(a)anthracene, Benzo(a)fluoranthene, Benzo(a)pyrene, Benzoperylene, Chrysene, Dibenzanthracene, Fluoranthene, Fluorene, Pyrene, Total PAH)	Pesticides (Total Chlordane), Total Mercury, Total Metals (Nickel)	NR
Guadalupe Creek	Total Mercury, Total Metals (Cadmium, Chromium, Nickel)	Total Metals (Nickel)	NR
Guadalupe River	Pesticides (Total Chlordane, Total DDTs), Total Mercury, Total Metals (Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Zinc), Total PCB	Pesticides (Total Chlordane), Total Mercury, Total Metals (Nickel, Zinc)	Dissolved Metals (Chromium)
Los Coches Creek	PAHs (Acenaphthene, Dibenzanthracene, Fluorene, Phenanthrene), Pesticides (Total Chlordane, Total DDTs)	Pesticides (Total Chlordane)	NR
Lower Penitencia Creek	Total Metals (Cadmium, Silver, Zinc)	NR	NR
Lower Silver Creek	Pesticides (Total Chlordane)	NR	NR
Matadero Creek	Pesticides (Total Chlordane, Total DDTs), Total Metals (Selenium)	Pesticides (Total Chlordane)	NR
North Morey Channel	Total Mercury	Total Mercury	NR

Public Review Draft

Table 3.13-3. Exceedances of Sediment Constituent Thresholds by Surface Water Body for Sediments Removed as part of the SMP in 2009 and 2010

Surface Water from which Sediment was Collected	Threshold Types ^{1,2}		
	Surface Limit	Foundation Limit	Hazard Limit
Penitencia East Channel	Pesticides (Total Chlordane), Total Metals (Selenium)	Pesticides (Total Chlordane)	NR
Permanente Creek	Total Metals (Cadmium, Selenium)	NR	NR
San Tomas Aquino Creek	PAH (Naphthalene), Pesticides (Total Chlordane, Total DDTs), Total Metals (Cadmium, Selenium)	PAH (Naphthalene), Pesticides (Total Chlordane)	NR
Saratoga Creek	Total Metals (Cadmium)	NR	NR
Sierra Creek	Pesticides (Total Chlordane, Total DDTs), Total Metals (Cadmium, Lead)	Pesticides (Total Chlordane, Total DDTs)	NR
Tennant Creek	Total Metals (Nickel)	Total Metals (Nickel)	NR
Tularcitos Creek	Pesticides (Total Chlordane, Total DDTs), Total Metals (Cadmium)	Pesticides (Total Chlordane)	NR
Upper Penitencia Creek	Pesticides (Total DDTs), Total Metals (Selenium)	NR	NR
2010⁴			
Adobe Creek	Pesticides (Dieldrin), Total Metals, (Cadmium)	NR	NR
Almaden-Calero Canal	Pesticides (Dieldrin, Hexachlorobenzene, Total DDTs), Total Mercury, Total Metals (Chromium, Nickel)	Total Mercury, Total Metals (Chromium, Nickel)	NR
Berryessa Creek	Pesticides (Dieldrin, Total Chlordane, Total DDTs), Total Metals (Nickel)	Pesticides (Total Chlordane), Total Metals (Nickel)	NR
Calera Creek	Pesticides (Total DDTs), Total Metals (Cadmium)	NR	NR
Canoas Creek	PAHs (Dibenz(a,h)anthracene, Phenanthrene), Pesticides (Total Chlordane, Total DDTs), Total Metals (Cadmium, Chromium, Nickel, Selenium)	Pesticides (Total Chlordane), Total Metals (Nickel)	NR
Coyote-Alamitos Canal	Total Metals (Cadmium, Chromium, Copper, Nickel, Selenium, Zinc), Total PCBs	Total Metals (Chromium, Nickel)	Total Metals (Chromium)
Coyote Bypass	Pesticides (Total DDTs)	NR	NR

Public Review Draft

Table 3.13-3. Exceedances of Sediment Constituent Thresholds by Surface Water Body for Sediments Removed as part of the SMP in 2009 and 2010

Surface Water from which Sediment was Collected	Threshold Types ^{1,2}		
	Surface Limit	Foundation Limit	Hazard Limit
Guadalupe Creek	Pesticides (Hexachlorocyclohexane, Total Chlordane), Total Mercury, Total Metals (Zinc)	Pesticides (Total Chlordane), Total Mercury	NR
Guadalupe River	PAHs (1-Methylnaphthalene, 1-methylphenanthrene, 2,6-Dimethylnaphthalene, Acenaphthene, Anthracene, Benzo(a)pyrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Benzo(e)pyrene, Biphenyl, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Perylene, Phenanthrene, Pyrene, Total PAHs), Pesticides (Total Chlordane, Total DDTs), Total Mercury, Total Metals (Cadmium, Selenium)	PAHs (Acenaphthene, Anthracene, Benzo(a)pyrene, Benzo(a)anthracene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Fluorene, Phenanthrene, Pyrene, Total PAHs), Pesticides (Total Chlordane), Total Mercury,	NR
Los Coches Creek	Total Metals (Selenium)	NR	NR
Matadero Creek	Total Metals (Cadmium, Selenium)	NR	NR
Miguelita Creek	Pesticides (Total Chlordane, Total DDTs), Total Metals (Zinc)	NR	NR
Norwood Creek	Pesticides (Dieldrin, Hexachlorobenzene, Total Chlordane, Total DDTs), Total Metals (Cadmium, Zinc)	NR	NR
Permanente Diversion Channel	PAHs (1-Methylnaphthalene, 2,3,5-Trimethylnaphthalene, 2,6-Dimethylnaphthalene, 2-Methylnaphthalene), Pesticides (Total Chlordane, Dieldrin, Total DDTs), Total Metals (Cadmium, Selenium)	Pesticides (Total Chlordane)	NR
Quimby Creek	PAHs (2,3,5-Trimethylnaphthalene), Pesticides (Total Chlordane, Dieldrin, Total DDTs, Hexachlorobenzene, Hexachlorocyclohexane), Total Mercury, Total Metals (Cadmium, Copper, Selenium, Zinc), Total PCB	Pesticides (Total Chlordane)	NR

Public Review Draft

Table 3.13-3. Exceedances of Sediment Constituent Thresholds by Surface Water Body for Sediments Removed as part of the SMP in 2009 and 2010

Surface Water from which Sediment was Collected	Threshold Types ^{1,2}		
	Surface Limit	Foundation Limit	Hazard Limit
Ross Creek	Pesticides (Total Chlordane, Dieldrin, Total DDTs, Hexachlorobenzene), Total Mercury, Total Metals (Cadmium, Chromium, Nickel, Selenium)	Pesticides (Total Chlordane), Total Metals (Nickel)	NR
San Tomas Aquino Creek	PAHs (Benzo(a)pyrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(e)pyrene, Chrysene, Dibenz(a,h)anthracene, Total PAH), Pesticides (Dieldrin, Total DDTs), Total Metals (Selenium)	NR	NR
Sierra Creek	Pesticides (Total Chlordane, Total DDTs), Total Metals (Selenium)	Pesticides (Total Chlordane)	NR
South East Santa Teresa Creek	Total Metals (Cadmium, Chromium, Nickel, Selenium)	Total Metals (Nickel)	NR
Stevens Creek	PCBs (Total PCBs), Pesticides (Total Chlordane), Total Metals (Selenium)	NR	NR
West Little Llagas Creek	Pesticides (Hexachlorocyclohexane, Total Chlordane), Total Metals (Zinc)	Pesticides (Total Chlordane)	NR
<p>NR = no exceedances were recorded. 1 = A constituent is listed above if at least one exceedance occurred for its designated threshold in that limit category. 2 = Not all constituents analyzed have designated limits in each threshold category. Some pesticide and PCB constituents do not have any limits. 3 = Madrone Creek's sediments also were analyzed in 2009 but did not exceed any thresholds. 4 = Saratoga Creek's sediments also were analyzed in 2010 but did not exceed any thresholds.</p>			

Sources: SCVWD 2009, 2010

Public Review Draft

Groundwater Quality

Two groundwater subbasins underlie the Project Area: the Santa Clara subbasin (Santa Clara Valley groundwater basin) and the Llagas subbasin (part of the Gilroy-Hollister groundwater basin).

The Santa Clara subbasin has an area of 153,600 acres (240 square miles) and is located within a structural trough parallel to the northwest-trending Coast Ranges. The subbasin extends from the Santa Clara County northern border to the groundwater divide near the town of Morgan Hill and is bound on the east by the Diablo Range and on the west by the Santa Cruz Mountains. Groundwater flows in the subbasin generally are to the north to San Francisco Bay. Groundwater levels within the subbasin declined by as much as 200 feet during the early 1900s through the mid-1960s, as a result of groundwater pumping. However, artificial recharge programs and decreases in pumping since 1965 generally have resulted in increases in groundwater levels. (DWR 2004)

In the Santa Clara subbasin, the groundwater is generally of a bicarbonate type, with sodium and calcium being the principal cations. Although hard, the water quality in the subbasin has good to excellent mineral composition and is suitable for most uses. Some areas within the northern portion of the subbasin have somewhat elevated mineral levels that may be associated with historical saltwater intrusion. Some areas in the southern portion of the subbasin have nitrate impairments. Other impairments in the Santa Clara subbasin include primary and secondary inorganics, nitrates, volatile organic compounds, semi-volatile organic compounds, radiological constituents, and pesticides. Most wells in the subbasin are not impaired. The most frequently observed impairment in wells in the subbasin was for secondary inorganics, which exceeded its maximum contaminant level standard in 29 out of 257 wells (approximately 11 percent). (DWR 2004)

The Llagas subbasin extends from the groundwater divide at Cochran Road near the town of Morgan Hill in the north to the Pajaro River in the south and is bounded by the Diablo Range on the east and Santa Cruz Mountains on the west. The total area of the subbasin is approximately 56,000 acres (87 square miles). The Llagas subbasin drains to the south and ultimately to the Pajaro River through the river's tributaries, including Uvas and Llagas creeks. From 1969 through 2001, groundwater elevations in the Llagas subbasin remained fairly stable, except for declines and subsequent recoveries associated with the 1976–1977 and 1987–1992 drought periods. (DWR 2004)

Groundwater quality in the Llagas subbasin is generally hard¹ but of sufficient quality to support most beneficial uses. However, nitrate concentrations have been increasing and exceed the federal water quality standards in numerous private wells. Public wells have not been impaired by nitrates. Other impairments in the Llagas subbasin include primary and secondary inorganics, and pesticides. (DWR 2004)

¹ Hardness is caused by calcium and magnesium compounds and a variety of other metals. Hardness classifications are generally based on the following guidelines: 0 to 60 mg/L (milligrams per liter) as calcium carbonate is classified as soft; 61 to 120 mg/L as moderately hard; 121 to 180 mg/L as hard; and more than 180 mg/L as very hard. Hard water may be less desirable for domestic or industrial water supply beneficial uses because it requires more soap and synthetic detergents for laundry and washing, and contributes to scaling in boilers and industrial equipment. (U.S. Geological Survey 2009)

Public Review Draft

3.13.4 Impact Analysis

Methodology

The methodology used to assess possible water quality impacts that could be caused by the Proposed Project utilized the following water quality standards and requirements:

1. Beneficial uses and water quality objectives established by the San Francisco and Central Coast RWQCBs
2. Approved TMDLs
3. Local discharge requirements as issued in NPDES permits (municipal and aquatic pesticide use general permit)

Potential impacts to water quality were assessed qualitatively, based on the degree to which the proposed maintenance activities could result in violations of water quality standards, impairment of beneficial uses, or water quality conditions that could be harmful to aquatic life or human health. Each of these potential impacts (and beneficial outcomes, as applicable) is discussed below. Potential temporary and permanent impacts from the primary maintenance activities (sediment removal, vegetation maintenance, and bank stabilization) were evaluated based on the beneficial uses and existing impairments established by the San Francisco Bay and Central Coast RWQCBs, as shown in Tables 3.13-1 and 3.13-2.

Criteria for Determining Significance

For the purposes of this analysis, the Proposed Project would result in a significant impact on water quality if it would:

- A. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality; or
- B. Create or contribute substantial additional sources of polluted runoff.

Environmental Impacts

Impact WQ-1: Water Quality Degradation Resulting in Violation of Water Quality Standards or Waste Discharge Requirements Caused by Ground-Disturbing Activities (Significance Criterion A; Less than Significant)

Disturbing soil on the banks and within the beds of surface water bodies could cause sediment to be eroded and transported downstream. Adverse effects of accidental sediment releases could include increased turbidity, which could cause an increase in water temperature and a corresponding decrease in dissolved oxygen levels. Increased turbidity and water temperatures, and lower dissolved oxygen levels could potentially exceed water quality standards and impair beneficial uses.

Public Review Draft

Bank Stabilization

Bank stabilization activities would disturb bank soils and streambeds through the implementation of “hard” (e.g., concrete) or “soft” structures (e.g., pole-plantings), and through the potential creation of temporary access roads or ramps for these activities. In the long term, bank stabilization activities would reduce potential erosion and sediment transport to streams by rectifying active sources of erosion. However, during the rainy season following the bank stabilization activities, sediment inputs to surface waters could occur in pulses during and after storm events. During these events, higher levels of turbidity in the water column could result from exposed bare soils on channel banks where vegetation had not yet become established, or caused by material eroded from the recently maintained channel. Increased turbidity from storm events following maintenance activities may impair beneficial uses in the Project Area, resulting in an adverse impact.

Sediment Removal

Sediment removal activities would disturb streambeds or bank soils by the use of heavy equipment to remove sediments. Sediment removal activities would result in similar effects as those described above for bank stabilization activities and would potentially result in short-term adverse impacts on stream channel water quality.

Vegetation Management

Grazing activities, vegetation removal, and discing for vegetation management also would potentially create erosion and be a potential source for sediment transport to streams.

Management of Animal Conflicts

Management of animal conflicts generally would not involve activities that would disturb soils except for minor physical alterations to the water bodies, such as levee compaction or reconstruction, and habitat modification activities (i.e., discing).

Minor Maintenance Activities

Minor maintenance activities would potentially include grading activities or sediment removal activities that could cause sediments to be transported downstream. The potential effects would be similar to those described for sediment removal and bank stabilization activities but on a much smaller scale because of the limited acreages and sediment volumes of minor 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 work.

Public Review Draft

Applicable Best Management Practices

The following BMPs would be implemented as part of the SMP Update to minimize the potential for water quality degradation resulting in violation of water quality standards or waste discharge requirements caused by ground-disturbing activities. 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-30: Vehicle and Equipment 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-3: Bank Stabilization Post-Construction Maintenance
 BMP REVEG-1: Seeding
 BMP REVEG-2: Planting Material

Conclusion

With the implementation of these BMPs, impacts related to water quality degradation caused by ground-disturbing Proposed Project activities would be less than significant and would not require mitigation.

Mitigation Measures: No mitigation is required.

Impact WQ-2: Water Quality Degradation Resulting in Violation of Water Quality Standards or Waste Discharge Requirements Caused by Instream Maintenance Activities (Significance Criterion A; Less than Significant)

The Proposed Project activities may be located in waters subject to tidal flows or water bodies with flowing water. As a result, SCVWD may need to prevent inundation by tidal flows and divert flowing water around the proposed maintenance activities by placement of dewatering systems and cofferdams. The use and potential effects of these systems for each of the Proposed Project's maintenance activities are described below.

Sediment Removal/Bank Stabilization Activities

Sediment removal and bank stabilization activities would be performed within stream channels and may require the use of dewatering systems and cofferdams. Several water quality impacts could occur during the installation, operation, and removal of dewatering systems. Installation and removal of flow diversion structures would involve streambed and

Public Review Draft

bank disturbance that could cause increased turbidity in the water column surrounding a work site and could cause migration of sediment downstream. In very unlikely cases, temporary instream cofferdams constructed in the channel could fail and release sediment, sand, gravel, and water into the work site and downstream. If flow bypass mechanisms were not properly maintained, they could displace sediment at the intake and increase turbidity locally from the discharged water. If the outlet discharge from the bypass pipe was not secured properly or energy dissipaters were not used at the discharge point, erosion at the work site could occur. If pollutants from maintenance equipment were spilled into temporarily stored water or within the work site, water quality also could be degraded.

Vegetation Management/Minor Maintenance Activities/Management of Animal Conflicts

Vegetation management activities, including mowing or pruning activities, could be performed instream and may require the use of dewatering systems and cofferdams, particularly in tidally-influenced areas. Streamflow diversions also may be necessary for the minor in-channel sediment or debris removal as part of minor maintenance activities. Management of animal conflicts generally would not require the use of streamflow diversions except for any activities related to physical facility alterations, such as reconstruction of levee side slopes or levee face compaction. Potential effects of the use of dewatering systems for any of these activities would be similar to those described for sediment removal/bank stabilization 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 work.

Applicable Best Management Practices

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

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

Conclusion

With the implementation of these BMPs, impacts related to water quality degradation caused by instream maintenance activities would be less than significant and would not require mitigation.

Mitigation Measures: No mitigation is required.

Public Review Draft

Impact WQ-3: Water Quality Degradation Resulting in Violation of Water Quality Standards or Waste Discharge Requirements Caused by the Accidental Release of Hazardous Materials (Significance Criterion A; Less than Significant)

The Proposed Project includes activities that would require the use of heavy equipment, which could result in accidental releases of hazardous materials and subsequent effects on stream water quality as described below.

Vegetation Management/Bank Stabilization/Sediment Removal Activities

Vegetation removal activities using machinery, including mechanical removal and flaming, sediment removal and bank stabilization activities, and sediment disposal/reuse activities would require the use of heavy machinery at the top of channel banks or within the stream channel. During these maintenance activities, equipment and worker vehicles would be stored and refueled in staging areas adjacent to the stream channel unless equipment stationed in these locations could not be readily relocated. The storage and refueling of equipment and vehicles could release hazardous materials, such as petroleum products. If accidentally released directly or indirectly into the stream channel, the sediment and water nearby the work site could be significantly degraded. Fine sediments within stream channels could readily absorb pollutants and be transported downstream. In addition, some bank stabilization activities would involve the use of concrete products that, if released, would affect downstream water quality.

Minor Maintenance/Management of Animal Conflicts

Minor maintenance activities may include grading or minor sediment removal activities that would require the use of heavy equipment. Similarly, management of animal conflicts could require the use of heavy equipment for any physical facility alterations, such as levee face compaction or levee side slope reconstruction. The use of heavy equipment and vehicles for these activities would result in potential effects on water quality, similar to those described for bank stabilization, vegetation management, and sediment removal 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 work.

Applicable Best Management Practices

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

- BMP GEN-24: On-Site Hazardous Materials Management
- BMP GEN-25: Existing Hazardous Materials
- BMP GEN-26: Spill Prevention and Release
- BMP GEN-30: Vehicle and Equipment Maintenance
- BMP GEN-31: Vehicle Cleaning

Public Review Draft

BMP GEN-32: Vehicle and Equipment Fueling BMP BANK-2: Concrete Use near Waterways

Conclusion

Impacts related to water quality degradation resulting in violation of water quality standards or waste discharge requirements caused by the accidental release of hazardous materials resulting from the Proposed Project would be less than significant and would not require mitigation.

Mitigation Measures: No mitigation is required.

Impact WQ-4: Water Quality Degradation Resulting in Violation of Water Quality Standards or Waste Discharge Requirements Caused by the Use of Pesticides, including Herbicides (Significance Criterion A; Less than Significant)

The use of pesticides, including herbicides, by the Proposed Project could result in potential violations of water quality standards or waste discharge requirements, if the pesticides were improperly applied, spilled into local water bodies, or transported to groundwater.

Vegetation Management/Canal Maintenance

SCVWD's application of herbicides directly to water, particularly in canals managed under the Proposed Project, would continue to comply with requirements of the NPDES General Permit for Aquatic Pesticide Use (see Section 3.6, *Hazards and Hazardous Materials*). This permit would require compliance with effluent limitations, including developing and implementing an Aquatic Pesticide Application Plan, as well as compliance with applicable receiving water limitations (SWRCB 2006). Compliance also would include following specific monitoring requirements, and SCVWD would follow all pesticide label instructions and any terms contained in use permits issued by the County Agricultural Commissioner. In addition, SCVWD would follow the requirement that applicators of a pesticide designated as a restricted material would need to be licensed by CDPR or work under the supervision of someone who was licensed (SWRCB 2006). Compliance with the provisions of this permit would adequately prevent against water quality degradation.

Furthermore, other pesticides, including herbicides used for vegetation maintenance, would be used as part of proposed maintenance activities. These pesticides could be accidentally released into channels and canals through spills and could be washed into the stream during storm events, impacting stream water quality. Pesticides also could cause impacts on groundwater quality if they were dissolved in water and filtered through the soil into the groundwater table. However, the majority of harmful constituents sorb onto soil particles would be broken down by organic matter into non-toxic forms and would not reach the groundwater table.

Only pesticides approved by USEPA and registered for use by the California Department of Pesticide Regulation would be used for proposed maintenance activities.

Public Review Draft

Minor Maintenance Activities

Minor maintenance activities may require the use of herbicides as part of efforts to control weeds during on-going maintenance of landscaping sites. Potential effects of these herbicide applications would be similar to those described above for vegetation management.

Management of Animal Conflicts

Animal conflicts management could include the use of bait traps, which would utilize rodenticides. These activities could potentially affect the water quality of the local creeks and channels if they were transported from the trap and application areas.

Sediment Removal/Bank Stabilization Activities

These activities would not involve the use of pesticides and would have no effect on channel or canal water quality.

Applicable Best Management Practices

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

- BMP GEN-2: Instream Herbicide Application Work Window
- BMP GEN-24: On-Site Hazardous Materials Management
- BMP GEN-26: Spill Prevention and Response
- BMP ANI-1: Avoid Redistribution of Rodenticides

Conclusion

By implementing these BMPs, impacts related to water quality degradation caused by the use of pesticides in Proposed Project activities would be less than significant and would not require mitigation.

Mitigation Measures: No mitigation is required.

Impact WQ-5: Water Quality Degradation Resulting in Violation of Water Quality Standards or Waste Discharge Requirements Caused by the Disturbance of Existing Contamination (Significance Criterion A; Less than Significant)

SCVWD-maintained channels (and to a lesser extent, canals) would receive and convey stormwater runoff from surrounding developed areas. Contaminants from stormwater runoff, such as metals and petroleum residues, could adhere to fine sediments that settled and accumulated in the stream or canal bottom. Large quantities of organic matter mingled with fine sediments would encourage sorption of urban contaminants. Sediments near storm drain outfalls may contain high concentrations of urban contaminants. The transport of contaminated soils downstream could result in a violation of water quality standards or waste discharge requirements.

Public Review Draft

Sediment Removal

As discussed in Section 3.6.3, Environmental Setting (Section 3.6, *Hazards and Hazardous Materials*), numerous sites in Santa Clara County are contaminated with hazardous materials. In addition, contaminants have been identified and measured in the Project Area, (as identified in Table 3.13-3, which summarizes sediment constituent threshold exceedances in surface water bodies for sediments removed as part of the SMP in 2009 and 2010). The Guadalupe River watershed has experienced mercury contamination, which has been addressed through a TMDL for mercury that was approved in 2010.

The proposed sediment removal activities could potentially adversely affect water quality, if contaminated sediments were transported downstream, or improve water quality by removing contaminated sediments from the watersheds. Disturbances of contaminated sediments as part of the sediment removal activities could potentially affect the water quality standards or waste discharge requirements if these sediments were transported downstream. However, in general, the removal of contaminated sediments in the Project Area, including mercury-contaminated sediment in the Guadalupe River watershed, would reduce the amount of contamination in water bodies, meeting the applicable TMDLs.

Other Maintenance Activities

Disturbances of contaminated soils could occur as part of the vegetation management's discing activities, minor maintenance grading, minor levee alterations to manage animal conflicts, or as part of bank stabilization activities. Potential effects of contaminated soil disturbances would be similar to those described above for sediment removal activities. The removal of trash and debris, a minor maintenance activity of the Proposed Project, would benefit water quality by removing potentially contaminating waste from stream channels. Because routine canal maintenance activities would include all general work activities, effects would be the same as described above for other routine maintenance work.

Applicable Best Management Practices

The following BMPs would be implemented as part of the SMP Update to minimize the potential for water quality degradation. 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-27: Existing Hazardous Sites

Conclusion

By implementing these BMPs, the District would minimize the disturbance of existing contaminated soils and encourage proper handling of any contaminated soils encountered during maintenance activities. Impacts related to water quality degradation caused by the disturbance of existing contamination would be less than significant and would not require mitigation.

Mitigation Measures: No mitigation is required.

Public Review Draft

Impact WQ-6: Compliance with CWA Section 303(d) Total Maximum Daily Loads (Significance Criterion A; Less than Significant)

Table 3.13-2 lists impaired water bodies and the corresponding TMDLs for each one as identified by the RWQCBs and USEPA. Only TMDLs approved by USEPA are enforceable. No additional contributions of 303(d) listed constituents are allowed until a TMDL has been approved. Currently, TMDLs established to control and reduce mercury and PCB contamination within the Project Area would apply to the SMP Update. As part of the TMDL enforcement procedure, the RWQCBs could add TMDL conditions to municipal permits and WDRs.

Sediment Removal

Proposed sediment removal activities would involve ground disturbance and could potentially mobilize contaminated sediments, such as mercury and PCB-contaminated sediment, which would already be present within stream channels. However, these activities would not contribute to new contamination in stream channels. In fact, over the period of implementation, the Proposed Project would remove significant quantities of sediment contaminated with mercury and PCBs from the system. This action would align with TMDL plans established by USEPA to alleviate water and sediment contamination in the Project Area.

Furthermore, SCVWD would comply with its municipal permit requirements; the Proposed Project would be reviewed and approved by the RWQCBs before being implemented by SCVWD. Also, SCVWD would implement a water and sediment quality monitoring program as part of the SMP Update and comply with permits issued by the RWQCBs. The water quality and sediment characterization monitoring programs would additionally support maintenance activities that would minimally disturb contamination and encourage proper handling of contaminated sediment to prevent mobilization and distribution of that contaminated sediment during and after maintenance activities.

Other Maintenance Activities

Other proposed maintenance activities (i.e., vegetation management, management of animal conflicts, bank stabilization, minor maintenance, and canal maintenance) also would potentially involve ground disturbance or sediment removal. Effects of sediment removal or ground disturbances would be similar to those described above for the proposed sediment removal activities. In addition, as described above, SCVWD would comply with its permits and perform sediment and water quality monitoring programs.

Applicable Best Management Practices

The following BMPs would be implemented as part of the SMP Update to support compliance with CWA Section 303(d) TMDLs. 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

Public Review Draft

BMP GEN-20: Erosion and Sediment Control Measures
BMP SED-1: Groundwater Management
BMP SED-2: Prevent Scour Downstream of Sediment Removal

Conclusion

The Proposed Project would be designed to minimize ground disturbance and the potential disruption of contaminated sediments. In addition, the Proposed Project would adhere to its permit requirements and would implement water quality and sediment monitoring programs. This impact would be less than significant and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact WQ-7: Water Quality Degradation Resulting in Violation of Water Quality Standards or Waste Discharge Requirements Caused by Sediment Handling and Disposal (Significance Criterion A; Less than Significant)

Sediment removed from stream channels during stream maintenance could contain contaminants. Improper handling and disposal of contaminated sediment could impact the beneficial uses of a stream. Also, sediment transport and disposal activities could result in sediment spills, which could impact water quality if sediments were spilled into the storm drain network or directly into water bodies. The potential of the Proposed Project's activities to involve sediment handling and disposal is further described below.

Sediment Removal/Bank Stabilization

Sediment removal and bank stabilization activities would involve grading activities and sediment handling and disposal. As described above, these activities could potentially degrade channel water quality if the sediments were improperly handled, disposed, or accidentally spilled. The RWQCB with jurisdiction over each stream would review and approve sediment test results before the onset of sediment removal activities on any stream. The RWQCB also would approve sediment disposal sites. However, the potential would exist for the handling of these sediments to affect the water quality of local water bodies.

Vegetation Management

Vegetation management activities may involve some discing of sediments but would not require the disposal or testing of sediments. The potential effects of sediment handling would be similar to those described above for sediment removal/bank stabilization.

Public Review Draft

Other Maintenance Activities

Minor maintenance, management of animal conflicts, and canal maintenance activities could involve grading, levee slope alterations, or sediment removal activities that would involve the handling and/or disposal of sediments. The potential effects of sediment handling or disposal activities would be similar to those described above for sediment removal/bank stabilization, although they would not require testing because of the limited amount of sediment.

Applicable Best Management Practices

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

- BMP GEN-4: Minimize the Area of Disturbance
- BMP GEN-21: Staging and Stockpiling of Materials
- BMP GEN-22: Sediment Transport
- BMP GEN-29: Dust Management
- BMP GEN-31: Vehicle Cleaning

Conclusion

Sediment handling and disposal during Proposed Project activities would not degrade water quality so that violations of water quality standards or waste discharge requirements would occur. Potential impacts related to the Proposed Project's activities would be less than significant and would not require mitigation.

Mitigation Measures: No mitigation is required.

Impact WQ-8: Create or Contribute Runoff Water that Would Provide Substantial Additional Sources of Polluted Runoff (Significance Criterion B; Beneficial)

The Proposed Project would not involve the construction of large areas of impermeable surfaces that would contribute substantial additional sources of polluted runoff. In addition, implementing the Proposed Project would not require expansion of existing channels within the Project Area and would not alter the quantity of stormwater runoff conveyed from adjacent lands and received in stream channels. However, the Proposed Project would improve the quality of stormwater runoff received in streams and conveyed downstream.

Vegetation Management

Revegetation management activities would improve the functioning of instream and riparian vegetation, which in turn would promote filtration of pollutants from stormwater runoff and improve instream habitat.

Public Review Draft

Sediment Removal/Bank Stabilization/Minor Maintenance/Canal Maintenance

Proposed Project activities, including sediment removal, also could improve water quality in a channel by removing existing contamination from the stream (both trash and contaminated sediments). Bank stabilization activities would improve stormwater quality by reducing the potential for sediment transport from unstable banks. Minor maintenance activities could involve trash or sediment removal, which would result in similar potential effects as those described for 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 work.

Management of Animal Conflicts

Animal conflict management activities generally would not involve any activities that would affect stormwater quality. However, rodenticides used in SCVWD bait traps could potentially affect stormwater quality, if spilled and released into a waterway. This is anticipated to be an extremely unlikely event.

Applicable Best Management Practices

The following BMP would be implemented as part of the SMP Update to minimize the potential for creating or contributing runoff water that would provide substantial additional sources of polluted runoff. A description of this BMP is provided in Chapter 2, *Project Description*.

BMP ANI-1: Avoid Redistribution of Rodenticides

Conclusion

By implementing BMP ANI-1, the Proposed Project would have an overall beneficial impact on the stormwater runoff quality received in channels and would not require mitigation.

Mitigation Measures: No mitigation is required.

Impact WQ-9: Alterations to the Quality of Groundwater (Significance Criterion A; Beneficial)

The Proposed Project would have the potential to affect the quality of groundwater as discussed below.

Bank Stabilization/Sediment Removal/Vegetation Management

Proposed maintenance activities would include stabilizing failing stream banks and supporting the growth of riparian vegetation along channel banks, which would assist in reducing fine sediment inputs to channels. Annual sediment removal activities and reshaping of a channel in some locations to prevent sediment deposition in the channel bed would improve groundwater percolation and filtration functioning. Use of pesticides and

Public Review Draft

herbicides would not occur before rainy conditions that could cause them to percolate to groundwater.

Minor Maintenance

Minor maintenance activities could include the removal of sediments, which would result in beneficial effects on groundwater quality, as described above.

Management of Animal Conflicts

These activities would not alter the groundwater quality. In particular, use of rodenticides would not occur before rainy conditions that could cause them to percolate to groundwater.

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 work.

Applicable Best Management Practices

No BMPs would be applicable for this impact.

Conclusion

The Proposed Project would have beneficial effects on the quality of groundwater and would not require mitigation.

Mitigation Measures: No mitigation is required.