

Stream Maintenance Program Update

Final Subsequent Environmental Impact Report

Volume 2

SCH #2000102055



Santa Clara Valley Water District

December 2011

**FINAL
SUBSEQUENT ENVIRONMENTAL IMPACT REPORT**

**Santa Clara Valley Water District
Stream Maintenance Program Update
2012–2022**

Volume II of II

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December 2011

Horizon Water and Environment. 2011 (December).
Stream Maintenance Program Update-2012-2022
Final Subsequent Environmental Impact Report.
HWE 10.005. Oakland, CA.

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ACRONYMS

AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
AG	Attorney General
AIS	Aerial Information Systems, Inc.
APE	area of potential effects
B.P.	Before Present
BAAQMD	Bay Area Air Quality Management District
BCDC	San Francisco Bay Conservation and Development Commission
BMP	Best Management Practice
BO	Biological Opinion
CAA	Clean Air Act
CAAQs	California Ambient Air Quality Standards
CAC	County Agricultural Commissioner
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources Recycling and Recovery Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCC	Central California Coast
CCR	California Code of Regulations
CDFG or DFG	California Department of Fish and Game
CDPR	California Department of Pesticide Regulation
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH ₄	methane
CHRIS	California Historical Resources Information System
CIP	capital improvement program
CIWMB	California Integrated Waste Management Board
CIWMP	Countywide Integrated Waste Management Plan
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalents
County	Santa Clara County
CRHR	California Register of Historic Resources
CVC	California Vehicle Code
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships

cy	cubic yards
dB	decibel
dBA	A-weighted decibel
dbh	diameter at breast height
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DEH	Santa Clara County Department of Environmental Health
DO	dissolved oxygen
DOT	U.S. Department of Transportation
DEIR	Draft Environmental Impact Report
DSEIR	Draft Subsequent Environmental Impact Report
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMT	Early Period/Middle Period Transition
FEIR	Final Environmental Impact Report
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Rodenticide, and Fungicide Act
FTA	Federal Transit Administration
FSEIR	Final Subsequent Environmental Impact Report
FY	fiscal year
GHG	greenhouse gas
HFC	hydrofluorocarbons
Hg	mercury
HCP	habitat conservation plan
HMMP	Habitat Mitigation and Management Plan
HMP	hydromodification plan
HOV	high occupancy vehicle
IAWG	Inter-Agency Work Group
IPCC	Intergovernmental Panel on Climate Change
IPMP	Invasive plant management program
ISA	International Society of Arboriculture
ISP	Invasive Spartina Program
LCFS	Low Carbon Fuel Standard
L _{dn}	day-night (sound) level
L _{eq}	equivalent sound level
L _{max}	maximum sound level
L _{min}	minimum sound level
LOS	level of service
LRA	local responsibility area
LUFT	leaking underground fuel tank
L _{xx}	percentile-exceeded sound level
MeHg	methylmercury

MFA	mitigation feasibility assessment
mg/L	milligrams per liter
MHW	mean high water
MTBA	Migratory Bird Treaty Act
MTC	Metropolitan Transportation Commission
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NCCP	natural community conservation plan
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOP	Notice of Preparation
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPW	Notification Notice of Proposed Work
NRHP	National Register of Historic Places
OHP	California Office of Historic Preservation
PAHs	polycyclic aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
PCEs	primary constituent elements
PCR	Post-Construction Report
PM	particulate matter
PM ₁₀	particulate matter less than 10 microns in diameter
PM _{2.5}	particulate matter less than 2.5 microns in diameter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PRC	California Public Resources Code
PRESCRIBE	Pesticide Regulation's Endangered Species Realtime Internet Bulletin Engine database
Proposed Project	Stream Maintenance Program Update
RCRA	Resource Conservation and Recovery Act
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCCC	South-Central California Coast
SCCVCD	Santa Clara County Vector Control District
SCS	Soil Conservation Service (now the Natural Resources Conservation Service)
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SCVWD	Santa Clara Valley Water District
SEIR	Subsequent Environmental Impact Report
SFBAAB	San Francisco Bay Area Air Basin
SHPO	State Historic Preservation Officer
SMP	Stream Maintenance Program
SR	State Route
SWRCB	State Water Resources Control Board
TMDL	Total Maximum Daily Load
URMP	Urban Runoff Management Plan
U/S	upstream

USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
USSCS	U.S. Soil Conservation Service, now known as U.S. Natural Resources Conservation Service (NRCS)
VMT	vehicle miles traveled
VTa	(Santa Clara) Valley Transportation Authority
WDRs	waste discharge requirements
WMA	watershed management area
WPCP	water pollution control plant

GLOSSARY OF SIGNIFICANT TERMS

1 percent flood	Refers to a flood of a magnitude that has an estimated probability of 1 in 100 of occurring in any given year. Technically more precise way of referring to the “100-year flood.” Generally, 1 percent, 2 percent, and 10 percent events refer to levels of flood flows with an expected recurrence of 100, 50, and 10 years, respectively.
100-Year Flood	Flood of a magnitude with an expected recurrence of once in 100 years. Synonymous with 1 percent flood.
Adaptive Management	A dynamic process that recognizes that the future cannot be perfectly predicted. In response to imperfect predictions, planning and management strategies are modified as better information becomes available. It is a continuous improvement process whereby monitoring and analysis of the results of past actions are fed back into the current decision-making process.
Aggradation	Process of a channel raising its elevation through deposition of sediments. A type of fluvial geomorphic instability (see “Degradation”).
Anadromous	A term used to describe the movement of certain fishes from saltwater to freshwater to breed, and from freshwater to saltwater to grow and mature.
Annual Plant	A plant that completes its life cycle and dies in one growing season or one year (e.g., corn, lettuce, wild oat).
Annual Work Plan	The stream maintenance work indentified that forms the basis of the annual budget. Specific information, such as location and size of sediment removal, vegetation management and erosion repair, is provided in the Annual Work Plan.
Appurtenant Structures	Accessory structures, such as storm outfalls, stream gages, trash racks, flap gates, tide gates, vaults, and headwalls.
Aquatic Vegetation	Herbaceous vegetation that grows in the wetted channel bottom and is typically dependent on either sustained flow or prolonged periods of water on site for survival.
Avian	Bird or bird-like.
Avoidance	Strategies for the planning, design, maintenance, and operation of District facilities to provide water supply and flood control, and which refrain from causing significant adverse environmental impacts.

Bank Stabilization	Bank stabilization involves any action by the District to stream banks that are eroding (repair), as well as preventative erosion protection. The District implements stream bank stabilization when the problem (1) causes or could cause significant damage to a property or adjacent property, (2) is a public safety concern, (3) negatively affects transportation or recreational use, (4) negatively affects water quality, or (5) negatively affects riparian habitat. Bank protection stabilizes a channel bank by using rock, rip rap, concrete, soft materials, vegetation, or a combination of materials or methods. Bank stabilization can also include preventative maintenance to ensure that banks do not erode in the future. This new work is considered routine maintenance because it is either restoring the flood control function of a modified channel, or it is repairing a natural bank to its approximate condition prior to becoming an erosion problem.
Bank/Bench	The area of the bank above the bankfull elevation and below the toe of levee inboard if in a reach with levee, and property line if not in a levee reach.
Bank Repair	Maintenance of existing bank stabilization structures with in-kind, in-place materials. This type of maintenance occurs when such structures fail.
Bankfull	When the channel is flowing full, the water surface is at floodplain level and the flow rate is the bankfull discharge.
Bankfull Bank	The area of bank between instream and bankfull elevation
Bankfull Elevation	The point where the normal channel meets the floodplain, the elevation at the top of the channel banks. When the channel is flowing full, the water surface is at floodplain level and the flow rate is the bankfull discharge.
Basin	For the purposes of the Stream Maintenance Program, a depression or valley that drains to a common waterbody. In Santa Clara County, two major hydrologic basins drain either into San Francisco or to Monterey Bay. In the northern portion of the county, streams of the Santa Clara Basin drain to San Francisco Bay. To the south, streams in the Pajaro River Basin drain ultimately to Monterey Bay.
Bedload	Material moving on or within a few particle diameters above the streambed, rolling or sliding, but not carried in the water column itself. Generally moves more slowly than the streamflow itself. Compare with "Suspended Sediment." Bedload does not mean the rate of discharge of bed material (see "Bedload Discharge").

Bedload Discharge	The rate of bedload transport; the quantity of bedload passing a point on the channel in a unit of time.
Best Management Practice (BMP)	An activity, procedure, or other standard management and work practice that provides the most effective means of preventing or reducing pollution or other negative environmental consequences. BMPs are incorporated into project activities to avoid and minimize environmental impacts.
Biotechnical	A method of bank stabilization emphasizing the incorporation of soft structures (e.g., vegetation). See “Soft Structures.”
Biotechnical Channel	A natural or artificial waterway that periodically or continuously contains moving water, or which forms a connecting link between two bodies of water.
Brackish Water	Water that is a mixture of freshwater and saltwater, with a salinity less than seawater.
Bypass Channel	A flood control facility through which a portion of a stream’s flow is diverted from one point and reintroduced into the stream at the downstream end of the bypass channel. Bypass channels can be used during the construction or maintenance process. Permanent bypass channels can also be designed to accommodate flood flows.
Bypass Structures	On construction sites, a generic term for any type of structure(s) used to pond water and convey it around a work site (e.g., cofferdams, bypass pipes, channels).
California Environmental Quality Act (CEQA)	The California Environmental Quality Act is California Public Resources Code Sections 21000 et seq. CEQA establishes a duty for public agencies to avoid or minimize environmental damage where feasible, recognizing that a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors. CEQA is intended to facilitate the disclosure of the significant environmental effects of proposed activities to decision-makers and the public, the identification of ways to avoid or reduce environmental damage, and the prevention of environmental damage by requiring the implementation of feasible alternatives or mitigation measures.
Capital Improvement Project CIP)	For the purposes of the Stream Maintenance Program, a large flood control construction project that affects the flood conveyance capacity of the stream. These projects are not considered routine stream maintenance.
Channel	Creeks and canals.

Channel Erosion	Includes the processes of streambank erosion, streambed scour, and degradation.
Channel Stabilization	See “Bank Stabilization.”
Clean Water Act	A broad federal statute with the goal of maintaining and restoring waters of the U.S. (see “Waters of the United States”). Federal Water Pollution Control Act.
Co-dominance	Equal in size and relative importance, usually associated with either the trunk/stems or scaffold limbs/branches in the crown (Matheny and Clark 1994).
Compensatory Mitigation	The restoration, creation, enhancement, or preservation of wetlands and other resources expressly for the purpose of compensating for unavoidable adverse impacts that remain after all appropriate and practicable avoidance and minimization of impacts have been achieved in compliance with law or requirements of regulatory agencies. (Federal Register March 6, 1995, Federal Guidance for the Establishment, Use and Operation of Mitigation Banks). In the Stream Maintenance Program, compensatory mitigation is mitigation in perpetuity that is to be provided by SCVWD to offset significant residual impacts that cannot be avoided.
Confluence	A meeting of two or more streams or rivers.
Culvert	Any covered structure not classified as a bridge, which conveys a waterway under a road or other paved area.
Cut-Stump Treatment	Elimination of woody vegetation by cutting at ground level and treating the cambium, or outer most plant tissue, with a concentrated, systemic herbicide. Best results are obtained when application of herbicide immediately follows (within minutes) the removal of target vegetation. Trees removed and treated by cut stump are reported as hand removal.
Debris Basin	A depression formed by the construction of a barrier or dam built at a suitable location to retain rock, sediment, plant material, and the like, which can be conveyed along steep hillside streams during high flows. Usually placed in hillside areas where access is better for removing sediment, generally prior to entering urbanized reaches (see also “Sediment Basin”).
Degradation	Process of a channel lowering its elevation through increased erosion, channel bed scour, or down-cutting. A type of fluvial geomorphic instability (see “Aggradation”).
Depauperate	An ecosystem that lacks sufficient stored chemical elements required for life. Depauperate ecosystems cannot support rapid growth of flora and fauna, high biomass density, or high biological diversity.

Design Capacity	An engineering term used to describe the amount of water that a modified channel was designed to convey. Generally, the design capacity for improved SCVWD facilities is to accommodate the 1 percent or 100-year flood. This is the level of protection. Capacity is in cfs or Q (see “Flood Capacity”).
Design Flood	The maximum calculated discharge intended to be conveyed in the design of a capacity-constructed channel. The maximum level of flood protection used as a design criterion in the design of a constructed or improved channel or waterway.
Diameter at Breast Height (dbh)	A tree trunk diameter is measured by the standard diameter at breast height (dbh) or approximately 4.5 feet above ground level.
Drop Structure	A structure designed to convey flows over a vertical distance from a higher to a lower elevation.
Emergency	A situation is considered an “emergency” if it is a sudden, unexpected occurrence involving a clear and imminent danger that demands immediate action to prevent or mitigate loss of or damage to life, health, property, or essential public services (Public Resource Code Section 21060.3). Emergency repair or activities associated with an emergency are not addressed by the Stream Maintenance Program. Most emergency projects are exempt from review pursuant to CEQA (Public Resource Code Section 21080(b)(2), (3), (4)), although there may be post-permitting requirements.
Environmental Impact Report (EIR)	A detailed statement prepared under CEQA describing and analyzing the significant environmental impacts of a project and discussing ways to mitigate or avoid the effects (see also “Program Environmental Impact Report”).
Ephemeral	Creek that only flows for short periods of time during or immediately following a rain event.
Erosion	The detachment and movement of soil and rock fragments by water and other geological agents, which results in the wearing away of the land. When water is the eroding agent, erosional processes include sheet and rill erosion, gully erosion, and channel erosion.
Fish Ladders	Artificial, stepped pools to enable fish traveling upstream, against the flow of water, to span a large vertical distance in a series of gradual steps. Used at dams or other in-stream barriers.

Flood Capacity	The capacity of a channel to carry calculated flood flows. Capacity is dependent on cross-sectional area and frictional components (e.g., channel vegetation).
Flood Control Facility	For the purposes of the Stream Maintenance Program, any watercourse, whether natural or man-made, in which water does or may flow and which is under ownership or controlled by the District for flood control purposes.
Fluvial	Pertaining to rivers.
Follow-up Hand Removal	Generally this category of work is removal of dead vegetative material after herbicide application. This work is not reported.
Gabion Basket or Mattress	Galvanized wire mesh panels filled with rock used for structural purposes. They can be connected together and used for retaining walls, revetments, or bank stabilization.
Geomorphology	The study of the forms of the earth's surface and the processes that shape them. Fluvial geomorphology involves the study of streams and sediment processes: transport, erosion, storage, and deposition.
Gradeall	A multipurpose mobile excavation machine with a reach of 35 feet.
Habitat	The specific area or environment in which a particular type of plant or animal lives. To be complete, an organism's habitat must provide all of the basic requirements of life for that organism.
Habitat Conservation Plan (HCP)	Plans under the Endangered Species Act (ESA) negotiated between the federal government and private landowners or state and local governments. These plans are designed to allow landowners to receive a federal permit to unintentionally harm listed species in the course of completing projects. In exchange for a permit, landowners agree to pursue specific management protections for threatened and endangered species.
Hard Structures	A type of bank stabilization structure incorporating rock, rip rap, sack concrete, gabion baskets and mattresses, or concrete. These structures are inert and rigid.
Hardscape	Concrete, rock, gabions, or other permanent, hard surface channel treatment. Refers to designs that utilize predominantly hard structures and are generally incapable of supporting vegetation (see "Softscape," "Hybrid" and bank stabilization table).
Hazard Tree	The combination of a failure of a tree or part of a tree with the presence of an adjacent target. A hazard does not exist if

	there will not be an impacted target. Excluded from SMP coverage.
Headwaters	The minor drainages in the extreme upper watershed.
Herbaceous Vegetation	Non-woody vegetation which includes grasses, broadleaf weeds, cattails, bulrushes, annuals, biennials, and perennials.
Herbicide	A chemical agent used to destroy or inhibit plant growth.
Hybrid	For purposes of the SMP Update, refers to bank stabilization projects that consist of a combination of hard and softscape (see “Hardscape,” “Softscape,” and bank stabilization table).
Hydraulic	Of or pertaining to the scientific or technical study of the static and dynamic behavior of fluids. Fluvial hydraulics is an engineering discipline geared toward the physics of water flow in channels—its volume, velocity, and elevation, in space and time. Hydraulic analysis is typically used to determine discharge capacity and to assess the effects of channel vegetation on channel capacity.
Hydrologic Basin	For the purposes of the Stream Maintenance Program, a depression or valley that drains to a common waterbody. In Santa Clara County, there are two major hydrologic basins draining either into San Francisco Bay or to Monterey Bay. In the northern portion of the county, streams of the Santa Clara Basin drain to San Francisco Bay. To the south, streams in the Pajaro River Basin drain ultimately to Monterey Bay. Each basin is comprised of several watersheds.
Hydrology	Hydrology is the science (or study) of water in the natural environment with a focus on the circulation and distribution of water as expressed in the hydrologic cycle or water balance.
Hydroseed	A process for revegetation of large areas. Plant seed, fertilizer, straw mulch, a binding agent, and green dye are mixed in a truck-mounted tank and sprayed through a hose onto the bare ground.
Impact	See “Significant Environmental Impact.”
Impervious Hardscape	Paved areas such as streets and sidewalks, other developed areas, or bank stabilization methods which are impenetrable to water.
Implementation Measure	An implementation measure is an action, procedure, program, or technique that carries out policy. Implementation measures provide specific guidance to District managers and staff in the environmental review and processing of routine stream maintenance projects.

Inlet	An arrangement for conveying surface water into an underdrain, pipe, culvert, or channel.
Inoperable Canals	<u>Canals that were historically, but are not currently, used to convey water for water supply purposes. Although inoperable, these canals typically convey storm and non-storm runoff entering from upslope locations. In general, these canals are unvegetated and do not support beneficial uses. However, pockets of wetland-associated or riparian vegetation exist in certain locations. Sediment removal, vegetation management, and bank stabilization activities in canals resulting in impacts to such vegetation (e.g., sediment removal that also results in removal of the associated vegetation) would require compensatory mitigation, consistent with the District’s mitigation program.</u>
Instream	For the purposes of the SMP Update, inboard levee toe to the opposite inboard levee toe. Where there is not a levee, inboard toe of the stream, ordinarily associated with “channel bottom” (see “bankfull bank”).
Invasive Plant	An invasive plant species reproduces rapidly and has the ability to spread aggressively outside its natural range, since the normal pressures of disease and predation which typically keep a populations growth in check are not present. Invasive plant species may alter ecological processes such as pollination patterns, nutrient cycling, fire regimes and modify canopy architecture causing a loss of cover, nesting and foraging habitat for wildlife species. Aggressive growth patterns often outcompete with native plant species. An invasive plant may be native or non-native. Non-native invasive plants are typically of greatest concern in native ecosystems.
Invasive Species	A subcategory of non-native plants that aggressively invades natural plant communities and displaces native plants or less aggressive weedy plants. Two examples of invasive species in Santa Clara County wetland and riparian areas are broad-leaf peppergrass (<i>Lepidium latifolium</i>) and giant reed (<i>Arundo donax</i>).
Invert	The lowest point of the internal cross section of a pipe, culvert, or channel; the elevation of the bottom of the channel (see “instream”).
Lacustrine	Of or pertaining to a lake.
Lateral Branch	A secondary or subordinate branch arising from a larger limb or trunk (Harris et al. 2004).
Levee	An embankment constructed to prevent a river or stream from flooding adjacent lands.

Levee Inboard	Area of levee between inboard toe and inboard edge of levee top. Generally the inboard levee slope.
Levee Outboard	Area of levee between outboard edge of levee top and outboard toe of levee. Generally the outboard levee slope.
Levee Top	Area of levee between top of levee inboard and levee outboard. Generally the flat top of levees, but not necessarily coinciding with levee roads.
(Toe of) Levee	The point on a levee slope where the designed and constructed levee ends and natural ground begins.
Listed Species	A species that is formally designated as endangered or threatened by the state or federal Endangered Species Acts.
Long-Term Permit	This is a non-specific phrase for permits, authorizations, or memorandums of understanding from the United States Army Corps of Engineers, Regional Water Quality Control Boards, the State Water Resources Control Board, Bay Conservation and Development Commission, and the Department of Fish and Game that are for a specified period of time (e.g., 5 or 10 years) or an indefinite period.
Lower Watershed	Generally, the watershed below reservoirs, including the main channel and outlet to the Bay.
Maintenance Guidelines	Engineering standards developed for each District flood control facility that will give guidance on maintenance requirements for flood control capacity. The guidelines may include design information, historical information, or special requirements for a reach of channel.
Marshmog	A mechanized vegetation management vehicle with low ground pressure used for aquatic plant control in wetland and marsh areas. The Marshmog can be fitted with multiple attachments for mowing, cutting, discing, and applying herbicide. Developed by Clean Lakes, Inc. of Martinez, California.
Mean Higher High Water (MHHW)	The average height of the higher of the two high tides in San Francisco Bay.
Mean High Water (MHW)	In San Francisco Bay, there are two high tides each day, usually with different elevations. Mean High Water is defined as the average height of both of these two tides.
Mitigation	The term “mitigation” includes the following: (1) Avoiding environmental impacts by not taking a certain action or parts of an action; (2) Minimizing environmental impacts by limiting the degree or magnitude of the action and its implementation; (3) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment; (4) Reducing or eliminating the impact over time by

preservation and maintenance operations during the life of an action; and (5) Compensating for the environmental impact by replacing or providing substitute resources or environments (State CEQA Guidelines, CCR Title 13 Chapter 3, Section 15370). The policies, implementation measures, and BMPs included in the Stream Maintenance Program have been designed to “mitigate” environmental impacts. The District Board of Directors has adopted the following definition, “Action taken by the District to fulfill CEQA/NEPA permit requirements and court-mandated mitigation to avoid, minimize, rectify, or reduce adverse environmental impacts, or to compensate for the impact(s) by replacing or providing substitute resources or environments.”

Modified Channel

A waterway in which engineered alterations have occurred to improve the passage of flood flows or to provide drainage. This includes straightening (or channelization), containing a watercourse within constructed banks or levees, or lining banks with concrete, rip rap, gabions, or sack concrete.

~~Modified Natural Channel~~

~~A watercourse that has had improvements, such as bank protection (e.g., gabions, rip rap, other revetments), and selected areas of historical channelization (e.g., widening, straightening) and/or other capacity or passage improvements.~~

Multi-Stem

A tree or shrub with a root ball and multiple trunks or stems. This may occur at ground level or several feet above ground. The dbh of trees with multiple stems will be calculated by adding the diameters of the individual stems at 4.5 feet above ground. Individuals with greater than seven stems at dbh will be assessed by their canopy cover, per the *Tree Scoring for Removal of Trees and Shrubs ≤12" DBH* (April 2011), included with the Mitigation Approach Memo (Appendix C).

~~Natural Channel~~

~~A watercourse without any significant improvements or modifications and very little evidence of historical alterations.~~

Natural Flood Protection

A multiple-objective approach to providing environmental quality, community benefit and protection from creek flooding in a cost effective manner through integrated planning and management that considers the physical, hydrologic, and ecologic functions and processes of streams within the community setting.

Non-Native Plant

A plant species that, under natural conditions, does not originate within the ecosystem in which it is found.

Non-Native Vegetation

Any vegetation that, under natural conditions, does not originate within the ecosystem in which it is found. These species may be removed by SCVWD because of their invasive

nature which typically reduces native vegetation cover and degrades natural habitat. Species include, but are not limited to: giant reed, tree tobacco, castor bean, pampas grass, cape ivy, eucalyptus and acacia.

Non-Jurisdictional

This term refers to USACE jurisdiction and was not intended to apply to RWQCB jurisdiction, under which “waters of the state” typically are construed to apply to a broader set of water bodies than “waters of the U.S.” The District looks to the RWQCB’s input as to the extent and nature of jurisdiction regarding canals; regardless, the District believes that compensatory mitigation would only be necessary if maintenance activities had the potential to impact beneficial uses—specifically, in places where impacts to riparian or wetland vegetation would occur, but not in unvegetated areas.

Obstruction

Material or objects which impede a facility from operating appropriately.

Ordinary High Water (OHW)

In non-tidal area, the highest level of water in a channel reached by commonly experienced flows. Defines the limit of the U.S. Army Corps of Engineers jurisdiction in the San Francisco Bay Area as the water level reached by flood flows with a predicted recurrence interval of 2.33 years.

Orographic

The effect that occurs when an air mass is forced from a low elevation to a higher elevation as it moves over rising terrain. The air mass cools, its relative humidity increases, and clouds may form.

Osteological

Pertaining to the scientific study of bones.

Outfall Structure

The end of a pipe or culvert that delivers local drainage into a creek. Features associated with an outfall structure may include erosion control materials, such as rip rap below the culvert or an energy dissipater. Further, a valve, such a flap gate, may also be part of the outfall structure.

Palustrine

Marsh-like.

Perennial Plant

A long-lived plant that typically has well-developed roots and above ground structures. May include herbaceous plants, vines, shrubs, and trees.

Pervious Hardscape

Hardscape, such as rock rip rap, gabions, and cellular soil confinement, which is not a barrier to water infiltration and that may allow (limited) revegetation growth.

Policy

Policies guide decision-making, both for individual stream maintenance projects and for the implementation of other related programs and projects. Policies are commitments made by the District Board of Directors.

Post-Emergent Herbicide	A herbicide designed to control target plant material after it has emerged. Post-emergents control plants by disrupting various growth mechanisms.
Pre-Emergent Herbicide	A herbicide designed to control target plant material prior to germination. Pre-emergents are applied to the soil surface, watered in through rainfall or artificial irrigation, and prevent germination and growth of seeds in the upper soil strata.
Preventive Maintenance (PM)	Preventative maintenance describes a group of work activities that are generated on a set schedule (most often annual or biannual) automatically for regularly scheduled work. Because of the type of work and location, these assigned work order codes will not need to be authorized by an environmental planner but will be required to follow SMP BMPs, including biological preconstruction authorizations.
Program	A program is a series of actions that can be described at a general level of detail. Programs include agency plans, policies, or regulatory programs.
Project Area	The area within the District that is subject to routine maintenance. This area contains 522.8 miles of creek channels.
Protocols	An established set of ground rules or procedures governing routine stream maintenance activities.
Reach	The smallest subdivision of a drainage system consisting of a uniform length of channel or a discrete portion of a channel.
Recharge	The replenishment of groundwater aquifers by infiltration.
Regrowth	The growth of vegetation subsequent to disruptive activities, such as sediment removal that originally removed all vegetation within the work or study area.
Repair	For the purposes of the Stream Maintenance Program, repair refers to maintenance of bank stabilization structure with in-kind, in-place materials. This type of maintenance occurs when such structures fail.
Residual Impact	Significant environmental impacts that cannot be avoided through the implementation of feasible site-specific measures. Significant residual impacts can be offset through a provision of compensatory mitigation.
Restoration	The reestablishment of the structure and function of ecosystems. Ecological restoration is the process of returning an ecosystem as closely as possible to pre-disturbance conditions and functions. Implicit in this definition is that ecosystems are naturally dynamic. It is therefore not possible to recreate a system exactly. The restoration process

	reestablishes the general structure, function, and dynamic but self-sustaining behavior of the ecosystem. The District Board of Directors has adopted the following definition, "Action taken by the District, to the extent practicable, toward the re-establishment of an ecosystem's pre-disturbance structure, function, and value, where it has been degraded, damaged, or otherwise destroyed."
Revetment	A term used to describe any number of hard structures used in bank stabilization.
Riprap	Loose rock or concrete of varying size, typically brought to a site. Used to protect channel banks from scouring forces.
Riparian	Located along the edge of a channel, generally on the floodplain. Characterized by access to and influence of the channel, but not in it. A riparian zone or riparian area is the interface between land and a river or stream. Riparian is also the proper nomenclature for one of the fifteen terrestrial biomes of the earth.
Riparian Corridors	Refers to a biological zone dominated by riparian vegetation immediately next to a channel. See "Riparian Vegetation."
Riparian Vegetation (or Habitat)	Riparian habitat is composed of the trees and other vegetation and physical features normally found on the stream banks and flood plains associated with streams, lakes, or other bodies of water. (http://www.wcb.ca.gov/Riparian/)
Riverine	Of, related to, or growing in rivers and streams.
Rootwad	A tree stump (dead or alive) with roots. May be used in place of hard structures during restoration activities.
Rotational Slump	Where a layer of permeable rock (absorbs water) in a cliff face sits upon a layer of impermeable rock(doesn't absorb water). When it rains, water soaks through the layer of permeable rock, but doesn't through the impermeable rock. A layer of water collects until the top layer of rock slips. The layer collapses down the front of the cliff face in a rotational manner.
Routine Stream Maintenance	Routine stream maintenance includes four major activities, as follows: (1) sediment removal activities that are designed to restore the flood capacity of existing District channels or associated features (e.g., tide gates), (2) vegetation management in and around the District's channels, including removal of vegetation for access and fire control, (3) bank stabilization activities necessary to protect District or other facilities, and (4) management of animal conflicts. Routine stream maintenance also includes more minor maintenance activities, such as trash removal; fence work; access road

	<p>maintenance; repair of structures with in-kind materials within the same footprint (such as replacement of concrete linings, culverts, pipes, valves, or similar structures); cleaning and minor sediment removal at stream gages, outfalls, flap gates, tide gates, fish ladders; and graffiti removal.</p>
Routine Stream Maintenance Project	<p>For the purposes of the Stream Maintenance Program, a project is the whole of a routine stream maintenance action that is proposed for implementation through the Stream Maintenance Program. A project has a specific location, duration, and purpose. (An example of an individual project would be the removal of 3,000 cubic yards of sediment from Adobe Creek between Highway 101 and East Charleston Road.) Major construction and repair, including CIPs, are not defined as routine stream maintenance projects. In the Stream Maintenance Program, also referred to as “individual stream maintenance project,” “individual project,” “stream maintenance project,” and “project.”</p>
Ruderal	<p>Vegetation containing mostly introduced, weedy herbaceous species; “disturbance loving” species. Common in disturbed areas, along roadsides or vacant lots.</p>
Runoff (surface)	<p>The flow of water across the land surface and in stream channels. Occurs only after the local storage capacity of the landscape has been exceeded and includes both overland flow and streamflow.</p>
Scour	<p>The clearing and digging action of flowing air or water, especially the downward erosion caused by steam water in removing material (e.g., soil, rocks) from a channel bed or bank or around in-channel structures.</p>
Secondary Channel	<p>For purposes of the SMP, secondary channels are constructed features of a main channel that are designed with flood conveyance or maintenance purposes. These channels often have maintenance requirements that are different than the main channel and are therefore specifically managed and reported separate from the main channel.</p>
Section 404	<p>Refers to a section of the Clean Water Act establishing a permit program for the discharge of dredged or fill materials into Waters of the United States.</p>
Sediment	<p>Particles derived from rocks or biological materials that have been transported by a fluid, or solid material suspended in or settled from water.</p>
Sediment Basin	<p>A depression formed by the construction of a barrier or dam built at a suitable location to retain rock, sand, gravel, silt, or</p>

	other material. In SCVWD, these basins also are commonly called “Debris Basins.”
Sediment Load	The sediment that is in transport. Load is a general term that refers to material in suspension and/or transport. It is not synonymous with discharge.
Sediment Removal	The act of removing sediment deposited within a stream. Typically, sediment is removed when it reduces capacity. This is the sediment removal activity referred to most often in the Stream Maintenance Program, and included in the program-level impact analysis. There is a subset of sediment removal that is conducted for purposes of allowing appurtenant structures (stream gages, outfalls, diversion sills, flap gates, and tide gates) to continue functioning, and to clear fish passage and access to fish ladders and weirs. This latter category of sediment removal is considered “minor maintenance,” as described in Chapter 3 of the Stream Maintenance Program.
Sensitive Habitat	A general term used to characterize habitats that either support sensitive species (listed species, species proposed for listing, and species of special concern) or are designated as a sensitive natural community in local or regional plans, policies, regulations, or by the CDFG or the U.S. Fish and Wildlife Service.
Sensitive Species	A general term for listed (i.e., on a state or federal endangered species list) species, species proposed for listing, and species of special concern (other species that may be of concern to state or federal agencies).
Serpentine Soil/Habitat	A serpentine soil is derived from ultramafic rocks, in particular serpentinite, a rock formed by the hydration and metamorphic transformation of ultramafic rock from the Earth's mantle. Soils derived from serpentine are toxic to many plants, because of high levels of nickel, chromium, and cobalt; growth of many plants is also inhibited by low levels of potassium and phosphorus and a low ratio of calcium/magnesium. The flora is generally very distinctive, with specialized, slow-growing species. Areas of serpentine-derived soil will show as strips of shrubland and open, scattered small trees (often conifers) within otherwise forested areas. As a result, serpentine habitat is typically host to a number of unique or rare plant species.
Shaded Riverine Aquatic Habitat (SRA)	The aquatic area occurring along the edge of a channel where the adjacent bank is composed of natural materials and supports riparian vegetation that overhangs or protrudes into the water and provides fish and other aquatic habitat.

Shear Stress	The force tending to cause deformation of a material by slippage along a plane or planes parallel to the imposed stress.
Shrub	Woody plant smaller in height than a tree (less than approximately 16 feet [5 meters] at maturity), often formed by a number of vertical or semi-upright branches arising close to the ground.
Significant Environmental Impact	A significant environmental impact is a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by a project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance (State CEQA Guidelines, CCR Title 13 Chapter 3, Sections 15358 and 15382).
Significant Rainfall	Local rainfall 0.5 inches or greater within a 24-hour period in the subject watershed.
Soft Structures	A type of bank stabilization structure incorporating biological materials, such as seeds, plants, plant parts (e.g., root wads), or a combination of vegetation and inert materials (e.g., brush mats/sills, wattles, fascines, or branch packing/layering).
Softscape	Earth channel or levees, either natural or modified. Also refers to “soft forms of bank stabilization” such as root wads, log structures, etc. (see “hardscape,” “hybrid,” and bank stabilization table).
Sphere of Influence (SOI)	A formally designated area of unincorporated land adjoining a city that is considered to be in the city’s (jurisdiction) sphere of influence for land planning based on geographic, economic, and social factors. The SOI is set by the State Local Agency Formation Commission (LAFCo) for each county.
Spreader Dam	Gravel berm placed across the channel to retain water in reaches of high channel permeability to improve ground water recharge.
Stakeholder	A stakeholder is an individual or organization who will be affected by or has an interest in the Stream Maintenance Program. Stakeholders include regulatory agency representatives, municipalities, and environmental and business groups.
Station	Station is a standard channel location system used by the District, which gives the distance from the downstream limit of jurisdiction (usually San Francisco Bay), or, for a tributary creek, from where it branches off of the main channel. Distance is measured in feet, with each “station” representing 100 feet. For example, station 43+56 would be

	a point 4,356 feet upstream from the mouth of the channel. Stations are used to define reaches (e.g., “From Station X – To Station Y”).
Stewardship	To entrust the careful and responsible management of the environment and natural resources to one’s care for the benefit of the greater community.
Stream	For the purposes of the Stream Maintenance Program, “streams” are defined as the natural watercourses and modified channels and canals within the District’s jurisdiction. In this Program, streams include both the waterway and its immediate geographical corridor, including riparian corridors.
Stream Maintenance Program	The Stream Maintenance Program (SMP) will provide long-term guidance to the District to effectively implement routine stream maintenance projects in a cost-effective and environmentally sensitive manner. The Stream Maintenance Program is to be codified in a process and policy document that can be adopted by the District and utilized in obtaining long-term permits from regulatory agencies. The Stream Maintenance Program includes specific measures, protocols, and monitoring and reporting requirements to ensure that routine stream maintenance projects are implemented in an effective, cost-sensitive, and environmentally sensitive manner.
Stream Maintenance Program Project Area	The SMP project area includes streams and any adjacent property that the District owns or holds an easement for access and maintenance. The District does not provide maintenance on private property when no easement exists. Other than leveed creeks (which can require a wider maintenance easement), the maintenance work area is within approximately 20 feet of the top of bank when access is provided, and can be substantially less when access is not provided.
Streambed	The part of a stream over which a column of water moves.
Sudden Oak Death	Sudden Oak Death is the common name of a disease caused by the oomycete plant pathogen <i>Phytophthora ramorum</i> . The disease kills oak and other species of tree and has had devastating effects on the oak populations in California and Oregon.
Surfactants	A shorthand term for surface-active agent, which are chemicals that modify surfaces of two liquids or a liquid and a solid. In the context of the Stream Maintenance Program, surfactants are used in combination with herbicides to increase the retention and penetration of herbicides on and into plants.

Suspended Sediment	Fine particles suspended in the water column and carried along with the water at the velocity of flow. Compare with “Bedload.”
Take (of a Listed Species)	To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect a listed species or its habitat, or to attempt to engage in any such activity.
Thalweg	Main channel in the creek.
Tree	A species of woody perennial that typically has one dominant vertical trunk and a height greater than approximately 16 feet (5 meters) in its natural form. Tree species may have multiple trunks or be less than approximately 16 feet (5 meters) at maturity.
Trimming	The systematic removal of branches of a plant, usually a woody perennial (Harris 2004). Synonym for pruning.
Turbidity	The pollution of water by dissolved or suspended solids. The cloudiness of water, caused by suspended sediment. Turbidity is measured by the degree to which light penetration is blocked because the water is muddy or cloudy.
Unavoidable Impact	An unavoidable impact would occur if specific economic, social, legal, technical, or other considerations make mitigation measures or alternatives for the impact of a project infeasible. When such impacts are considered “significant,” to support its decision on a project for which an EIR was prepared, a Lead Agency must prepare written findings that identify that either: (1) changes to the project are within another agency’s jurisdiction and have been or should be adopted, (2) specific economic, social, legal, technical, or other considerations make mitigation measures or alternatives infeasible (State CEQA Guidelines Section 15091). In addition, the Lead Agency must adopt a Statement of Overriding Considerations which describes how the benefits of the project outweigh the unavoidable adverse environmental effects (State CEQA Guidelines Section 15092, 15096(h)).
Unmodified Stream	An unmodified stream is defined for the purposes of the SMP as a creek, river, or section thereof, which has not undergone the process of construction of modifications to meet specific flood control criteria. Examples of such criteria would include design to pass specific flows, such as a 25-year flood; or the protection of a specific number of homes, businesses, schools, etc. All unmodified streams will be assessed for flow conveyance in relation to their function within the watershed.

Unrevetted	Without revetment (i.e., a bare slope or channel side without hardscape protection).
Unvegetated	<u>Areas containing either no, or only ruderal, vegetation. Examples would be locations that are concrete, or that support primarily annual non-native grasses and forbs. These areas provide little to no habitat value and, as such, maintenance activities in these locations would not have impacts requiring compensatory mitigation.</u>
Upland	<u>Terrestrial, referring to habitats that are not wetland or aquatic habitats.</u>
Upper Watershed	Generally, the steeper portion of a watershed, above reservoirs and above urban areas.
Vegetation Management/Removal	Removal of vegetation in and adjacent to creeks to maintain the ability of channels to function as flood control facilities. In addition, vegetation is removed to meet local fire code requirements and to reduce combustible weeds and grasses on property adjacent to the streams within the District's jurisdiction. The control of invasive non-native vegetation is another purpose for which the District undertakes vegetation control. Vegetation management can be accomplished through mowing, discing, hand pruning, hand removal, or herbicide applications (depending on the environmental conditions of the site).
Waste Discharge Requirement	A legal mechanism of the state and regional Water Quality Control Boards to regulate discharges of dredge or fill materials.
Waters of the United States	Waters of the United States are tidal waters, all interstate waters, including wetlands, and all other waters which could involve interstate or foreign commerce.
Watershed	Entire area that drains to a common stream, synonymous with drainage area. A ridge or drainage divide separates a watershed from adjacent watersheds. For purposes of the SMP Update, watershed means the five SCVWD administrative watersheds: Lower Peninsula, West Valley, Guadalupe, Coyote, and Pajaro.
Wetlands	Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetland is characterized by having the appropriate plant species (dependant on or capable of surviving root saturation), the appropriate hydrology (predictable saturation), and soils reflecting saturation and periodic anaerobic conditions.

Winterization

Winterization is the process to maintain project sites with the appropriate BMPs to prevent erosion, sediment transport, and protect water quality. Winterization occurs upon completion of bank repairs or on incomplete projects after October 15 and prior to the forecast of significant rainfall, 0.5 inches or greater of rainfall within 24 hours in the subject watershed. Winterization shall be completed prior to the occurrence of such actual significant rainfall. Winterization materials will be available and on-site when rain falls after October 15.

Winterization includes erosion control practices, sediment control practices, and general site and materials management.

- Basic ground rules for winterization:
 1. Direct runoff away from disturbed areas.
 2. Retain existing vegetation as much as possible.
 3. Fit grading to the surrounding terrain.
 4. Prepare temporary drainages and outlets.
 5. Grade/excavate outside of rainy season.
 6. Minimize length and steepness of slope.
 7. Stabilize disturbed areas by mulching, vegetating (hydromulching, hydroseeding, hydraulic matrices, blankets, etc.).
 8. Use every dissipating measure to keep runoff velocities low.
 9. Trap sediment on site.
 10. Inspect, log, and maintain control measures after each storm.
- BMPs may include use of:
 1. Silt fences
 2. Straw bales
 3. Straw wattles/fiber rolls
 4. Erosion control blankets, plastic sheeting
 5. Drain protection structures/drain filters
 6. Sediment basins
 7. Stabilized entrances/exits (incl. tire wash)
- Proper use of erosion and sediment control BMPs requires training by experienced professionals. Certifications are available through the IECA (International Erosion Control Association).

Woody Vegetation

Live vegetation having a stiff trunk or branch structure that is inflexible and does not bend over in flows. Typical vegetation types include trees and large shrubs.

Work Sites

The locations where maintenance activities are anticipated to occur. For the SMP Update, such locations have been identified for the 2012-2022 time frame.

EXECUTIVE SUMMARY

Introduction

The Santa Clara Valley Water District (SCVWD) has developed the Stream Maintenance Program (SMP) Update to review existing SMP activities, revise the SMP Manual, update the SMP's environmental compliance documentation, and renew necessary SMP permits. The SMP Update is considered a "project" for the purposes of the California Environmental Quality Act (CEQA) and is referred to as the "Proposed Project" or "SMP Update" throughout this document.

SCVWD has prepared this draft subsequent environmental impact report (DSEIR) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of implementation of the Proposed Project. This DSEIR was prepared in compliance with CEQA (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.). SCVWD is the lead agency on the Proposed Project.

Proposed Project Overview

The SMP Update has been prepared to provide guiding policies, specific direction on approach, and regulatory authorization for routine stream and canal maintenance activities. The Proposed Project would update the 2002 SMP, as necessary, to meet new conditions or maintenance needs of SCVWD. The SMP Update (including the 2012 SMP Manual [Appendix A] and this CEQA document) is an ongoing and continuous program with an indefinite time horizon; intended to cover the 10-year planning period beginning in 2012 and ending in 2022 has been used for the purposes of the regulatory permitting. These SMP Update documents are intended to fully replace the original documents that guided the SMP from its inception through 2012. The 2012 SMP Manual (included as Appendix A in this DSEIR) and the contents of the DSEIR are meant to be read as companion volumes. The DSEIR references or summarizes information (including figures and tables) presented in the 2012 SMP Manual frequently to avoid repeating information. The reader is encouraged to review the 2012 SMP Manual while reviewing the DSEIR.

Proposed Project Objectives

The overall flood management goals of the SMP Update are to maintain the design flow or appropriate conveyance capacity of SCVWD facilities, and to maintain the structural and functional integrity of SCVWD facilities.

To meet these goals, the SMP Update would prioritize and administer maintenance activities to achieve the following objectives:

- remove sediment to maintain the hydraulic, safety, and habitat functions of the creek systems;
- manage vegetation to maintain the hydraulic, safety, and habitat functions of the creek systems, and to 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; and
- avoid, minimize, or mitigate impacts on the environment by incorporating stream stewardship measures into maintenance activities.

The SMP Update also seeks to obtain and maintain multi-year programmatic permits to regulate Proposed Project activities.

Proposed Project Background

SCVWD is responsible for water supply, flood protection, and stream stewardship in Santa Clara County, California. SCVWD flood protection facilities require maintenance to maintain the designed function of each facility. Historically, SCVWD has implemented these activities as needed. Therefore, the SMP Update would be a continuation of past routine creek and canal maintenance activities in most of the same areas using many of the same techniques. The difference between stream maintenance conducted before the SMP (pre 2002) and the initial SMP period (2002–2012) is the SMP Update’s comprehensive approach to managing and tracking the maintenance work and costs, monitoring environmental conditions, and providing program mitigation. The SMP Update would be used by SCVWD staff to conduct routine stream maintenance practices in an efficient, consistent, and environmentally-sensitive manner.

The requirements and policies of the original SMP document were finalized in 2002, when SCVWD completed CEQA review requirements and received authorizations from all the permitting agencies with jurisdiction over the program. Work under the existing SMP began in 2002.

Project Area

The Project Area includes the portions of Santa Clara County below the 1,000-foot elevation contour, as shown in Figure ES-1. The Project Area includes streams within the Santa Clara and Pajaro basins. Municipalities within the Project Area that contain SCVWD-owned or maintained channels include the cities of Campbell, Cupertino, Gilroy, Los Altos, Milpitas, Morgan Hill, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, and the towns of Los Altos Hills and Los Gatos. SCVWD does not provide maintenance on private property where no easement exists, unless expressly authorized by the SCVWD Board of Directors.



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Figure ES-1: Project Area

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Proposed Project Channel Types

SCVWD actively manages over 1,000 miles of channels and creeks. For purposes of this document, the channels within SCVWD's jurisdiction are classified as earthen, concrete, tunnel, siphon, pipeline, or waterbody. The majority of SMP channels are earthen, having earthen channel bed and banks. SCVWD-maintained earthen channels may be either engineered or natural stream channels.

The SMP Update would not cover maintenance activities at reservoirs, dams, pipelines outside of stream corridors, groundwater percolation facilities, in-stream summer dams, or work in stream reaches above the 1,000-foot elevation contour.

Proposed Project Description

Overview of SMP Update Approach

Based on the work performed during the SMP 2002–2009, SCVWD has developed projections for reasonably anticipated work expected to occur over the next decade of the Proposed Project (2012–2022). Actual stream maintenance activities vary from year to year, depending on weather and hydrologic conditions, frequency and extent of past maintenance activities, and budget/funding availability. Future maintenance needs may occur, consistent with the overall SMP Update projections, but they may vary from the specific location originally projected.

Maintenance activities would be permitted throughout the Project Area, as long as they did not result in new or more significant environmental effects than those evaluated and disclosed in this DSEIR. The 2012–2022 maintenance work projections represent the District's best estimate of where work is likely to occur. The work projections are "conservative" in that work is not likely to occur in all of the newly identified reaches shown on the maps presented in Chapter 2. The work projections are a useful basis to consider potential programmatic impacts to wetlands and other habitats and, therefore, to develop a suitable mitigation approach that can guide the next decade of the program.

The SMP Update has been designed to be adaptable. One way the SMP Update would achieve this would be by supporting site-specific assessments to determine the most effective method to achieve the maintenance goal. As conditions allow and technologies and environmental regulations evolve, this would support an assessment for work activity modifications that could result in decreased impacts.

Maintenance Activities

The SMP Update would involve five categories of work activities: bank stabilization, sediment removal, vegetation management, management of animal conflicts, and minor maintenance. In addition, the SMP Update would include maintenance of canals, which may include any of these five activities.

Bank Stabilization

Stream bank stabilization activities would involve actions by SCVWD to repair eroding stream banks and levees. SCVWD may implement stream bank stabilization activities when the problem: causes or could cause significant damage to SCVWD property and/or adjacent property; or is a public safety concern. Additional benefits of stabilizing eroding stream banks include reducing instream sedimentation, and protecting water quality and other beneficial uses such as riparian habitat and recreation.

Bank stabilization work could be performed along any creek or canal where SCVWD has fee title or easement, or was otherwise directed by the SCVWD Board of Directors. Based on the maintenance work conducted from 2002–2010, the District stabilizes about 0.94 mile of stream channel banks or levees on average per year. The 2012 SMP Manual (Appendix A) describes the specific bank stabilization techniques and approaches. SCVWD favors the use of soft bank stabilization approaches that use bio-technological approaches in place of methods that create more hardened banks.

Sediment Removal

Sediment removal is the act of mechanically removing sediment deposited within a flood protection channel. Sediment removal is required when accumulated sediment reduces a channel's flow conveyance capacity, prevents facilities or appurtenant structures from functioning as intended, or impedes fish passage and access to fish ladders. Sediment is removed from SCVWD facilities to allow channels to convey flow and minimize flood hazard, according to the original channel design. Sediment removal under the SMP Update would not include increasing a channel's flow conveyance capacity beyond the as-built design. Sediment removal activities may occur along creeks, canals, or at stream gauges.

Sediment removed from SCVWD channels and facilities would be assessed according to the appropriate Sediment Characterization Plan established by the San Francisco Bay and Central Coast Regional Water Quality Control Boards. These characterization plans would be used to determine the physical and chemical properties of the removed sediment, using continuous core, discrete sampling and residual sampling methods. Collected sediment that met wetland reuse criteria could be transferred to the South San Francisco Bay Pond A8 to support levee restoration efforts at the pond. Sediment that did not meet these standards but met standards for landfill disposal would be disposed at a local landfill. Sediment that exceeded hazardous waste criteria would be disposed at an appropriate hazardous waste facility (e.g., Kettleman Hills hazardous waste landfill). Pond A8 is anticipated to have sufficient capacity for sediment disposal for the next 2–5 years. Additional ponds, including ponds A5, A1, A2W, and A9 have been identified as other potentially suitable long-term sediment reuse locations. SCVWD also may add other upland or aquatic sites to its disposal options. Potential upland sites include the abandoned quarry pond next to the Coyote Parkway site, as well as the U.S. Fish and Wildlife Service refuge at Bair Island and Phase 2 of the South Bay Salt Pond restoration effort.

Annual sediment removal needs would vary, depending on yearly climate and hydrologic conditions. Sediment removal could be performed in any stream within the Project Area.

Vegetation Management

Similar to sediment removal activities, vegetation management activities are intended to maintain the hydraulic conveyance and flood safety functions of SCVWD's channels. Vegetation maintenance would seek to trim, thin, or remove vegetation that was causing flow blockages or significantly increasing hydraulic roughness and, thereby, reducing channel conveyance capacity. Vegetation management methods would include pruning, hand or mechanical removal, herbicide application, mowing, disking, flaming, and grazing.

SCVWD's preference is to first thin or prune trees before considering tree removal. However, when tree removal is necessary, SCVWD prioritizes retaining native trees in place of non-native species. The removal of trees and shrubs less than or equal to 12 inches diameter at breast height (dbh) is permissible only if they are required for bank stabilization projects, ecological health/stewardship purposes, or to maintain flow conveyance. As defined in the projections (Chapter 2, *Project Description*, or Appendix A, 2012 SMP Manual), vegetation management may occur from the creek center to the outer edge of the SCVWD property line/SCVWD management area. Other types of vegetation management (e.g., flaming and grazing) would be performed on an as-needed basis along any creek within the Project Area where SCVWD has fee title or easement. Tree removals may occur on a site-specific basis, per the criteria and mitigation described in the SMP Manual.

Management of Animal Conflicts

In the Project Area, animals can damage SCVWD channels, facilities, and infrastructure. The stability of banks and levees may be reduced as a result of burrowing, foraging on mitigation sites, and interfering with work activities. Management of animal conflicts refers to the use of avoidance tactics, biological control, site alterations, habitat alteration, and lethal control to reduce conflicts between SCVWD facilities and local species. These control methods are described in the Management of Animal Conflicts chapter of the 2012 SMP Manual (Appendix A).

Although routine, the extent and specific locations for animal conflicts management are generally not known before the maintenance season; although routine rodent control activities would occur on designated levee reaches.

Minor Maintenance

Minor maintenance activities would be performed to repair and maintain SCVWD facility functions. Minor maintenance activities may occur along creeks, canals, or at existing stream gauges. Minor maintenance activities would have limited potential to impact environmental resources. A minor activity is defined as an activity that results in removing less than 0.05 acres (2,178 square feet) of wetland or riparian vegetation. The minimum reporting size for any minor vegetation work to be notified in SCVWD's Notice of Proposed Work would be 0.01 acres (436 square feet) per project, which would include any vegetation work necessary for access or staging. Minor maintenance activities may occur anywhere within the Project Area.

Minor maintenance activities proposed under the SMP Update would include:

- cleaning and minor sediment removal at outfalls, culverts, flap gates, tide gates, inlets, grade control structures, fish ladders, fish screens (limited to 50 cubic yards [cy]);
- minor in-channel (or canal) sediment removal (less than 10 cy);
- trash and debris removal;
- repair and installation of fences and gates;
- grading and other repairs to restore the original contour of existing maintenance roads;
- grading small areas without vegetation above stream banks to improve drainage and reduce erosion;
- repair of structures with substantially similar materials within approximately the same footprint (i.e., replacement of concrete linings, culverts, pipes, valves);
- graffiti removal;
- installation and on-going maintenance of mitigation and landscape sites (including irrigation, weed control, and replanting of dead or declining individual plants until success criteria were met);
- removal of obstructions at structures to maintain function (i.e., bridges, stream flow measuring stations, box culverts, storm drain outfalls and drop structures); and
- stream gauge maintenance including stilling well cleaning, painting of gauge house, replacing/adding antenna or solar panels to existing structures, replacing instrumentation, cableway repair, weir cleaning of algae and debris, and unburying staff markers/orifice/communication pipes.

Canal Maintenance

The SMP Update would include routine and periodic maintenance conducted by SCVWD on its canals. Unlike the streams and flood protection channels that are the primary focus of the existing SMP, SCVWD's canals are primarily water supply transport facilities and may provide incidental flood protection. Routine canal maintenance may include all general work activities discussed above, including sediment removal, vegetation management, management of animal conflicts, bank stabilization, and minor maintenance.

Sediment removal in canals is typically small in scale and localized (generally 10 cy or less per occurrence), and is conducted to clear small sediment deposits ("plugs") where local sediments have either entered the canal or been deposited. Sediment removal may occur anywhere along the canals, however no more than 1,000 cy of sediment would be removed per calendar year from all SCVWD canals.

Vegetation management along the canals would include some periodic herbicide use, inside the canals and along the access roads, to address weed growth. In the upland margins adjacent to the canals, SCVWD would conduct periodic and routine tree hand pruning, hand removal, and grass mowing, using the same techniques described above in the *Vegetation Management* section. In general, vegetation management may occur anywhere along or within the canals; however, no more than 6 acres of work would be performed in a given calendar year. In addition, disking would be restricted to the right bank of Coyote Alamos canal only.

Additional minor maintenance activities performed along the canals would include minor grading of the access road, graffiti removal, fence repair, erosion repairs, management of animal conflicts, and bank stabilization activities. Minor structural repairs may include repairing a concrete lining, culvert, pipe, valve, weir, instream orifice, or communication pipe. These canal maintenance activities may occur anywhere along the canals, as needed.

Activities Not Covered in the SMP Update

The SMP Update would not include the following activities, which are therefore not analyzed in this DSEIR:

- work that would increase the designed flood conveyance or water supply capacity of a facility;
- maintenance work in stream reaches above the 1,000-foot elevation contour;
- removal of hazard trees;
- maintenance work for dams, reservoirs and other water supply facilities, such as pipelines outside of stream corridors, groundwater percolation ponds, and in-stream summer dams;
- installation of new or major modification of fish ladders;
- work conducted on private property by others;
- work performed by other agencies;
- other large construction projects or capital improvement projects;
- area-wide, intensive maintenance, or rehabilitation of large (greater than 0.05 acre) mitigation projects installed as part of SCVWD Capital Improvement Projects;
- emergency repair work; and
- continued implementation of mitigation measures in the existing SMP.

Stream Maintenance Process Overview

Annual administration of the SMP Update would occur in three phases, as described in detail below.

Phase 1: Annual Maintenance Activity Identification, Development and Documentation

The first phase of the annual work sequence would begin with identifying maintenance needs. Maintenance work could be proposed either as part of the annual work plan through the Notice of Proposed Work, subsequent regulatory notifications/submittals, or as identified throughout the year via individual work orders. SCVWD internal work orders would provide a description of the project, schedule of implementation, estimated costs, permit requirements, and other special conditions.

For minor maintenance activities, the appropriate resource protection measures and BMPs would be identified and work would proceed. For other maintenance activities, a more detailed review process would occur and may include site assessment and/or engineering evaluations. These activities would be reviewed to verify they were covered under the long-term regulatory clearances provided in conjunction with the SMP Update. If the work was not covered by the SMP Update, the appropriate project development process would be followed and may include individual CEQA review and project-specific regulatory permits or clearances. For covered activities, appropriate resource protection measures and BMPs would be identified and added to the work order. Pre-work meetings would be held with appropriate SCVWD staff to discuss site-specific requirements, environmental constraints, and BMPs.

Phase 2: Implementation of Annual Routine Stream Maintenance Work

Maintenance activities would be implemented during the appropriate work season or as described in the work order. In addition, direct field monitoring of maintenance work would occur for both sediment removal and bank repair activities, enforcing BMPs to effectively prevent adverse impacts to water quality and stream habitats.

Maintenance Timing

Work windows for sediment removal, in-stream vegetation and herbicide application, and bank stabilization generally would be conducted between June 15 and October 15. However, if the fall season remained dry, work could continue until the first significant rainfall event occurred. Sediment removal may occur after a significant rainfall under special circumstances but only in low quality areas. A significant rainfall event is defined as local rainfall of 0.5 inches or greater within the watershed over a 24-hour period. Even if no significant rainfall occurred, no instream work (excluding hand pruning and hand removal in non-steelhead streams) would continue later than December 31.

After October 15, 72-hour look-ahead weather forecasts from the National Weather Service (or local vendor such as the Western Weather Group) would be consulted. If a significant rainfall was forecast within the 72-hour forecast window, maintenance work that may

result in sediment runoff to the stream would be stopped, to allow adequate time to complete erosion control measures.

Bank Stabilization

SCVWD has committed that no more than half of non-in-kind bank repairs would consist of impervious hardscape each year. Equipment used for bank stabilization activities may include excavators, bulldozers, and front-end loaders for bank grading and earth-moving activities. Staging typically would occur on adjacent access roads. Soil and other repair materials typically would be staged in areas that were previously disturbed (i.e., service roads, turn-outs). In some cases, bank stabilization projects may require the installation of temporary roads and ramps to access the work site. Where trees may have to be removed, SCVWD would target non-native trees for removal. The average duration of bank stabilization work is 10 working days per site.

Sediment Removal

Sediment may be removed by excavators, grade-alls, draglines, and/or loaders. Temporary dams, pipes, and existing overflow channels would be used if water needed to be bypassed around the site during work. Sediment removed from the channel typically would be placed in 10- or 20-cy dump trucks, and prepared for off-site hauling and disposal. Stockpiling of sediment to allow for drying before disposal only would be done when sufficient space would allow the temporary piling of material; however, this would not be typical. The average duration of a sediment removal project would be 10 days, although larger work sites would require up to 6 weeks to complete.

Vegetation Management

Vegetation management techniques would include hand removal, using small tools and hand-held equipment (chainsaws, weed-eaters, and flamers), mechanical removal using heavy equipment, herbicide application, and grazing. Heavy equipment used for vegetation removal may include a disc attachment on a tiller to clear aboveground herbaceous plants on the upland parcels outside of stream banks; flail mowers to cut weeds and other non-native vegetation on the inside slope of some levees or stream banks; or a backhoe or rubber-tracked excavator, used for removing material from the channel.

New techniques (described in the 2012 SMP Manual [Appendix A]) would include grazing and the use of flamers to manage vegetation. Flaming would involve the use of a hand-held, propane gas-powered flamer to control weed seedlings. In limited circumstances, SCVWD may use various domestic animals to provide non-specific weed control.

Herbicide application in upland areas typically would be sprayed from a truck-mounted rig or applied using a controlled drop applicator. Spray trucks would be used to apply herbicides to areas such as maintenance roads. Herbicides may be selectively sprayed instream, following appropriate biological surveys and clearances. Only herbicides and surfactants approved for aquatic use by the U.S. Environmental Protection Agency and registered for use by the California Department of Pesticide Regulation would be used for SCVWD's aquatic vegetation control work.

The SMP Update includes an expanded list of herbicide types and a broader area of application. The Proposed Project would enable herbicide use within the Pajaro River watershed and incorporate surfactants under restricted conditions as an application aid. Additional application adjustments would include a longer work window, application in upland areas, and application in sensitive species habitat under certain restrictions.

Management of Animal Conflicts

Management of animal conflicts generally would be conducted with the use of hand-placed materials using small tools and hand-held equipment. This would include establishing buffers and biological repellants, trapping, as well as lethal baiting and fumigant applications. Heavy equipment may be used to modify habitat conditions and reduce or eliminate burrowing animals through surface compaction, filling of burrows with slurry, and tilling areas to destroy food sources. All lethal control methods would be designed to comply with County Agriculture Commission requirements and would be implemented using BMPs that would be designed to avoid or minimize effects on special-status species.

Phase 3: Annual Reporting

At the conclusion of each year's maintenance season, a Post-Construction Report would be developed and submitted to the appropriate resource agencies. This report would include a summary of the year's maintenance projects, describing what activities occurred and where, a description and confirmation of the restoration and mitigation activities implemented, and other SMP updates as necessary.

Program Review

Following the submittal of the Post-Construction Report, resource agency staff would be invited to meet with SCVWD staff for a "lessons learned meeting," usually in February or March of each year, to evaluate the effectiveness of both resource protection and maintenance methods used in the preceding construction season. The information discussed at these annual lessons learned meetings would be used to adaptively manage the BMPs and SMP processes to improve SMP effectiveness.

Programmatic Impact Avoidance, Minimization, and Compensatory Mitigation

A three-part sequence would address Proposed Project impacts. First, the SMP Update itself has several built-in or internal restrictions and protocols to avoid or minimize impacts by limiting how and where maintenance could occur. Second, the operational implementation of maintenance activities would be required to adhere to specific BMPs. Thirdly, residual impacts remaining after these two impact avoidance and minimization efforts would be addressed through compensatory mitigation. These three approaches to address potential Proposed Project impacts are further described next.

Programmatic Impact Avoidance and Minimization

The SMP Update would incorporate the following overarching principles to protect natural resources and guide decision-making for stream maintenance activities and projects:

Principle 1: SCVWD will implement all routine stream maintenance activities according to the process and protocols established in the SMP Update.

Principle 2: Decisions regarding the necessity of routine sediment removal and vegetation management activities (to restore channel flow capacities) will be made following the thresholds and standards provided in the District's Maintenance Guidelines and Asset Management Program.

Principle 3: SCVWD will implement measures to avoid and minimize impacts to native species and habitat.

Principle 4: All maintenance activities will be performed in a manner that has the least impact to the natural flora, fauna, and aquatic resources while meeting SMP Update objectives.

Supporting these SMP principles, measures and protocols would be applied by SCVWD for effective work results while avoiding or minimizing potential environmental impacts, including conducting no work above the 1,000-foot contour level, identifying the minimum maintenance need, and considering existing channel features in analysis and design.

Best Management Practices

Maintenance activities would incorporate a range of measures to minimize undesired effects on the environment and to implement the SMP principles described above. BMPs specifically created for the SMP Update would encompass the range of proposed maintenance activities and the environmental conditions of the Project Area. Types of BMPs would include general BMPs that would apply to all work, as well as activity-specific BMPs designed to address anticipated effects of certain work activities or particular types of resources. See Table 2-12 for a description of the BMPs proposed to be used in the SMP Update.

Compensatory Mitigation

Summary Status of the 2002 SMP Mitigation Program

Although not all 2002 SMP Mitigation Program requirements have been met, it is important to recognize that the original mitigation requirements were based on the full estimated impact of the 2002 SMP work projections. Not all of the projected work has been conducted, nor have all the estimated impacts occurred. For tidal wetland impacts in the Santa Clara Basin, conducted mitigation has met the full mitigation requirement and provided 21+ acres over the mitigation necessary, when considering how much actual work and impacts have occurred in tidal wetlands. For freshwater wetland impacts in the Santa Clara Basin, conducted mitigation has not satisfied the complete mitigation requirement and is about 76

percent in pace with the maintenance work conducted (and impacts) that have occurred. In the Pajaro Basin, freshwater wetland impacts have been mitigated fully.

SMP Update Mitigation Program

The proposed SMP Update process includes reviewing and renewing the existing compensatory mitigation package that was established in 2002. The 2002 SMP Mitigation Program that covers the original projected activities (sediment removal and vegetation management) would remain in place to provide compensatory mitigation in perpetuity for the channels identified in the 2002 work projections.

As part of the proposed SMP Update process, the compensatory mitigation program addresses potential impacts anticipated for work sites that were not included in the original SMP work projections and not accounted for in the initial compensatory mitigation package. Besides addressing mitigation for these new work sites, the compensatory mitigation program has been revised to improve overall mitigation feasibility and quality. A key constraint to the original SMP mitigation approach was its emphasis on land acquisition. As a result, feasible mitigation was often not available in a manner to support the program's needs. For the SMP Update, a broader suite of suitable mitigation approaches has been developed to provide increased flexibility while maintaining high mitigation quality. The revised mitigation program, discussed in detail in Appendix C) would include the following elements:

- Acquisition and Restoration Program
- Invasive Plant Management Program
- Riparian Planting Program
- Mitigation for Tree and Shrub Removals 6-12 inches (dbh)
- Instream Habitat Complexity Program
- Gravel Augmentation in Steelhead Creeks
- Species-Targeted Habitat Mitigation
- Bank Stabilization Mitigation

Public Involvement Process

Scoping Comment Period

In accordance with State CEQA Guidelines (14 CCR 15082[a], 15103, 15375), SCVWD circulated a Notice of Preparation (NOP) of a DSEIR for the Proposed Project on August 31, 2010 (Appendix B). The NOP, in which SCVWD was identified as lead agency for the Proposed Project, was circulated to the public; to local, state, and federal agencies; and to other interested parties. The purpose of the NOP was to inform responsible agencies and the public that the Proposed Project could have significant effects on the environment and to solicit their comments. Comments received in response to the NOP were considered during preparation of this DSEIR (Appendix B).

Public and Agency Review of the DSEIR

This document will be circulated to local, state, and federal agencies and to interested organizations and individuals who may wish to review and comment on the report. Its publication will mark the beginning of a 45-day public review period. Written comments or questions concerning this DSEIR should be directed to the name and address listed below. Submittal of written comments via e-mail (Microsoft Word format) will be greatly appreciated.

Santa Clara Valley Water District
 Attention: Sunny Williams
 5750 Almaden Expressway
 San Jose, CA 95118-3686
 E-mail: smp_update@valleywater.org
 Subject Line: SMP Update EIR Comments

All documents mentioned herein or related to the Proposed Project can be reviewed on any SCVWD business day between the hours of 8 a.m. and 5 p.m. at SCVWD headquarters, located at the address shown above.

Preparation of FSEIR and Public Hearing

Written and oral comments received in response to the DSEIR will be addressed in a Final Subsequent Environmental Impact Report (FSEIR), which will include all comments received, responses to each, and a reprint of the DSEIR, updated as appropriate in underline/strikeout in response to the comments. After review of the FSEIR, SCVWD staff will recommend to the SCVWD Board of Directors whether to approve or deny the Proposed Project. The Board then will review the FSEIR, consider staff recommendations and public testimony, and decide whether to certify the FSEIR and approve or deny the Proposed Project.

If the Board approves the Proposed Project in spite of significant impacts identified by the FSEIR that cannot be mitigated, the Board must state in writing the reasons for its actions. A Statement of Overriding Considerations must be included in the record of the Proposed Project approval and mentioned in the Notice of Determination (14 CCR 15093[c]).

Areas of Known Controversy

No areas of public concern have been identified regarding the SMP Update.

Key Issues and Significant Impacts

This section discusses key issues of concern relative to the Proposed Project and the conclusions of this document regarding those issues, as well as any significant impacts that were identified. This is not a comprehensive discussion of impacts of the Proposed Project; the reader is directed to Table ES-1, Summary of Impacts and Mitigation Measures, at the end of this chapter. Environmental factors potentially affected by the SMP include:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Global Climate Change
- Hazards and Hazardous Materials
- Hydrology and Geomorphology
- Land Use and Planning
- Noise
- Public Services and Utilities
- Recreation
- Traffic and Transportation
- Water Quality

Chapter 3, *Environmental Setting and Impact Analysis*, and Chapter 4, *Other Statutory Considerations* of this DSEIR address each of these environmental resource topics and the impacts of the SMP Update.

Temporary Impacts from Maintenance Activities

In general, the primary adverse impacts of SMP Update activities would be short term and would occur during maintenance and the period immediately following maintenance. Temporary impacts would include:

- adverse effects on aesthetics, dust and air emissions from maintenance vehicles and equipment,
- effects on riparian and aquatic habitats and associated species,
- potential exposure to sites of existing chemical contamination,
- potential for accidental releases of hazardous materials associated with maintenance vehicles and herbicide use,
- discharge of sediments and related effects on water quality,
- temporary exposure of the public to elevated noise levels associated with maintenance activities,
- temporary disruption of recreational opportunities or quality during maintenance, and
- effects on local traffic from maintenance vehicles and hauling of sediment and other debris.

However, the SMP Update would include a multi-tiered program to avoid or minimize and compensate for impacts. First, the SMP Update would involve pre-maintenance impact avoidance through the use of maintenance principles. These principles would include conducting no unnecessary maintenance or intervention, and to target maintenance activities to reduce their impact. Second, during maintenance activities, a variety of BMPs would be implemented as part of the Proposed Project. These BMPs would be implemented before, during, and following maintenance. The BMPs would include avoidance of impacts, reducing the intensity/extent of potential impacts, and revegetation and other on-site activities that would be implemented to shorten the duration of site recovery. Finally, mitigation measures have been designed to address potential impacts that would remain after the implementation of BMPs, including a compensatory mitigation program to offset residual impacts related to biological resources and water resources (e.g., those potentially significant impacts remaining after implementation of BMPs and other issue specific mitigation measures). With the exceptions of air and greenhouse gas emissions, habitat

fragmentation, aesthetics, and noise impacts to sensitive receptors, all short-term impacts of the SMP Update would be reduced to a level of insignificance.

Long-Term Impacts from Maintenance Activities

Over the long term, SMP Update activities are anticipated to provide a variety of beneficial impacts. The Proposed Project would provide channel maintenance to maintain design flood conveyance capacity, as well as to help establish a developed riparian corridor along the maintained channels, resulting in incrementally improved conditions over time (i.e., ecological lift). This would result in enhanced habitat values, improved water quality, and better recreational value.

Several long-term adverse impacts have also been identified, including the potential for SMP Update activities to result in cumulative adverse contributions of air emissions or greenhouse gases; impacts on biological resources and habitat fragmentation; harm to existing archeological or paleontological resources; as well as cumulative land use conflicts, noise generation, traffic disruption, and water quality effects. However, BMPs would be implemented, consistent with the 2012 SMP Manual, that would include measures to address these impacts. Furthermore, mitigation measures (described in Chapter 3.3, *Biological Resources*) would be applied to address cumulative impacts on biological resources. With the exception of cumulative impacts associated with air emissions, greenhouse gases, and habitat fragmentation, all long-term impacts of the SMP Update would be reduced to a level of insignificance.

Significant and Unavoidable Impacts

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

Alternatives Considered

The purpose of the alternatives analysis in an EIR is to describe a range of reasonable alternatives to the Proposed Project that could feasibly attain most of the objectives of the Proposed Project while reducing or eliminating one or more of the Proposed Project's significant effects. The range of alternatives considered must include those that offer substantial environmental advantages over the Proposed Project and may be feasibly accomplished in a successful manner considering economic, environmental, social, technological, and legal factors.

The following alternatives have been evaluated for their feasibility and their ability to achieve most of the Proposed Project objectives while avoiding, reducing, or minimizing significant impacts identified for the Proposed Project:

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

No Project Alternative

Under the No Project Alternative, SCVWD would continue conducting maintenance activities, including CEQA compliance and permitting, on an annual basis following the practices in the existing (2002) SMP. This would be accomplished either by (1) conducting CEQA compliance and permitting on a project-by-project basis, or (2) by extending or renewing the existing SMP permits and relying on the prior CEQA document. SCVWD would conduct the same maintenance activities as done currently, using existing operation and maintenance guidelines and BMPs. One main difference between this alternative and the Proposed Project is that the Proposed Project would include an extension of the end of the maintenance period, from October 15 to December 31, as long as weather remained dry. If project-by-project permitting was implemented, some needed maintenance likely would not be conducted during the same season as the need for it was identified, resulting in the potential for increased flood risk. Therefore, possibly less maintenance work would get accomplished each year.

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, a variety of impacts would be slightly reduced, compared to the Proposed Project. 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, it is expected that the No Project Alternative would provide a slightly lower level of flood protection than the Proposed Project. The existing BMPs, to the extent they would not be 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 would need to be mitigated on an annual basis. Should

project-by-project permitting lead to undertaking mitigation in smaller increments, the overall mitigation may be less ecologically significant than the comprehensive approach proposed by the SMP Update.

Reduced Frequency 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 currently proposed BMPs) would be implemented under this alternative. Under the Proposed Project, the recurrence of activities is projected for a 10-year period. Typically, the need for sediment removal or instream vegetation management is based on field observations of reduced channel capacity from sediment accumulation or vegetation growth; non-instream vegetation management addresses annual growth, including the removal of both pre-emergent and post-emergent vegetation. 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 to need sediment removed in 4 out of 10 years, under this alternative, sediment would be removed in 2 out of 10 years.

Although maintenance activities would occur less frequently, the amount of maintenance done during each event would likely 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).

Compared to the Proposed Project, impacts would be theoretically 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 have various impacts. Increased sediment accumulation and instream vegetation resulting from the longer period between maintenance activities would result in a greater temporary reduction in conveyance capacity, and thus an increased flood risk, than the Proposed Project. However, because larger maintenance events would occur, flood flow conveyance capacity could be retained over the long term. Increased non-instream vegetation growth, resulting from the longer period between maintenance activities, would result in greater temporary fire hazards on roads and levees than the Proposed Project.

Limited Work in Unmodified Channels 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 upstream 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 increased flood risk or unaddressed maintenance needs. All other aspects of the Proposed Project (e.g., the currently proposed BMPs) would be implemented under this alternative.

The primary goal of the Limited Work Alternative would be to reduce impacts to biological resources in unmodified channels, as the unmodified channels are believed to have 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 would likely be reduced. As a result, various impacts 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 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.

Limited Activities Alternative

Under the Limited Activities Alternative, 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 would always 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. Relying on alternative methods would result in increased efforts 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.

Under the Limited Activities Alternative, the avoidance of the most impactful activities would eliminate impacts but may increase others. For instance, eliminating the use of herbicides and rodenticides would reduce the potential for impacts on water quality. However, repeated hand-vegetation removal would be likely to result in greater trampling

of vegetation/habitat than single events of herbicide application. 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 were needed for bank stability. This could result in repeated 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).

Comparison of Alternatives and the Environmentally Superior Alternative

Weighing all the issues, the Proposed Project is considered to be environmentally superior. Compared to any of the other alternatives, it strikes the most appropriate balance between managing flood risk, protecting the ecological integrity of the SMP channels, and addressing other short- and long-term impacts associated with proposed maintenance activities.

However, 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 provide less overall flood protection than the Proposed Project. Although flood flow capacity would be retained in the long-term by 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 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 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.

Summary of Impacts and Levels of Significance

The impacts of the Proposed Project, proposed mitigation, and significance conclusions are discussed in detail in Chapter 3, *Environmental Setting and Impact Analysis*, and Chapter 4, *Other Statutory Considerations* of this DSEIR. Table ES-1 summarizes the impacts, mitigation measures, and levels of significance identified in this document.

Table ES-1. Summary of Potential Impacts and Mitigation Measures

Potential Impact	Level of Significance before Mitigation ¹	Mitigation Measures	Level of Significance after Mitigation ¹
Direct and Indirect Impacts			
3.1 Aesthetics			
AES-1: Alternation to a Scenic Vista	LTS	None Required	LTS
AES-2: Alteration to Scenic Resources Viewed from a State or County-designated Scenic Highway	LTS	None Required	LTS
AES-3: Temporary Alteration of Visual Character or Quality from Maintenance Activities	PS	MM BIO-1, MM BIO-2, and MM BIO-7	SU
AES-4: Permanent Alteration of Visual Character or Quality from Maintenance Activities	PS	MM BIO-1, MM BIO-2, and MM BIO-7	SU
AES-5: Substantial Alteration to Day or Nighttime Views resulting from Additional Light or Glare	NI	None Required	NI
AES-6: Impacts on Aesthetics Associated with sediment Disposal/Reuse	LTS	None Required	LTS
3.2 Air Quality			
AIR-1: Temporary Increase in ROG, NO _x , PM ₁₀ , and PM _{2.5} Emissions during Maintenance Activities	PS	MM AIR-1A: Reduction in Fleet Emissions, MM AIR-1B: Off-site NO _x Emissions Mitigation Program, MM AIR-1C: NO _x Emissions Offsets	LTS/SU
AIR-2: Diesel PM Health Risk during Maintenance Activities	LTS	None Required	LTS
AIR-3: Creation of Objectionable Odors	LTS	None Required	LTS
3.3 Biological Resources			
BIO-1: Loss or Disturbance of Wetlands and Other Waters	PS	MM BIO-1: Implement Compensatory Mitigation for Wetlands and Other Waters	LTS

Table ES-1. Summary of Potential Impacts and Mitigation Measures

Potential Impact	Level of Significance before Mitigation ¹	Mitigation Measures	Level of Significance after Mitigation ¹
BIO-2: Loss or Disturbance of Woody Riparian Vegetation	PS	MM BIO-2: Implement Compensatory Mitigation for Woody Riparian Vegetation	LTS
BIO-3: Disturbance of Sensitive Plant Communities	PS	MM BIO-3: Implement Compensatory Mitigation for Serpentine Communities	LTS
BIO-4: Impacts to Serpentine-Associated Special-Status Plant Species	PS	MM BIO-4: Implement Compensatory Mitigation for Serpentine-Associated Special-Status Plant Species	LTS
BIO-5: Impacts to Non-Serpentine Special-Status Plant Species	PS	MM BIO-5: Implement Compensatory Mitigation for Impacts to Non-Serpentine Special-Status Plant Species	LTS
BIO-6: Impacts to Serpentine-Associated Special-Status Invertebrates	PS	MM BIO-6: Implement Compensatory Mitigation for Impacts to Serpentine-Associated Special-Status Invertebrates	LTS
BIO-7: Loss of Ordinance Trees	PS	MM BIO-7: Tree Replacement	LTS
BIO-8: Impacts on Steelhead	PS	MM BIO-1, MM BIO-2, MM BIO-8: Augmentation of Spawning Gravel, and MM BIO-9: Augmentation of Instream Complexity for Non-Tidal Stream Fish	LTS
BIO-9: Impacts on the Pacific Lamprey and Monterey Roach	PS	MM BIO-1, MM BIO-2, and MM BIO-9	LTS
BIO-10: Impacts on the Longfin Smelt and Green Sturgeon	PS	MM BIO-1	LTS
BIO-11: Impacts on the California Tiger Salamander	PS	MM BIO-1, MM BIO-2, and MM BIO-10: Implement Compensatory Mitigation for the California Tiger Salamander	LTS
BIO-12: Impacts on the California Red-Legged Frog	PS	MM BIO-1, MM BIO-2, and MM BIO-11: Implement Compensatory Mitigation for the California Red-Legged Frog	LTS
BIO-13: Impacts on the Foothill Yellow-Legged Frog	LTS	None Required	LTS

Table ES-1. Summary of Potential Impacts and Mitigation Measures

Potential Impact	Level of Significance before Mitigation ¹	Mitigation Measures	Level of Significance after Mitigation ¹
BIO-14: Impacts on Non-Special-Status Fish and Amphibians	PS	MM BIO-1, MM BIO-2, and MM BIO-9	LTS
BIO-15: Impacts on Essential Fish Habitat	LTS	None Required	LTS
BIO-16: Impacts on the Western Pond Turtle	PS	MM BIO-1, MM BIO-2, and MM BIO-9	LTS
BIO-17: Impacts on the California Horned Lizard	LTS	None Required	LTS
BIO-18: Impacts on the Black Skimmers	LTS	None Required	LTS
BIO-19: Impacts on the Western Snowy Plover	LTS	None Required	LTS
BIO-20: Impacts on the California Clapper Rail and Alameda Song Sparrow	PS	MM BIO-1	LTS
BIO-21: Impacts on the California Black Rail and Bryant's Savannah Sparrow	LTS	None Required	LTS
BIO-22: Impacts on the San Francisco Common Yellowthroat	LTS	None Required	LTS
BIO-23: Impacts on the Least Bell's Vireo	PS	MM BIO-2, and MM BIO-12: Implement Compensatory Mitigation for the Least Bell's Vireo (MM BIO-12A or MM BIO-12B)	LTS
BIO-24: Impacts on the Burrowing Owl	PS	MM BIO-13: Implement Compensatory Mitigation for the Burrowing Owl	LTS
BIO-25: Impacts on the Golden Eagle and Bald Eagle	LTS	None Required	LTS
BIO-26: Impacts on the American Peregrine Falcon	LTS	None Required	LTS
BIO-27: Impacts on the Yellow Warbler	PS	MM BIO-2 and MM BIO-14: Implement Compensatory Mitigation for the Yellow Warbler	LTS
BIO-28: Impacts on the Yellow-Breasted Chat	PS	MM BIO-12 (MM BIO-12A or MM BIO-12B)	LTS

Table ES-1. Summary of Potential Impacts and Mitigation Measures

Potential Impact	Level of Significance before Mitigation ¹	Mitigation Measures	Level of Significance after Mitigation ¹
BIO-29: Impacts on the Grasshopper Sparrow	LTS	None Required	LTS
BIO-30: Impacts on the Northern Harrier	LTS	None Required	LTS
BIO-31: Impacts on the White-tailed Kite and Loggerhead Shrike	LTS	None Required	LTS
BIO-32: Impacts on the Redhead, Short-Eared Owl, Long-Eared Owl, Vaux's Swift, and Olive-Sided Flycatcher	LTS	None Required	LTS
BIO-33: Impacts on the Tricolored Blackbird	LTS	None Required	LTS
BIO-34: Impacts on Non-Breeding, Special-Status Birds	LTS	None Required	LTS
BIO-35: Impacts on the Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew	PS	MM BIO-1	LTS
BIO-36: Impacts on the San Francisco Dusky-Footed Woodrat	LTS	None Required	LTS
BIO-37: Impacts on the Pallid Bat	PS	MM BIO-15: Provide Alternative Bat Roost	LTS
BIO-38: Impacts on the Western Red Bat and Townsend's Big-Eared Bat	LTS	None Required	LTS
BIO-39: Impacts on Non-Special-Status Bats	LTS	None Required	LTS
BIO-40: Impacts on the San Joaquin Kit Fox	LTS	None Required	LTS
BIO-41: Impacts on the American Badger and Ringtail	LTS	None Required	LTS
BIO-42: Impacts on the Mimic Tryonia	LTS	None Required	LTS
BIO-43: Impacts on the Pacific Harbor Seal	LTS	None Required	LTS
BIO-44: Introduction of Invasive Species	PS	MM BIO-16: Invasive <u>Plant</u> Species Management Program	LTS

Table ES-1. Summary of Potential Impacts and Mitigation Measures

Potential Impact	Level of Significance before Mitigation ¹	Mitigation Measures	Level of Significance after Mitigation ¹
BIO-45: Habitat Fragmentation	SU	None Available	SU
BIO-46: Conflicts with Adopted Habitat Conservation Plans or Natural Community Conservation Plans	LTS	None Required	LTS
BIO-47: Resuspension of Mercury	LTS	None Required	LTS
3.4 Cultural Resources			
CR-1: Disturbance to Known and Previously Undiscovered Archaeological or Historic Resources	LTS	None Required	LTS
CR-2: Discovery of Human Remains	LTS	None Required	LTS
CR-3: Impacts to Sensitive Paleontological Resources as a Result of Maintenance Activities	LTS	None Required	LTS
3.5 Global Climate Change			
GCC-1: Temporary Increase in GHGs during Maintenance Activities	PS	MM AIR-1A and MM GCC-1A: On-site or Off-site GHG Emissions Mitigation Program, or MM GCC-1B: GHG Emissions Offsets	LTS/SU
3.6 Hazards and Hazardous Materials			
HAZ-1: Use, Transport, or Accidental Release of Hazardous Materials such that a Significant Hazard to the Public or Environment Would Result	LTS	None Required	LTS
HAZ-2: Potential to Interfere with Emergency Response	LTS	None Required	LTS
HAZ-3: Be Located on a Known Existing Contaminated Site	LTS	None Required	LTS
HAZ-4: Be Located on a Previously	LTS	None Required	LTS

Table ES-1. Summary of Potential Impacts and Mitigation Measures

Potential Impact	Level of Significance before Mitigation ¹	Mitigation Measures	Level of Significance after Mitigation ¹
Undiscovered Contaminated Site			
HAZ-5: Create Safety Hazards or Releases of Hazardous Materials in Proximity to a School	LTS	None Required	LTS
HAZ-6: Exacerbate Wildland Fires	LTS	None Required	LTS
HAZ-8: Disposal of Contaminated Sediments	LTS	None Required	LTS
3.7 Hydrology and Geomorphology			
HYD-1: Short-Term Instream Erosion or Sedimentation from Sediment Management Activities	LTS	None Required	LTS
HYD-2: Long-Term Instream Erosion or Sedimentation from Sediment Removal Activities	B	None Required	B
HYD-3: Short-Term Erosion or Sedimentation from Vegetation Management Activities	LTS	None Required	LTS
HYD-4: Short-Term Erosion, or Sedimentation from Bank Stabilization Activities	LTS	None Required	LTS
HYD-5: Long-Term Erosion and Sedimentation from Vegetation Management and Bank Stabilization Activities	B	None Required	B
HYD-6: Harm to People, Structures, or Water Quality from Flooding	B	None Required	B
HYD-7: Alterations to the Recharge, Quality, or Quantity of Groundwater	B	None Required	B
HYD-8: Occurrence of Seiche, Tsunami, or Mudflow	NI	None Required	NI

Table ES-1. Summary of Potential Impacts and Mitigation Measures

Potential Impact	Level of Significance before Mitigation ¹	Mitigation Measures	Level of Significance after Mitigation ¹
HYD-9: Geomorphic Effects of Sediment Reuse	LTS	None Required	LTS
HYD-10: Creation of Runoff Water and Depletion of Surface Water Supplies	LTS	None Required	LTS
HYD-11: Short-Term Erosion and Sedimentation from Minor Maintenance, Management of Animal Conflicts, and Canal Maintenance Activities	B	None Required	B
HYD-12: Long-Term Erosion and Sedimentation from Minor Maintenance, Management of Animal Conflicts, and Canal Maintenance Activities	B	None Required	B
3.8 Land Use and Planning			
LU-1: Division of Existing Neighborhoods or Communities	LTS	None Required	LTS
LU-2: Incompatibility with Adjacent Land Uses	LTS	None Required	LTS
LU-3: Compatibility with Land Use Plans and Policies	LTS	None Required	LTS
3.9 Noise			
NZ-1: Temporary Exposure of the Public to Noise Levels in Excess of City or County Standards	PS	None Available	SU
NZ-2: Generate Groundborne Vibrations	NI	None Required	NI

Table ES-1. Summary of Potential Impacts and Mitigation Measures

Potential Impact		Level of Significance before Mitigation ¹	Mitigation Measures	Level of Significance after Mitigation ¹
NZ-3:	Temporary Substantial Increase in Noise above Ambient Levels	PS	None Available	SU
3.10 Public Services and Utilities				
PSU-1:	Effects on Public Facilities and Services	LTS	None Required	LTS
PSU-2:	Disruption to Utilities and Service System Facilities	LTS	None Required	LTS
PSU-3:	Insufficient Available Water Supplies resulting in the Need for New or Additional Water Supply or Distribution Facilities	LTS	None Required	LTS
PSU-4:	Disposal of Excavated Sediment and Other Materials at Off-Site Locations, including Landfills	LTS	None Required	LTS
3.11 Recreation				
REC-1:	Temporary Disturbance of Recreational Quality	LTS	None Required	LTS
REC-2:	Permanent Changes to Recreation Quality	B	None Required	B
REC-3:	Temporary Disruption of the Use of, or Access to, Recreational Facilities	LTS	None Required	LTS
REC-4:	Permanent Use or Access Disruption of Recreational Facilities	NI	None Required	NI
3.12 Traffic and Transportation				
TR-1:	Increase in Vehicle Miles Traveled	LTS	None Required	LTS
TR-2:	Substantial Increase in Safety Hazards	LTS	None Required	LTS
TR-3:	Inadequate Emergency Access	LTS	None Required	LTS

Table ES-1. Summary of Potential Impacts and Mitigation Measures

Potential Impact		Level of Significance before Mitigation ¹	Mitigation Measures	Level of Significance after Mitigation ¹
TR-4:	Disruption of Alternative Transportation Facilities or Services	LTS	None Required	LTS
TR-5:	Insufficient Parking Capacity	LTS	None Required	LTS
3.13 Water Quality				
WQ-1:	Water Quality Degradation Resulting in Violation of Water Quality Standards or Waste Discharge Requirements Caused by Ground-Disturbing Activities	LTS	None Required	LTS
WQ-2:	Water Quality Degradation Resulting in Violation of Water Quality Standards or Waste Discharge Requirements Caused by Instream Maintenance Activities	LTS	None Required	LTS
WQ-3:	Water Quality Degradation Resulting in Violation of Water Quality Standards or Waste Discharge Requirements Caused by the Accidental Release of Hazardous Materials	LTS	None Required	LTS
WQ-4:	Water Quality Degradation Resulting in Violation of Water Quality Standards or Waste Discharge Requirements Caused by the Use of Pesticides, including Herbicides	LTS	None Required	LTS
WQ-5:	Water Quality Degradation Resulting in Violation of Water Quality Standards or Waste Discharge Requirements Caused by the Disturbance of Existing Contamination	LTS	None Required	LTS

Table ES-1. Summary of Potential Impacts and Mitigation Measures

Potential Impact	Level of Significance before Mitigation ¹	Mitigation Measures	Level of Significance after Mitigation ¹
WQ-6: Compliance with CWA Section 303(d) Total Maximum Daily Loads	LTS	None Required	LTS
WQ-7: Water Quality Degradation Resulting in Violation of Water Quality Standards or Waste Discharge Requirements Caused by Sediment Handling and Disposal	LTS	None Required	LTS
WQ-8: Create or Contribute Runoff Water that Would Provide Substantial Additional Sources of Polluted Runoff	B	None Required	B
WQ-9: Alterations to the Quality of Groundwater	B	None Required	B
Cumulative Impacts			
AIR-1: Emissions of ROG, NO _x , PM ₁₀ , and PM _{2.5}	PS	MM AIR-1A, MM AIR-1B, and MM AIR-1C	LTS/SU
AIR-2: Emissions of Greenhouse Gases	PS	MM AIR-1A, and MM GCC-1A or MM GCC-1B	LTS/SU
BIO-1: Effects on Biological Resources	PS	MM BIO-1, MM BIO-2, MM BIO-3, MM BIO-4, MM BIO-5, MM BIO-6, MM BIO-7, MM BIO-8, MM BIO-9, MM BIO-10, MM BIO-11, MM BIO-12, MM BIO-13, MM BIO-14, MM BIO-15, and MM-BIO-16	LTS
BIO-2: Habitat Fragmentation	PS	None Available	SU
CR-1: Effects on Cultural Resources	LTS	None Required	LTS
LU-1: Land Use Conflicts	LTS	None Required	LTS
NZ-1: Project-Related Noise Emissions	LTS	None Required	LTS
TR-1: Disruption to Automobile Traffic Patterns	LTS	None Required	LTS
PSU-1: Effects on Public Services and Utilities	B	None Required	B
WQ-1: Effects on Water Quality	LTS	None Required	LTS

¹ Definitions:

B	Beneficial
LTS	Less-than-Significant
NI	No Impact
PS	Potentially Significant
SU	Significant and Unavoidable

Source: Compiled by Horizon Water and Environment in 2011

Chapter 1

INTRODUCTION

The Santa Clara Valley Water District (SCVWD) has prepared this Draft Subsequent Environmental Impact Report (DSEIR) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the proposed Stream Maintenance Program (SMP) Update (SMP Update or Proposed Project). This DSEIR was prepared in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended) and the State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.).

1.1 General Background

SCVWD is a special district created by the State Legislature to act not only as Santa Clara County (County)'s water wholesaler but also as its flood protection agency and the steward for its streams and creeks, underground aquifers, and SCVWD-built reservoirs. SCVWD carries out its responsibilities in an environmentally responsible and cost effective manner, led by a Board of Directors composed of seven members, each elected from geographical areas within the county.

As the County's water wholesaler, SCVWD ensures a dependable supply of clean, safe water for homes and businesses. As the agency responsible for local flood protection, the SCVWD works diligently to protect Santa Clara Valley residents and businesses from the devastating effects of flooding. SCVWD's stream stewardship includes creek restoration and wildlife habitat projects, mitigation monitoring, pollution prevention efforts, and a commitment to natural flood protection.

1.2 Proposed Project Background

SCVWD is responsible for water supply, flood protection, and stream stewardship in Santa Clara County, California. SCVWD manages streams, canals, reservoirs, dams, pipelines, groundwater percolation facilities, and water treatment plants throughout the county to fulfill its responsibilities. SCVWD-owned flood protection facilities require maintenance to ensure that the designed function of each facility is maintained. Before 2002, SCVWD conducted maintenance activities as needed. In 2002, SCVWD implemented the SMP as an ongoing program with an indefinite time horizon to guide routine maintenance activities within SCVWD's creeks and canals. The difference between stream maintenance conducted before the SMP (pre-2002) and the initial SMP (2002–2012) is the SMP's comprehensive approach to managing and tracking the maintenance work and costs, its monitoring of environmental conditions, and its mitigating for the program as a whole, rather than on an individual project basis. The SMP is used by SCVWD staff to ensure that routine stream maintenance practices are conducted in an efficient, consistent, and environmentally sensitive manner.

Although the SMP is an ongoing program, the initial 2002 SMP Manual and Final Environmental Impact Report used a 20-year planning horizon to forecast SMP activities ~~and consider potential environmental effects~~. In 2009, SCVWD initiated an SMP Update process to renew necessary SMP permits as well as to review and update the SMP Manual and environmental compliance documentation. For the purposes of regulatory permitting, the SMP Update (including the 2012 SMP manual and this CEQA document) is intended to cover the 10-year planning period beginning in 2012 and ending in 2022. These SMP Update documents are intended to fully replace the original documents that guided the SMP from its inception through 2011. In general, the SMP Update is a continuation of past routine creek and canal maintenance activities in most of the same areas, using many of the same techniques. The SMP Update includes some new work areas and new work activities. More details regarding the SMP Update are provided in Chapter 2, *Project Description*.

The 2012 SMP Manual (included as Appendix A in this DSEIR) and the contents of the DSEIR are meant to be read as complementary volumes. As such, the DSEIR references or summarizes information presented in the 2012 SMP Manual frequently to avoid repeating information. The reader is encouraged to review the 2012 SMP Manual while reviewing the DSEIR.

1.3 Overview of CEQA Requirements and the 2002 SCVWD Stream Maintenance Program EIR

CEQA is the cornerstone of environmental law and policy in California. CEQA's primary objectives are to (State CEQA Guidelines Section 15002):

- ensure that the significant environmental effects of proposed activities are disclosed to decision makers and the public;
- identify ways to avoid or reduce environmental damage; prevent environmental damage by requiring implementation of feasible alternatives; and avoid, minimize, reduce and/or compensate for environmental impacts through implementation of mitigation measures;
- disclose the reasons for agency approval of projects with significant environmental effects;
- foster multidisciplinary interagency coordination in the review of projects; and
- allow for public participation in the planning process.

With certain strictly limited exceptions, CEQA requires all state and local government agencies to consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. It establishes both procedural and substantive requirements that agencies must satisfy to meet CEQA's objectives. For example, the agency with decision-making authority (the lead agency) must first assess whether a proposed project would result in significant environmental impacts. If the project could result in significant environmental impacts, CEQA requires that the agency prepare an environmental impact report (EIR), analyzing both the proposed project and a range of feasible alternatives.

As described in Section 15121(a) of the State CEQA Guidelines, an EIR is a public information document that assesses potential environmental effects of a proposed project as well as identifies mitigation measures and alternatives to the project that could reduce or avoid adverse environmental impacts (14 CCR 15121[a]). Other key procedural requirements include developing a plan for mitigation measure reporting and monitoring, and carrying out specific noticing and distribution steps to facilitate public involvement in the environmental review process.

In 2001, for its SMP the SCVWD complied with CEQA through a comprehensive evaluation and disclosure of potential environmental effects. This included the preparation of a public Draft Environmental Impact Report (DEIR) and a Final Environmental Impact Report (FEIR), which incorporated public comments and responses to comments on the DEIR. A Notice of Determination was filed on July 12, 2002 with the State Clearinghouse (SCH No. 200102055), completing the CEQA review requirements for the SMP. The requirements and policies of the SMP were finalized in 2002 when SCVWD received authorizations from all the permitting agencies with jurisdiction over the program, as shown in Table 2-10 in Chapter 2, *Project Description*.

1.3.1 CEQA Requirements for Subsequent EIR

The SMP that was evaluated in SCVWD's certified 2002 EIR was intended to be implemented indefinitely and, under ordinary circumstances, the EIR should have been sufficient to cover implementation of the SMP indefinitely.

According to Section 15162 of the State CEQA Guidelines, when an EIR has been certified for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

- Substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete shows any of the following:
 - The project will have one or more significant effects not discussed in the previous EIR;
 - Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
 - Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Section 15162 also states that a subsequent EIR shall be given the same notice and public review as required under Section 15087 or Section 15072. A subsequent EIR shall state where the previous document is available and can be reviewed.

SCVWD has determined that its 2002 SMP and related circumstances have changed substantially enough that the preparation of a Subsequent EIR is appropriate. Specifically, the following changes to the SMP contributed to this decision:

- Maintenance activities are being proposed in new locations not included in the 2002 SMP.
- At some existing locations, different types of maintenance activities are now being proposed.
- New maintenance activities are being proposed.
- SCVWD is proposing a modified approach to mitigation than what was adopted under the 2002 EIR.

In addition, several changes in the physical and regulatory environment have occurred, as follows:

- Several species are now listed as threatened or endangered under either the California or federal Endangered Species Act that were not listed in 2002.
- CEQA has been updated with additional requirements regarding the analysis of greenhouse gas emissions and global climate change.

1.4 Public Involvement Process

As described above, public disclosure and dialogue are priorities under CEQA. Accordingly, CEQA mandates two periods during the SEIR process when public and agency comments on the impacts of the Proposed Project are solicited: during the scoping comment period, and during the review period for the DSEIR. CEQA and the State CEQA Guidelines also encourage lead agencies to hold public meetings or hearings to review both the draft and final versions of an SEIR. Brief descriptions of these milestones are provided below, as they apply to this document.

1.4.1 Scoping Comment Period

Scoping refers to the public outreach process used under CEQA to determine the coverage and content of an SEIR. The scoping comment period offers an important opportunity for public review and comment in the early phases of a project. The scoping process for an SEIR is typically initiated by publication of the Notice of Preparation (NOP) required by CEQA, which provides formal notice to the public and to interested agencies and organizations that a DSEIR is in preparation. During the scoping period, agencies and the public are invited to comment on the project, the approach to environmental analysis, and any issues of concern to be discussed in the DSEIR. Scoping also can assist the lead agency with identification of project alternatives and mitigation measures. CEQA does not require public meetings during the scoping phase.

In accordance with State CEQA Guidelines (14 CCR 15082[a], 15103, 15375), SCVWD circulated an NOP for the Proposed Project on August 31, 2010 (Appendix B). The NOP, in which SCVWD was identified as lead agency for the Proposed Project, was circulated to the public; to local, state, and federal agencies; and to other interested parties. The purpose of the NOP was to inform responsible agencies and the public that the Proposed Project could have significant effects on the environment and to solicit their comments so that any concerns raised could be considered during the preparation of the DSEIR. In addition, SCVWD held a public scoping meeting on September 22, 2010, to provide the public with another opportunity to comment. Comments received in response to the NOP are included in Appendix B, and the preparers of this DSEIR considered these comments. No comments were received at the public scoping meeting.

1.4.2 ~~Draft EIR~~DSEIR Comment Period

After the DSEIR is completed, the District will issue a notice of availability, providing agencies and the public with formal notification that the document is available for review. The notice will be sent to the State CEQA Clearinghouse, all responsible and trustee agencies, any person or organization requesting a copy, and the county clerk's office for posting. The notice also will be published in a general-circulation newspaper. These actions will trigger a 45-day public review period, during which the District will receive and collate public and agency comments on the project and the document.

SCVWD will host a public hearing approximately 30 days after release of the document. The purpose of public circulation and the public hearings are to provide agencies and interested

individuals with opportunities to comment on or express concerns regarding the contents of the DSEIR.

For those interested, written comments or questions concerning this DSEIR can be submitted within this review period and directed to the name and address listed below. Submittal of written comments via e-mail (Microsoft Word format) will be greatly appreciated.

Santa Clara Valley Water District
Attention: Sunny Williams
5750 Almaden Expressway
San Jose, CA 95118-3686

E-mail: smp_update@valleywater.org
Subject Line: SMP Update EIR Comments

All documents mentioned herein or related to the Proposed Project can be reviewed on any SCVWD business day between the hours of 8:00 a.m. and 5:00 p.m. Monday through Friday at SCVWD headquarters, located at the address shown above, or on the SCVWD Web site at www.valleywater.org under Quick Links, Public Review docs. The documents also will be available at the libraries listed below during their normal operating hours.

Dr. Martin Luther King, Jr. Library
150 E. San Fernando Street
San Jose, CA 95112

Morgan Hill Public Library
660 W. Main Avenue
Morgan Hill, CA 95037

Palo Alto Public Library
1213 Newell Road
Palo Alto, CA 94303

Cupertino Public Library
10800 Torre Avenue
Cupertino, CA 95014-3207

Milpitas Public Library
160 N. Main Street
Milpitas, CA 95035

Alviso Library
5050 N. 1st St.
San Jose, CA 95134

Written and oral comments received in response to the DSEIR will be addressed in the Final Subsequent Environmental Impact Report (FSEIR), which will include all comments received, responses to each, and a reprint of the DSEIR, updated as appropriate in underline/strikeout in response to the comments.

1.4.3 Preparation of ~~Final EIR~~FSEIR and Public Hearing

CEQA requires the lead agency to prepare an FSEIR, addressing all substantive comments received on the DSEIR before approving a project. The FSEIR must include a list of all individuals, organizations, and agencies that provided comments on the DSEIR, and must contain copies of all comments received during the public review period along with the lead agency's responses.

After review of the FSEIR, SCVWD staff will recommend to the SCVWD Board of Directors whether to approve or deny the Proposed Project. This governing body then will review the FSEIR, consider SCVWD staff recommendations and public testimony, and decide whether to certify the FSEIR and approve or deny the Proposed Project.

If significant impacts are identified in the SEIR that cannot be mitigated, a statement of overriding considerations must be included in the record of the Proposed Project approval and mentioned in the Notice of Determination, to be filed with the State Office of Planning and Research and at the office of the County Clerk (14 CCR 15093[c]).

1.5 Organization of this DSEIR

This DSEIR contains the following components:

Table of Contents. The Table of Contents include an outline of the document, lists of the appendices, tables, and figures, acronyms, and a glossary of significant terms.

Executive Summary. A summary of the Proposed Project, a description of the issues of concern, alternatives to the Proposed Project, and a summary of environmental impacts are provided.

Chapter 1, *Introduction.* This chapter describes the statutory basis, purpose, and organization of the DSEIR and its preparation, review, and certification process.

Chapter 2, *Project Description.* This chapter summarizes the Proposed Project, including: a description of the Proposed Project purpose and goals; a brief description of the Proposed Project area and facilities where the SMP is implemented; the Proposed Project approach and activities; Proposed Project implementation and oversight; avoidance and minimization measures (best management practices); and required permits and approvals.

Chapter 3, *Environmental Setting and Impact Analysis.* This chapter begins with an introductory section which identifies resource areas determined not to be affected by the Proposed Project. Chapter 3 then presents thirteen sections that describe existing environmental conditions, the Proposed Project's anticipated environmental impacts, and

mitigation measures proposed for any significant impacts. The following resource topics are addressed these sections:

3.1 Aesthetics

3.2 Air Quality

3.3 Biological Resources

3.4 Cultural Resources

3.5 Global Climate Change

3.6 Hazards and Hazardous Materials

3.7 Hydrology and Geomorphology

3.8 Land Use and Planning

3.9 Noise

3.10 Public Service and Utilities

3.11 Recreation

3.12 Traffic and Transportation

3.13 Water Quality

Chapter 4, *Other Statutory Considerations*. This chapter addresses the Proposed Project's potential to contribute to cumulative impacts in the Project Area. Chapter 4 also outlines the Proposed Project's potential to induce growth and identifies significant, irreversible environmental changes that could result from implementation of the Proposed Project.

Chapter 5, *Alternatives Analysis*. This chapter describes the process through which alternatives to the Proposed Project were developed and screened, evaluates their likely environmental impacts, and identifies the environmentally superior alternative.

Chapter 6, *Report Preparation*. This chapter lists the individuals involved in preparing this DSEIR and their responsibilities.

Chapter 7, *References*. This chapter provides a bibliography of printed references, Web sites, and personal communications used in preparing this DSEIR.

Appendix A 2012 Stream Maintenance Program Manual

Appendix B Notice of Preparation and Comments Received

Appendix C	2012–2022 SMP Update Mitigation Approach Memorandum
Appendix D	General Plan Policies and Ordinances
Appendix E	Air Quality and Greenhouse Gas Emissions Calculations
Appendix F	Taxonomic Crosswalk between the Jepson Manual First Edition and Second Edition (second edition in preparation)
Appendix G	Special-Status and Locally Significant Plant Species Considered but Rejected for Occurrence in the Project Area
Appendix H	Detailed Descriptions of Special-Status and Locally Significant Plant Species Potentially Occurring in the Project Area
Appendix I	Detailed Descriptions of Special-Status Wildlife Species Potentially Occurring in the Project Area
Appendix J	Pesticide Regulatory Information
Appendix K	Traffic and Transportation Calculations
Appendix L	Mitigation Monitoring and Reporting Program
Appendix M	<u>Fish Relocation Guidelines</u>

1.6 Impact Terminology

This DSEIR uses the following terminology to describe the environmental effects of the Proposed Project.

- A finding of no impact is made when the analysis concludes that the Proposed Project would not affect the particular environmental resource or issue.
- An impact is considered less than significant if the analysis concludes that a substantial adverse change in the environment related to this impact would not occur and, therefore, no mitigation is needed.
- An impact may be considered significant or potentially significant if the analysis determines that a substantial adverse effect on the environment could occur. Depending on the nature of the impact and feasibility of mitigation which could be implemented, such impacts would result in one of the following two conclusions:
 - An impact is considered less than significant with mitigation if the analysis concludes that a substantial adverse change in the environment related to this impact would not occur with the inclusion of the mitigation measures described.

- An impact is considered significant and unavoidable if the analysis concludes that a substantial adverse effect on the environment related to this impact could occur and no feasible mitigation measures are available to reduce the impact to a less-than-significant level.
- An impact is considered *beneficial* if the analysis concludes that a positive change in the environment would occur related to this impact.
- *Mitigation* refers to specific measures or activities adopted to avoid or substantially reduce a significant impact.
- A *cumulative impact* is the environmental change resulting from the incremental impact of a project when added to other related past, present, or reasonably foreseeable future projects. Significant cumulative impacts may result from individually minor but collectively significant projects.

2.1 Introduction

Since the summer work season of 2002, SCVWD has implemented the SMP to guide routine maintenance activities within its creeks and canals. In 2009, SCVWD initiated the SMP Update process to: 1) review SMP activities and revise the program manual, 2) update its environmental compliance documentation, and 3) renew necessary SMP permits.

Although the SMP is an ongoing, continuous program (with an indefinite time horizon), the 2002 SMP Manual and Final Environmental Impact Report used a 20-year planning horizon to forecast SMP activities ~~and consider potential environmental effects~~. The proposed SMP Update (including the revised SMP manual and this document) is intended to ~~addresse~~cover the 10-year planning period from 2012–2022 ~~for the purposes of regulatory permitting~~. The updated SMP documents are intended to fully replace the original documents that have guided the SMP from its inception in 2002 through the present.

2.1.1 Project Purpose

As discussed in Chapter 1, *Introduction*, SCVWD has prepared this Draft Subsequent Environmental Impact Report (DSEIR) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects associated with the adoption and implementation of the updated SMP for the 2012–2022 period. The SMP was developed to provide guiding policies, specific direction on approach, and regulatory authorization for routine stream and canal maintenance. The SCVWD Board of Directors (SCVWD Board) adopted a series of Ends Policies to guide SCVWD activities toward achieving SCVWD’s mission. The SMP integrates several of the Ends Policies in order to guide staff in conducting routine maintenance activities and to provide the foundation for obtaining regulatory authorizations. The SMP supports updates, as necessary, to meet new conditions or maintenance needs of SCVWD.

Applicable Ends Policies of the Board of Directors (as of ~~June 2010~~ July 2011)

E-1 Mission and General Principles

The mission of SCVWD is to provide for a healthy, safe, and enhanced quality of living in Santa Clara County through watershed stewardship and comprehensive management of water resources in a practical, cost-effective, and environmentally-sensitive manner for current and future generations.

E-2 Water Supply: There is a reliable, clean water supply for current and future generations.

Goal 2.1 Current and future water supply for municipalities, industries, agriculture and the environment is reliable.

Objective 2.1.1 Aggressively protect groundwater ~~basins~~ from the threat of contamination and maintain and develop the groundwater ~~basins~~ to optimize reliability and to minimize land subsidence and salt water intrusion.

Objective 2.1.2 Protect, maintain and develop local surface water.

E-3 Natural Flood Protection: There is a healthy and safe environment for residents, businesses and visitors, as well as for future generations.

Goal 3.1 Natural flood protection for residents, businesses and visitors

Objective 3.1.1 Balance environmental quality and protection from flooding. ~~in a cost effective manner~~

Objective 3.1.2 Preserve flood conveyance capacity.

E-4 Water Resources Stewardship: There is water resources stewardship to protect and enhance watersheds and natural resources and to improve the quality of life in Santa Clara County.

Goal 4.1 Healthy creek, ~~and~~ bay and other aquatic ecosystems

Objective 4.1.1 Balance water supply, flood protection and environmental stewardship functions.

Objective 4.1.2 Protect and improve watersheds, streams, and natural resources.

Objective 4.1.3 Promote ~~awareness~~ the protection of aquatic ~~creek and bay~~ ecosystem functions.

Goal 4.2 Clean, safe water in creeks and bay

Objective 4.2.1 Preserve or improve surface and ground water quality for beneficial uses.

Objective 4.2.2 Promote ~~awareness~~ the protection of water quality and stream stewardship.

District Mission and the SMP

Flood protection under the SMP is an integral part of SCVWD's mission, integrating the efficient management of SCVWD assets within the context of environmental requirements (Ends Policy E-1). Creek maintenance preserves flow capacity of SCVWD creeks to reduce the risk of flooding, and improves water quality through the stabilization of eroding creek banks and removal of excess sediment (Ends Policies E-3.1 and E-4.2).

Maintenance of canals ensures that water conveyance systems are functioning, sustainable, and able to move water between reservoirs, creeks, percolation ponds, and water treatment plants (Ends Policy E-2.1). Water released into creeks and percolation ponds helps to replenish local groundwater aquifers and manage environmental needs (Ends Policy E-2.1).

SMP mitigation measures are designed to avoid, minimize, or mitigate potential impacts in balance with the need to conduct work in creeks and canals while carrying out SCVWD's mission.

2.1.2 Project Objectives

The overall flood management goals of the SMP Update are to maintain the design flow or appropriate conveyance capacity of SCVWD facilities, and to maintain the structural and functional integrity of SCVWD facilities. To meet these goals and to implement the applicable ends policies described above, the SMP Update would prioritize and administer maintenance activities to achieve the following objectives:

- remove sediment to maintain the hydraulic, safety, and habitat functions of the creek systems;
- manage vegetation to maintain the hydraulic, safety, and habitat functions of the creek systems, and to 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; and
- avoid, minimize, or mitigate impacts on the environment by incorporating stream stewardship measures into maintenance activities.

The SMP Update also seeks to obtain and maintain multi-year programmatic permits to regulate Proposed Project activities.

2.1.3 Project Background

SCVWD is responsible for water supply, flood protection, and stream stewardship in Santa Clara County, California. SCVWD manages streams, canals, reservoirs, dams, pipelines, groundwater percolation facilities, and water treatment plants throughout the county to fulfill its responsibilities. SCVWD flood protection facilities require maintenance to maintain the designed function of each facility. The routine activities covered by the existing SMP are undertaken on SCVWD property and easements in streams, canals, levees, and adjacent property. The principal maintenance activities are:

- Bank stabilization
- Sediment removal
- Vegetation management
- Management of animal conflicts
- Minor maintenance

Historically, SCVWD has implemented these activities as needed. Therefore, the SMP Update would be a continuation of past routine creek and canal maintenance activities in most of the same areas using many of the same techniques. The difference between stream maintenance conducted before the SMP (pre-2002), and the initial SMP period (2002–2012), is the SMP Update’s comprehensive approach to managing and tracking the maintenance work and costs, monitoring environmental conditions, and providing program mitigation. The SMP Update would be used by SCVWD staff to conduct routine stream maintenance practices in an efficient, consistent, and environmentally-sensitive manner.

The existing SMP complied with the requirements of CEQA through a comprehensive evaluation and disclosure of potential environmental effects. This included the preparation of a public Draft Environmental Impact Report (DEIR) and a Final Environmental Impact Report (FEIR), which incorporated public comments and responses to comments on the DEIR. A Notice of Determination was filed on July 12, 2002 with the State Clearinghouse (SCH No. 200102055), completing the CEQA review requirements for the SMP. The requirements and policies for the existing SMP document were finalized in 2002, when SCVWD received authorizations from all the permitting agencies with jurisdiction over the program. Work under the existing SMP began in 2002.

Tables 2-1 and 2-2 summarize sediment removal and vegetation management work conducted in the SMP’s first decade. The tables compare the sediment removal and vegetation maintenance work originally projected for the 2002–2012 period with the actual work conducted to date between 2002 and 2009. As shown in the tables, projected sediment removal activities were greatly overestimated. Table 2-3 summarizes the bank stabilization work conducted during 2002–2009. Bank stabilization work was not projected as it was uncertain where such work would be needed until after the winter season occurred. Table 2-11, at the end of this chapter, highlights key differences between the Proposed Project that is being evaluated in this document, and the SMP adopted in 2002.

Table 2-1. Sediment Removal, 2002–2009

Watershed	Length (miles)			Volume Removed (cubic yards)		
	Projected Work 2002–2012	Actual Work (2002–2009)		Projected Work 2002–2012	Actual Work (2002–2009)	
		Work Completed ¹	Avg Annual ²		Work Completed	Avg Annual
Santa Clara Basin	47	28.21	3.53	730,700	364,018	45,502
Pajaro Basin	11	4.13	0.52	64,900	7,274	909
Total	58	32.34	4.04	795,600	371,292	46,411

Notes:

1. Certain locations may have been the subject of sediment removal more than once during 2002-2009, but their lengths are only counted once in this column.
2. In contrast with (1) above, the average annual length as presented on this table considers locations of repeat work.

Source: Data compiled by Horizon Water and Environment in 2011

Table 2-2. Vegetation Management, 2002–2009

Watershed	Channel Hand Removal			Herbicide Application		
	Projected Work (miles) 2002–2012	Actual Work (2002–2009)		Projected Work (miles) 2002–2012	Actual Work (2002–2009)	
		Work Length Completed ¹	Avg Annual Work Length ²		Work Length Completed	Avg Annual
Santa Clara Basin	44	28.49	3.56	183	172.86	21.6
Pajaro Basin	16	18.25	2.28	0	0	0
Stream Total³	60	46.74	5.84	183	172.86	21.6

Notes:

1. Certain locations may have been the subject of ~~sediment-channel hand~~-removal more than once during the 2002-2009 period, but their lengths are only counted once in this column.
2. In contrast with (1) above, the average annual length as presented on this table considers locations of repeat work.
3. Canals are included in lengths

Source: Data compiled by Horizon Water and Environment in 2011

Table 2-3. Bank Stabilization, 2002–2009

Watershed	Length (feet)			Total Work Completed (miles)	Avg Annual (miles)
	Hardscape	Softscape	In-Kind Repair		
Santa Clara Basin	7,373	24,621	1	6.06	0.76
Pajaro Basin	10	1,063	6,403	1.42	0.18
Total	7,383	25,684	6,404	7.48	0.94

Source: Data compiled by Horizon Water and Environment in 2011

2.1.4 Project Area

The Project Area includes the portions of Santa Clara County below the 1,000-foot elevation contour, as shown in Figure 2-1. SCVWD maintains only those sections of creeks and canals where it has fee title or maintenance easements (including property and easements that will be acquired in the future), or where the SCVWD Board has provided specific direction. The maintenance work area is the stream channel or canal itself, and typically extends past the top-of-bank, where access is provided. Where levees have been constructed, the work area extends at least to the outside toe of the levee.

As shown in Figure 2-1, SCVWD is divided into two major hydrologic basins (watersheds): the Santa Clara Basin drains to San Francisco Bay, and the Pajaro River Basin drains to the Monterey Bay. The Santa Clara Basin encompasses approximately 716 square miles. The Pajaro River Basin covers approximately 1,300 square miles, of which only 370 square miles is within Santa Clara County. The Project Area consists of 315 named rivers, streams, channels, drains and ditches, and 7 canals. Figures 2-2 through 2-6 (provided at the end of this chapter) provide more detailed maps of the Project Area, including the Lower Peninsula, West Valley, Guadalupe, Coyote, and Pajaro watersheds.

The SMP (both the existing SMP and the Proposed Project) does not include maintenance activities in or at reservoirs, dams, pipelines, groundwater percolation facilities, or water treatment plants. The SMP does include channel maintenance at dam outlet structures immediately downstream of reservoirs. The SMP also includes stream maintenance upstream of reservoirs, up to the 1,000 feet elevation contour. In addition, work activities performed to maintain creek and canal flow conveyance capacity cannot be used to increase the designed flow conveyance capacity of the facility; furthermore, work activities cannot be performed if they are specifically excluded in the SMP.

Municipalities within the Project Area include the cities of Campbell, Cupertino, Gilroy, Los Altos, Milpitas, Morgan Hill, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, and the towns of Los Altos Hills and Los Gatos. SCVWD does not provide maintenance on private property where no easement exists, unless expressly authorized by the SCVWD Board of Directors.

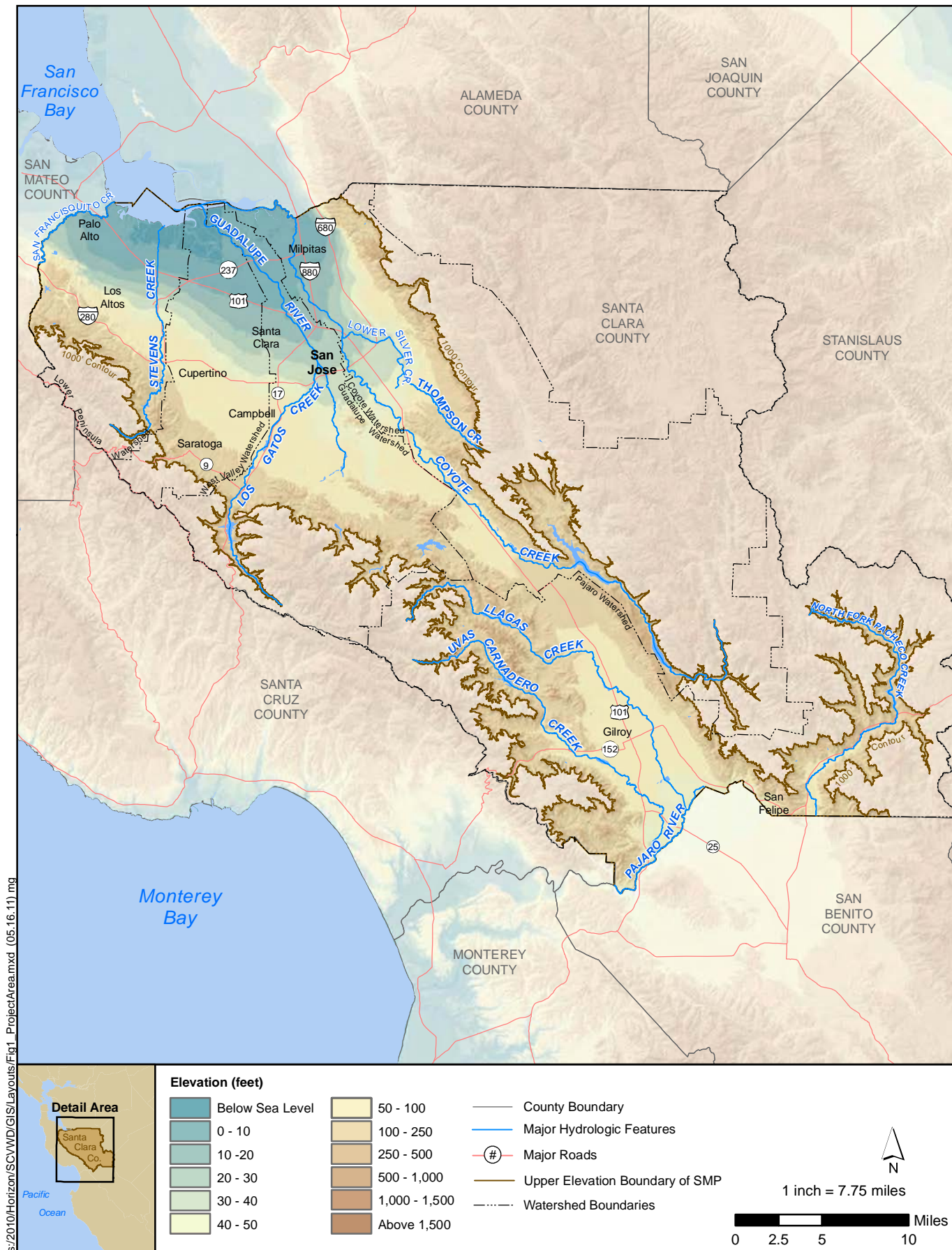


Figure 2-1: Project Area

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2.1.5 Project Channel Types

SCVWD actively manages over 1,000 miles of channels and creeks. For purposes of this document, the channels within SCVWD's jurisdiction are classified as earthen, concrete, tunnel, siphon, pipeline, or waterbody. The majority of SMP channels are earthen, having earthen channel bed and banks. SCVWD-maintained earthen channels may be either engineered and natural stream channels.

Figure 2-7 (all remaining figures can be viewed at the end of this chapter; photo figures are available on the page following their introduction) illustrates a generalized cross section of a SCVWD-maintained channel. Note that Figure 2-7 represents the wider and more complex channels in the Project Area, similar to the photo of lower Coyote Creek seen in Figure 2-8. This figure illustrates many of the channel features (e.g. top-of-bank, toe-of-slope, etc.) that are referred to throughout this document. Figure 2-9 provides a generalized illustration of an even wider channel alignment where a secondary channel area provides additional conveyance. Note that the channel maintenance zone in Figure 2-9 is still defined by the top of the outer levees. Figure 2-10 is a photo of the lower Guadalupe River, where this type of wide channel alignment with a secondary channel occurs.

Not all SMP channels are as wide and complex as those shown in Figures 2-7 through 2-10. Many of SCVWD's flood protection channels are narrow, linear, and uniform. Figure 2-11(a) depicts a linear trapezoidal channel built in concrete. This type of channel is demonstrated by the photo of San Tomas Aquino Creek (Figure 2-12). Figure 2-11(b) shows a simple trapezoidal channel with earthen banks and bed. These channels are very common in the Project Area and typically have maintained, grass-lined banks. These channels generally do not provide complex or high quality instream features or habitats. The photograph of Sierra Creek (Figure 2-13) illustrates this common channel type.



Figure 2-8. Coyote Creek

These photos show the vegetated benches adjacent to the low-flow channel and instream bar features. The upper banks are grass covered without taller canopy riparian vegetation.

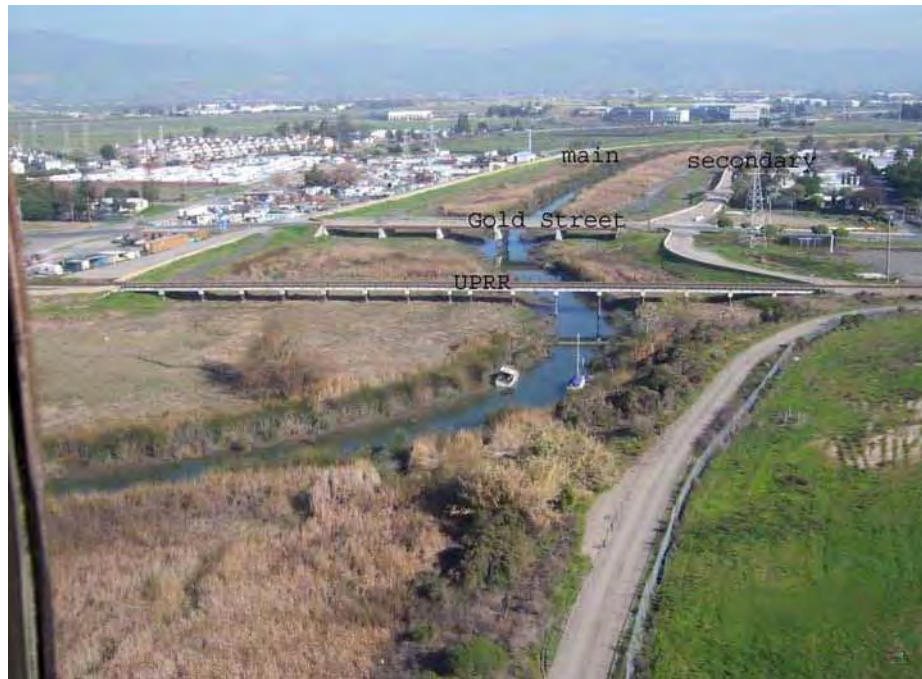


Figure 2-10. Guadalupe River

The photo shows wide overall channel alignment, with secondary back channel.



Figure 2-12. San Tomas Aquino Creek

The photo illustrates a concrete linear trapezoidal channel.



Figure 2-13. Sierra Creek

Sierra Creek is a uniform and linear trapezoidal flood protection channel, characterized by limited vegetation, grass lined streambanks, and narrow easement because of adjacent homes to left. Maintenance access road is seen to the right.

2.1.6 Overview of SMP Approach

Work Area Projections and Annual Work Plans

Based on the work performed during the SMP 2002–2009, SCVWD has developed projections for reasonably anticipated work expected to occur over the next 10-year period of its maintenance program (2012–2022). The estimated work projections identify the potential creek and maintenance activities by watershed. Although general maintenance needs have shown a relatively consistent pattern historically, projections of future stream maintenance activities are not meant to represent the exact extent or volume of work that may occur.

Actual stream maintenance activities vary from year-to-year, depending on weather and hydrologic conditions, frequency and extent of past maintenance activities, and budget/funding availability. Future maintenance needs may occur, consistent with overall SMP Update projections, but they may vary from the specific location originally projected. Some maintenance activities, such as bank stabilization, cannot be reasonably projected because they happen in response to hydrologic events and a variety of site-specific factors. Under the SMP Update, maintenance activities would be conducted throughout the program area, as long as they do not result in new or more significant environmental effects than those evaluated and disclosed in this document.

Work site projections for specific activities are described in greater detail below. Based on SCVWD's experience during the 2002–2009 period (see Tables 2-1, 2-2, and 2-3), it is likely that the actual maintenance conducted during 2012–2022 will be less than the projected values.

Although the SMP Update work projections provide an overview of expected maintenance needs over the period 2012–2022 (as described above), maintenance needs in any given year would reflect a variety of factors. Each year, SCVWD would develop an annual stream maintenance work plan. The work plan would identify the locations, lengths, and areas for the given year's proposed maintenance activities. This information would be provided to overseeing regulatory agencies in the annual Notice of Proposed Work (NPW) and provided at <http://www.valleywater.org/Services/StreamMaintenanceProgram.aspx>, SCVWD's Web site. The actual maintenance activities that were conducted in a given year would be summarized and verified in the end of year annual Post Construction Report (PCR), and also would be made available to regulatory staff and the public.

Adaptability

The existing SMP was designed to be adaptable, to be updated and modified as conditions require. One way the SMP Update would achieve this would be by supporting site-specific assessments to determine the most effective method to achieve the maintenance goal. As conditions allow and technologies and environmental regulations evolve, this would support an assessment for work activity modifications that could result in decreased impacts. In addition, annual post-maintenance meetings, or "lessons learned" meetings, are planned so that SCVWD and resource agency staff can evaluate the effectiveness of both the resource protection and the maintenance methods used. These evaluations would be used to update Best Management Practices (BMPs) and SMP processes to create a greater understanding of how to accomplish environmentally-sensitive, fiscally-sound maintenance work.

2.1.7 Maintenance Guidelines

SCVWD undertakes three primary assessment programs to provide maintenance guidelines, standards, and baseline conditions to help prioritize and guide maintenance activities. These three programs include the District's Maintenance Guidelines standards, Watershed Asset Management Program, and Geomorphic Data Collection Program. These programs are briefly summarized below:

- **Maintenance Guidelines:** In the late 1980s and through the 1990s, the District developed the "Engineering-Based Maintenance Guidelines," or Maintenance Guidelines, to document the ongoing need for maintenance of flood protection channels to provide adequate flood conveyance capacity. The Maintenance Guidelines are organized into five volumes: Northwest Zone, North Central Zone, Central Zone, East Zone, and South Zone. A variety of information is provided for channels, including: channel location maps, summary data tables, background information, maintenance thresholds, maintenance history, and data and calculations used to develop the maintenance thresholds. Some creeks have the full set of information listed above; while some channels only have a subset of this

information. Most commonly, a maintenance history of past District actions is provided for included creeks. The District has not evaluated all the channels in the SMP program area and some channel evaluations are more complete than others. However, the District frequently relies on the information within the Maintenance Guidelines to identify maintenance needs.

- **Asset Management Program:** Begun in 2008, the District has undertaken an inventory of all assets within watersheds including creeks, levees, channels, mitigation sites, and other features. Through the inventory, District channels and other features are assessed for their condition and performance. This assessment provides a baseline to develop and optimize maintenance strategies and capital improvement programs. It is anticipated that integrating operations, maintenance, and capital investment decision-making processes will minimize the cost of owning these assets without jeopardizing financial health, the environment, the community, or service delivery and reliability. This program improves on existing practices by utilizing more advanced tools and protocols (making better use of information systems and technology), incorporating enhanced planning processes (using best practices and established models), and through increased consistency and standardization.
- **Geomorphology Data Collection Program:** In 2011, the District initiated this program to provide geomorphic support to the District's capital projects and maintenance activities, collect geomorphic data, and develop and maintain a geomorphic database. Through the Geomorphology Program, the District is building an understanding of creek geomorphology to improve the planning, design, and implementation of stream and channel maintenance and capital projects. The program's database directly assists the operations and maintenance activities in District watersheds and also provides information to support the evaluation of the Maintenance Guidelines described above. The Geomorphology Program includes collecting standard channel geometry, creek profile, and sediment conditions data. The program uses this information to evaluate bankfull flow elevations and discharge, and other conditions. Channel photos are included in the database. The Geomorphology Program assesses streams and channels to identify existing erosion conditions and practical solutions where appropriate, to improve stream stability within a dynamic equilibrium.

2.2 Maintenance Activities

The 2012 SMP Update would involve five categories of work activities: bank stabilization, sediment removal, vegetation management, management of animal conflicts, and minor maintenance. In addition, the SMP Update would include maintenance of canals, which may include any of the five activities described above. Full details regarding these maintenance activities are provided in Appendix A, and are summarized below.

2.2.1 Bank Stabilization

Stabilizing and repairing eroding stream channel banks and levees is a routine SMP activity. Based on the maintenance work conducted from 2002–2010, the District stabilizes about 0.94 mile of stream channel banks or levees on average per year. Although bank stabilization is routine and expected, the specific work locations are not certain until after each winter season. As a result, this type of maintenance (unlike sediment removal and vegetation management) is not a projected work activity. Rather, bank stabilization maintenance needs are assessed annually on an as-needed basis. Mitigation for bank stabilization projects is also determined on an annual basis depending on the identified work need.

For the SMP Update, the District has slightly revised and reorganized the list of suitable SMP bank stabilization treatments. These techniques are described in detail in the 2012 SMP Manual (Appendix A) and summarized in Table 2-4, which identifies the SMP's 13 bank stabilization treatments (and variations), shows mitigation ratios, describes whether the technique uses softscape or hardscape elements, and notes whether the technique requires review by regulatory agencies. SCVWD favors the use of soft bank stabilization approaches that use bio-technological approaches in place of methods that create more hardened banks.

Table 2-4. SMP Bank Stabilization Methods (SMP Update 2012)

ID No	Method	Mitigation Ratio	Hard/Softscape	Requires Plan Review by Agencies
1	Earth Repair	1:1	Soft	No
1B	Earth Repair with Buried Rock	1:1	Soft	No
2	Live Construction	1:1	Soft	No
2A	Live Construction with Boulder Toe	1:1 if boulder toe is vegetated 1.5:1 if boulder toe is not vegetated	Vegetated: Hybrid Not Vegetated: Hard	No
2B	Live Construction with Log Toe	1:1	Soft	No
3	Contour Wattling	1:1	Soft	No
3A	Contour Wattling with Boulder Toe	1:1 if boulder toe is vegetated 1.5:1 if boulder toe is not vegetated	Soft	No
3B	Contour Wattling with Log Toe	1:1	Soft	No
4	Brush Mattress (Brush Layering)	1:1	Soft	No

Table 2-4. SMP Bank Stabilization Methods (SMP Update 2012)

ID No	Method	Mitigation Ratio	Hard/ Softscape	Requires Plan Review by Agencies
4A	Brush Mattress (Brush Layering) with Boulder Toe	1:1 if boulder toe is vegetated 1.5:1 if boulder toe is not vegetated	Vegetated: Hybrid Not Vegetated: Hard	No
4B	Brush Mattress (Brush Layering) with Log Toe	1:1	Soft	No
5	Surface Matting (Erosion Mats)	1:1	Soft	No
5A	Surface Matting (Erosion Mats) with Boulder Toe	1:1 if boulder toe is vegetated 1.5:1 if boulder toe is not vegetated	Vegetated: Hybrid Not Vegetated: Hard	No
5B	Surface Matting (Erosion Mats) with Log Toe	1:1	Soft	No
6	Add Rock to Invert	1:1	Hybrid	No
6A	Rock Cross Vanes	1:1	Hybrid	No
6B	Root Wads and Boulders	1:1	Hybrid	No
6C	Live Log Crib Walls	1:1	Soft	No
6D	Log Revetment	1:1	Hybrid	No
7	Cellular Confinement System	2:1	Hard	Yes
8	Rock Blanket	2:1	Hard	Yes
8A	Boulder Revetment	2:1	Hard	Yes
8B	Boulder Revetment with Soil and Vegetation	1:1	Hybrid	Yes
9	Articulated Concrete Blocks	3:1	Hard	Yes
9A	Articulated Concrete Blocks with Planted Areas	2:1	Hard	Yes
10	Concrete Crib Walls	3:1	Hard	Yes
11	Sacked Concrete	3:1	Hard	Yes
12	Gunit Slope Protection	3:1	Hard	Yes
13	Earth with Rock Toe on Grass Lined Channels ¹	2:1 ² None if rock is below bankfull depth, and includes some element of instream complexity. For areas above bankfull depth, use mitigation ratios as specified in ID Nos. 1 thru 12 above.	Soft/Hybrid	No

1 Grass lined channels are those where grass is the predominant or sole vegetation, and that contain no significant riparian structure. The NPW submittal will include photographs and descriptions to justify use of this line item.

2 None if rock is below bankfull depth and includes some element of instream complexity.

Source: Data compiled by Horizon Water and Environment in 2011

Through the SMP, SCVWD may implement stream bank stabilization activities when the problem: causes or could cause significant damage to SCVWD property and/or adjacent property; or is a public safety concern. Additional benefits of stabilizing eroding stream banks include reducing instream sedimentation, and protecting water quality and other beneficial uses such as riparian habitat and recreation.

As described in the SMP Manual, sites with eroding or destabilized banks are evaluated for their local on-site soil conditions, slope stability, channel position, and geomorphic processes. An overall assessment is performed to determine the most appropriate treatment to stabilize the bank, with consideration of habitat, species use, and other site beneficial uses. Based on the condition assessment, the SCVWD design engineer will develop a treatment approach that stabilizes the streambank while trying to minimize the use of hardscape. Depending on work site conditions and hydraulic forces, the design engineer may favor the use of hardscape elements over softscape treatments if there is an increased risk for potential failure of the softscape treatments over the longer-term.

2.2.2 Sediment Removal

Sediment removal is the act of mechanically removing sediment deposited within a flood protection channel. Sediment removal is required when accumulated sediment reduces a channel's flow conveyance capacity, prevents facilities or appurtenant structures from functioning as intended, or impedes fish passage and access to fish ladders. Sediment is removed from SCVWD facilities to assist a channel to convey flow and minimize flood hazard, according to the existing channel design. Sediment removal under the SMP Update would not include increasing a channel's flow conveyance capacity beyond the as-built design. Sediment removal activities may occur along creeks, canals or at stream gauges.

Sediment removed from SCVWD channels and facilities would be assessed according to the appropriate Sediment Characterization Plan established by the RWQCBs. These characterization plans would be used to determine the physical and chemical properties of the removed sediment using continuous core, discrete sampling, and residual sampling methods. Collected sediment that met wetland reuse criteria area could be transferred to the south Bay Pond A8 to support tidal habitat restoration efforts at the pond. Sediment that did not meet these standards but met standards for landfill disposal would be disposed at a local landfill. Sediment that exceeded hazardous waste criteria would be disposed at an appropriate hazardous waste facility (e.g., Kettleman Hills hazardous waste landfill). Pond A8 is anticipated to have sufficient capacity for sediment disposal for the next 2-5 years. Additional ponds, including ponds A5, A1, A2W, and A9 have been identified as potentially suitable long-term sediment reuse locations. SCVWD also may add other upland or aquatic sites to its disposal options. Potential upland sites include the abandoned quarry pond next to the Coyote Parkway site, as well as the U.S. Fish and Wildlife Service refuge at Bair Island and Phase 2 of the South Bay Salt Pond restoration effort.

Sediment removal is a projected work activity. However, as discussed above, decadal projections may not reflect the actual maintenance work conducted. Annual sediment removal needs would vary, depending on yearly climate and hydrologic conditions. Since 2002, annual sediment removal volumes have ranged from a minimum of 8,845 cubic yards (cy) in 2008 to a maximum of 96,240 cy in 2006 (see Table 2-5).

Table 2-5. Actual Sediment Removal Work, 2002–2009

Year	New Work Length (feet)	Repeated Work Length (feet)	Sediment Removed (cy)	Annual Precipitation (in)
Santa Clara Basin				
2002	36,664	0	51,368	12.98
2003	32,946	4,608	85,504	13.62
2004	29,205	30,559	35,899	15.10
2005	9,170	45,315	39,420	22.80
2006	10,199	22,238	95,379	20.42
2007	17,989	13,027	33,523	8.38
2008	7,229	5,245	8,205	10.71
2009	5,512	5,294	14,720	13.83
Total	148,914 feet (28.20 miles)	126,286 feet (23.92 miles)	364,018 cubic yards	
Pajaro Basin				
2002	2,532	0	751	17.36
2003	0	0	0	15.93
2004	2,853	0	1,765	19.66
2005	13,161	0	2,664	24.95
2006	1,760	0	861	18.45
2007	0	0	0	5.84
2008	600	0	640	14.62
2009	903	0	594	20.31
Total	21,809 feet (4.13 miles)	-	7,274 cubic yards	

Source: Data compiled by Horizon Water and Environment in 2011

As summarized in Table 2-6, over the next 10 years, estimated sediment removal activities may include 43 miles of creeks and canals in the Project Area, with approximately 35.4 miles in the Santa Clara Basin and 7.4 miles in the Pajaro River Basin. Table 2-6 also identifies how much of the work estimated for 2012–2022 would be located in “new” channel areas (i.e., areas where work was not previously projected for the 2002–2012 period in the existing SMP). For 2012–2022, about 19 miles of new channel areas are projected to have sediment removal work not included in the original program. For example, the Guadalupe Watershed will contain over 8 miles of these new work areas. However, as shown in the fourth column of Table 2-6, about 15 miles of channel area that

were included in the existing SMP projection for the 2002–2012 work period are no longer included in the current projections for the coming decade of work. For example, the West Valley Watershed would decrease in sediment removal activities by over 8 miles. Thus, as a program, the SMP Update would gain about 4 miles of net additional projected sediment removal activities.

Figures 2-14 through 2-18 (provided at the end of this chapter) are maps that show past and future projected sediment removal activities for the primary watersheds of the Project Area. More specifically, in Figures 2-14 through 2-18, sediment removal work that was projected for the first decade of the SMP (2002–2012) is shown in red. The areas shown in goldenrod are reaches where maintenance work was projected for the original decade 2002–2012 that also has been projected for the next decade. Finally, the areas shown in blue are reaches where new work areas have been projected for the 2012–2022 maintenance period.

Table 2-6. Projected Sediment Removal Work, 2012–2022

Watershed	2012–2022 Total Projected Sediment Removal (miles)*	New Work Areas for 2012–2022 (miles)	Work Areas from 2002–2012 Not Projected for 2012–2022 (miles)
Santa Clara Basin			
Lower Peninsula	3.9	0.7	2.6
West Valley	3.8	0.9	8.3
Guadalupe	11	8.7	0
Coyote	16.7	5.9	0.7
Pajaro Basin			
Pajaro	7.4	3.1	3.5
Total	42.8 miles	19.3 miles	15.1 miles

Source: Data compiled by Horizon Water and Environment in 2011

2.2.3 Vegetation Management

Similar to sediment removal activities, vegetation management activities are intended to maintain the hydraulic conveyance and flood safety functions of SCVWD's channels. Vegetation maintenance would seek to trim, thin, or remove vegetation that was causing flow blockages or significantly increasing hydraulic roughness and thereby reducing channel conveyance capacity. Vegetation management methods would include pruning, hand or mechanical removal, herbicide application, mowing, disking, flaming, and grazing. These methods are described in detail in the SMP Manual. Vegetation management activities may occur along creeks, canals or at stream gauges. Protective measures associated with these approaches are described in the BMP Listings (Table 2-12), provided at end of this chapter.

Certain types of vegetation management work (hand removal, herbicide, pruning, mowing, and discing) are projected activities as shown in Table 2-7. As defined in the projections, vegetation management may occur from the creek center to the outer edge of SCVWD property line/SCVWD management area. Other types of vegetation management (e.g., flaming and grazing) would be performed on an as-needed basis along any creek within the Project Area where SCVWD has fee title or easement. Tree removals may occur on a site-specific basis, per the criteria and mitigation described in the SMP Manual.

Table 2-7. Projected Vegetation Management Work Type by Watershed

Watershed	Hand Removal (miles)	Herbicide (miles)	Pruning (miles)	Mowing (miles)	Discing (miles)
Santa Clara Basin					
Lower Peninsula	2.5	47.8	22.7	3.8	0
West Valley	3.2	146	61.7	32.6	0
Guadalupe	6.9	277.7	211.6	146.8	.4
Coyote	88.6	213.4	159.5	58.3	.5
Pajaro Basin					
Pajaro	49.7	162	156.6	45.9	.9
Total	150.9 miles	846.9 miles	612.1miles	287.4miles	1.8 miles

Note:

Values do not account for overlapping work areas.

Source: Data compiled by Horizon Water and Environment in 2011

SCVWD's preference is to first thin or prune trees before considering tree removal. However, when tree removal is necessary, SCVWD prioritizes retaining native trees in place of non-native species. In general, the program includes the removal of trees and shrubs less than or equal to 12 inches diameter at breast height (dbh). Chapter 2 of the SMP Manual describes the District's vegetation management and tree removal activities in detail.

Several maps, provided at the end of this chapter, describe the location of vegetation maintenance activities within the primary watersheds of the SMP. Hand removal, pruning, and mowing vegetation management activities that occur below the bankfull elevation ("instream activities") are shown in Figures 2-19 through 2-23. Similar to the sediment removal maps, the three colors on the map indicate locations for:

- projected activities for the first decade of the SMP, 2002–2012 (shown in red);
- projected activities for both the first decade (2002–2012) and second decade (2012–2022) of the stream maintenance program (shown in goldenrod); and
- projected activities for only the SMP Update, 2012–2022 (shown in blue as new maintenance areas).

Figures 2-24 through 2-28 show the location of hand removal, pruning, mowing, and discing vegetation activities that occur above the bankfull elevation in the channel (“non-instream”) and are differentiated according to the first or second decade of the SMP, using the same three-color system as in the other maps.

Figures 2-29 through 2-33 include maps that show where instream (below bankfull elevations) herbicide application is projected to be applied. Figures 2-34 through 2-38 show where non-instream herbicide application (above bankfull elevation) is projected for the SMP Update. Because most of the Project Area channels have maintenance road access from either side of the channel (see Figures 2-8 and 2-13), vegetation maintenance requiring large mechanized equipment typically would occur from the top-of-bank access road and the upper bank/bench zone. Large mechanized equipment would not be used to cross an active/wet stream channel. Vegetation management occurring in mid-channel areas that are separated by active wet creeks would only be conducted with hand-held tools (including mechanized hand-held tools), to prevent the need of crossing an active wet stream course with large mechanized equipment; although small trucks may need to cross wetted areas for creek access.

2.2.4 Management of Animal Conflicts

In the Project Area, animals can damage SCVWD channels, facilities, and infrastructure. The stability of banks and levees may be reduced as a result of animal burrowing, foraging on mitigation sites, and interfering with work activities. Management of animal conflicts refers to the use of avoidance tactics, biological control, site alterations, habitat alteration, and lethal control to reduce conflicts between SCVWD facilities and local species. These control methods are described in the Management of Animal Conflicts chapter of the SMP Manual (see Appendix A). Animal conflict management can occur year-round, though the selected control methods are dependent on the site conditions, animal specific life cycles, and applicable regulatory permits.

Although routine, the extent and specific locations for animal conflict management are generally not known in advance of the conflict itself. As such, animal conflict management activities are not projected, with the exception of rodent control activities on designated levee reaches. Rodent control activities are estimated to occur on approximately 115 miles of creeks and canals in the Santa Clara Basin and approximately 15 miles in the Pajaro Basin annually (whereby each bank is counted separately).

2.2.5 Minor Maintenance

Minor maintenance activities would be performed to repair and maintain SCVWD facility functions. Minor maintenance activities may occur along creeks, canals or at existing stream gauges. Minor activities are small in size and have limited potential to impact environmental resources. A minor activity is defined as an activity that results in removing less than 0.05 acres (2,178 square feet) of wetland or riparian vegetation. The minimum size for any minor vegetation work to be notified in SCVWD’s NPW is 0.01 acres (436 square feet) per project, which includes any vegetation work necessary for access or staging.

Minor maintenance activities proposed under the SMP Update would include:

- cleaning and minor sediment removal at outfalls, culverts, flap gates, tide gates, inlets, grade control structures, fish ladders, and fish screens (limited to 50 cy);
- minor in-channel (or canal) sediment removal (less than 10 cy);
- trash and debris removal;
- repair and installation of fences and gates;
- grading and other repairs to restore the original contour of existing maintenance roads;
- grading small areas without vegetation above stream banks to improve drainage and reduce erosion;
- repair of structures with substantially similar materials within approximately the same footprint (i.e., replacement of concrete linings, culverts, pipes, valves);
- graffiti removal;
- installation and on-going maintenance of mitigation and landscape sites (including irrigation, weed control, and replanting of dead or declining individual plants until success criteria were met);
- removal of obstructions at structures to maintain function (i.e., bridges, stream flow measuring stations, box culverts, storm drain outfalls and drop structures); and
- stream gauge maintenance including stilling well cleaning, painting of gauge house, replacing/adding antenna or solar panels to existing structures, replacing instrumentation, cableway repair, weir cleaning of algae and debris, and unburying staff markers/orifice/communication pipes.

Minor maintenance activities are not projected and may occur anywhere within the Project Area. The minimum reporting size for any minor vegetation work is 0.01 acres per project. Yearly minor maintenance activities would be limited to less than 0.2 acres of wetland or riparian vegetation impact per year. Similarly, cumulative minor maintenance activities would be limited to 2 acres total wetland or riparian vegetation impact over the 10-year planning period.

2.2.6 Canal Maintenance

The SMP Update would include routine and periodic maintenance conducted by SCVWD on its canals. The location of SCVWD canals is shown in Figure 2-39, and representative photos are provided in Figure 2-40. Unlike the streams and flood protection channels that are the primary focus of the existing SMP, SCVWD's canals are primarily water supply transport facilities, but they do provide additional flood management functions locally.

Routine canal maintenance may include all of the general work activities discussed above, including: sediment removal, vegetation management, management of animal conflicts, bank stabilization, and minor maintenance.

Sediment removal in canals is typically small in scale and localized (generally 10 cy or less per occurrence), and is conducted to clear small sediment deposits ("plugs") where local

sediments have either entered the canal or have been deposited. Canal sediment removal activities are generally performed using a small loader from the top of the adjacent canal access road. Canal sediment removal may also be conducted using hand tools because of its small volume.



Figure 2-40. The Almaden-Calero Canal

Sediment removal may occur anywhere along the canals; however, no more than 1,000 cy of sediment would be removed per calendar year from all SCVWD canals.

Vegetation management along the canals would include some periodic herbicide use, inside the canals and along the access roads to address weed growth. In the upland margins adjacent to the canals, SCVWD would conduct periodic and routine tree hand pruning, hand removal, and grass mowing, using the same techniques described above in the *Vegetation Management* section. In general, vegetation management may occur anywhere along or within the canals; however, no more than 6 acres of work would be performed in a given calendar year. In addition, disking would be restricted to the right bank of Coyote Alamitos canal only.

Additional minor maintenance activities performed along the canals would include minor grading of the access road, graffiti removal, fence repair, erosion repairs, management of animal conflicts, and bank stabilization activities. Minor structural repairs may include repairing a concrete lining, culvert, pipe, valve, weir, instream orifice, or communication pipe. These canal maintenance activities, because of their small-scale and uncertain location, are not projected activities and may occur anywhere along the canals as needed.

2.2.7 Activities Not Included in the SMP Update

The SMP Update would not include the following activities, which are therefore not analyzed in this document:

- work that would increase the designed flood conveyance or water supply capacity of a facility;
- maintenance work in stream reaches that are above the 1,000-foot elevation contour
- removal of hazard trees;
- maintenance work of dams, reservoirs and other water supply facilities, such as pipelines outside of stream corridors, groundwater percolation ponds, and instream summer dams;
- installation of new or major modification of fish ladders;
- work conducted on private property by others;
- work performed by other agencies;
- other large construction projects or capital improvement projects;
- area-wide, intensive maintenance, or rehabilitation of large (greater than 0.05 acre) mitigation projects installed as part of SCVWD Capital Improvement Projects (CIPs)
- emergency repair work; and
- continued implementation of mitigation measures in the existing SMP.

A situation is considered an emergency if it is a sudden, unexpected occurrence involving a clear and imminent danger that demands immediate action to prevent or mitigate loss of or damage to life, health, property, or essential public services (Public Resource Code Section 21060.3). Although emergency situations will not be covered in the SMP, SCVWD would make every effort to follow the guidance provided in the SMP Manual (Appendix A) when implementing activities under emergency conditions.

Large construction projects and CIPs are not considered routine stream maintenance and are not addressed through the SMP. Future CIPs will analyze and account for long-term maintenance impacts under the CIP's environmental review.

2.3 Stream Maintenance Process Overview

2.3.1 Annual Work Sequence

Annual administration of the SMP Update would occur in three phases (as shown in Figure 2-41). In the winter and early spring, maintenance needs would be assessed and prioritized, the annual maintenance work plan would be developed, and the regulatory agencies would be notified through the ~~Notification~~ Notice of Proposed Work (NPW) document. During the summer and early fall, maintenance projects would be more specifically planned and

implemented. Toward the end of the year and into the following early winter, the annual Post-Construction Report (PCR) would be developed, distributed, and SCVWD staff and managers would meet with regulatory partners to review the past year's work. These work phases are described in more detail below.

Phase 1: Annual Maintenance Activity Identification, Development and Documentation

The first phase of the annual work sequence would begin with identifying maintenance needs. Maintenance work could be proposed either as part of the annual work plan through the NPW submittal, subsequent regulatory notifications/submittals, or as identified throughout the year via individual work orders. SCVWD internal work orders would provide a description of the project, schedule of implementation, estimated costs, permit requirements, and other special conditions.

For minor maintenance projects, the appropriate resource protection measures and BMPs would be identified and work would proceed. For other maintenance activities, a more detailed review process would occur and may include site assessment and/or engineering evaluations. These activities would be reviewed to verify they were covered under the long-term regulatory clearances provided in conjunction with the SMP Update. If the work was not covered by the SMP Update, the appropriate project development process would be followed, and may include individual CEQA review and project-specific regulatory permits or clearances. For covered activities, appropriate resource protection measures and BMPs would be identified and added to the work order. For maintenance activities requiring compensatory mitigation, mitigation would be planned and notified according to Appendix C (2012–2022 SMP Update Mitigation Approach Memorandum) and summarized in Section 2.4.3 below. Pre-work meetings would be held with appropriate SCVWD staff to discuss site-specific requirements, environmental constraints, and BMPs.

Phase 2: Implementation of Annual Routine Stream Maintenance Work

Maintenance activities would be implemented during the relevant work season (as described below) or as described in the work order. Specific maintenance steps and methods are described in more detail below. In addition, direct field monitoring of maintenance work would occur for both sediment removal and bank repair activities. This would be done so that work would be conducted as described in the annual NPW. Field monitoring would include inspections of BMPs so that they would be effective in preventing adverse impacts to water quality and stream habitats.

Maintenance Timing

Work windows for sediment removal, instream vegetation and herbicide application, and bank stabilization generally would be conducted between June 15 and October 15. However, if the fall season remained dry, work could continue until the first significant rainfall event occurred. A significant rainfall event is defined as local rainfall of 0.5 inches or greater within the watershed over a 24-hour period. The following precipitation gages are used to determine maintenance work allowance. Each SMP watershed has a target rain gage to assess rainfall conditions and to determine if a significant rain event has occurred.

- Lower Peninsula Watershed (station located in the City of Mountain View Corporation Yard)
- West Valley Watershed (station located at Santa Clara County West Yard Maintenance facility)
- Guadalupe Watershed (station located near the City of San Jose, Office of Emergency Services)
- Coyote Watershed (Penitencia Water Treatment Plant, station located at Anderson Dam.)
- Pajaro Watershed (Church Ave percolation ponds, station located in Morgan Hill)

Even if no significant rainfall occurred, no instream work (excluding hand pruning and hand removal in non-steelhead streams) would continue later than December 31.

SCVWD also relies on weather forecasts to prepare for situations when significant rains are anticipated. After October 15, 72-hour look-ahead weather forecasts from the National Weather Service (or local vendor such as the Western Weather Group) would be consulted. If a significant rainfall was forecast within the 72-hour forecast window, maintenance work that may result in sediment runoff to the stream would be stopped, to allow adequate time to complete erosion control measures.

In general, permits issued by regulatory agencies for the SMP and/or mitigation requirements stemming from the CEQA analysis may place additional limitations on work types and windows; these would be verified and incorporated into the Proposed Project implementation as applicable.

Other activity-specific requirements related to work windows would include:

- Bank Stabilization:
 - Projects ~~that were more than 50 percent complete on October 15~~ may continue until the approved date stated below completion or until the first 3-day forecast that includes significant rainfall.
 - In Creeks Supporting Anadromous Fish
 - An extended work window may occur until October 31st for bank stabilization projects that will be 50% complete by October 15th.
 - In Creeks Not Supporting Anadromous Fish
 - An extended work window may occur until November 30th for projects that will be 50% complete by October 15th or until significant rainfall.
 - An extended work window may occur until November 30th for new bank stabilization projects that will be completed in five (5) days or less, or until significant rainfall.

- After October 15, all incomplete bank repair projects would be winterized¹ before the date when the forecast included significant rainfall.
- Sediment Removal:
 - Work may occur until December 31.
 - Additional sediment removal work may occur ~~after the first significant rainfall event only~~ within Berryessa Creek (0+88+80; 232+70-236+00; 284+30-288+00), Lower Silver Creek (Reach 3 between Stations 37+40 and 381+19), Thompson Creek (0+00-10+00), Canoas Creek (0+00-390+00), Ross Creek (0+00-86+30), Calabazas Creek (35+00-105+00), and San Tomas Aquino Creek (80+00-100+00), if clearance was provided through a preconstruction biological survey; site conditions were dry; vehicles would not impact roadways; no water diversions were used; and work would stop in the event of any rainfall forecast 3 days in the future; ~~and e-mail notification of work would be provided to regulatory agencies 2 days before start of work.~~
 - Sites would be maintained in a winterized state during extended work windows.
 - Work may occur after a significant rainfall event but no later than December 31.
- Vegetation Management:
 - As a non-ground disturbing activity, instream hand pruning may occur year-round except where equipment would need to access the site by crossing a creek or otherwise affect water quality, or in steelhead creeks ~~where the general work window would apply to Dec 31 or significant rainfall.~~ As described above, mechanized equipment would not cross an active (wet) creek.
 - Upland vegetation activities and all other non-projected non-instream maintenance work may occur year-round, weather permitting. Upland vegetation activities would include work occurring above the bankfull hinge point (see Figure 2-7) to the outer edge of SCVWD management area.

Bank Stabilization

As summarized in Table 2-4, the SMP Update would include several bank stabilization approaches, ranging from “soft structures” (e.g., willow brush mattresses, log crib walls, and pole plantings), to “hard structures” (e.g., concrete, and sacked concrete, ~~and gabions~~), or a combination of hard and soft structures. Bank stabilization measures that create extensive inflexible, impervious channel banks with essentially no revegetation ability or habitat opportunities are termed “hard” and the product is called “hardscape.” Measures that retain

¹ Winterization is the process to prepare and maintain work sites with the appropriate BMPs to prevent erosion, sediment transport, and protect water quality during the rainy season. Winterization occurs on completion of bank repairs or on incomplete projects after October 15 and before the forecast of significant rainfall, 0.5 inches or greater of local watershed rainfall within 24 hours. Winterization would be completed before the occurrence of such actual significant rainfall.

natural earthen banks and have higher capacity to support vegetation or habitat are termed “soft” and the product is called “softscape.”

Hybrid bank stabilization refers to a combination approach whereby softscape bank stabilization approaches like live construction, contour wattling, brush mattresses, or surface erosion matting are combined with a limited amount of rock toe protection at the base of the bank stabilization site. Additional boulders at the toe of the bank treatment is only applied if necessary, if there are hydraulic shear forces affecting the bank site, or geologic slumping or mass wasting forces affecting the site (because of the site’s position or slope) that require the additional presence of mass/rock at the base of the slope.

SCVWD has committed that no more than half of non-in-kind bank repairs would consist of impervious hardscape each year. Bank stabilization also would include preventative maintenance to reduce the chances of banks eroding in the future. Refer to the Bank Stabilization Methods table in the Bank Stabilization chapter of the SMP Manual for further descriptions of each method (see Appendix A). Equipment used for bank stabilization activities may include excavators, bulldozers, and front-end loaders for bank grading and earth-moving activities. Staging typically would occur on adjacent access roads. Soil and other repair materials typically would be staged in areas that were previously disturbed (i.e., service roads, turn-outs, etc). In some cases, bank stabilization projects may require the installation of temporary roads and ramps to access the work site. Where tree pruning would not provide adequate clearance for maintenance vehicles and heavy equipment, SCVWD would make an effort to select an access route that would avoid mature, native trees. Where trees may have to be removed, SCVWD would target non-native trees for removal. Removal of large branches from mature trees for equipment access would be evaluated carefully and avoided whenever possible. The average duration of bank stabilization work is 10 working days per site.

Sediment Removal

Sediment may be removed by excavators, grade-alls, draglines, and/or loaders. Temporary dams, pipes, and existing overflow channels would be used if water needed to be bypassed around the site during work. Sediment removed from the channel typically would be placed in 10- or 20-cy dump trucks, and prepared for off-site hauling and disposal. Stockpiling of sediment to allow for drying before disposal only would be done when sufficient space would allow the temporary piling of material; however, this would not be typical. The average duration of a sediment removal project would be 10 days, although it could last up to several weeks, depending on the size of the project. Further details regarding the specific methods used for sediment removal are provided in Appendix A.

Vegetation Management

Vegetation management techniques would include hand removal, using small tools and hand-held equipment (chainsaws, weed-eaters, flamers), mechanical removal using heavy equipment, herbicide application, and grazing. Heavy equipment used for vegetation removal may include a disc attachment on a tiller to clear aboveground herbaceous plants on the upland parcels outside of stream banks; flail mowers to cut weeds and other

vegetation on the inside slope of some levees or stream banks; or a backhoe or rubber-tracked excavator, used for removing material from the channel.

New techniques described in the 2012 SMP Manual (Appendix A) would include grazing and the use of flammers to manage vegetation. In limited circumstances, SCVWD may use various domestic animals to provide non-specific weed control. Such animals may include sheep, goats, or other appropriate species. Larger scale grazing by cattle is normally not appropriate for SCVWD facilities. Flaming would involve the use of a hand-held, propane gas powered flamer to control weed seedlings.

Herbicide application in upland areas typically would be sprayed from a truck-mounted rig or applied using a controlled drop applicator. Spray trucks would be used to apply herbicides to areas such as maintenance roads. Herbicides may be selectively sprayed instream following appropriate biological surveys and clearances. Only herbicides and surfactants approved for aquatic use by the USEPA and registered for use by the California Department of Pesticide Regulation would be used for SCVWD's aquatic vegetation control work.

The SMP Update includes an expanded list of herbicide types and a broader area of application. For example, application of herbicides in the Pajaro River watershed was not included in the existing 2002 SMP Manual and FEIR. This restriction was self-imposed and later was formalized in some of the regulatory permits issued for the SMP in 2002. Use of surfactants also was limited under the original program.

The Proposed Project would enable herbicide use within the Pajaro River watershed and incorporate surfactants under restricted conditions as an application aid. Additional application adjustments would include: a longer work window (see above); application in upland areas; and application in sensitive species habitat under certain restrictions. See Table 2-11 at the end of this chapter for a comparison between existing SMP (2002–2012) and the SMP Update (2012–2022) approaches.

Once vegetation management was complete, a portion of the woody green waste would be chipped for mulch and stored for later use at SCVWD property, while the remainder would be transferred to a composting landfill.

Management of Animal Conflicts

Management of animal conflicts generally would be conducted with the use of hand-placed materials using small tools and hand-held equipment. This would include establishing buffers and biological repellants, trapping, as well as lethal baiting and fumigant applications (see Appendix A for more details on methods). Heavy equipment may be used to modify habitat conditions and reduce or eliminate burrowing animals through surface compaction, filling of burrows with slurry, and tilling areas to destroy food sources. All lethal control methods would be designed to comply with the County Agriculture Commission requirements and would be implemented using BMPs that would be designed to avoid or minimize effects on special-status species.

Minor Maintenance and Canal Maintenance

In general, Minor Maintenance and Canal Maintenance would include activities already described under the previous four categories. Further information regarding their implementation can be found in Appendix A.

Phase 3: Annual Reporting

At the conclusion of each year's maintenance season, a Post-Construction Report (PCR) would be developed and submitted to the appropriate resource agencies. This report would include a summary of the year's maintenance projects, describing what activities occurred and where, a description and confirmation of the restoration and mitigation activities implemented, and other SMP updates as necessary.

Annual Program Review

Following the submittal of the PCR, resource agency staff would be invited to meet with SCVWD staff for an annual "lessons learned meeting," to be held in February or March of each year, to evaluate the effectiveness of both resource protection and maintenance methods used in the preceding construction season. The information discussed at these annual lessons learned meetings would be used to adaptively manage the BMPs and SMP processes to improve SMP effectiveness.

2.4 Programmatic Impact Avoidance, Minimization, and Compensatory Mitigation

A three-part sequence would occur so that Proposed Project impacts would be avoided, minimized, or addressed through compensatory mitigation. First, the SMP Update itself has several built-in or internal restrictions and protocols to avoid or minimize impacts by limiting how and where maintenance could occur. Second, the operational implementation of maintenance activities would be required to adhere to specific BMPs. Thirdly, residual impacts remaining after these two impact avoidance and minimization efforts would be addressed through compensatory mitigation. These three approaches to address potential Proposed Project impacts are further described next.

2.4.1 Programmatic Impact Avoidance and Minimization

The Proposed Project would incorporate the following overarching principles to protect natural resources and guide decision-making for stream maintenance activities and projects. Proposed Project BMPs (discussed further below) were developed to be consistent with these principles.

Principle 1: SCVWD will implement all routine stream maintenance activities according to the process and protocols established in the SMP Update.

Principle 2: Decisions regarding the necessity of routine sediment removal and vegetation management activities (to restore channel flow capacities)

will be made following the thresholds and standards provided in the District's Maintenance Guidelines and Asset Management Program.

Principle 3: SCVWD will implement measures to avoid and minimize impacts to native species and habitat.

Principle 4: All maintenance activities will be performed in a manner that has the least impact to the natural flora, fauna, and aquatic resources while meeting SMP Update objectives.

Supporting these SMP principles, the following measures and protocols would be applied by SCVWD so that the work would be effective and also would avoid or minimize potential environmental impacts:

- No work above 1,000-foot contour level. This elevational boundary would limit the extent of the SMP and prevent maintenance work in the higher watershed lands.
- Identifying the Minimum Maintenance Need: SCVWD would identify and evaluate maintenance needs using the standards and thresholds in the Maintenance Guidelines and Asset Management Program. These guidelines are based on the engineered design of the channel and outline the level of maintenance required to maintain adequate flood protection capacity in the streams and canals within SCVWD's jurisdiction. This measure would minimize unnecessary intervention in stream processes and restrict maintenance to only necessary and appropriate activities.
- Consideration of Existing Channel Features in Analysis and Design: SCVWD would attempt to retain the functions of instream habitat features such as low-flow channels and pools after sediment removal in areas used for migration by salmonids. In such areas, the geomorphic functions of existing channel features would be incorporated into the project design approach, as feasible, to restore instream habitat functions. Similarly, SCVWD would consider the hydraulic influences upstream and downstream of bank stabilization sites to address potential stream velocity and erosion effects. Bank stabilization projects would be designed to minimize impacts to the stream channel.

2.4.2 Best Management Practices

The maintenance activities would incorporate a range of measures to minimize undesired effects on the environment and to implement the SMP principles described above. BMPs specifically created for the SMP Update encompass the range of proposed maintenance activities and the environmental conditions of the Project Area. The BMPs for the SMP Update are listed in Table 2-12 at the end of this chapter. These BMPs include general BMPs that would apply to all work, as well as activity-specific BMPs designed to address anticipated effects of certain work activities or particular types of resources.

2.4.3 Compensatory Mitigation¹

SMP Mitigation Program under the Existing 2002 SMP

SMP mitigation measures were developed in 2002 to compensate for anticipated impacts caused by SMP activities. Mitigation for sediment removal and vegetation management was based on a comprehensive accounting in 2002 of the potential impacts from maintenance activities on instream wetlands, tidal wetlands, riparian vegetation, and other sensitive habitats in the program area. Table 2-8 summarizes the existing mitigation requirements for ongoing SMP activities. The SMP mitigation program includes land acquisition, habitat protection, and wetland restoration/creation, ~~and invasive species control activities~~ to mitigate for maintenance activities.

An important aspect to the original mitigation approach was that the “programmatic” or “up front” mitigation was calculated based on the maximum work projections. The programmatic mitigation included coverage for repeat maintenance work at sites in perpetuity. Impacts from other non-projected maintenance activities such as bank stabilization projects are mitigated on an “as-needed” basis using defined mitigation ratios as maintenance projects occur.

As shown in Table 2-8, to date not all of the SMP’s mitigation requirements have been met. The District is committed to completing all remaining mitigation requirements. Appendix A of the Mitigation Approach Memorandum (which is included in the DSEIR as Appendix C) includes a letter from the District to San Francisco Bay RWQCB that describes the current status of the SMP mitigation program and presents a plan to meet all of the District’s SMP mitigation requirements identified in the 2002 SMP and the associated permits for the 2002-2012 program period. The District Board has recently approved the purchase of a property (known as the “Castle & Cooke property”). The District continues to pursue land acquisition opportunities for Stream and Watershed Protection. In addition, a proposed project to restore wetlands at Laguna Seca is currently under technical review. If feasible, this project could provide some or all of the remaining needed wetland mitigation credit.

The mitigation requirements shown in Table 2-8 were established in 2002 based on the maximum SMP work projections at that time. The actual amount of sediment removal work conducted during the 2002–2012, as shown in Table 2-1, was 371,292 cy, which is about 47 percent of the total sediment removal volume of 795,600 cy projected in 2002. Or, in terms of length, 32.3 miles of sediment removal have been conducted to date, about 56 percent of the 2002 projected length of 58 miles. Completed vegetation management activities since 2002 have been more consistent with the original work projections.

¹ While the mitigation program is not technically part of the Proposed Project, it is summarized in this chapter for clarity and because the impacts of the mitigation program were considered in the environmental analysis in this DSEIR. A more complete description of the mitigation program is presented in Appendix C, and mitigation measures for significant impacts have been included in the impact analysis. These mitigation measures would direct the District to implement the mitigation program, and each mitigation measure describes the manner in which it would be implemented to address a significant impact.

As shown in Table 2-8, 30 acres of required tidal wetland mitigation for the program have been completed. This is approximately 21 acres greater than the mitigation that would have been required based on the area of tidal wetland impacted to date. The District is proposing to use the 21+ acres already provided as mitigation as credit toward future tidal habitat impacts that are not yet identified or accounted for. The smooth cordgrass control mitigation component compensates for the time-lag between immediate impacts to tidal wetlands from SMP activities and the delay in the creation of a functional tidal wetland mitigation project. The smooth cordgrass control mitigation requirement is complete. Freshwater wetland mitigation in the Santa Clara Basin is not yet complete, but in the Pajaro Basin, freshwater wetland impacts have been mitigated fully. As described above, SCVWD is committed to completing the mitigation requirements assigned for the 2002 program work projections, for which the 2002 projected areas will have mitigated for work activity impacts in perpetuity.

Table 2-8. 2002 SMP Mitigation Program

Mitigation Type	Mitigation Purpose	Mitigation Requirement	Mitigation Completed to Date	Percent of Requirement Completed*
Tidal Wetland Restoration	Restore Bay salt ponds to tidal marsh conditions, provides mitigation for tidal wetland impacts	30 acres	30 acres	100%
Freshwater Wetland Creation/Restoration	Convert or restore areas to seasonal or perennial wetlands, provides mitigation for non-tidal wetland impacts	10-acre Santa Clara Basin 4-acre Pajaro Basin	7-acre Santa Clara Basin 4-acre Pajaro Basin	70% Santa Clara Basin 100% Pajaro Basin
Stream and Watershed Protection	Preserve, protect, and improve streams and associated watersheds, provides mitigation for non-tidal wetland and CRLF impacts	Freshwater wetland habitat: <ul style="list-style-type: none"> ▪ 820-1080 acres acquired (81-acre credit) for Santa Clara Basin ▪ 11-acre credit for Pajaro Basin ▪ CRLF Habitat—108-acre credit District-wide 	Freshwater wetland habitat: <ul style="list-style-type: none"> ▪ 10-acre credit (125 ac total) for Santa Clara Basin ▪ 11-acre credit (138 ac total) for Pajaro Basin ▪ CRLF Habitat – 56-acre credit Santa Clara Basin 	<ul style="list-style-type: none"> ▪ 12% Santa Clara Basin ▪ 100% Pajaro Basin ▪ 52% CRLF Habitat
Giant reed (<i>Arundo donax</i>) Control	Control giant reed outbreaks; map, revegetate, educate, and coordinate reed control efforts in the county	125 ac District-wide	116 acres District-wide	93%
Invasive Smooth Cordgrass Control (<i>Spartina alterniflora</i>)	Control Invasive Cordgrass along tidal shorelines, provides mitigation for time lag until tidal wetland mitigation is established	Up to 10 acres in tidal areas	10 acres	100%

* With the purchase of the Castle & Cooke property, some of the mitigation requirements not yet complete as shown above would be completed. Also, this status summary does not include achievement of final success criteria at completion of the monitoring period.

Source: Data compiled by Horizon Water and Environment in 2011

2012 Updates to the 2002 SMP Mitigation Program

The proposed SMP Update process includes reviewing and revising the existing compensatory mitigation package that was established in 2002. The 2002 SMP Mitigation Program that covers the original projected activities (sediment removal and vegetation management) would remain in place to provide compensatory mitigation in perpetuity for the channels identified in the 2002 work projections. The channel reaches shown in red in the maps at the end of this chapter (Figures 2-14 through 2-38) have all had their mitigation provided for through the original mitigation program. Because the original programmatic mitigation was developed to address compensatory mitigation for the 2002 SMP identified channels based on full work projections, the mitigation provided for these reaches (shown in red and gold colors in the maps) continues in perpetuity. No new significant environmental effects or a substantial increase in the severity of previously identified significant effects are anticipated under the SMP Update in these locations.

As described in Appendix C to the DSEIR (Mitigation Approach Memorandum), SCVWD would provide compensatory mitigation for SMP Update activities requiring mitigation by acquiring or protecting appropriate mitigation lands (including populations of special-status species, where impacts are to such species), using conservation easements or other vehicles as appropriate, or would provide suitable ecological services-based mitigation as needed to compensate for annual impacts. SCVWD would identify funding mechanisms to support the long-term maintenance and conservation of such mitigation lands and projects.

The compensatory mitigation program proposed for the SMP Update addresses potential impacts anticipated for new work sites that were not included in the original SMP work projections and not accounted for in the initial compensatory mitigation package. These sites are the blue channel reaches shown in the maps of Figures 2-14 through 2-38. Potential residual impacts from maintenance that would require mitigation in new work sites are similar in nature to the potential impacts that were identified in the 2002 SMP FEIR. Although the existing SMP mitigation would continue to serve as mitigation for the original work sites identified in the 2002 SMP, additional mitigation would be required for the new work sites.

The District identified the new work sites based on its understanding of maintenance needs for the 10-year period beginning in 2012. However, as observed from 2002 until the present, it is highly unlikely that all of the identified potential new sites will have actual work conducted. Because of the potential inaccuracy of using projected work estimates developed in 2010–2011 as a basis for defining mitigation requirements until 2022, the District has adjusted its approach in mitigation requirement identification. The District is now using the actual work sites (versus work site projections) as the final basis for mitigation requirements in new work sites. The SMP Update projects some “new” maintenance activities in previously mitigated areas. The impacts of this “new” work are considered to have been mitigated by the previous mitigation program because they are in the same work category (e.g., vegetation management).

The 2012–2022 maintenance work projections provided in the 2012 SMP Update DSEIR are useful estimates of where work would be conducted. The projections represent the

District's best estimate of where work would occur. The work projections are "conservative" because work likely would not occur in all of the newly identified reaches shown in the maps provided at the end of this chapter. The work projections are a useful basis to consider potential programmatic impacts to wetlands and other habitats and develop a suitable mitigation approach that can guide the next decade of the program.

Besides addressing mitigation for these new work sites, the compensatory mitigation program has been revised to improve overall mitigation feasibility and quality. A key constraint to the original SMP mitigation approach was its emphasis on land acquisition. As a result, feasible mitigation was often not available in a manner to support the program's needs. For the 2012 SMP Update, a broader suite of suitable mitigation approaches has been developed to provide increased flexibility while maintaining high mitigation quality.

As a result of this revised approach, ~~three~~^{two} key changes are being made to the existing programmatic mitigation program (for sediment removal and vegetation management) for the 2012 SMP Update:

1. **Ecologic Services.** In addition to land acquisition-based mitigation projects that provide mitigation in perpetuity (i.e., mitigate for repeat impacts in the same work location), programmatic mitigation for sediment removal and vegetation management also would include ecologic services-based mitigation projects for individual maintenance projects. These approaches would provide mitigation on a "pay as you go" or incremental basis. Ecologic services-type mitigation projects would only mitigate for an individual work activity. Service-based "pay as you go" mitigation would be identified annually based on the annual maintenance work plan, provided in the annual NPW, and verified in the end of year annual PCR.
2. **Project Specific Accounting.** Rather than identifying all the necessary mitigation areas (acreages) for sediment removal and vegetation management activities "up front" in 2012 for the new work sites where maintenance would occur between 2012 and 2022, mitigation criteria and metrics would be identified by standard unit measures (typically acreages). The specific extent of mitigation required for any given year's work will be defined annually when the work areas are precisely identified. This annual mitigation analysis will clearly distinguish mitigation requirements for new work areas from mitigation already accomplished for work in areas projected in 2002.~~The actual mitigation requirement would be calculated annually when the work sites were more precisely defined.~~
3. ~~**New Programmatic Mitigation.** In addition to the mitigation approaches described above, the District would provide additional programmatic habitat mitigation through the instream complexity and gravel augmentation mitigation programs.~~

These ~~two~~^{three} adjustments to the programmatic mitigation program are further described in Appendix C (2012–2022 SMP Update Mitigation Approach Memorandum). The District would be able to use "pay as you go" mitigation projects/services to provide incremental mitigation annually on an as-needed basis. The District also could continue to purchase lands to provide longer-term mitigation needs. In this way, the District would have more

flexibility to pursue suitable mitigation opportunities through either long-term land acquisition or annual mitigation project approaches. Mitigation credits from the 2002 SMP mitigation program (Stream and Watershed Protection) may potentially be applied to new work areas in need of mitigation support. The District would work with the appropriate regulatory staff to identify, review, and approve the potential application of existing mitigation credit toward new work areas.

As described above, the location and extent of bank stabilization activities are difficult to predict and have never been projected work activities. Since 2002, bank stabilization projects that required mitigation have been mitigated using an annual assessment and “pay as you go” incremental mitigation process. For bank stabilization projects, identifying impacts and necessary mitigation would continue to occur annually, depending on what bank work was needed. Bank stabilization treatments and their associated mitigation ratio requirements are listed in Table 2-4, and may include programmatic mitigation components (instream complexity) as well.

Table 2-9 summarizes the key attributes of the updated mitigation approach for sediment removal and vegetation management activities. Details for these programs are provided in Appendix C (2012–2022 SMP Update Mitigation Approach Memorandum).

Table 2-9. 2012–2022 Mitigation Approach for Sediment Removal and Vegetation Management Activities

Mitigation Component	Ratio/ Metric	Notes
Land acquisition (in-kind preservation/enhancement)	3:1	Mitigation applied in perpetuity
Land acquisition (in-kind restoration)	1.5:1	Mitigation applied in perpetuity
Land acquisition (watershed lands out of kind)	8:1	Mitigation applied in perpetuity
Invasive plant management program	1.2:1	Mitigation assessed and applied annually
Riparian restoration and planting program	1.2:1	Mitigation assessed and applied annually
Tree plantings for removal of trees less than or equal to 12 inches dbh	1:1 2:1 3:1	Mitigation ratio determined by tree scoring protocol provided in the 2012–2022 SMP Update Mitigation Approach Memorandum (Appendix C of this document), in its Appendix B.
Instream habitat complexity features	0.5 1:1	Mitigation can be applied either through a number of projects or according to project area, using the 0.5 1:1 ratio
Gravel augmentation in steelhead creeks	1:1	Mitigation option for impacts in steelhead creeks due to sediment removal activities

Source: Data compiled by Horizon Water and Environment in 2011

In addition to the programmatic mitigation described in Table 2-9 for sediment removal and vegetation management, mitigation would be provided to compensate for impacts to individual special-status species resulting from SMP Update activities. The species for which compensatory mitigation would be provided, and the form that this mitigation would take, is identified in Section 3.3, *Biological Resources* and will be further described in pending Biological Opinions (BOs) for the 2012 SMP Update to be issued by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS), as well as the Incidental Take Permit that will be issued by the California Department of Fish and Game (DFG). The impact analysis in this document is intended to provide CEQA coverage for all mitigation activities under the Proposed Project, to the extent that the mitigation projects would not result in any new or more significant impacts than those disclosed in this DSEIR.

The mitigation approach presented in this DSEIR has been developed to meet the requirements of CEQA. However, it is anticipated that the mitigation approach will be further refined as part of the programmatic permit renewal process. Therefore, in no case would the mitigation program be changed so that it would be less protective of the impacted resources in question, compared to the approach presented in this DSEIR. Once mitigation requirements have been finalized, SCVWD staff would track and report annual and cumulative work quantities to verify compliance with the one-time accounting mitigation package.

2.5 Permits and Approvals

Several state and federal agencies granted permits and approvals to SCVWD to implement the 2002–2012 SMP. These same agencies are working together as the Inter-Agency Work Group (IAWG) in an effort to refine the SMP Update and required mitigation, and issue new multi-year permits and approvals to authorize SCVWD to continue implementing the SMP between 2012 and 2022. As CEQA responsible agencies, state permitting agencies will utilize this SEIR (once it is certified) as their CEQA compliance document in issuing permits. If applicable, the U.S. Army Corps of Engineers (USACE) will use this SEIR as background information for Section 404 permit NEPA compliance, and the USFWS and NMFS will use this SEIR as background information for Section 7 consultation with the USACE. A summary of agencies, applicable laws/regulations, and existing permits proposed for renewal is provided in Table 2-10

Table 2-10. Agency Approvals

Agency	Applicable Law/Regulations Guiding Jurisdiction	Current or Prior Permits or Approvals for Maintenance		
		Description	Original Date of Issuance	Date of Expiration
California Department of Fish and Game (DFG)	Fish and Game Code Section 1602	Lake and Streambed Alteration Agreement, Notification No. R3-200-0119	July 8, 2002	Dec 31, 2014 10
		<u>Lake and Streambed Alteration Agreement, Notification No. 1600-2009-0361-R3</u>	<u>Jan 21, 2011</u>	<u>Dec 31, 2014</u>
	Fish and Game Code Section 2081 (California Endangered Species Act)	N/A	N/A	N/A
<u>California State Lands Commission</u>	<u>State Lands Act</u>	<u>Lease of State Lands</u>	<u>Various</u>	<u>Various</u>
NOAA National Marine Fisheries Service	Endangered Species Act (ESA) Section 7	Biological Opinion AR: 151422-SWR-01-SR-408	July 3, 2002	July 15, 2012
Central Coast Regional Water Quality Control Board	Porter-Cologne Water Quality Control Act Clean Water Act (CWA) Section 401, Water Quality Certification	Waste Discharge Requirements Order No. R3-2002-0008	March 22, 2002	March 2012
San Francisco Bay Regional Water Quality Control Board	Porter-Cologne Water Quality Control Act CWA Section 401, Water Quality Certification	Waste Discharge Requirements and Water Quality Certification— Order No. R2-2002-0028	Feb 27, 2002	February 2012
San Francisco Bay Conservation and Development Commission	Federal Coastal Zone Management Act of 1972	Permit No. M77-113 Authorization to conduct work in tidal sloughs in Santa Clara County	Feb 8, 1978	June 1, 2015
U.S. Army Corps of Engineers (USACE)	CWA Section 404 Rivers and Harbors Act of 1899, Section 10 NEPA	Permit Number 22525S	August 7, 2002	July 15, 2012
U.S. Fish and	Fish and Wildlife	Biological Opinion Permit	July 5, 2002	July 15, 2012

Table 2-10. Agency Approvals

Agency	Applicable Law/Regulations Guiding Jurisdiction	Current or Prior Permits or Approvals for Maintenance		
		Description	Original Date of Issuance	Date of Expiration
Wildlife Service	Coordination Act Endangered Species Act	Number 22525S		

N/A = Not applicable; the District was not required to obtain a Section 2081 take permit in the 2002 SMP.

Source: Data compiled by Horizon Water and Environment in 2011

Table 2-11. Comparison of Key Differences between 2002 SMP and 2012 SMP Update

Description of Activity	2002 SMP	2012 SMP Update
Bank Stabilization		
Work Window	Generally between July 1 and October 15, 50 percent completed project may extend to October 30.	<p>July 1 <u>June 15</u> to October 15. <u>Projects may continue until the approved date stated below 50 percent completed projects by October 15 may continue until completion, or until the first 5-day 72-hour forecast that includes significant rainfall (greater than 0.5 inch/24 hours).</u></p> <ul style="list-style-type: none"> • <u>In Creeks Supporting Anadromous Fish</u> <ul style="list-style-type: none"> ○ <u>An extended work window may occur until October 31st for bank stabilization projects that will be 50% complete by October 15th.</u> • <u>In Creeks Not Supporting Anadromous Fish</u> <ul style="list-style-type: none"> ○ <u>An extended work window may occur until November 30th for projects that will be 50% complete by October 15th or until significant rainfall.</u> ○ <u>An extended work window may occur until November 30th for new bank stabilization projects that will be completed in five (5) days or less, or until significant rainfall.</u>
Exclusions	Does not cover certain bank stabilization methods in high-quality fish or riparian habitat.	Preference is for softscape methods.

Table 2-11. Comparison of Key Differences between 2002 SMP and 2012 SMP Update

Description of Activity	2002 SMP	2012 SMP Update
Methods Table	29 methods (see SMP Manual)	Methods list revised, 9 methods updated (see below), 7 methods eliminated (see Table 2-4): <ul style="list-style-type: none"> • 1B-Earth Repair with Buried Rock • 2B-Live construction with Log Toe • 3B-Contour Wattling with Log Toe • 4B-Brush Mattress (Brush Layering) with Log Toe • 5B-Surface Matting (Erosion Mats) with Log Toe • 6-Add Rock to Invert • 6A-Rock Cross Vanes • 6D-Log Revetment • 13-Earth with Rock Toe Below OHW
Agency Review Time for Bank Stabilization Designs	45 days for review and response	30 days for review and response
Mitigation Requirements	Based on stream-side impact mitigation matrix and standard success criteria (see BMP 2.4)	Mitigation will be determined via the Bank Stabilization Methods Table and the programmatic mitigation approach for instream complexity. Success criteria to be determined based on specific site conditions reviewed via the Mitigation Feasibility Assessment.
Winterization	Required for active instream work sites if significant rainfall (greater than 0.5 inch/24hours) occurs after October 15.	Considered to occur upon completion of bank repairs or on incomplete projects after October 15 and prior to forecast of significant rainfall (greater than 0.5 inch/24hours)

Table 2-11. Comparison of Key Differences between 2002 SMP and 2012 SMP Update

Description of Activity	2002 SMP	2012 SMP Update
Management of Animal Conflicts		
General	Included as part of “Minor Activities.. Incorporated rodent control using rodenticide, traps, and smoke bombs. Limited detail.	<p>New section of SMP Manual describing in detail, the management of animal conflicts. Now includes:</p> <ul style="list-style-type: none"> • Maintenance of Sanitary Conditions • Avoidance • Biological control • Physical alterations • Habitat alterations • Non-lethal trapping/relocation; and • Lethal control
Requirements	<p>BMP 3.21 listing of several requirements including:</p> <ul style="list-style-type: none"> • No rodenticides or fumigant application near salt harvest mouse range, one-half mile of burrowing owl locations, or potential range of sensitive amphibians • Minimization of secondary poisoning impacts including carcass clean-up and surveys 	<p>Additional requirements include:</p> <ul style="list-style-type: none"> • No rodenticides or fumigant application within the current mapped potential range of sensitive amphibians. • Specifically designed bait stations to prevent entry of California Tiger Salamander, California Red-Legged Frog, or Foothill Yellow-Legged Frog species, or Salt Marsh Harvest Mouse. • <u>Live traps will be designed to allow salt marsh harvest mouse to enter and exit easily.</u> • Minimization of secondary poisoning impacts including clean-up and disposal of spilled bait • <u>A 656-yard buffer will be established around known burrowing owl locations where no rodenticides or fumigants (including smoke bombs) will be used. A 0.5-mile buffer will be established around known bald eagle and golden eagle nesting locations where no rodenticides will be used.</u>

Table 2-11. Comparison of Key Differences between 2002 SMP and 2012 SMP Update

Description of Activity	2002 SMP	2012 SMP Update
Minor Maintenance		
Work Activities	Approximately 12 distinct work activities.	Updated list of 11 work activities. Pruning/ vegetation control and animal control activities are no longer classified as Minor Maintenance (included in Vegetation and Animal Conflict management instead)
Definition of Minor	No size limitations described for clearing and minor sediment removal activities	<ul style="list-style-type: none"> • Cleaning and minor sediment removal activities at facilities/structures are limited to 50 cubic yards • Minor sediment removal less than 10 cubic yards per site may be removed anywhere instream
Mitigation/Limitations	<p>Equivalent area of mitigation provided for annual impacts greater than 0.2 acres to wetland and riparian vegetation removed by minor work activities (or 2 acres for the 10 year program).</p> <ul style="list-style-type: none"> • Less than 0.01 acre not reported • .01–.05 accounted • 0.2 acre annual max/year • 2 acres max per 10-year permit • Coverage per compensatory mitigation 	<ul style="list-style-type: none"> • See Appendix C for a description of mitigation requirements. • Minor maintenance requirements for annual impacts less than or equal to 0.2 acres per year remain the same.

Table 2-11. Comparison of Key Differences between 2002 SMP and 2012 SMP Update

Description of Activity	2002 SMP	2012 SMP Update
<i>Sediment Removal</i>		
Work Window	Instream work limited to June 15–October 30 or first significant rainfall after October 15 (greater than 0.5 inch/24 hours), whichever occurs first.	<p>June 15–October 15, with extended work window under the following conditions:</p> <ul style="list-style-type: none"> • <u>Creeks Supporting Anadromous Fish:</u> <u>An extended work window may occur from October 15 through October 31, or until local rainfall of 0.5 inches or greater falls within the subject watershed within a 24-hour period, whichever occurs first.</u> • <u>Creeks Not Supporting Anadromous Fish:</u> <u>An extended work window may occur from October 15 through November 30th, or until local rainfall of 0.5 inches or greater falls within the subject watershed within a 24-hour period, whichever occurs first.</u> • <u>In lower quality areas, work may occur after a significant rainfall event but no later than stops at first significant rainfall (0.5 inches of rain in a 24-hr period) or December 31, per watershed</u> <ul style="list-style-type: none"> ○ Additional conditions needed for work on Berryessa Creek (0+88+80; 232+70-236+00; 284+30-288+00), Lower Silver Creek (Reach 3 between Stations 37+40 and 381+19), Thompson Creek (0+00-10+00), Canoas Creek (0+00-390+00), Ross Creek (0+00-86+30), Calabazas Creek (35+00-105+00), and San Tomas Aquino Creek (80+00-100+00), after a rainfall event (0.5 inch/24 hours) ○ Sites maintained in a winterized state during extended work window
<i>Vegetation Management</i>		
General Description of Activities	<ul style="list-style-type: none"> • In-Channel • Upland 	<ul style="list-style-type: none"> • Woody • Herbaceous

Table 2-11. Comparison of Key Differences between 2002 SMP and 2012 SMP Update

Description of Activity	2002 SMP	2012 SMP Update
Pruning Activities	<p>Identified as a means to remove over-hanging growth in upland areas.</p> <p>Removal of instream vegetation by hand can occur between July 1–March 1</p>	<ul style="list-style-type: none"> • Now defined as a work activity which includes corrective pruning and coppicing, (for both in-channel and upland areas) • Outside the bankfull area, activity may occur year round, weather permitting. • Activity permitted year-round within the instream area except: <ul style="list-style-type: none"> – Where equipment would need to access a site by crossing a creek or would affect water quality – In steelhead streams - where work would be allowed until Dec. 31 or first significant rainfall occurs (greater than 0.5 inch/24 hours)/watershed, whichever transpires first.
Hand Removal Activities	<p>Described as a means to remove vegetation both in-channel (trees, shrubs, and weeds) and upland areas, less than 6 inches dbh only, everywhere.</p> <p>Removal of instream vegetation by hand can occur between July 1–March 1</p>	<p>Greater description of activity includes:</p> <ul style="list-style-type: none"> • Hand-removal of woody vegetation occurs for the following reasons: <ul style="list-style-type: none"> – Maintenance (retain conveyance capacity) – Bank Stabilization – Ecological Health/Stewardship (includes habitat improvement, snag removal) • Stump treatment is included as hand removal (not considered Herbicide work). • Tree/shrub removal 6–12 inches dbh. Tree removal is subject to removal assessment process and criteria. • Timing same as described for Pruning Activities • “Pay as you go” mitigation • Additional requirements include supervision by qualified specialist for certain pruning types, and tree removal compliance with local tree ordinances.

Table 2-11. Comparison of Key Differences between 2002 SMP and 2012 SMP Update

Description of Activity	2002 SMP	2012 SMP Update
Mechanical Removal	For control of herbaceous vegetation. Includes mowing and discing in upland areas. <ul style="list-style-type: none"> • Mowing work window=May–October • Discing work window= undefined 	Similar, though now includes instream mowing. <ul style="list-style-type: none"> • Mowing work window= February 1–November 30 • Discing work window= February 1–October 15 • Instream mowing work window= June 15–October 15
Flaming	Not included or described in the SMP.	<ul style="list-style-type: none"> • Countywide, year-round • Limitations include application by trained staff, no use during periods of high fire danger, and notification to local fire districts upon request prior to use.
Grazing	Not included or described in the SMP	<ul style="list-style-type: none"> • Where other herbaceous work activity is projected. • Year-round
Herbicide Use	<ul style="list-style-type: none"> • Limitations in Pajaro River Basin <ul style="list-style-type: none"> – Allowed only within channel for invasive vegetation removal. • BMPs call for avoidance of serpentine habitats. • Work windows <ul style="list-style-type: none"> – In aquatic areas July 1–October 15 – Guadalupe River work window July 1–August 15 – No application if rain is forecast within 72 hours – Upland Areas year round except when rain is forecast within 72 hours • Additional guidance <ul style="list-style-type: none"> – Refer to product label and Endangered Species database for pesticide regulation for use within 1.25 miles of known CRLF areas 	Expanded activity location and timing: <ul style="list-style-type: none"> • Similar application in Santa Clara and Pajaro River Basins • Instream application window June 15–October 15 with extended window until Dec 31 or first significant rainfall (greater than 0.5 inch/24 hours)/watershed, whichever transpires first. • Upland application window year-round, weather permitting • Limitations include <ul style="list-style-type: none"> – biological clearance required – pest control recommendation – Foliar application only to less than 2 inches dbh and less than 8-foot tall woody vegetation – Application allowed in serpentine areas with additional limitations – Use of aquatic herbicides in CRLF and CTS mapped areas only if creek is dry and no rain forecast for 48 hrs. • Includes use of surfactants on the 14 steelhead streams with additional limitations/considerations

Table 2-12. BMPs Listings**SECTION A –Pre-Project Planning and General BMPs**

General BMPs are applicable program-wide, for most routine SMP maintenance activities. These measures include standard construction practices and impact avoidance measures that will minimize potential environmental impacts. These BMPs will be implemented by the stream maintenance crew, as appropriate and as overseen by site managers, for all activities associated with the maintenance program. The majority of these BMPs are implemented prior to and during maintenance operations, though the level of activity varies depending on the work type.

Other General BMPs are conducted prior to implementing maintenance activities on site. This group of measures includes procedures to identify site or maintenance constraints, such as biological or cultural resource surveys which coincide with permit compliance requirements. Site design constraints for sediment and bank stabilization activities in particular are also identified as part of the pre-project planning process.

BMP Number	BMP Title	BMP Description
GEN-1	In-Channel Work Window	<p>All ground-disturbing maintenance activities (i.e., sediment removal, bank stabilization, tree removal, and mechanized vegetation management) occurring in the channel (below bankfull) will take place between June 15 and October 15. <u>Requests for work window extensions must be submitted to the regulatory agencies by October 1st, listing the creek names and reaches where a work extension will occur. Work extensions vary per work activity. The agencies will provide a single response within one week. Significant rainfall applies after October 15. An extension through December 31 may apply if the following requirements are met and regulatory agency approval is received:</u></p> <p>For ground-disturbing activities:</p> <ul style="list-style-type: none"> ▪ Work may continue if no significant rainfall, defined as greater than 0.5 inches per 24 hours within a local watershed, is either forecasted¹ or observed. Following October 15th, maintenance work shall cease for the season if such a rain event is forecasted or observed. <p><u>Sediment removal</u></p> <ul style="list-style-type: none"> ▪ <u>Extended Work Window:</u> <ol style="list-style-type: none"> 1. <u>Creeks Supporting Anadromous Fish:</u> <u>An extended work window may occur from October 15 through October 31, or until local rainfall of 0.5 inches or greater falls within the subject watershed within a 24-hour period, whichever occurs first.</u> 2. <u>Creeks Not Supporting Anadromous Fish:</u> <u>An extended work window may occur from October 15 through November 30th, or until local rainfall of 0.5 inches or greater falls within the subject watershed within a 24-hour period, whichever occurs first.</u> ▪ <u>Extended Work Window in Lower Quality Areas:</u> <ol style="list-style-type: none"> 1. <u>After a significant rainfall event (0.5 in/24 hrs), sediment removal work may occur until December 31.</u>

¹ Weather Forecasts. No phase of the project may be started if that phase and its associated erosion control measures cannot be completed prior to the onset of a storm event if that construction phase may cause the introduction of sediments into the stream. Seventy-two-hour weather forecasts from the National Weather Service or other localized and more detailed weather forecast service will be consulted prior to start up of any phase of the project that may result in sediment runoff to a stream.

BMP Number	BMP Title	BMP Description
		<p>2. <u>Work will only occur on Berryessa Creek (0-88+80; 232+70-236+00; 284+30-288+00), Lower Silver Creek (Reach 3 between Stations 37+40 and 381+19), Thompson Creek (0+00-10+00), Canoas Creek (0+00-390+00), and Ross Creek (0+00-86+30), Calabazas Creek (35+00-105+00), and San Tomas Aquino Creek (80+00-100+00) can continue with the following conditions:</u></p> <ul style="list-style-type: none"> ○ site conditions are dry and access for all construction equipment and vehicles will not impact waterways; <u>and</u> ○ all work will stop if any rainfall is forecast for the next 72 hour period; <u>and</u> ○ email notification of work status will be provided to regulatory agencies two days in advance of scheduled work. <p>3. <u>Work may occur after a significant rainfall event but no later than December 31.</u></p> <p>4. <u>Sites must be maintained in a rapidly winterizable¹ state (implement control measures BMP GEN-20). Bank stabilization projects that are 50% complete by October 15 may continue until the approved date stated below completion or until 0.5 inches of rain is predicted in the next 24 hr period. Prior to a forecasted significant rainfall event (0.5 in/24 hrs), all incomplete bank stabilization projects must be winterized.</u></p> <p>1. <u>In Creeks Supporting Anadromous Fish</u></p> <ul style="list-style-type: none"> ○ <u>An extended work window may occur until October 31st for bank stabilization projects that will be 50% complete by October 15th.</u> <p>2. <u>In Creeks Not Supporting Anadromous Fish</u></p> <ul style="list-style-type: none"> ○ <u>An extended work window may occur until November 30th for projects that will be 50% complete by October 15th or until significant rainfall.</u> ○ <u>An extended work window may occur until November 30th for new bank stabilization projects that will be completed in five (5) days or less, or until significant rainfall.</u> <ul style="list-style-type: none"> ▪ Instream hand pruning and hand removal of vegetation will occur year round, except when: <ul style="list-style-type: none"> ○ Wheeled or tracked equipment needs to access the site by crossing a creek, ponded area, or secondary channel; or ○ Work occurs in streams that support steelhead. In these streams instream vegetation maintenance will cease on December 31 or when local rainfall greater than 0.5 inches is predicted within a 24-hour period of planned activities, whichever happens first. <p><u>Modification and removal of instream large woody debris will occur at any time of the year, and as further described in the NMFS Biological Opinion. if imminent danger of a flood threat precludes leaving the wood in place.</u></p>
GEN-2	Instream Herbicide Application Work Window	<p>Instream herbicide applications will take place between June 15 and October 15³¹, with an extension through December 31 or until the first occurrence of any of the following conditions; whichever happens first:</p> <ul style="list-style-type: none"> ▪ local rainfall greater than 0.5 inches is forecasted within a 24-hour period from planned application events; or ▪ when steelhead begin upmigrating and spawning in the 14 steelhead creeks, as determined by a qualified

¹ Winterization is the process to maintain work sites with the appropriate BMP's to prevent erosion, sediment transport, and protect water quality. Winterization occurs upon completion of bank repairs or on incomplete projects after October 15 and prior to the forecast of significant rainfall, 0.5 inches or greater of local watershed rainfall within 24 hours. Winterization shall be completed prior to the occurrence of such actual significant rainfall.

BMP Number	BMP Title	BMP Description
		<p>biologist (typically in November/December),</p> <ul style="list-style-type: none"> ○ A qualified biologist will determine presence/absence of sensitive resources in designated herbicide use areas and develop site-specific control methods (including the use of approved herbicide and surfactants). Proposed herbicide use would be limited to the aquatic formulation of glyphosate (Rodeo or equal). Surfactant <u>use</u> would be limited to <u>non-ionic products, such as Agri-dex, Competitor, or another brand name using the same ingredients</u>. Any modifications to these materials would require review and approval by NMFS and CDFG. ○ A qualified fisheries biologist will review proposed herbicide application methods and stream reaches. The fisheries biologist would conduct a pre-construction survey (and any other appropriate data research) to determine whether the proposed herbicide application is consistent with SMP approvals concerning biological resources and determine which BMPs would be instituted for work to proceed. <p><u>In addition, herbicide application requirements are as follows:</u></p> <ul style="list-style-type: none"> ▪ <u>no direct application into water;</u> ▪ <u>herbicide application shall not occur when wind conditions may result in drift;</u> ▪ <u>herbicide shall only be applied after the surfactant has a "wet" appearance on the target plants in order to avoid run off; and</u> ▪ <u>where permitted, surfactants shall be added to the spray solution prior to application.</u>
GEN-3	Avoid Exposing Soils with High Mercury Levels	<p>Sediment removal and bank stabilization projects in portions of the Guadalupe River watershed affected by historic mercury mining may expose soils containing mercury.</p> <ol style="list-style-type: none"> 1. In specified maintenance reaches in the Guadalupe River Basin, soils that are likely to be disturbed or excavated shall be tested for mercury (Hg). Soils shall be remediated if: <ol style="list-style-type: none"> a. disturbed or excavated soils exposed to streamflow below the elevation of the 2.33-year flow event exceed 1 ppm Hg; or b. disturbed or excavated soils above the 2.33-year flow level exceed 20 ppm Hg. 2. Remediation may be accomplished either by: <ol style="list-style-type: none"> a. treating the site so that contaminated soils excavated for the purpose of bank stabilization shall not be susceptible to erosion; or b. further excavating contaminated soils and replacing them with clean fill or other bank stabilization materials that are free from contaminants. c. Soils with mercury concentrations exceeding 20 mg/kg shall be removed and disposed of in a Class I landfill following established work practices and hazard control measures. Soils with mercury concentrations less than 20 mg/kg will remain at the project site. 3. To ensure worker safety during sediment removal and bank stabilization projects with elevated mercury concentrations in the exposed surfaces, personal protective equipment will be required during project construction to maintain exposure below levels established by the Occupational Safety and Health Agency (OSHA).

Biological Resources

GEN-4	Minimize the Area of	To minimize impacts to natural resources, soil disturbance will be kept to the minimum footprint necessary to
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BMP Number	BMP Title	BMP Description
	Disturbance	complete the maintenance operation.
GEN-5	Mitten Crab Control Measure	Sediment from the San Francisco Bay Watershed, including that for reuse, cannot be moved to areas any farther south than Coyote Creek Golf Drive in south San Jose, and the intersection of McKean and Casa Loma Roads.
GEN-6	Minimize Impacts to Nesting Birds via Site Assessments and Avoidance Measures	<ol style="list-style-type: none"> For activities occurring between January 15 and August 31, project areas will be checked by a qualified biologist or Designated Individuals (DI – for limited ground nesting species surveys)-for nesting birds within 2 weeks prior to starting work. If a lapse in project-related work of 2 weeks or longer occurs, another focused survey will be conducted before project work can be reinitiated. If nesting birds are found, a buffer will be established around the nest and maintained until the young have fledged. Appropriate buffer widths are 0.5 mile for bald and golden eagles; 250 feet for other raptors and the least Bell's vireo, herons, and egrets; 25 feet for ground-nesting non-raptors; and 50 feet for non-raptors nesting on trees, shrubs and structures. A qualified biologist may identify an alternative buffer based on a site specific-evaluation. No work within the buffer will occur without written approval from a qualified biologist, for as long as the nest is active. All vegetation management, sediment reuse, road grading, or other SMP activities in or immediately adjacent to suitable California clapper rail or Alameda song sparrow nesting habitat, as determined by a qualified biologist, shall not be conducted prior to September 1 (the non-nesting season). If a pre-activity survey in high-quality San Francisco common yellowthroat breeding habitat (as determined by a qualified biologist) identifies more singing male San Francisco common yellowthroats than active nests, then the inconspicuous nests of this species might have been missed. In that case, maintenance activities in that area shall be delayed until the San Francisco common yellowthroat non-breeding season (i.e., August 16– March 14). The boundary of each buffer zone will be marked with fencing, flagging, or other easily identifiable marking if work will occur immediately outside the buffer zone. All protective buffer zones will be maintained until the nest becomes inactive, as determined by a qualified biologist. If monitoring shows that disturbance to actively nesting birds is occurring, buffer widths will be increased until monitoring shows that disturbance is no longer occurring. If this is not possible, work will cease in the area until young have fledged and the nest is no longer active.
<u>GEN-6.5</u>	<u>Protection of Nesting Least Bell's Vireos</u>	<ol style="list-style-type: none"> <u>To the extent feasible, SMP activities within woody riparian habitat along portions of lower Llagas Creek downstream from Highway 152, the Pajaro River from Llagas Creek downstream, and lower Uvas/Carnadeo Creek downstream from Hecker Pass Road shall be scheduled to occur outside of the least Bell's vireo nesting season (March 15 – July 31).</u> <u>For activities within woody riparian habitat along the aforementioned creek reaches that will occur between March 15 and July 31, any work will be preceded by a focused survey for least Bell's vireos. Pre-activity surveys will consist of two site visits, conducted on separate days within 14 days before the initiation of maintenance activities in the given area, with at least one of these surveys occurring within 7 days before the initiation of such activities. Surveys will be conducted between dawn and 11:00 a.m., during mild weather conditions (i.e., not during excessive cold, heat, wind, or rain), within all riparian habitat in and within 250 feet of any proposed maintenance location along these reaches. The surveys will be conducted by a qualified biologist who is familiar with the visual and auditory identification of this species.</u>

BMP Number	BMP Title	BMP Description
		<p>3. <u>To minimize impacts to nesting least Bell's vireos and other birds, the biologist will not initially be looking for Bell's vireo nests during these surveys. Rather, the biologist will look and listen for individual vireos. If a least Bell's vireo is detected, it will be observed to determine whether it is actively nesting. The biologist will note the nest location, or if finding the actual nest could result in excessive disturbance or risk damaging the nest, the biologist will determine the approximate location, based on observation of birds carrying nesting material, carrying food, or repeatedly visiting a certain area.</u></p> <p>4. <u>If an active nest is found, a minimum 250-foot no-activity buffer will be established around the nest. If a territorial male is found but no nest can be detected, then the approximate centroid of the bird's area of activity will be the point from which the buffer will be applied. The required buffer may be reduced in areas where dense riparian forest occurs between the construction activities and the active nest or where sufficient barriers or topographic relief exists to protect the nest from excessive noise or other disturbance. The biologist will coordinate with the USFWS and CDFG to evaluate exceptions to the minimum no-activity buffer distance on a case-by-case basis.</u></p> <p>5. <u>No work will occur within the buffer without verification by a biologist that the nest is inactive and until any fledged young are no longer dependent on adults for food.</u></p>
GEN-7	Protection of Burrowing Owls	<p>1. If burrowing owls are present, then no <u>Work within 250 feet of an occupied burrow</u> will be delayed until after the nesting season.</p> <p>2. If suitable burrowing owl habitat is identified where mowing is proposed, or active burrows are found, they will be marked in such a way that the mower can identify the locations of such burrows. Mowing can then occur anywhere beyond the 250 foot buffer zone. Within the 250 foot buffer zone mowing may be done to within 10 feet of an active burrow provided there are <u>is</u> no burrowing owls active on the surface. An on-site monitor will observe the area in front of the mower from a safe vantage point while it is in operation. In areas within 10 ft of active burrows the vegetation may be removed by hand (e.g., weed-whackers). All mowing and hand-removal of vegetation within 250 ft of a burrow will be done as quickly as possible to minimize disturbance of burrowing owls.</p> <p>3. All markers will be removed once mowing is complete.</p> <p>4. For burrow destruction work, all burrows within the 250-foot buffer zone around known, occupied burrows will be inspected with a burrow camera prior to destruction to ensure no entrapment of burrowing owls. Burrows that are difficult to inspect due to intricate subterranean configuration or depth will be inspected in stages where the uninspected section of the burrow will be protected while the previously inspected section is excavated.</p> <p>If maintenance activities will directly impact occupied burrows the District will consult with the DFG and FWS on establishing alternative burrows (including artificial burrows) and a process for removing owls from the active burrow. No burrowing owls will be evicted from burrows during the nesting season.</p>
GEN-8	Protection of Sensitive Fauna Species from Herbicide Use	<p>Approved herbicides and adjuvants may be applied in habitat areas for sensitive wildlife species (including steelhead, California red-legged frog, California tiger salamander, salt marsh harvest mouse, and Bay checkerspot butterfly); all applications will occur in accordance with federal and state regulations.</p> <p>For sprayable or dust formulations: when the air is calm or moving away from sensitive wildlife habitat, applications will commence on the side nearest the habitat and proceed away from the habitat. When air currents are moving toward habitat, applications will not be made within 200 yards by air or 40 yards by ground upwind from occupied</p>

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		<p>habitat. However, these distances may be modified for the control of invasive species on salmonid streams if the following measures are implemented:</p> <ul style="list-style-type: none"> ▪ A qualified biologist will determine presence/absence of sensitive resources in designated herbicide use areas and develop site-specific control methods (including the use of approved herbicide and surfactants). Proposed herbicide use would be limited to the aquatic formulation of glyphosate (Rodeo or equal). Surfactant <u>use</u> would be limited to <u>non-ionic products, such as Agri-dex, Competitor, or another brand name using the same ingredients</u>. Any modifications to these materials would require review and approval by NMFS and CDFG. ▪ A qualified fisheries biologist will review proposed herbicide application methods and stream reaches. The fisheries biologist would conduct a pre-construction survey (and any other appropriate data research) to determine whether the proposed herbicide application is consistent with SMP approvals concerning biological resources and determine which BMPs would be instituted for work to proceed.
GEN-9	Avoid Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities	<p>A qualified botanist will identify special status plant species and sensitive natural vegetation communities and clearly map or delineate them as needed in order to avoid and/or minimize disturbance, using the <u>DFG protocols</u> and the <u>CNPS Botanical Survey Guidelines</u> to formulate the following protocols:</p> <ol style="list-style-type: none"> 1. A qualified botanist will use the GIS database, CNDDDB, and/or other suitable tools to identify special status plants and sensitive natural vegetation communities located within or near work areas. 2. Surveys of areas identified as sensitive natural communities or suitable habitat for special status plant species will be conducted by a qualified botanist prior to commencement of work. 3. Surveys will be conducted during the appropriate time of the year to adequately identify <u>special-status</u> plants that could occur on the site of proposed maintenance activities. 4. The qualified botanist will ensure avoidance and/or minimize impacts by implementing one or more of the following, as appropriate, per the botanist's recommendation: <ol style="list-style-type: none"> a) Flag or otherwise delineate in the field the special status plant populations and/or sensitive natural community to be protected; b) Allow adequate buffers around plants or habitat; the location of the buffer zone will be shown on the maintenance design drawings and marked in the field with stakes and/or flagging in such a way that exclusion zones are visible to maintenance personnel without excessive disturbance of the sensitive habitat or population itself (e.g., from installation of fencing). c) Time construction or other activities during dormant and/or non-critical life cycle period; d) Store removed sediment off site; and e) Limit the operation of maintenance equipment to established roads whenever possible. 5. No herbicides, terrestrial or aquatic, will be used in areas identified as potential habitat for special status plants species or containing sensitive natural communities, until a qualified botanist has surveyed the area and determined the locations of special status plant species present. 6. If special status plant species or sensitive communities are present, then a qualified botanist will determine if a given type of vegetation management method is ecologically appropriate for a given area. Alternative strategies based on the botanist's recommendations will be coordinated with appropriate staff. 7. All impacts to sensitive natural communities and special status plants identified by the qualified botanist will be avoided and/or minimized

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GEN-10	Avoid Impacts to Bay Checkerspot Butterfly and Associated Critical Habitat	<ol style="list-style-type: none"> 1. Areas supporting Bay checkerspot larval host plants will be identified by a qualified botanist and protected from disturbance <u>to the extent feasible</u>, by establishing buffer zones around individual plants or populations. The size of the buffer will be determined by a qualified botanist; the actual distance will depend on the plant species potentially affected and the type of disturbance. No herbicide will be applied to the buffer area, and <u>to the extent feasible</u>, maintenance personnel and equipment will not operate within such areas. 2. Herbicides may be used in serpentine areas that do not contain Bay checkerspot butterfly larval host plants or sensitive plant species and habitat when approved by a qualified botanist and for the following maintenance purposes: <ol style="list-style-type: none"> a) To protect sensitive species and habitat; b) To manage for control of invasive and non-native plants; and/or c) To maintain access to a facility.
GEN-11	Protection of Salt Marsh Harvest Mouse and California Clapper Rail	<ol style="list-style-type: none"> 1. A District qualified biologist will conduct a desk audit to determine whether suitable Salt Marsh Harvest Mouse (SMHM) or California Clapper Rail (CCR) habitat is present in or adjacent to a maintenance activity. 2. Within 7 days prior to work within the range of the Salt Marsh Harvest Mouse (SMHM) or California Clapper Rail (CCR), as depicted on the District's GIS layers, the proposed project area will be surveyed by a qualified biologist to identify specific habitat areas. Surveyed areas will include work locations and access routes. 3. To minimize or avoid the loss of individuals, activities within or adjacent to California clapper rail and salt marsh harvest mouse habitat will not occur within two hours before or after extreme high tides (6.5 feet or above) when the marsh plain is inundated, because protective cover for those species is limited and activities could prevent them from reaching available cover. 4. Specific habitat areas are vegetated areas of <u>cordgrass (<i>Spartina</i> spp.)</u>, <u>marsh gumplant (<i>Grindelia</i> spp.)</u>, <u>pickleweed (<i>Sarcocornia pacifica</i>)</u>, <u>alkali heath, (<i>Frankenia</i> sp.)</u>, and other high marsh vegetation, brackish marsh reaches of creek with heavy accumulations of bulrush thatch (old stands), and high water refugia habitat that may include annual grasses, and shrubs immediately adjacent to channels. 5. Within the identified specific habitat areas, vegetation will be removed by hand from areas to be directly impacted by the work activities if possible (hand removal of vegetation in some channels may not be possible). 6. Prior to the initiation of work each day for all vegetation management work, ground or vegetation disturbance, operation of large equipment, grading, sediment removal, and bank stabilization work and prior to expanding the work area, if suitable habitat occurs within the immediate work area, a qualified biologist will conduct a pre-construction survey of all suitable habitat that may be directly or indirectly impacted by the day's activities (work area, access routes, staging areas). <ol style="list-style-type: none"> a. If during the initial daily survey or during work activities a CCR is observed within or immediately adjacent to the work area (50 feet), initiation of work will be delayed until the CCR leaves the work area. b. If during the initial daily survey or during work activities a SMHM or similar rodent is observed within or immediately adjacent to the work area (50 feet), initiation of work will be delayed until a <i>Site Specific Species Protection Form</i> can be developed and implemented by a qualified biologist to protect the SMHM or similar rodent is developed and implemented by the qualified biologist. Acceptable plan activities may include one or more of the following activities: 1) establishment of a buffer zone at least 50 feet in radius from the rodent; 2) ongoing active monitoring; 3) construction of silt fence barrier between

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		<p>maintenance work and location of the rodent, 4) delay of work activity until the qualified biologist can contact DFG and USFWS for additional direction.</p> <p>7. Mowing using heavy equipment (tractors, boom mowers, rider mowers) will not be conducted in habitat areas or within 50 feet of habitat areas. If mowing with hand equipment is necessary within 50 feet of habitat areas, an on-site monitor will observe the area in front of the mower from a safe vantage point while it is in operation. If SMHM are detected within the area to be mown, no mowing will occur in that area. If CCR are detected within the area to be mown, the mowing will stop until the individual(s) have left the work area.</p> <p>8. See ANI-2 for additional restrictions.</p>
GEN-12	Protection of Special-Status Amphibian and Reptile Species	<p>1. A District qualified biologist will conduct a desk audit to determine whether suitable special-status amphibian or reptile habitat is present in or adjacent to a maintenance activity.</p> <p>2. If the District Wildlife or Fisheries Biologist determines that a special-status amphibian or reptile could occur in the activity area, a qualified biologist will conduct one daytime survey within a 7 day period preceding the onset of maintenance activities.</p> <p>a. If a special-status amphibian or reptile, or the eggs or larvae of a special status amphibian or reptile, is^{are} found within the activity area during a pre-activity survey or during project activities, the qualified biologist shall notify the project proponent about the special-status species and conduct the following work specific activities:</p> <p>i. For minor maintenance activities and for vegetation removal activities that will take less than 1 day, the qualified biologist shall conduct a special status species survey on the morning of and prior to the scheduled work.</p> <p>A. If no special status species is found, the work may proceed.</p> <p>B. If eggs or larvae of a special status species are found, a buffer will be established around the location of the eggs/larvae and work may proceed outside of the buffer zone. No work will occur within the buffer zone. Work within the buffer zone will be rescheduled until the time that eggs have hatched and/or larvae have metamorphosed.</p> <p>C. If an active western pond turtle nest is detected within the activity area, a 25-50-foot buffer zone around the nest will be established and maintained during the breeding and nesting season (April 1 – August 31). The buffer zone will remain in place until the young have left the nest, as determined by a qualified biologist.</p> <p>D. If adults or non-larval juveniles of a special status species are found, one of the following two procedures will be implemented:</p> <p>i. If, in the opinion of the qualified biologist, capture and removal of the individual to a safe place outside of the work area is less likely to result in adverse effects than leaving the individual in place and rescheduling the work (e.g., if the species could potentially hide and be missed during a follow-up survey), the individual will be captured and relocated by a qualified biologist (with USFWS and/or CDFG approval, depending on the listing status of the species in question), and work may proceed.</p> <p>ii. If, in the opinion of the qualified biologist, the individual is likely to leave the work area on its own, and work can be feasibly rescheduled, a buffer will be established around</p>

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		<p>the location of the individual(s) and work may proceed outside of the buffer zone. No work will occur within the buffer zone. Work within the buffer zone will be rescheduled.</p> <ul style="list-style-type: none"> ii. For minor maintenance and vegetation removal activities that will take more than 1 day, the qualified biologist shall conduct a special-status species survey on each morning of and prior to the scheduled work commencing. <ul style="list-style-type: none"> E. If eggs or larvae of a special status species are found, a buffer will be established around the location of the eggs/larvae and work may proceed outside of the buffer zone. No work will occur within the buffer zone. Work within the buffer zone will be rescheduled until the time that eggs have hatched and/or larvae have metamorphosed. F. If an active western pond turtle nest is detected within the activity area, a 25<u>50</u> ft-buffer zone around the nest will be established and maintained during the breeding and nesting season (April 1 – August 31). The buffer zone will remain in place until the young have left the nest, as determined by a qualified biologist. G. If adults or non-larval juveniles of a special status species are found, the individual will be captured and relocated by a qualified biologist (with USFWS and/or CDFG approval, depending on the listing status of the species in question), and work may proceed. iii. For Sediment Removal and Bank Stabilization Projects the wildlife or fisheries biologist in cooperation with the project proponent shall complete a <i>Site Specific Species Protection Form for the project</i>. Elements of the form include: work rescheduling, training work crews, daily surveys, establishment of buffers and buffer fencing, on-site monitoring, habitat modification in advance of work activities, capture and relocation of individual special-status species, methods of documentation, and reporting of results. b. If no special status amphibian or reptile is found within the activity area during a pre-activity survey, the work may proceed. c. During animal conflict management activities, if special status species are found within a burrow proposed for destruction, a qualified biologist will determine an appropriate buffer distance around that burrow to ensure adequate protection of the habitat. The buffer area may include not destroying adjacent burrows as that may damage subterranean networks of the occupied burrow or produce substrate vibrations which could interfere with prey detection mechanisms. If two consecutive follow up surveys are conducted (spaced 30 days apart) in which the burrow is found to be unoccupied, work can proceed as planned. A naturally found back filled burrow known to have been inhabited by a special-status species will be presumed to still be occupied by that species and a clearly delineated buffer demarcation of the burrow area will be in place for the duration of nearby work activities. In rare instances in which destruction of the burrow is not avoidable during animal conflict management, the animal will be relocated to a safe burrow outside the impact area, with USFWS and/or CDFG approval, depending on the listing status of the species in question. A biologist will observe the relocated animal until it is certain that the animal is not in immediate danger of desiccation or predation.

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GEN-13	Protection of Bat Colonies	<ol style="list-style-type: none"> 1. A District Wildlife Biologist will conduct a desk audit to determine whether suitable habitat (appropriate roost trees or anthropogenic structures) is present for bat colonies within 100 feet of the work site, staging areas, or access routes. 2. If potential bat colony habitat is determined to be present, within two weeks prior to the onset of work activities a qualified biologist will conduct a survey to look for evidence of a bat use. If evidence is observed, or if potential roost sites are present in areas where evidence of bat use might not be detectable (such as a tree cavity), an evening survey and/or nocturnal acoustic survey may be necessary to determine if the bat colony is active and to identify the specific location of the bat colony. 3. If an active bat maternity colony is present then the qualified biologist will make the following determinations: <ol style="list-style-type: none"> a. The work can proceed without unduly disturbing the bat colony b. There is a need for a buffer zone to prevent disturbance to the bat colony, and implementation of the buffer zone (<u>determined on a case-by-case basis by a qualified biologist</u>) will reduce or eliminate the disturbance to an acceptable level. c. Work cannot proceed without unduly disturbing the bat colony; thus, the work will be postponed until after July 31. 4. If a non-breeding bat hibernaculum is found in a tree or structure that must be removed or physically disturbed, the qualified biologist will consult with DFG prior to initiating any removal or exclusion activities.
GEN-14	Protection of San Francisco Dusky-footed Woodrat	<ol style="list-style-type: none"> 1. Prior to work within riparian, oak woodland, or coyote brush scrub habitat, or the removal of any oak trees outside these habitats, a District Wildlife Biologist will conduct a desk audit to determine whether woodrats could be present within suitable habitat for San Francisco dusky-footed woodrat or is known to be present in or adjacent to a maintenance activity site. 2. If the District Wildlife Biologist determines that no San Francisco dusky-footed woodrat habitat is present, or there is habitat present but will not be affected by the maintenance activity, then no further action is required. 3. If the District Wildlife Biologist determines that suitable San Francisco dusky-footed woodrat habitat is present and may be affected by the maintenance activity, a qualified biologist shall conduct a pre-activity survey within 2 weeks prior to the start of work to determine if woodrat nests are in, or within 5 feet of, the immediate activity area. <ol style="list-style-type: none"> a. If woodrat nests are present at the site and will be affected by the work activity area, the District Wildlife Biologist in cooperation with the project proponent will evaluate the site specific situation. The Wildlife Biologist will then develop a site specific woodrat management plan to first avoid and second minimize take or injury of the woodrat(s). The woodrat management plan may include: establishment of buffers zones, installation of buffer zone fences, relocation of the woodrat nest, removal of the woodrat nest, and/or construction of artificial nests. Consideration will be given to the number of woodrat nests that may be affected by the work activity and the number in the project vicinity that may not be affected.

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GEN-15	Salvage Native Aquatic Vertebrates from Dewatered Channels	<p>If fisheries or native aquatic vertebrates are present when cofferdams, water bypass structures, and silt barriers are to be installed, a fish and native aquatic vertebrate relocation plan shall be implemented to ensure that fish and native aquatic vertebrates are not stranded. Relocation efforts will be based on the District's Fish Relocation Guidelines. Streams that support a sensitive species (i.e. steelhead) will require a relocation effort and/ or initial onsite monitoring by a qualified biologist depending on seasonal conditions:</p> <ol style="list-style-type: none"> 1. In non-tidal channels, where water is to be diverted, prior to the start of work or during the installation of water diversion structures, native aquatic vertebrates shall be captured in the work area and transferred to another reach as determined by a qualified biologist. Timing of work in streams that supports a significant number of amphibians will be delayed until metamorphosis occurs to minimize impacts to the resource. Capture and relocation of aquatic native vertebrates is not required at individual work sites when site conditions preclude reasonably effective operation of capture gear and equipment. 2. Aquatic invertebrates will not be transferred (other than incidental catches) because of their anticipated abundance and colonization after completion of the repair work.
GEN-15.5	Avoidance of Impacts on the San Joaquin Kit Fox	<ol style="list-style-type: none"> 1. A qualified District biologist will conduct a desk audit to determine whether an SMP activity will occur in an area where the San Joaquin kit fox could potentially occur (i.e., roughly east of Frazier Lake Road and south of Bloomfield Avenue), and in potential habitat for the species. 2. If the District biologist determines that an SMP activity could occur in an area that could potentially support a kit fox, the SCVWD will implement applicable pre-activity surveys and other measures in accordance with the USFWS's <i>San Joaquin Kit Fox Survey Protocol for the Northern Range</i>, as follows: <ol style="list-style-type: none"> a) Conduct a preconstruction/pre-activity survey no less than 14 days and no more than 30 days prior to the beginning of project implementation. Surveys shall identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, and assess the potential impacts to the kit fox by the proposed activity. The status of all dens shall be determined and mapped in accordance with the survey protocol. b) If a natal/pupping den is discovered within the project area or within 200 feet of the project boundary, the USFWS shall be immediately notified. Disturbance to all San Joaquin kit fox dens should be avoided to the maximum extent possible. Destruction of any known or natal/pupping kit fox den would require take authorization from the USFWS. c) The project proponent will establish exclusion zones around the kit fox dens, if determined to be present. The configuration of the exclusion should have a radius measured outward from the entrance or cluster of entrances. The following radii are minima to be applied: <ul style="list-style-type: none"> ▪ Potential den: 50 feet ▪ Known den: 100 feet ▪ Natal/pupping den: Service must be contacted (occupied and unoccupied) ▪ Atypical den: 50 feet. 3. <u>If take of the San Joaquin kit fox will occur, take authorization from the USFWS and CDFG will be necessary.</u>

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General Maintenance Practices		
GEN-16	In-Channel Minor Activities	For in-channel minor work activities, work will be conducted from the top of the bank if access is available and there are flows in the channel.
GEN-17	Employee/Contractor Training	All appropriate District staff and contractors will receive annual training on Stream Maintenance Program BMPs. The training will also include an overview of special-status species identification and habitat requirements. District staff and contractors will receive fact sheets to assist with in-the-field identification of special-status species and their habitats.
GEN-18	Paperwork Required On-site	<ol style="list-style-type: none"> 1. Copies of regulatory permits related to the Stream Maintenance Program will <u>be</u> kept on-site and available for review, if requested by regulatory personnel. 2. Copies of the Stream Maintenance Program Manual and this BMP Manual will be kept on-site.
GEN-19	Work Site Housekeeping	<ol style="list-style-type: none"> 1. District employees and contractors will maintain the work site in neat and orderly conditions on a daily basis, and will leave the site in a neat, clean, and orderly condition when work is complete. 2. Slash, sawdust, cuttings, etc. will be removed to clear the site of vegetation debris. As needed, paved access roads and trails will be swept and cleared of any residual vegetation or dirt resulting from the maintenance activity. 3. For activities that last more than one day, materials or equipment left on the site overnight will be stored as inconspicuously as possible, and will be neatly arranged. Any materials and equipment left on the site overnight will be stored to avoid erosion, leaks, or other potential impacts to water quality (see BMPs GEN-24). 4. The District's maintenance crews are responsible for properly removing and disposing of all debris incurred as a result of construction within 72 hours of project completion. 5. All trash that is brought to a project site during maintenance activities (e.g., plastic water bottles, plastic lunch bags, cigarettes) will be collected at the site daily.
GEN-20	Erosion and Sediment Control Measures	<ol style="list-style-type: none"> 1. Soils exposed due to maintenance activities will be seeded and stabilized using hydroseeding, straw placement, mulching, and/or erosion control fabric. These measures will be implemented such that the site is stabilized and water quality protected prior to significant rainfall. The channel bed and areas below the Ordinary High Water Mark (OHWM) are exempt from this BMP. 2. The preference for erosion control fabrics will be to consist of natural fibers; however, steeper slopes and areas that are highly erodible may require more structured erosion control methods. No non-porous fabric will be used as part of a permanent erosion control approach. Plastic sheeting may be used to temporarily protect a slope from runoff, but only if there are no indications that special-status species would be impacted by the application. 3. Erosion control measures will be installed according to manufacturer's specifications. 4. Appropriate measures include, but are not limited to, the following: <ul style="list-style-type: none"> o Silt Fences o Straw Bale Barriers o Brush or Rock Filters o Storm Drain Inlet Protection o Sediment Traps o Sediment Basins

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		<ul style="list-style-type: none"> ○ Erosion Control Blankets and Mats ○ Soil Stabilization (i.e. tackified straw with seed, jute or geotextile blankets, etc.) ○ Wood chips ○ Straw mulch <p>5. All temporary construction-related erosion control methods shall be removed at the completion of the project (e.g. silt fences).</p> <p>6. Surface barrier applications installed as a method of animal conflict management, such as chain link fencing, woven geotextiles, and other similar materials, will be installed no longer than 300 feet, with at least an equal amount of open area prior to another linear installation; and only on one side of levee slopes. Inboard and outboard areas will only have installations set in an alternating pattern, such that no inboard and outboard levee faces would have erosion control blankets along the same levee stationing.</p>
GEN-21	Staging and Stockpiling of Materials	<p>1. To protect on-site vegetation and water quality, staging areas should occur on access roads, surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation. Similarly, all maintenance equipment and materials (e.g., road rock and project spoil) will be contained within the existing service roads, paved roads, or other pre-determined staging areas.</p> <p>2. Building materials and other maintenance-related materials, including chemicals and sediment, will not be stockpiled or stored where they could spill into water bodies or storm drains. Materials will not be stockpiled longer than seven (7) calendar days.</p> <p>3. No runoff from the staging areas may be allowed to enter water ways, including the creek channel or storm drains, without being subjected to adequate filtration (e.g., vegetated buffer, swale, hay wattles or bales, silt screens).</p> <p>4. The discharge of decant water to water ways from any on-site temporary sediment stockpile or storage areas is prohibited.</p> <p>5. Wet material removed from an isolated creek reach may be pulled to the side of the channel (within the channel and below top of bank) and allowed to naturally drain prior to removal from the channel. Pulled material will be removed from the channel prior to deactivation of the site or forecast of rain.</p> <p>6. During the wet season, no stockpiled soils will remain exposed, unless surrounded by properly installed and maintained (i.e., per manufacturer specifications) silt fencing or other means of erosion control. During the dry season; exposed, dry stockpiles will be watered, enclosed, covered, or sprayed with non-toxic soil stabilizers (GEN-24).</p> <p>7. All pipes, culverts, or similar structures stored at a site within sensitive species areas, for one or more overnight periods shall be securely capped prior to storage or inspected before the pipe is subsequently moved. If any potential special-status species are observed within a pipe, a District biologist shall be consulted on what steps should be taken to protect the species. If a District biologist is on-site, they may remove the special status species from the pipes and relocate to the nearest appropriate and unaffected habitat.</p>

BMP Number	BMP Title	BMP Description
GEN-22	Sediment Transport	To prevent sediment-laden water from being released back into waterways during transport of spoils to disposal locations, truck beds will be lined with an impervious material (e.g., plastic), or the tailgate blocked with wattles, hay bales, or other appropriate filtration material. Trucks may then drain excess water by slightly tilting the loads and allowing the water to drain out through the applied filter, but only within the active project area of the creek where the sediment is being loaded into the trucks or within an identified vegetated area (swale) that is separated from the creek.
GEN-23	Stream Access	<p>District personnel will use existing access ramps and roads to the extent feasible. If necessary to avoid large mature trees, native vegetation, or other significant habitat features, temporary access points will be constructed in a manner that minimizes impacts according to the following guidelines:</p> <ol style="list-style-type: none"> 1. Temporary access points will be constructed as close to the work area as possible to minimize equipment transport 2. In considering channel access routes, slopes of greater than 20 percent will be avoided, if possible. 3. Any temporary fill used for access will be removed upon completion of the project and pre-project topography will be restored to the extent possible. 4. When temporary access is removed, disturbed areas will be revegetated or filled with compacted soil, seeded, and/or stabilized with erosion control fabric immediately after construction to prevent future erosion. 5. Personnel will use the appropriate equipment for the job that minimizes impacts and disturbance to the stream bottom. Appropriately-tired vehicles, either tracked or wheeled, will be used depending on the site and maintenance activity.
GEN-24	On-Site Hazardous Materials Management	<ol style="list-style-type: none"> 1. An inventory of all hazardous materials used (and/or expected to be used) at the worksite and the end products that are produced (and/or expected to be produced) after their use will be maintained by the worksite manager. 2. As appropriate, containers will be properly labeled with a "Hazardous Waste" label and hazardous waste will be properly recycled or disposed of off-site. 3. Contact of chemicals with precipitation will be minimized by storing chemicals in watertight containers with appropriate secondary containment to prevent any spillage or leakage. 4. Quantities of toxic materials, such as equipment fuels and lubricants, will be stored with secondary containment that is capable of containing 110% of the primary container(s). 5. Petroleum products, chemicals, cement, fuels, lubricants, and non-storm drainage water or water contaminated with the aforementioned materials will not contact soil and not be allowed to enter surface waters or the storm drainage system. 6. All toxic materials, including waste disposal containers, will be covered when they are not in use, and located as far away as possible from a direct connection to the storm drainage system or surface water. 7. Sanitation facilities (e.g., portable toilets) will be placed outside of the creek channel and floodplain. Direct connections with soil, the storm drainage system, and surface waters will be avoided. 8. Sanitation facilities will be regularly cleaned and/or replaced, and inspected daily for leaks and spills.-
GEN-25	Existing Hazardous Materials	If hazardous materials, such as oil, batteries or paint cans, are encountered at the maintenance sites, the District will carefully remove and dispose of them according to applicable regulatory requirements. District staff will wear proper protective gear and store the waste in appropriate hazardous waste containers until it can be disposed at a hazardous waste facility.

BMP Number	BMP Title	BMP Description
GEN-26	Spill Prevention and Response	<p>The District will prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels following these measures:</p> <ol style="list-style-type: none"> 1. District field personnel will be appropriately trained in spill prevention, hazardous material control, and clean up of accidental spills. 2. Equipment and materials for cleanup of spills will be available on site and spills and leaks will be cleaned up immediately and disposed of according to applicable regulatory requirements. 3. Field personnel will ensure that hazardous materials are properly handled and natural resources are protected by all reasonable means. 4. Spill prevention kits will always be in close proximity when using hazardous materials (e.g., at crew trucks and other logical locations). All field personnel will be advised of these locations. 5. District staff will routinely inspect the work site to verify that spill prevention and response measures are properly implemented and maintained. <p><i>Spill Response Measures:</i></p> <p>For small spills on impervious surfaces, absorbent materials will be used to remove the spill, rather than hosing it down with water. For small spills on pervious surfaces such as soil, the spill will be excavated and properly disposed rather than burying it. Absorbent materials will be collected and disposed of properly and promptly.</p> <p>If a hazardous materials spill occurs that cannot be contained or cleaned up with the onsite materials, the onsite District field personnel will be responsible for immediately initiating an emergency response sequence by notifying the proper authorities (i.e., District Emergency Response (ER) Team and public fire and hazmat agencies) of the release; taking appropriate defensive steps from a safe distance to secure the site to minimize damage to people, environment, and property (PEP); and deferring all other response activities to public emergency response agencies and/or the District Emergency Response (ER) Team or District ER Contractor. Depending on the nature of the release, the District ER Team's actions will include: urgent (responding within 2 hours of notification) field response site reconnaissance, emergency sequence initiation, defensive containment, release control, incident command; or priority (non 2-hour) field response site reconnaissance and clean-up operations.</p> <p>If a "reportable" spill of petroleum products occurs, the District's Stream Maintenance Implementation Program Manager will be notified and action taken to contact the appropriate safety and cleanup crews. A reportable spill is defined as when:</p> <ul style="list-style-type: none"> ▪ a film or sheen on, or discoloration of, the water surface or adjoining bank/shoreline is observed; or ▪ a sludge or emulsion is deposited beneath the surface of the water or adjoining banks/shorelines (40 Code of Federal Regulations 110); or when ▪ another violation of water quality standards is observed. <p>A written description of the reportable release must be submitted to the appropriate Regional Water Quality Control Board and the California Department of Toxic Substances Control (DTSC). This submittal must contain a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases.</p> <p>If an appreciable spill has occurred, and results determine that project activities have adversely affected surface</p>

BMP Number	BMP Title	BMP Description
		water or groundwater quality, a detailed analysis will be performed to the specifications of DTSC to identify the likely cause of contamination. This analysis will include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, the District or contractors will select and implement measures to control contamination, with a performance standard that surface and groundwater quality will be returned to baseline conditions. These measures will be subject to approval by the District, DTSC, and the Regional Water Quality Control Board.
GEN-27	Existing Hazardous Sites	Upon selection of maintenance project locations, the District will conduct a search for existing known contaminated sites, as part of its annual preparation of the Notice of Proposed Work (NPW), on the State Water Resource Control Board's GeoTracker Web site (http://www.geotracker.waterboards.ca.gov). The Geotracker search will only be performed for the District's ground disturbing activities. For any proposed ground disturbing maintenance sites located within 1,500 feet of any "open" sites where contamination has not been remediated, the District will contact the RWQCB case manager listed in the database. The District will work with the case manager to ensure maintenance activities would not affect cleanup or monitoring activities or threaten the public or environment.
GEN-28	Fire Prevention	<ol style="list-style-type: none"> 1. All earthmoving and portable equipment with internal combustion engines will be equipped with spark arrestors. 2. During the high fire danger period (April 1–December 1), work crews will have <u>have</u> appropriate fire suppression equipment available at the work site.
GEN-29	Dust Management	<p>The District will implement the Bay Area Air Quality Management District's (BAAQMD) required Dust Control Measures (http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines%20May%202011.ashx?la=en). Current measures stipulated by the BAAQMD Guidelines include the following:</p> <ol style="list-style-type: none"> 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. 4. <u>Water used to wash the various exposed surfaces (i.e., parking areas, staging areas, soil piles, graded areas, etc.) will not be allowed to enter the water way.</u> 5. All vehicle speeds on unpaved roads shall be limited to 15 mph. 6. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. 7. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. 8. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator. 9. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

BMP Number	BMP Title	BMP Description
GEN-30	Vehicle and Equipment Maintenance	<ol style="list-style-type: none"> 1. All vehicles and equipment will be kept clean. Excessive build-up of oil and grease will be prevented. 2. All equipment used in the creek channel will be inspected for leaks each day prior to initiation of work. Maintenance, repairs, or other necessary actions will be taken to prevent or repair leaks, prior to use. 3. Incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) will be checked for leaking oil and fluids. Vehicles or equipment visibly leaking operational fluids will not be allowed on-site. 4. No heavy equipment will operate in a live stream. This will not apply to activities for which no other option exists, such as sediment removal which cannot be conducted from top of bank, etc. In these cases, dewatering will be conducted as necessary, following the protocols in BMPs GEN-33 or GEN-34. 5. No equipment servicing will be done in the creek channel or immediate floodplain, unless equipment stationed in these locations cannot be readily relocated (i.e., pumps and generators). 6. If emergency repairs are required in the field, only those repairs necessary to move equipment to a more secure location, and that can be performed without releasing any material into the floodway or water, will be conducted in the channel or floodplain. 7. If necessary, all servicing of equipment done at the job site will be conducted in a designated, protected area to reduce threats to water quality from vehicle fluid spills. Designated areas will not directly connect to the ground, surface water, or the storm drain system. The service area will be clearly designated with berms, sandbags, or other barriers. Secondary containment, such as a drain pan, to catch spills or leaks will be used when removing or changing fluids. Fluids will be stored in appropriate containers with covers, and properly recycled or disposed of offsite.
GEN-31	Vehicle Cleaning	<ol style="list-style-type: none"> 1. Equipment will be cleaned of any visible sediment or vegetation clumps before transferring and using in a different watershed to avoid spreading pathogens or exotic/invasive species. 2. Vehicle and equipment washing can occur on-site only as needed to prevent the spread of sediment, pathogens or exotic/invasive species. No runoff from vehicle or equipment washing is allowed to enter water bodies, including creek channels and storm drains, without being subjected to adequate filtration (e.g., vegetated buffers, straw wattles or bales, fiber rolls, and silt screens). The discharge of decant water from any on-site wash area to water bodies or to areas outside of the active project site is prohibited. Additional vehicle/equipment washing will occur at the approved wash area in the District's corporation yard.
GEN-32	Vehicle and Equipment Fueling	<ol style="list-style-type: none"> 1. No fueling will be done in the channel (top-of-bank to top-of-bank) or immediate floodplain unless equipment stationed in these locations cannot be readily relocated (e.g., pumps and generators). 2. All off-site fueling sites (i.e., on access roads above the top-of-bank) will be equipped with secondary containment and avoid a direct connection to soil, surface water, or the storm drainage system. 3. For stationary equipment that must be fueled on-site, secondary containment, such as a drain pan or drop cloth, will be used to prevent accidental spills of fuels from reaching the soil, surface water, or the storm drain system.

BMP Number	BMP Title	BMP Description
<i>Dewatering</i>		
GEN-33	Dewatering for Non-Tidal Sites	<p>When sediment removal and bank stabilization work area includes a flowing stream, the entire streamflow will be diverted around the work area by construction of a temporary dam and/or bypass. Where appropriate, stream flow diversions will occur via gravity driven systems.</p> <p><i>A. Planning to avoid and minimize impacts to water quality and aquatic wildlife:</i></p> <ol style="list-style-type: none"> 1. For construction and monitoring of a stream flow bypass, the <i>Sediment Removal and Bank Stabilization Projects</i> checklist will be completed. 2. Recommendations by a qualified Fisheries Biologist to protect native fisheries and aquatic vertebrates will be incorporated into the bypass design. The recommendations may include but are not limited to: <ol style="list-style-type: none"> i. Screening the stream flow diversion source or pump to prevent entrainment of native fish or amphibian species. The screening dimensions will be appropriate to the species present. ii. Relocation of native aquatic vertebrates. This will include the methods to be used to capture and hold and move the aquatic vertebrates and a description of where the aquatic vertebrates will be relocated. 3. Depending on the channel configurations, sediment removal activities may occur where the flows are not bypassed around the work site as long as a berm is left between the work area and stream flows to minimize water quality impacts during excavation activities. The berm between the work and the live channel will be wide enough to prevent introduction of turbid water from the cell into the live channel. <p><i>B. Construction:</i></p> <ol style="list-style-type: none"> 1. The construction of facilities will be based on the water bypass plan. 2. Cofferdams will be installed both upstream and downstream of the work area to minimize impacts or the distance necessary to accomplish effective passive systems. 3. In streams where water may enter the construction site from downstream (reverse flow) additional coffer dams (downstream) may be necessary. When multiple coffer dams are constructed, the upstream dam will be constructed first. 4. 5. Instream cofferdams will only be built from materials such as sandbags, <u>earth fill</u>, clean gravel, or rubber bladders which will cause little or no siltation or turbidity. 5. 4. Plastic sheeting will be placed over k-rails, timbers, and earth fill to minimize water seepage into and out of the maintenance areas. The plastic sheets will be firmly anchored, using sandbags, to the streambed to minimize water seepage. 6. When pumping is necessary to dewater a work site, a temporary siltation basin and/or use of silt bags may be required to prevent sediment from re-entering the wetted channel. Pump intakes will be screened to prevent harm to aquatic wildlife. 7. If necessary to prevent erosion an energy dissipater will be constructed at the discharge point. 8. Timing of flow diversions will be coordinated with the completion of the dam structure to facilitate not drying up the downstream creek area and to minimize dry back conditions.

BMP Number	BMP Title	BMP Description
		<p><i>C. Implementation:</i></p> <ol style="list-style-type: none"> 1. Water flows downstream of the project site will be maintained to prevent stranding aquatic vertebrates. 2. Water diverted around work sites and water detained by coffer dams will be protected from maintenance activity-related pollutants, such as soils, equipment lubricants or fuels. 3. The <i>Fish Relocation Guidelines</i> will be implemented to ensure that fish and other aquatic vertebrates are not stranded during construction and implementation of channel dewatering. <ol style="list-style-type: none"> a) Native aquatic vertebrates shall be captured in the work area and transferred to another reach as determined by a qualified biologist. Timing of work in streams that supports a significant number of amphibians will be delayed until metamorphosis occurs to minimize impacts to the resource. Capture and relocation of aquatic native vertebrates is not required at individual work sites when site conditions preclude reasonably effective operation of capture gear and equipment. b) Aquatic invertebrates will not be transferred (other than incidental catches) because of their anticipated abundance and colonization after completion of the repair work. 4. Filtration devices (silt bags attached to the end of discharge hoses and pipes to remove sediment from discharged water) or settling basins will be provided as necessary at discharge sites to ensure that the turbidity of discharged water is not visibly more turbid than the water in the channel upstream of the maintenance site. If increases in turbidity are observed, additional measures will be implemented such as a larger settling basin or additional filtration. If increases in turbidity persist, the District's Stream Maintenance Program Implementation Project Manager will be alerted since turbidity measurements may be required. 5. Water remaining in the work area will be removed by evaporation, seepage, or pumping. When pumping is required to dewater a site, the decanted water will be discharged with water bypassed around the site or in a separate erosion control – energy dissipation area/vegetated swale. The turbidity of discharged water will not be visibly more turbid than the receiving water. <p><i>Deconstruction:</i></p> <ol style="list-style-type: none"> 1. When maintenance is completed, the flow diversion structure will be removed as soon as possible. Impounded water will be released at a reduced velocity to minimize erosion, turbidity, or harm to downstream habitat. 2. Removal will normally proceed from downstream in an upstream direction. 3. When diversion structures are removed, the ponded water will be directed back into the low-flow channel in a phased manner to minimize erosion and downstream water quality impacts. Normal flows will be restored. 4. The area disturbed by flow bypass mechanisms will be restored to the pre-project condition at the completion of the project (to the extent practical). This may include, but is not limited to, recontouring the area and planting of riparian vegetation.

BMP Number	BMP Title	BMP Description
GEN-34	Dewatering in Tidal Work Areas	<p>For tidal areas, a downstream cofferdam will be constructed to prevent the work area from being inundated by tidal flows.</p> <ol style="list-style-type: none"> 1. Installation of cofferdams and fish exclusion measures will be installed at low tide when the channel and project site are at their driest. 2. It is preferable to not use any bypass pipes when work is being conducted on one side of the channel, if isolated by the cofferdam, and flows can continue on the other side of the creek channel without entering the project area. 3. If downstream flows cannot be diverted around the project site, the creek waters will be transmitted around the site through cofferdam bypass pipes. Waters discharged through tidal cofferdam bypass pipes will not exceed 50 NTUs over the background levels of the tidal waters into which they are discharged. 4. Cofferdams in tidal areas may be made from earthen or gravel material. If earth is used, the downstream and upstream faces will be covered by a protected covering (e.g., plastic or fabric) if needed to minimize erosion. A protected covering or sheeting will be placed on the water side of an earthen coffer dam to protect water quality. 5. When maintenance is completed, the cofferdams and bypass pipes will be removed as soon as possible but no more than 72 hours after work is completed. Flows will be restored at a reduced velocity to minimize erosion, turbidity, or harm to downstream habitat.
GEN-35	Pump/Generator Operations and Maintenance	<p>When needed to assist in channel dewatering, pumps and generators will be maintained and operated in a manner that minimizes impacts to water quality and aquatic species.</p> <ol style="list-style-type: none"> 1. Pumps and generators will be maintained according to manufacturers' specifications to regulate flows to prevent dryback or washout conditions. 2. Pumps will be operated and monitored to prevent low water conditions, which could pump muddy bottom water, or high water conditions, which creates ponding. 3. All pump intakes will be screened. Pumps in steelhead creeks will be screened according to NMFS criteria (http://www.swr.noaa.gov/sr/fishscrn.pdf) to prevent entrainment of steelhead.
Public Safety		
GEN-36	Public Outreach	<p>The public will be informed of stream maintenance work prior to the start of work as part of the preparation of the NPW for all projects in the NPW:</p> <ol style="list-style-type: none"> 1. Each spring, a newspaper notice will be published with information on the NPW work sites, approximate work dates, and contact information. 2. Neighborhood Work Notices will be distributed as part of the NPW preparation prior to the start of work. 3. Local governments (cities and County) will be notified of scheduled maintenance work. The annual work plan NPW will be submitted to the public works departments, local fire districts, and the District's Zone Advisory Committee Flood Protection and Watershed Advisory Committees. 4. The District will post specific information on individual maintenance projects on the Stream Maintenance Web site: (http://valleywater.org/EkContent.aspx?id=379&terms=stream+maintenance) 5. For high profile projects, at the District's discretion, signs will be posted in the neighborhood to notify the public at least one week in advance of maintenance schedules, trail closures, and road/lane closures as necessary and as possible. Signage used at work sites will include contact information for lodging comments and/or complaints regarding the maintenance activities.

BMP Number	BMP Title	BMP Description
GEN-37	Implement Public Safety Measures	<p>The District will implement public safety measures during maintenance as follows:</p> <ol style="list-style-type: none"> 1. Construction signs will be posted at job sites warning the public of construction work and to exercise caution, as appropriate to public accessed areas. 2. Where work is proposed adjacent to a recreational trail, warning signs will be posted several feet beyond the limits of work. Signs will also be posted if trails will be temporarily closed. 3. If needed, a lane will be temporarily closed to allow for trucks to pull into and out of access points to the work site. 4. Temporary fencing, either the orange safety type or chain link, will be installed above repair sites on bank stabilization projects. 5. When necessary, District or contracted staff will provide traffic control and site security.
GEN-38	Minimize Noise Disturbances to Residential Areas	<p>The District will implement maintenance practices that minimize disturbances to residential areas surrounding work sites.</p> <ol style="list-style-type: none"> 1. With the exception of emergencies, work will be conducted during normal working hours. Maintenance activities in residential areas will not occur on Saturdays, Sundays, or District observed holidays except during emergencies, or with approval by the local jurisdiction and advance notification of surrounding residents. 2. Vehicles, generators and heavy equipment will be equipped with adequate mufflers. 3. Idling of vehicles will be prohibited beyond 5 minutes unless operation of the engine is required to operate a necessary system such as a power take-off (PTO).
GEN-39	Planning for Pedestrians, Traffic Flow, and Safety Measures	<ol style="list-style-type: none"> 1. Work will be staged and conducted in a manner that maintains two-way traffic flow on public roadways in the vicinity of the work site. If temporary lane closures are necessary, they will be coordinated with the appropriate jurisdictional agency and scheduled to occur outside of peak traffic hours (7:00 – 10:00 a.m. and 3:00 – 6:00 p.m.) to the maximum extent practicable. Any lane closures will include advance warning signage, a detour route and flaggers in both directions. When work is conducted on public roads and may have the potential to affect traffic flow, work will be coordinated with local emergency service providers as necessary to ensure that emergency vehicle access and response is not impeded. 2. Bicycle and pedestrian facility closures will be scheduled outside of peak traffic hours (7:00 – 10:00 a.m. and 3:00 – 6:00 p.m.) to the maximum extent practicable. 3. Public transit access and routes will be maintained in the vicinity of the work site. If public transit will be affected by temporary road closures and require detours, affected transit authorities will be consulted and kept informed of project activities. 4. Adequate parking will be provided or designated public parking areas will be used for maintenance-related vehicles not in use through the maintenance period. 5. Access to driveways and private roads will be maintained. If brief periods of maintenance would temporarily block access, property owners will be notified prior to maintenance activities.

BMP Number	BMP Title	BMP Description
Cultural Resources		
GEN-40	Discovery of Cultural Remains or Historic or Paleontological Artifacts	<p>Work in areas where remains or artifacts are found will be restricted or stopped until proper protocols are met.</p> <ol style="list-style-type: none"> 1. Work at the location of the find will halt immediately within 50 feet of the find. A “no work” zone shall be established utilizing appropriate flagging to delineate the boundary of this zone, which shall measure at least 50 feet in all directions from the find. 2. The District shall retain the services of a Consulting Archaeologist or Paleontologist, who shall visit the discovery site as soon as practicable, and perform minor hand-excavation to describe the archaeological or paleontological resources present and assess the amount of disturbance. 3. The Consulting Archaeologist shall provide to the District and the Corps, at a minimum, written and digital-photographic documentation of all observed materials, utilizing the guidelines for evaluating archaeological resources for the California Register of Historic Places (CRHP) and National Register of Historic Places (NRHP). Based on the assessment, the District and Corps shall identify the CEQA and Section 106 cultural-resources compliance procedure to be implemented. 4. If the find appears to not meet the CRHP or NRHP criteria of significance, and the Corps archaeologist concurs with the Consulting Archaeologist’s conclusions, construction shall continue while monitored by the Consulting Archaeologist. The authorized maintenance work shall resume at the discovery site only after the District has retained a Consulting Archaeologist to monitor and the Watershed Manager has received notification from the Corps to continue work. 5. If the find appears significant, avoidance of additional impacts is the preferred alternative. The Consulting Archaeologist shall determine if adverse impacts to the resources can be avoided. 6. When avoidance is not practical (e.g., maintenance activities cannot be deferred or they must be completed to satisfy the SMP objective), the District shall develop an Action Plan and submit it to the Corps within 48 hours of Consulting Archaeologist’s evaluation of the discovery. The action Plan may be submitted via e-mail to rstradford@spd.usace.army.mil. The Action Plan is synonymous with a data-recovery plan. It shall be prepared in accordance with the current professional standards and State guidelines for reporting the results of the work, and shall describe the services of a Native American Consultant and a proposal for curation of cultural materials recovered from a non-grave context. 7. The recovery effort will be detailed in a report prepared by the archaeologist in accordance with current archaeological standards. Any non-grave artifacts will be placed with an appropriate repository. 8. The Consulting Paleontologist will meet the Society for Vertebrate Paleontology’s criteria for a “qualified professional paleontologist” (Society of Vertebrate Paleontology Conformable Impact Mitigation Guidelines Committee 1995). 9. The paleontologist will follow the Society for Vertebrate Paleontology’s guidelines for treatment of the artifact. Treatment may include preparation and recovery of fossil materials for an appropriate museum or university collection, and may include preparation of a report describing the finds. The District will be responsible for ensuring that paleontologist’s recommendations are implemented. 10. In the event of discovery of human remains (or the find consists of bones suspected to be human), the field crew supervisor shall take immediate steps to secure and protect such remains from vandalism during periods when work crews are absent.) 11. Immediately notify the Santa Clara County Coroner and provide any information that identify the remains as

BMP Number	BMP Title	BMP Description
		<p>Native American. If the remains are determined to be from a prehistoric Native American, or determined to be a Native American from the ethnographic period, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours of being notified of the remains. The NAHC then designates and notifies within 24 hours a Most Likely Descendant (MLD). The MLD has 24 hours to consult and provide recommendations for the treatment or disposition, with proper dignity, of the human remains and grave goods.</p> <p>12. Preservation in situ is the preferred option. Human remains shall be preserved in situ if continuation of the maintenance work, as determined by the Consulting Archaeologist and MLD, will not cause further damage to the remains. The remains and artifacts shall be documented and the find location carefully backfilled (with protective geo-fabric if desirable) and recorded in District project files.</p> <p>13. Human remains or cultural items exposed during maintenance that cannot be protected from further damage shall be exhumed by the Consulting Archaeologist at the discretion of the MLD and reburied with the concurrence of the MLD in a place mutually agreed upon by all parties.</p>
GEN-41	Review of Projects with Native Soil	<p>A cultural resources specialist will conduct a review and evaluation of those sites that would involve disturbance / excavation of native soil previously undisturbed by contemporary human activities to determine their potential for affecting significant cultural resources. The evaluation of the potential to disturb cultural resources will be based on an initial review of archival information provided by the California Historical Resources System/Northwest Information Center (CHRIS/NWIC) in regard to the project area based on a 0.25 mile search radius. It is recommended that this initial archival review be completed by a professional archaeologist who will be able to view confidential site location data and literature to arrive at a preliminary sensitivity determination. If necessary, a further archival record search and literature review (including a review of the Sacred Lands Inventory of the Native American Heritage Commission); and a field inventory of the project area will be conducted to determine the presence/absence of surface cultural materials associated with either prehistoric or historic occupation. The results along with any mitigation and/or management recommendations would be presented in an appropriate report format and include any necessary maps, figures, and correspondence with interested parties. A summary table indicating appropriate management actions (e.g., monitoring during construction, presence/absence testing for subsurface resources; data recovery, etc.) will be developed for each project site reviewed. The management actions will be implemented on site to avoid significant effects to cultural resources.</p>

BMP Number	BMP Title	BMP Description
Utilities		
GEN-42	Investigation of Utility Line Locations	<p>An evaluation of the locations of utility lines that could be affected by maintenance activities will be conducted annually as part of the preparation of the Notice of Proposed Work (NPW). Utilities will be avoided as much as possible. For maintenance areas with the potential for adverse effects on utility services, the following measures shall be implemented:</p> <ol style="list-style-type: none"> 1. Utility excavation or encroachment permits shall be required from the appropriate agencies. These permits include measures to minimize utility disruption. The District and its contractors shall comply with permit conditions. Such conditions shall be included in construction contract specifications. 2. Utility locations shall be verified through a field survey (potholing) and use of the Underground Service Alert services. 3. Detailed specifications shall be prepared as part of the design plans to include procedures for the excavation, support, and/or fill of areas around utility cables and pipelines. All affected utility services shall be notified of the District's maintenance plans and schedule. Arrangements shall be made with these entities regarding protection, relocation, or temporary disconnection of services. 4. Residents and businesses in the project area shall be notified of planned utility service disruption 2 to 4 days in advance, in conformance with state standards. 5. Disconnected cables and lines shall be reconnected promptly.

SECTION C – Sediment Removal BMPs

This group of BMPs is intended to be implemented specifically during sediment removal activities. ~~To avoid potential impacts on biological resources, none of these measures will be implemented until authorization from the SMP Implementation Project Manager is received.~~

BMP Number	BMP Title	BMP Description
SED-1	Groundwater Management	If high levels of groundwater (i.e., visible water) are encountered during excavations in a work area, the water will be pumped out of the work site or left within the work area if the work activity is not causing water quality degradation in a live stream. Water Quality monitoring would need to occur. If necessary to protect water quality, the extracted water will be discharged into specifically constructed infiltration basins, holding ponds, or areas with vegetation to remove sediment prior to the water re-entering a creek. Water discharged into vegetated areas or swales will be pumped in a manner that will not create erosion around vegetation.
SED-2	Prevent Scour Downstream of Sediment Removal	Sediment removal sites in the transport zone on alluvial fans may cause increased scour downstream if they experience scouring flows or rapid sediment accumulation after maintenance. After sediment removal, the channel will be graded so that the transition between the existing channel both upstream and downstream of the maintenance area is smooth and continuous between the maintained and non-maintained areas and does not present a sudden vertical transition (wall of sediment) or other blockage that could erode once flows are restored to the channel.

BMP Number	BMP Title	BMP Description
SED-3	Restore Channel Features	Low-flow channels within non-tidal streams will be contoured to facilitate fish passage and will emulate the pre-construction conditions as closely as possible, within the finished channel topography.
SED-4	Berm Bypass	Where sediment removal is accomplished without a bypass by removing alternating cells, the berm between the work and the live channel will be wide enough to prevent introduction of turbid water from the cell into the live channel.

SECTION D – Vegetation Management BMPs

These BMPs provide specific and detailed guidance on the variety of vegetation management procedures implemented by the District. BMPs for the following maintenance techniques are included: tree pruning, tree removal, plant removal, woody debris management, herbicide application, mowing, disking, flaming, and grazing. Practices will be implemented by fully trained and qualified field crews.

BMP Number	BMP Title	BMP Description
VEG-1	Minimize Local Erosion Increase from In-channel Vegetation Removal	To minimize the potential effect of localized erosion, the toe of the bank will be protected by leaving vegetation to the maximum extent possible and consistent with the maintenance guidelines or original design requirements.
VEG-2	Non-native Invasive Plant Removal	Invasive species (e.g. cape ivy [<i>Delairea odorata</i> / <i>Senecio mikanooides</i>], arundo [<i>Arundo donax</i>]) will be disposed of in a manner that will not contribute to the further spread of the species. Cape ivy removed during a project shall be bagged and disposed of in a landfill. <u>Arundo canes will be prevented from floating downstream or otherwise entering the creek or waterway.</u>
VEG-3	Use Appropriate Equipment for Instream Removal	When using heavy equipment to cut or remove instream vegetation, low ground pressure equipment, such as tracked wheels will be utilized to reduce impacts to the streambed.
VEG-4	Use Flamers with Caution	1. A fire extinguisher, water supply and other appropriate fire suppression equipment will always be kept close to the work site in case of an emergency. 2. Propane tanks will be checked for leaks and proper functioning prior to and proceeding use of flaming equipment. The propane tank will be treated as a hazardous material.
VEG-5	Conduct Flaming During Appropriate Weather and Seasonal Conditions	Flamers will not be used during periods of high fire danger or in areas where fuel or climate conditions could accidentally ignite a fire.
VEG-6	Standard Grazing Procedures	1. Vegetation and areas to be preserved will be fenced off to exclude grazing animals. 2. Grazing animals will be excluded from stream channels, using fencing or other barriers.

SECTION E – Bank Stabilization BMPs

These BMPs provide additional guidance during implementation of bank stabilization projects. ~~To avoid impacts on biological and cultural resources, none of these measures will be implemented until authorization from the SMP Implementation Project Manager is received.~~ Review of the Post-Project Restoration BMPs in Section F is recommended because those measures will be implemented after bank stabilization projects are complete. The BMPs included in this section are implemented by the field crew and site manager.

BMP Number	BMP Title	BMP Description
BANK-1	Bank Stabilization Design to Prevent Erosion Downstream	To further prevent potential downstream erosion impacts due to bank stabilization, the site design will be adjusted to provide proactive protection of vulnerable areas within the reach of the worksite. Such measures include, but are not limited to, appropriately keyed-in coir logs, riparian planting, strategic placement of rock, and flow deflectors. Bank stabilization will include appropriate transition designs upstream and downstream of the work site to prevent potential erosion impacts.
BANK-2	Concrete Use Near Waterways	Concrete that has not been cured is alkaline and can increase the pH of the water. Fresh concrete will be isolated until it no longer poses a threat to water quality using the following appropriate measures: 1. Wet sacked concrete will be excluded from the wetted channel for a period of two weeks after installation. During that time, the wet sacked concrete will be kept moist (such as covering with wet carpet) and runoff from the wet sacked concrete will not be allowed to enter a live stream. 2. Poured concrete will be excluded from the wetted channel for a period of two weeks after it is poured. During that time, the poured concrete will be kept moist, and runoff from the wet concrete will not be allowed to enter a live stream. Commercial sealants (e.g., Deep Seal, Elasto-Deck Reservoir Grade) may be applied to the poured concrete surface where difficulty in excluding water flow for a long period may occur. If a sealant is used, water will be excluded from the site until the sealant is dry. 3. Dry sacked concrete will not be used in any channel. 4. An area outside of the channel and floodplain will be designated to clean out concrete transit vehicles.
BANK-3	Bank Stabilization Post-Construction Maintenance	The District may maintain or repair bank stabilization projects that are less than 2 years old that are damaged by winter flows. The District will notify the regulatory agencies 24 hours prior to beginning the work and the work will be reported as part of the Post-Construction Report submitted by January 15 of each year or if necessary, the subsequent year. Appropriate BMPs will be applied during maintenance repairs.

SECTION F – Post-Project Restoration BMPs

These BMPs will be implemented, as appropriate, on all sites that involve ground disturbance.

BMP Number	BMP Title	BMP Description
REVEG-1	Seeding	Sites where maintenance activities result in exposed soil will be stabilized to prevent erosion. Disturbed areas shall be seeded with native seed as soon as is appropriate after maintenance activities are complete. An erosion control seed mix may be applied to exposed soils, and down to the ordinary high water mark (OHWM). 1. The seed mix should consist of California native grasses (e.g., <i>Hordeum brachyantherum</i> , <i>Elymus glaucus</i> , and <i>Vulpia microstachyes</i>) or annual, sterile seed mix. 2. Temporary earthen access roads may be seeded when site and horticultural conditions are suitable, or have other appropriate erosion control measures in place (GEN-20).
REVEG-2	Planting Material	Revegetation and replacement plantings will consist of locally collected native species. Species selection will be based on surveys of natural areas on the same creek that have a similar ecological setting and/or as appropriate for the site location.

SECTION G – Management of Animal Damage Conflict BMPs

Methods of animal management included in the SMP are avoidance, biological controls, physical alterations, habitat alterations, and lethal controls. Of all these methods, implementation of lethal controls has the highest potential for environmental and biological impacts. Therefore, the animal management BMPs provided in this section focus on lethal controls. The application area for lethal controls will be identified during the annual planning process (see the Biological Resource Planning BMPs) and guided as directed by wildlife biologists. Species habitat areas are defined by the District's GIS species mapping, updated CNDDB and known local biological information and are included in the SMP Update Subsequent EIR.

BMP Number	BMP Title	BMP Description
ANI-1	Avoid Redistribution of Rodenticides	<u>Carcass surveys will be conducted periodically when acute poisons and first generation anticoagulants are used. The frequency of the carcass surveys will be specific to the type of rodenticide used.</u> In areas where rodenticides are used, carcass retrieval surveys will be conducted as follows to minimize secondary poisoning impacts: <ul style="list-style-type: none"> <u>Acute toxins-Daily, carcass surveys, beginning the first day after application until the end of the baiting period for acute toxins used above-ground.</u> <u>Anticoagulants-Weekly for anticoagulants</u> Within 7 days of installation of first generation anticoagulant bait, and weekly thereafter. Anytime a carcass is found, daily carcass surveys will begin for as long as carcasses are found until no carcasses are found during a daily survey. Once no carcasses are found, carcass surveys will return to the weekly carcass survey timeline maximum from the date of initial installation of an anticoagulant bait station. - In addition, twice per year District biologists will conduct daily carcass surveys for a full cycle of a baiting trap.

BMP Number	BMP Title	BMP Description
		to minimize secondary poisoning impacts. <u>To verify that the frequency of carcass surveys is adequate, a biologist will conduct daily carcass surveys 2 times per year over one baiting cycle. Based on the results of these surveys, the timing of carcass surveys will be adjusted if necessary.</u> Any spilled bait will be cleaned up immediately.
ANI-2	Prevent Harm to the Salt Marsh Harvest Mouse and California Clapper Rail	1. No rodenticides or fumigants will be used within the range of the SMHM or CCR as identified on District range maps. 2. Methods of rodent control within SMHM or CCR habitat will be limited to live trapping. All live traps shall have openings measuring no smaller than 2 inches by 1 inch to allow any SMHM that inadvertently enter the trap to easily escape. All traps will be placed outside of pickleweed areas and above the high tide line.
ANI-3	Burrowing Owl, Bald Eagle and Golden Eagle Buffer Zone	Per the California Department of Fish and Game's 2008 <i>Guidance for Burrowing Owl Conservation</i> , a 656-yard buffer will be established around known burrowing owl locations where no rodenticides or fumigants (including smoke bombs) will be used. A 0.5-mile buffer will be established around known bald eagle and golden eagle nesting locations where no rodenticides will be used.
ANI-4	Animal Control in Sensitive Amphibian Habitat	1. Fumigants will not be used within the habitat areas of special status amphibians. 2. The use of bait stations within the potential habitat areas of California red-legged frog, California tiger salamander, or foothill yellow-legged frog will be limited to bait stations specifically designed to prevent entry by these species. 3. Any live traps will allow California red-legged frogs, California tiger salamanders, or foothill yellow-legged frogs to safely exit (e.g., by having openings measuring no smaller than 2 inches by 1 inch).
ANI-5	Slurry Mixture near Waterways	All slurry type mixes used to fill rodent burrows will be prevented from entering any waterway by using appropriate erosion control methods and according to the manufacturer's specifications. If the creek bed is dry or has been dewatered, any material that has entered the channel will be removed.

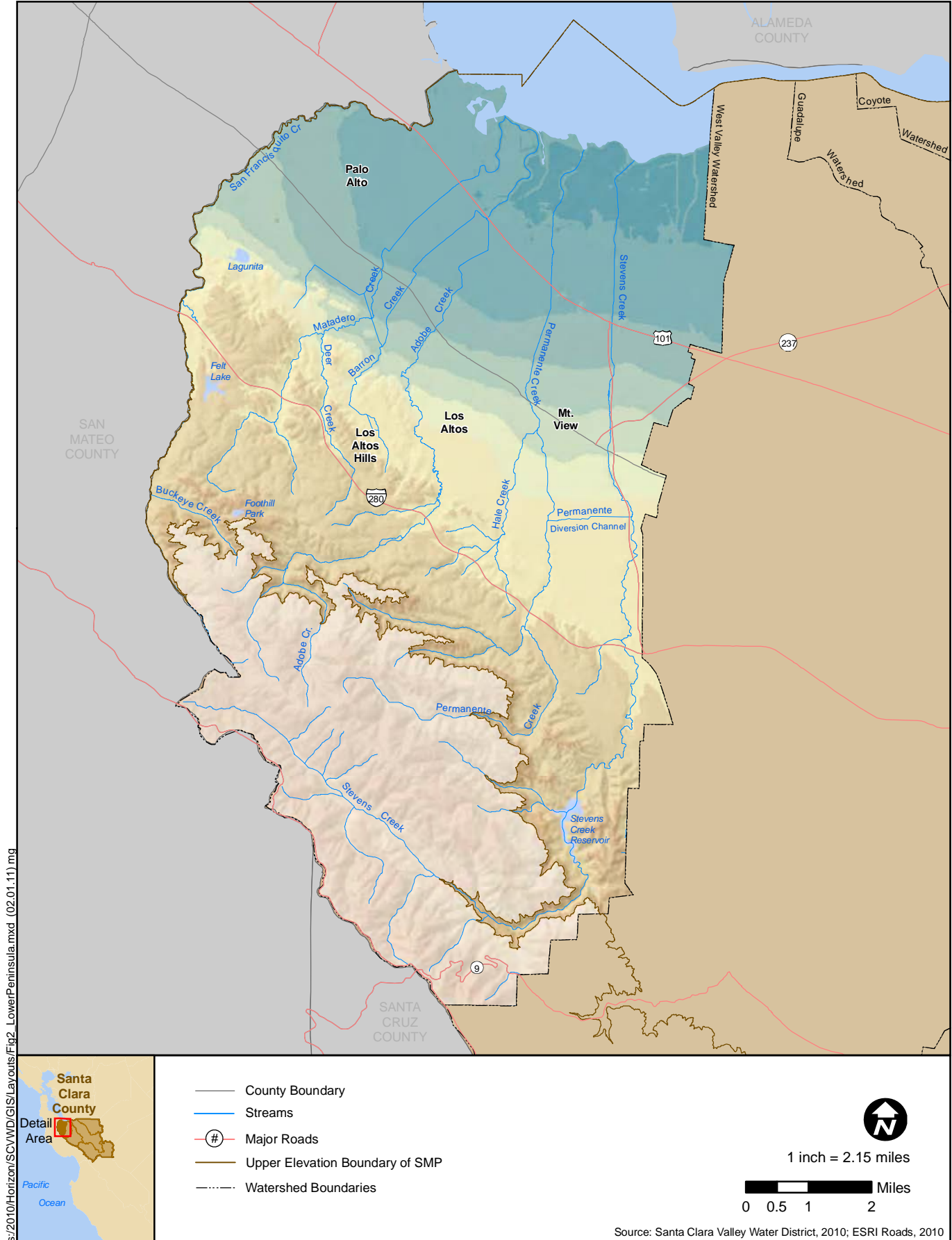
SECTION H – Use of Pesticides

Pesticides may be used for vegetation management or control of animal damage

BMP Number	BMP Title	BMP Description
HM-4	Posting and Notification for Pesticide Use	Posting of areas where pesticides are used will be performed in compliance with District Policy Ad-8.2 Pesticide Use as follows: 1. Posting will be performed in compliance with the label requirements of the product being applied. 2. In addition, posting will be provided for any products applied in areas used by the public for recreational purposes, or those areas readily accessible to the public, regardless of whether the label requires such notification. In doing this, the District ensures that exposure risk is minimized further by adopting practices that go beyond the product label requirements. (The posting method may be modified to avoid destruction of bait stations or scattering of rodenticide.)

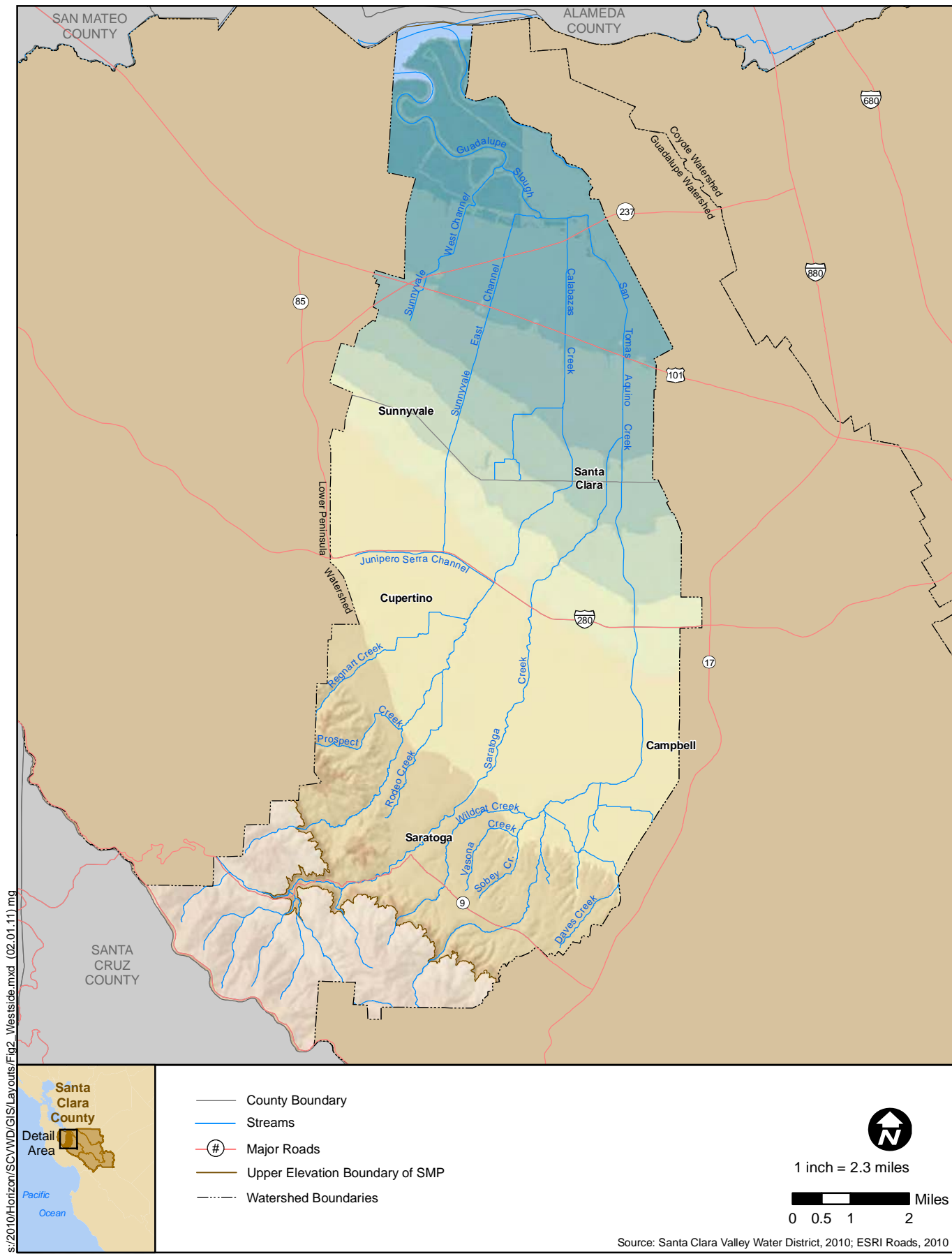
BMP Number	BMP Title	BMP Description
		<p>3. These postings will notify staff and the general public of the date and time of application, the product's active ingredients, and common name, and the time of allowable re-entry into the treated area.</p> <p>4. Signs will not be removed until after the end of the specified re-entry interval.</p> <p>5. Right-to-know literature on the product will be made available to anyone in the area during the re-entry period.</p> <p>6. A District staff contact phone number will be posted on the sign, including a pagercellular phone number.</p> <p>7. Notification of pesticide activities will be made as required by law. Also, the District will maintain records of neighbors with specific needs relative to notification before treatment of an adjacent area so that such needs are met.</p>

Source: Data compiled by Horizon Water and Environment in 2011



**Figure 2-2: Project Area
Lower Peninsula Watershed**

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**Figure 2-3: Project Area
West Valley Watershed**

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**Figure 2-4: Project Area
Guadalupe Watershed**

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- County Boundary
- Streams
- Major Roads
- Upper Elevation Boundary of SMP
- Watershed Boundaries



1 inch = 5 miles

0 1.25 2.5 5 Miles

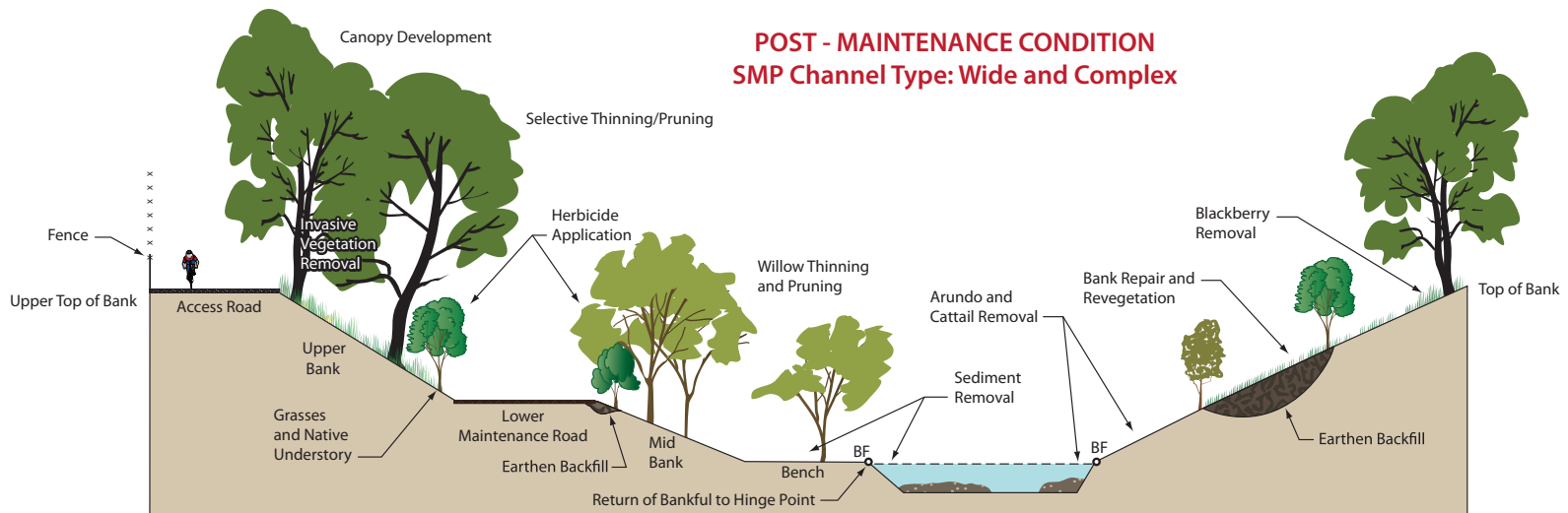
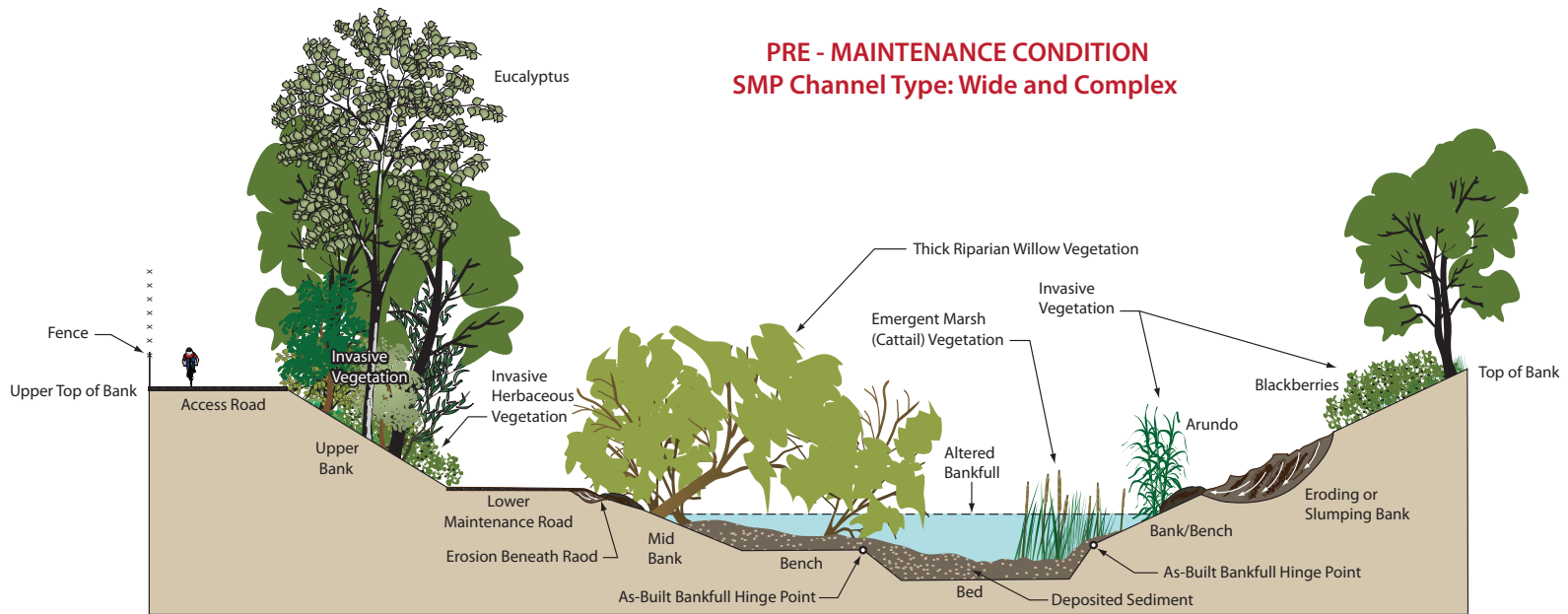
Source: Santa Clara Valley Water District, 2010; ESRI Roads, 2010



**Figure 2-5: Project Area
Coyote Watershed**

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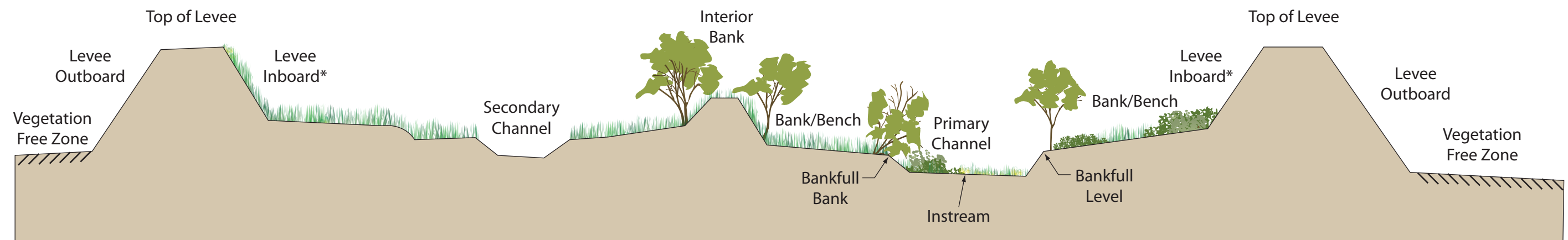
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Note 1 - for flood control channels that include engineered levees, the upper bank portion of this typical cross section is analogous to the inboard levee. Many SCVWD levees also have a visible outboard slope that slopes outside and away from the channel to the adjacent land.

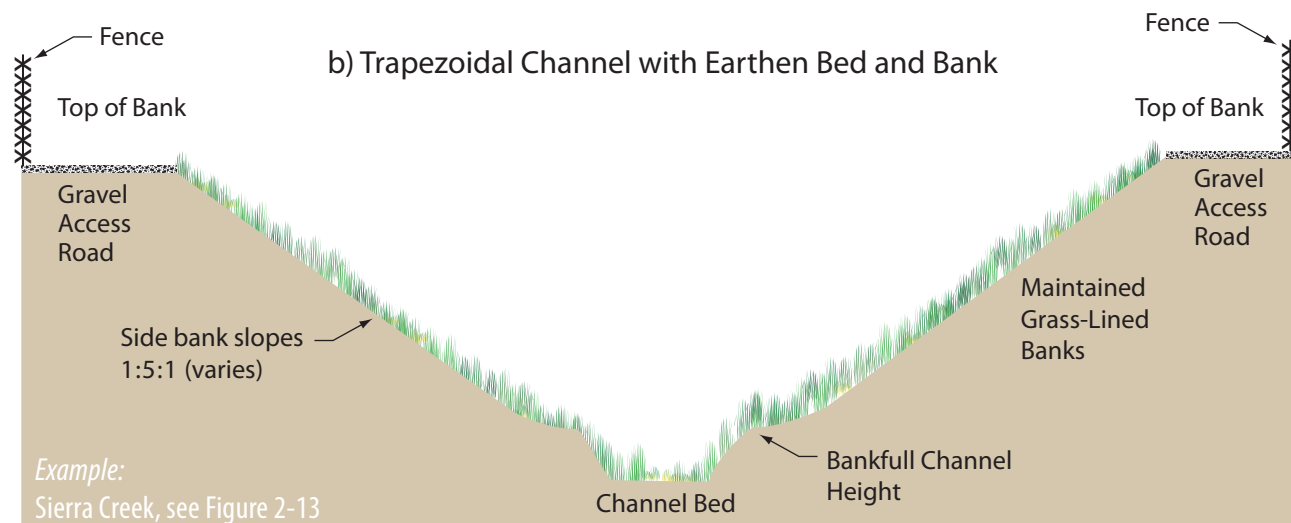
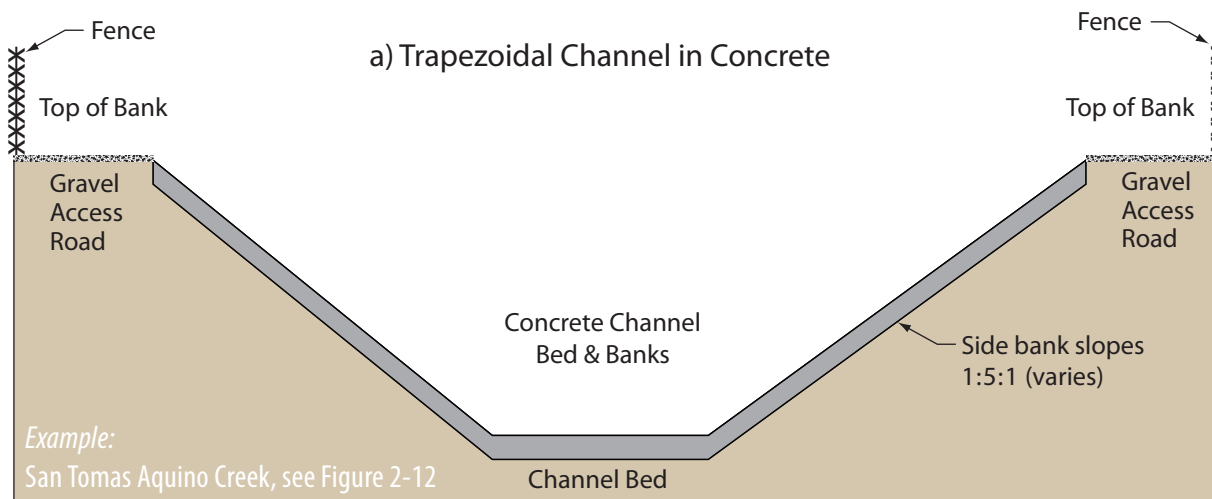
Note 2 - the areas in the typical cross-section identified as "bank" or "bench" are typically combined into a single geographic area type "bank/bench" for the purposes of SCVWD maintenance work projections.

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*Although in some instances vegetation exists at levee inboard locations, for federally-constructed flood protection projects for which SCVWD is the local sponsor (and therefore responsible for maintenance), the U.S. Army Corps of Engineers (Corps) has indicated that vegetation-free zones should exist at levee inboard locations to maximize accessibility for inspection and maintenance (unless the local sponsor applies for and receives a vegetation variance from the Corps).

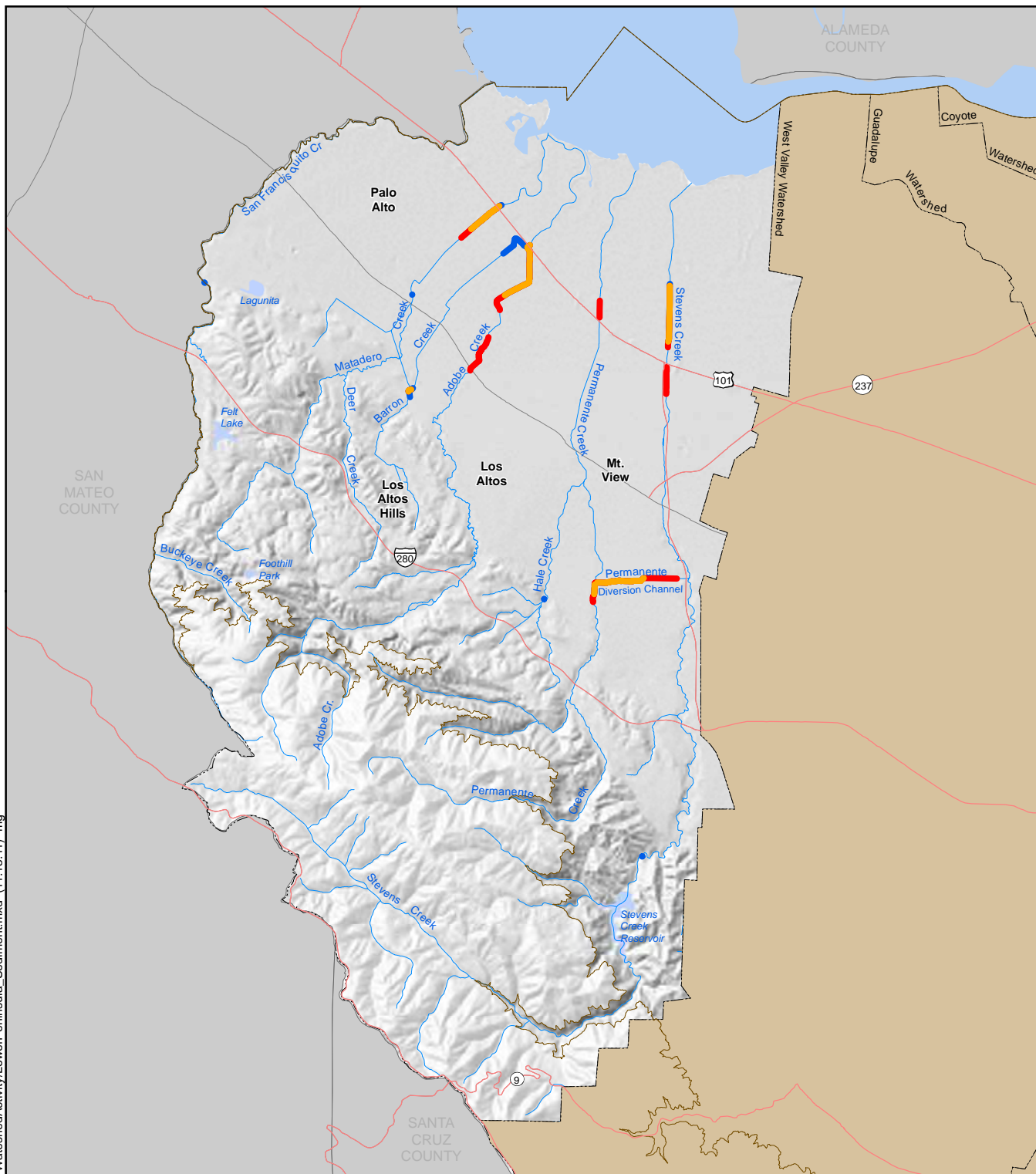
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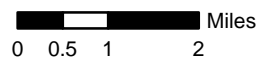


- Sediment Removal: 2002 - 2012 (only)
- Sediment Removal: 2002 - 2012 and 2012-2022 (both)
- Sediment Removal: 2012 - 2022 (new)
- County Boundary
- Streams
- # Major Roads
- Upper Elevation Boundary of SMP
- Watershed Boundaries

Note: Project area maps provide a general description of work type and area for the 2012-2022 SMP Update and are not intended to represent the exact locations of future work.



1 inch = 2.15 miles



Source: Santa Clara Valley Water District, 2010; ESRI Roads, 2010



Figure 2-14: Lower Peninsula Watershed Maintenance Activity - Sediment Removal

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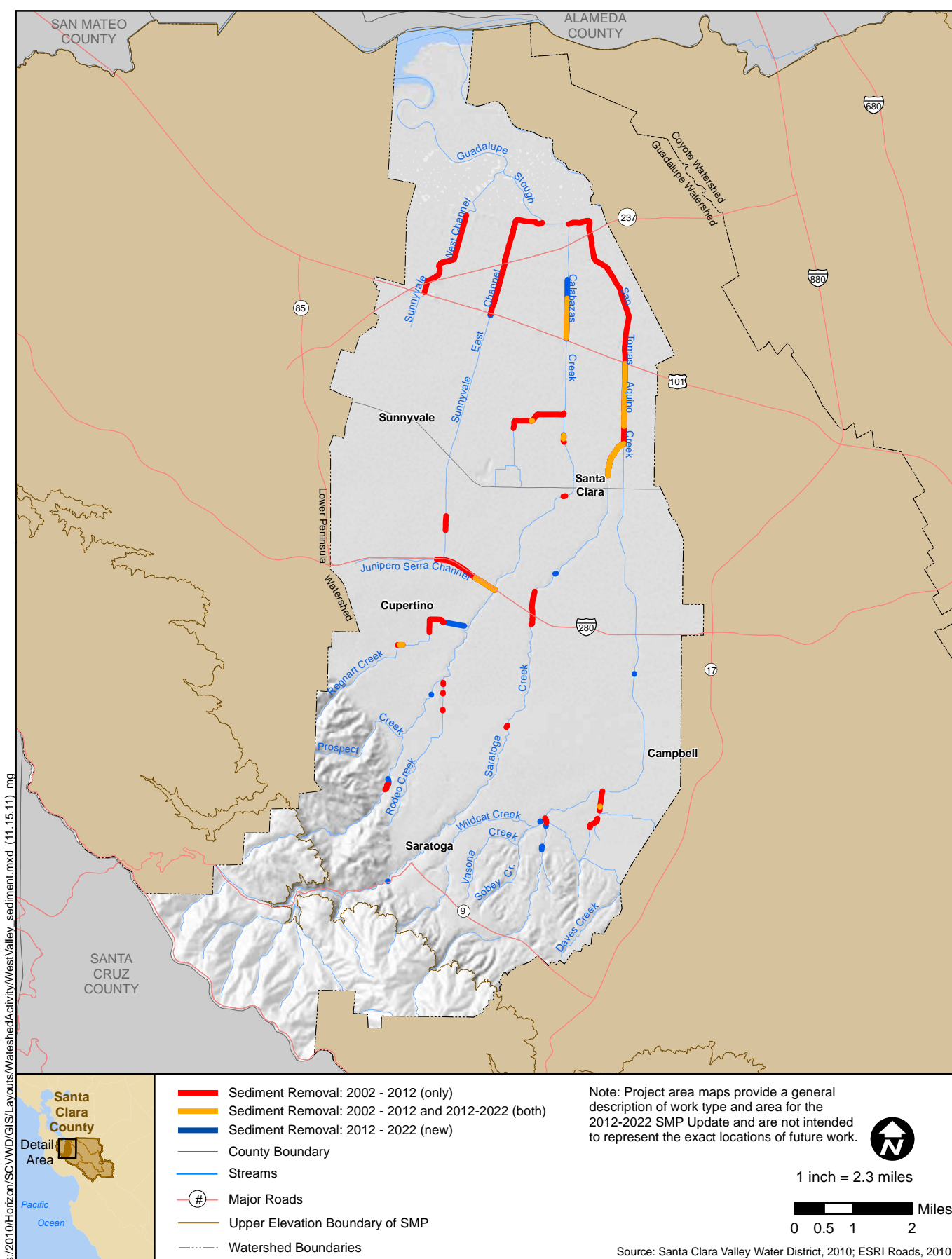
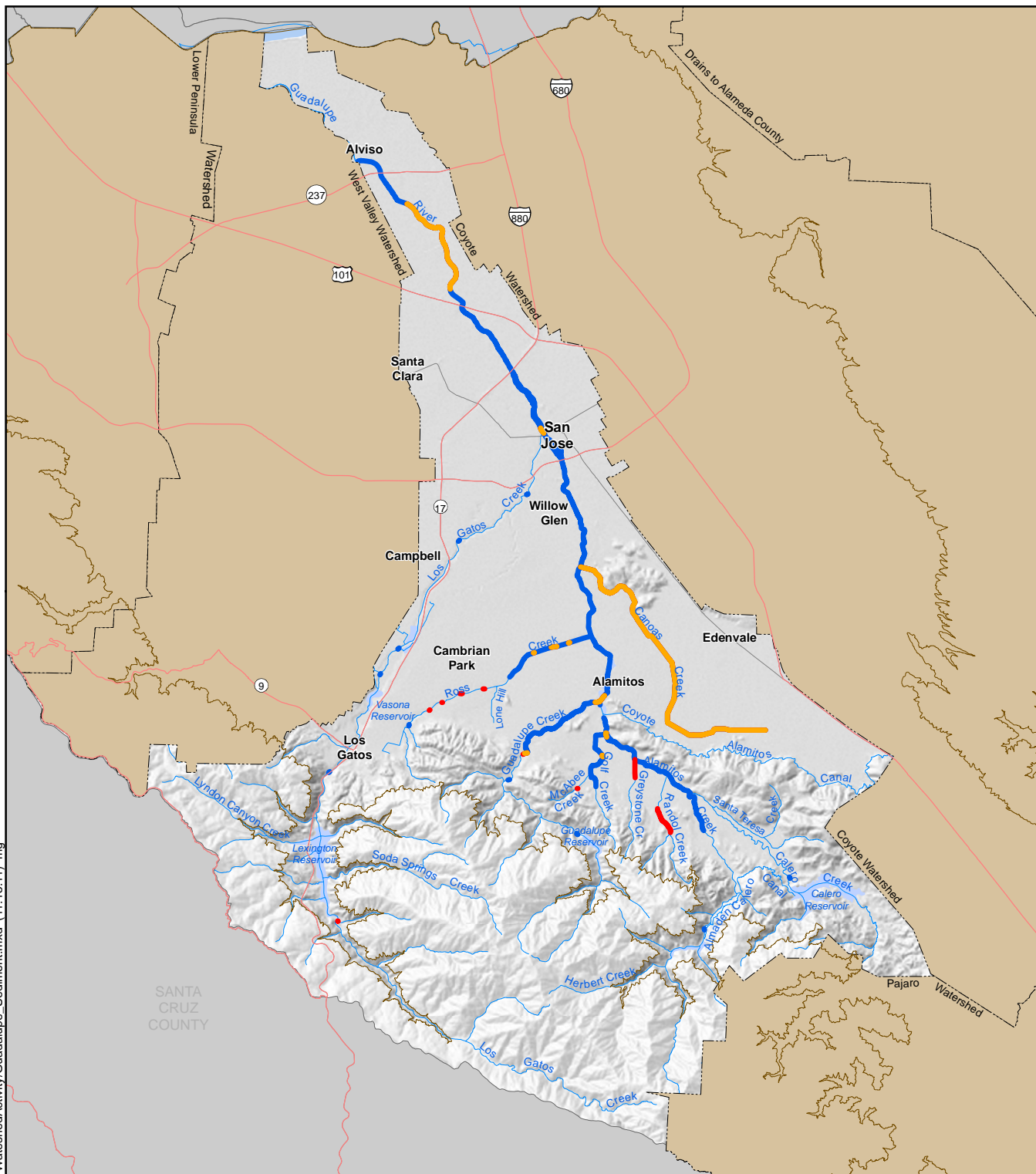


Figure 2-15: West Valley Watershed Maintenance Activity - Sediment Removal

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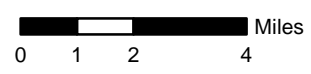


- Sediment Removal: 2002 - 2012 (only)
- Sediment Removal: 2002 - 2012 and 2012-2022 (both)
- Sediment Removal: 2012 - 2022 (new)
- County Boundary
- Streams
- # Major Roads
- Upper Elevation Boundary of SMP
- Watershed Boundaries

Note: Project area maps provide a general description of work type and area for the 2012-2022 SMP Update and are not intended to represent the exact locations of future work.



1 inch = 3.5 miles



Source: Santa Clara Valley Water District, 2010; ESRI Roads, 2010



Figure 2-16: Guadalupe Watershed Maintenance Activity - Sediment Removal

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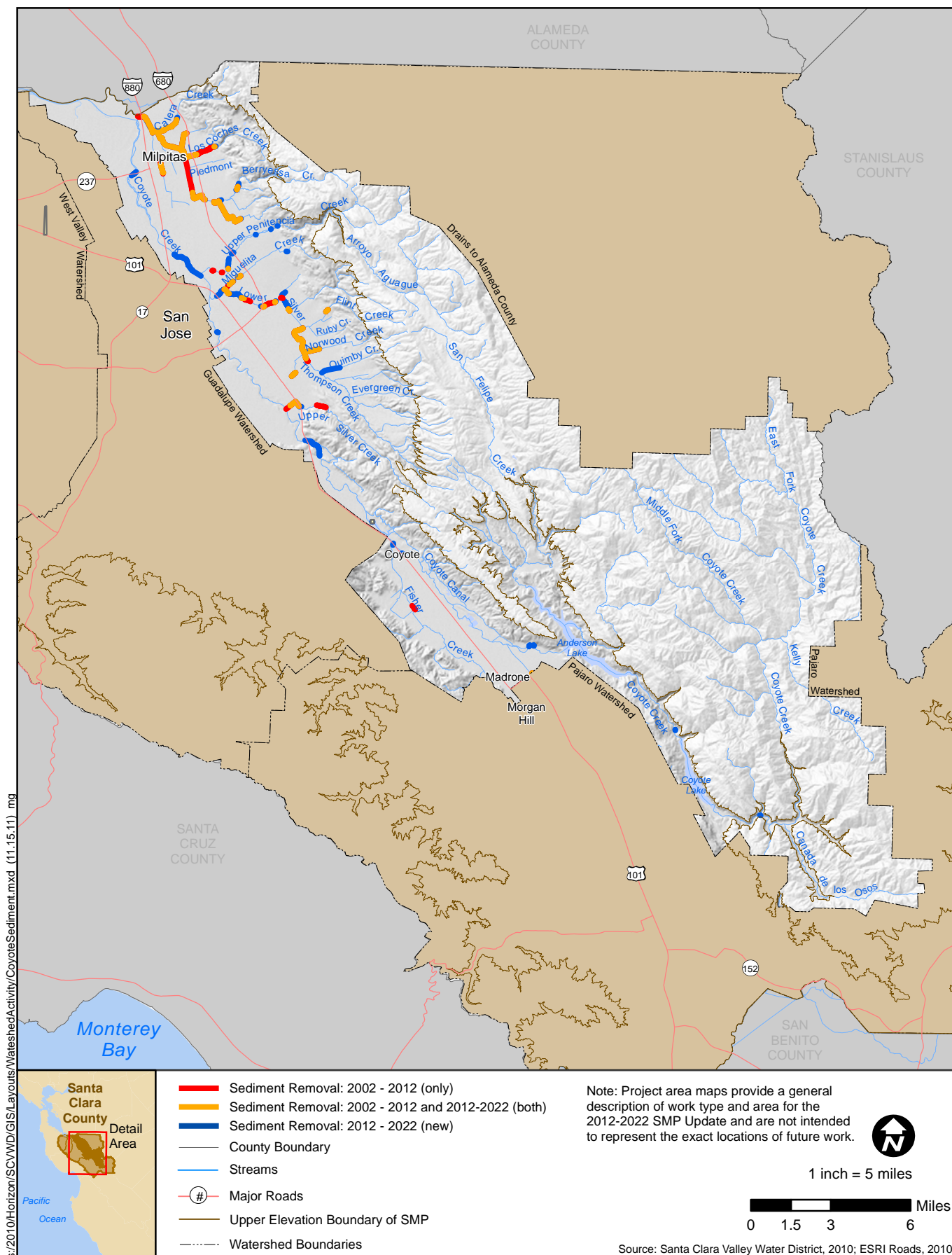


Figure 2-17: Coyote Watershed Maintenance Activity - Sediment Removal

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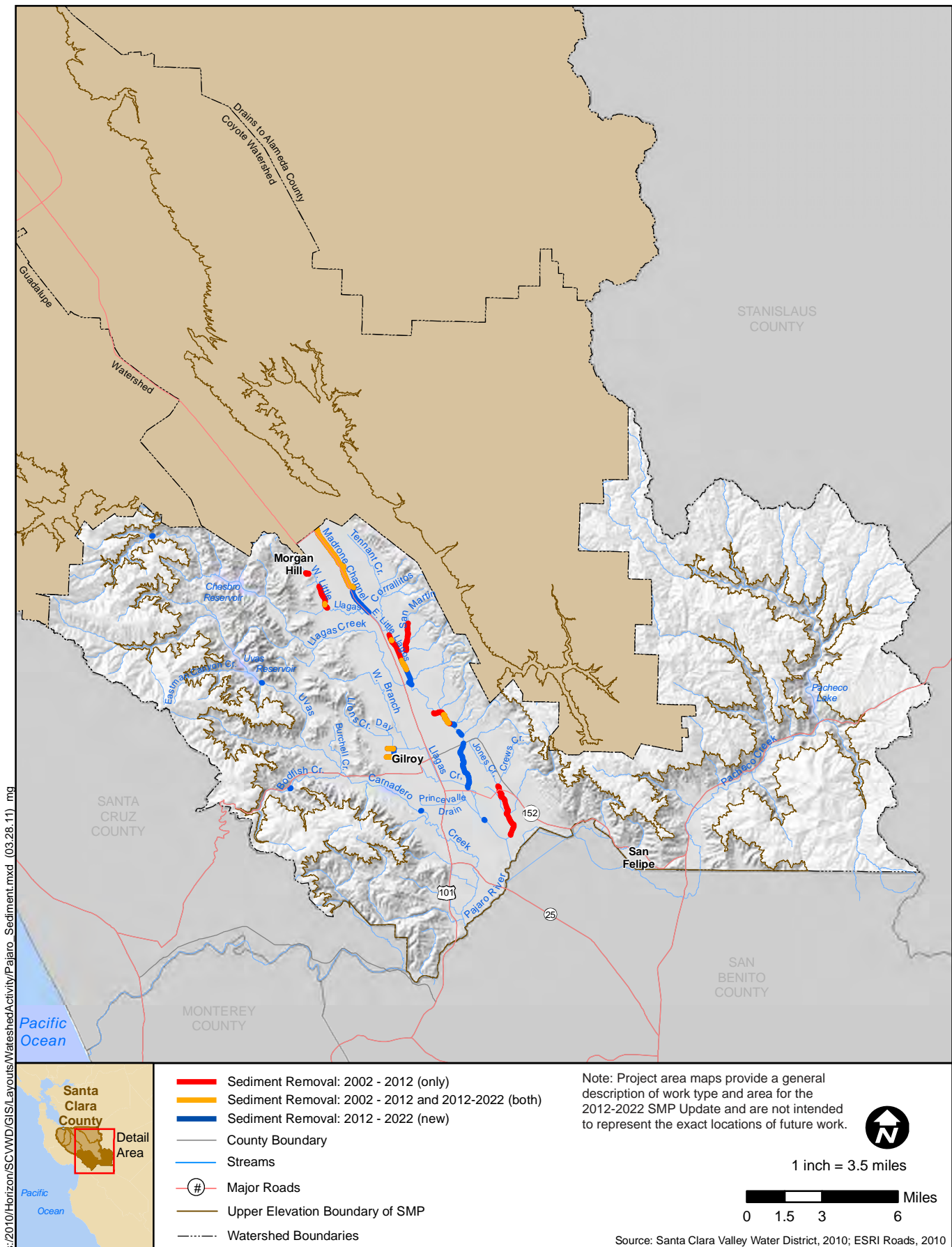
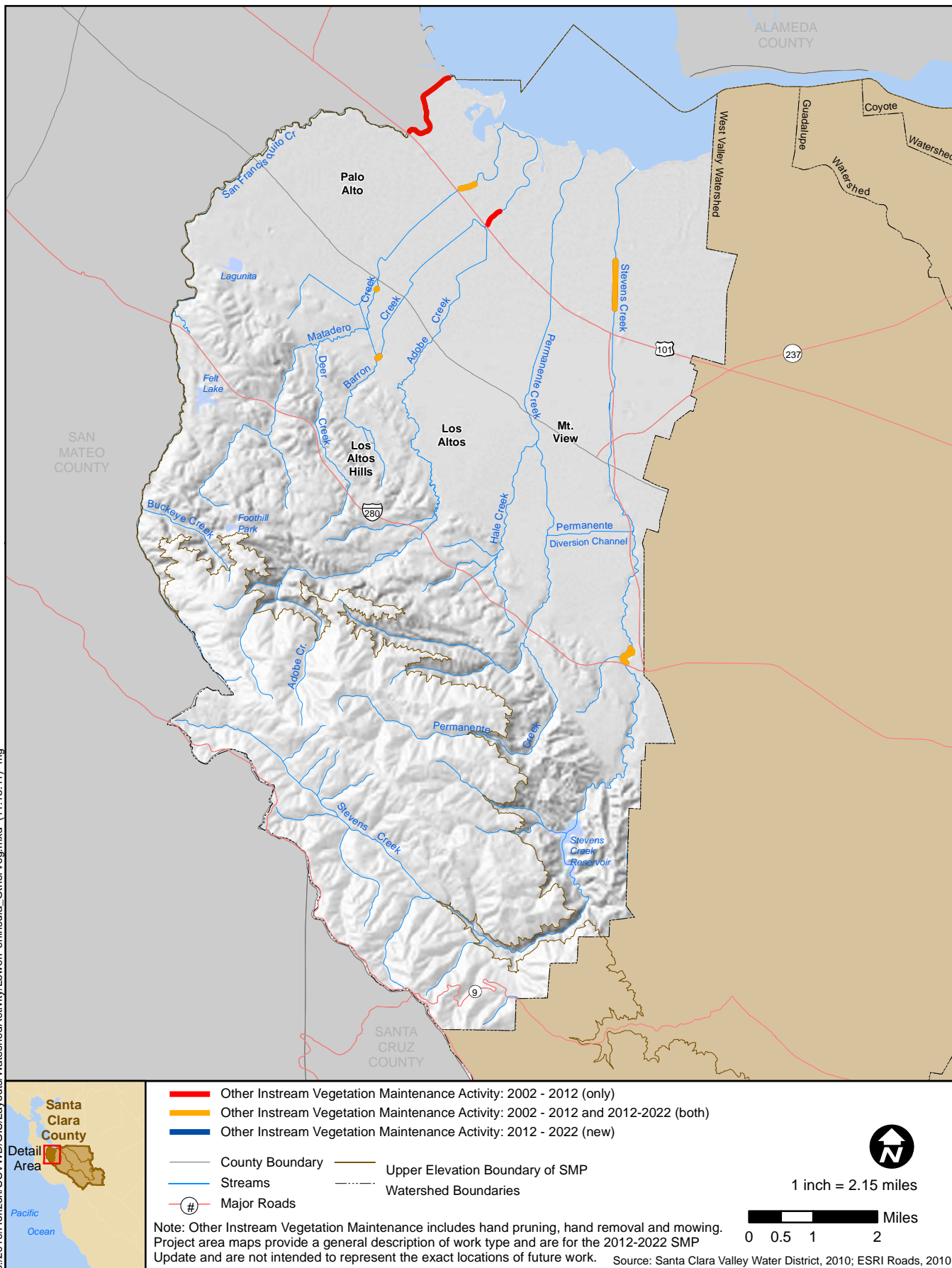


Figure 2-18: Pajaro Watershed Maintenance Activity - Sediment Removal

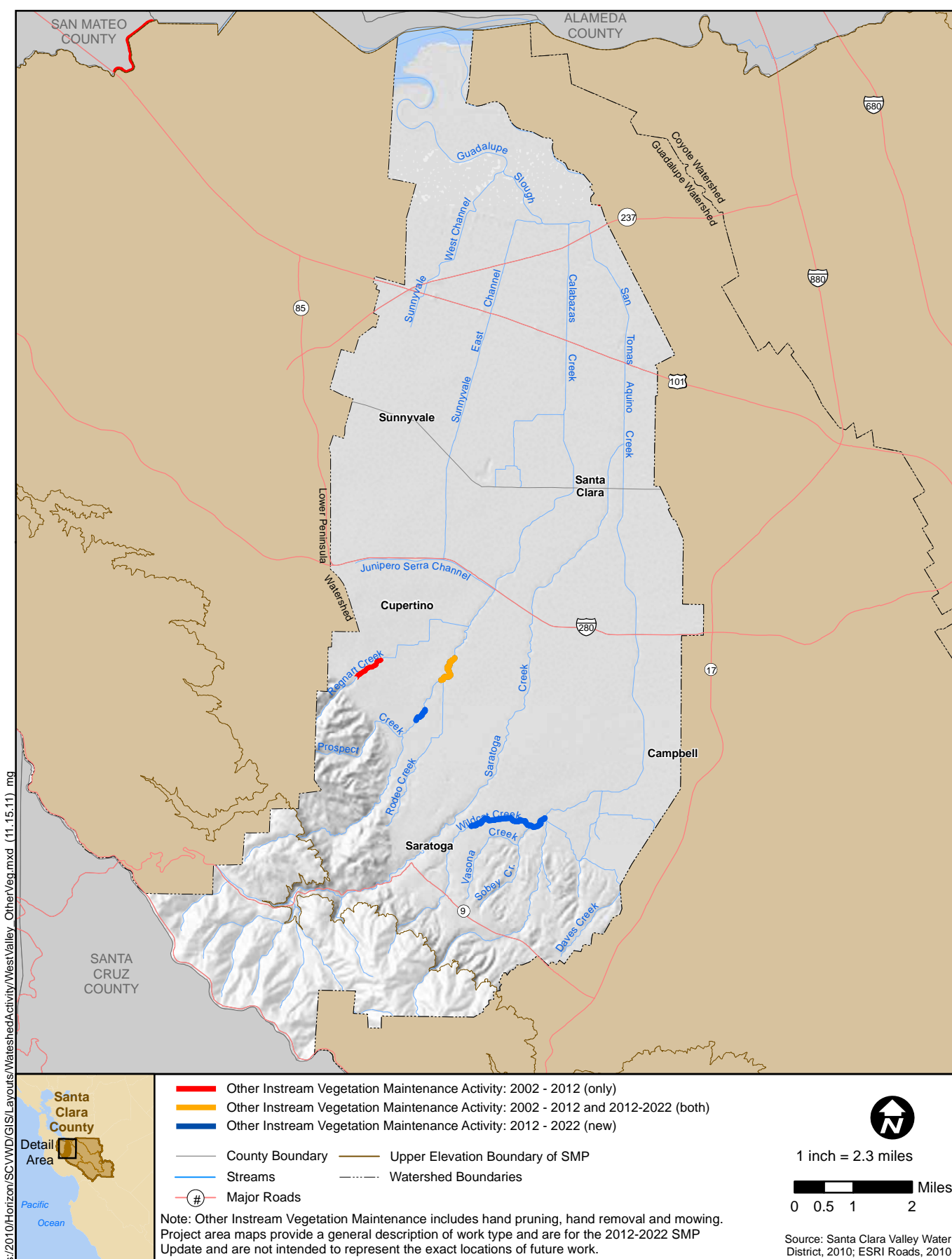
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**Figure 2-19: Lower Peninsula Watershed Maintenance Activity
Other Instream Vegetation Maintenance**

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**Figure 2-20: West Valley Watershed Maintenance Activity
Other Instream Vegetation Maintenance**

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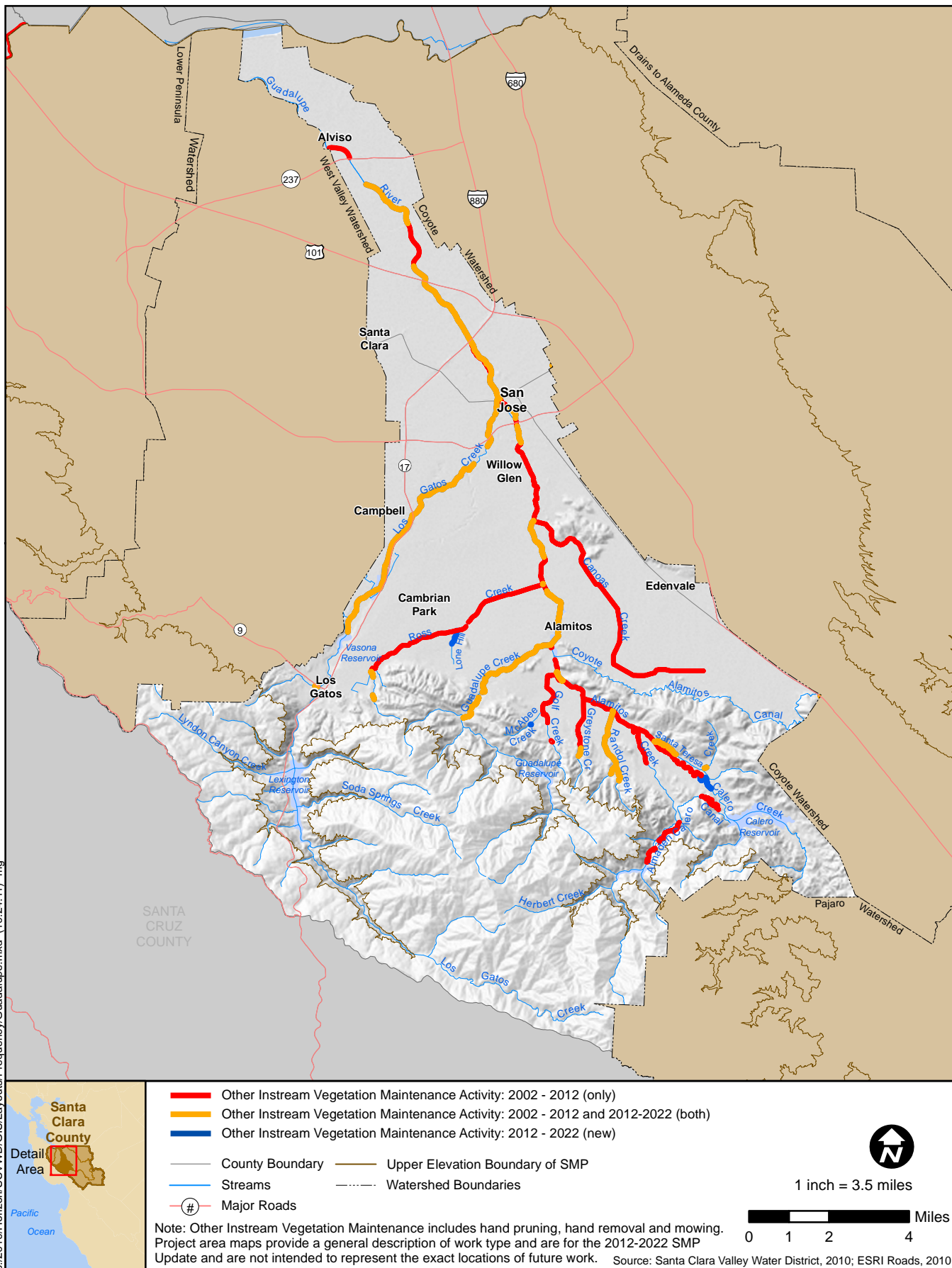
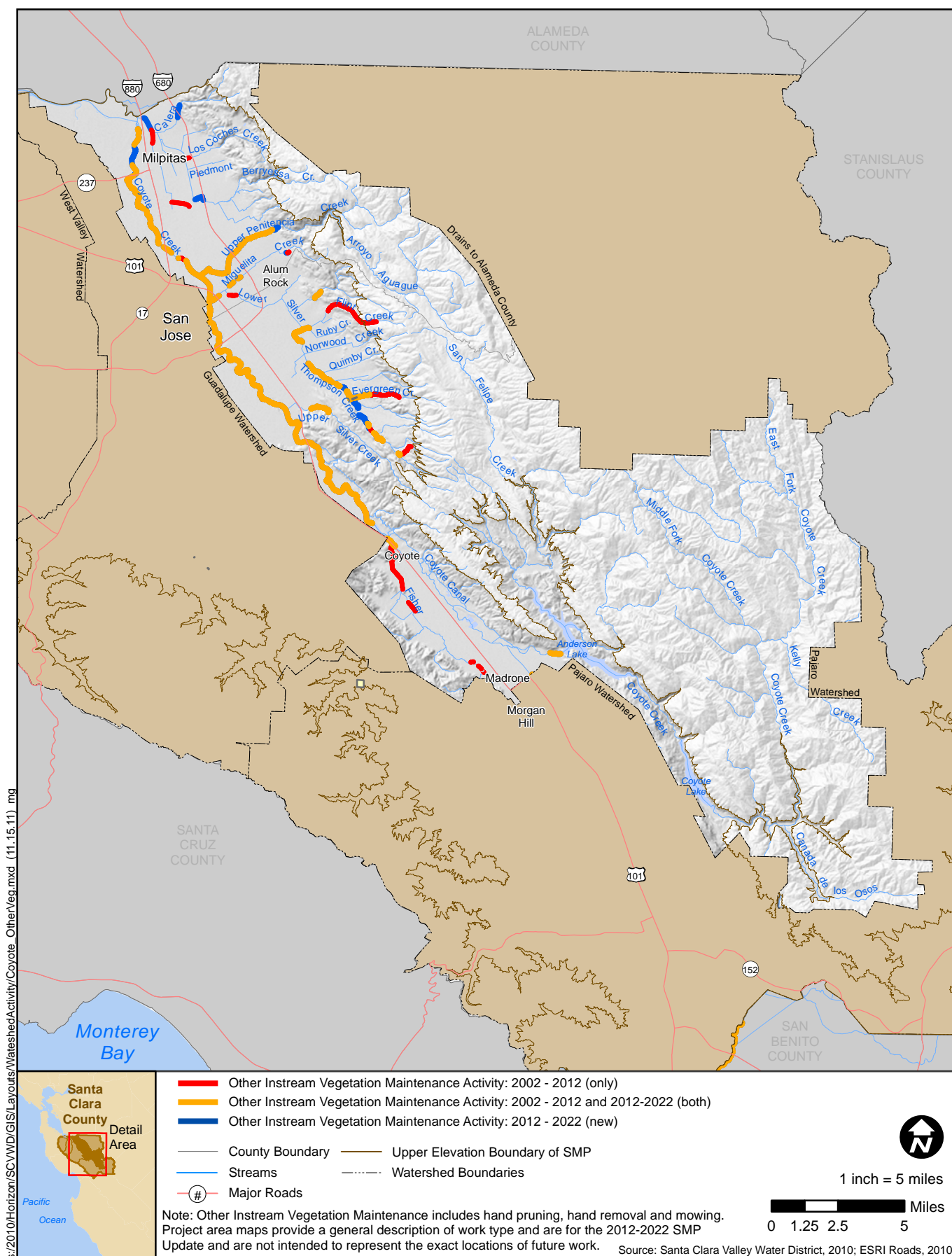


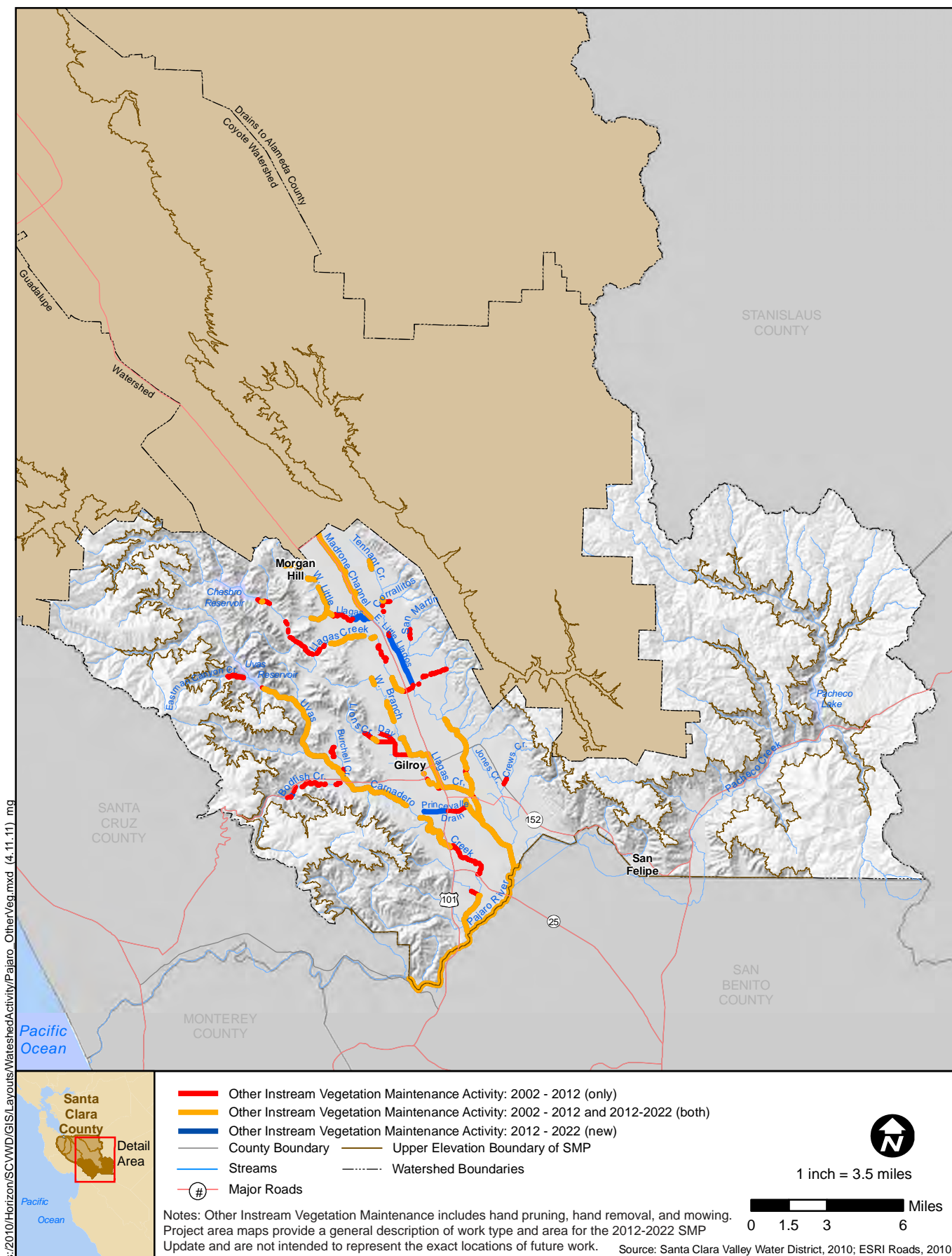
Figure 2-21: Guadalupe Watershed Maintenance Activity
Other Instream Vegetation Maintenance

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**Figure 2-22: Coyote Watershed Maintenance Activity
Other Instream Vegetation Maintenance**

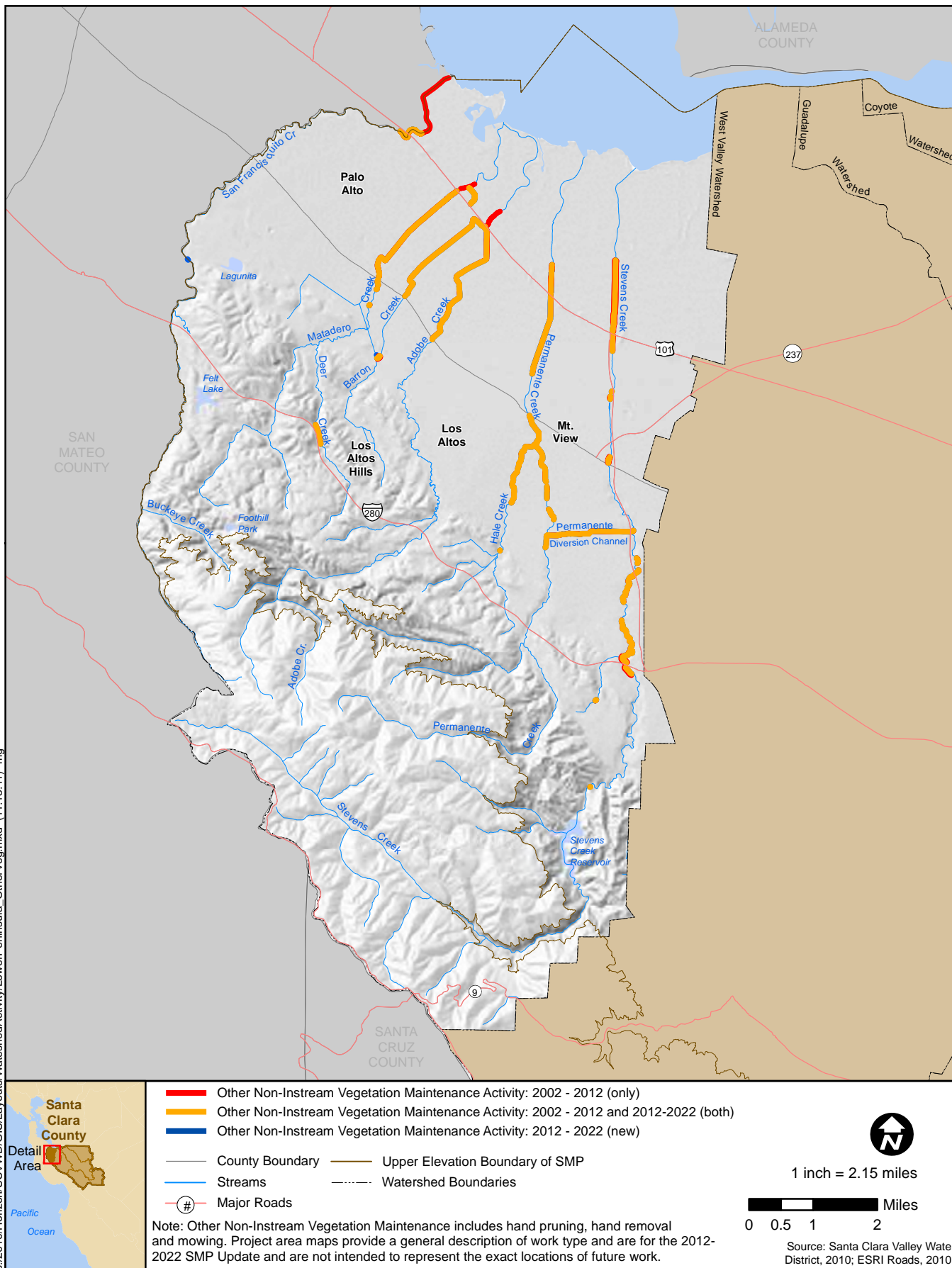
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**Figure 2-23: Pajaro Watershed Maintenance Activity
Other Instream Vegetation Maintenance**

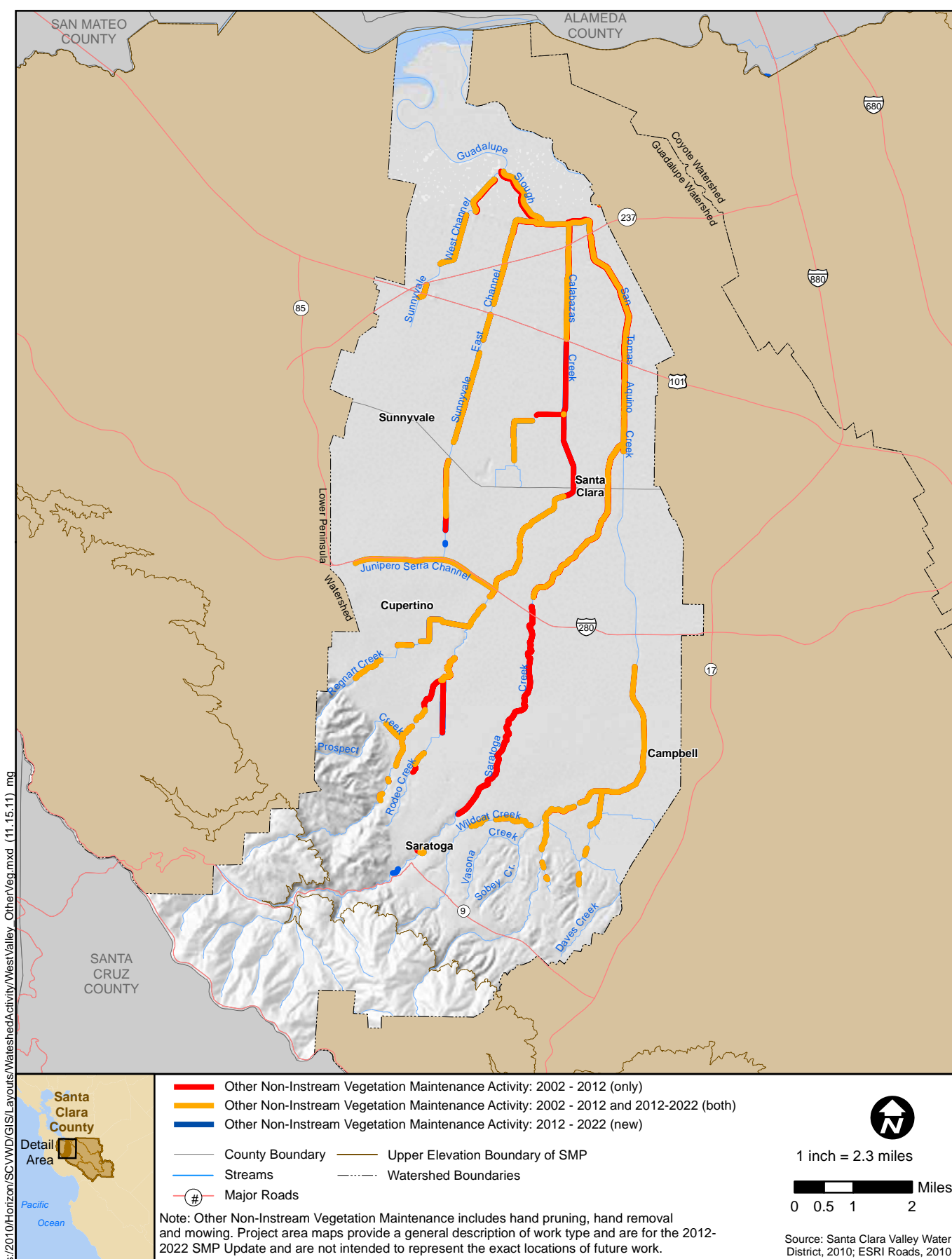
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**Figure 2-24: Lower Peninsula Watershed Maintenance Activity
Other Non-Instream Vegetation Maintenance**

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**Figure 2-25: West Valley Watershed Maintenance Activity
Other Non-Instream Vegetation Maintenance**

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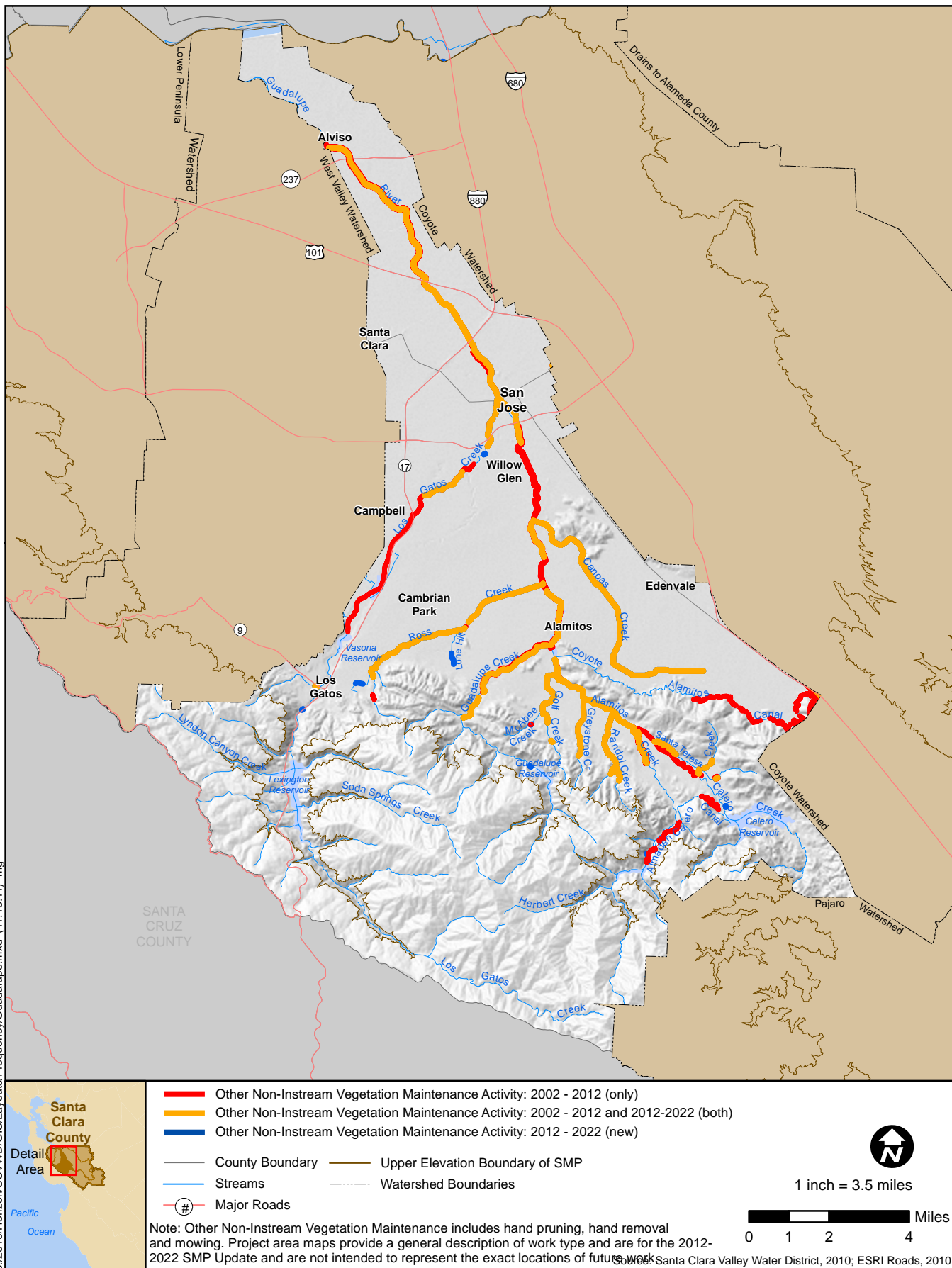
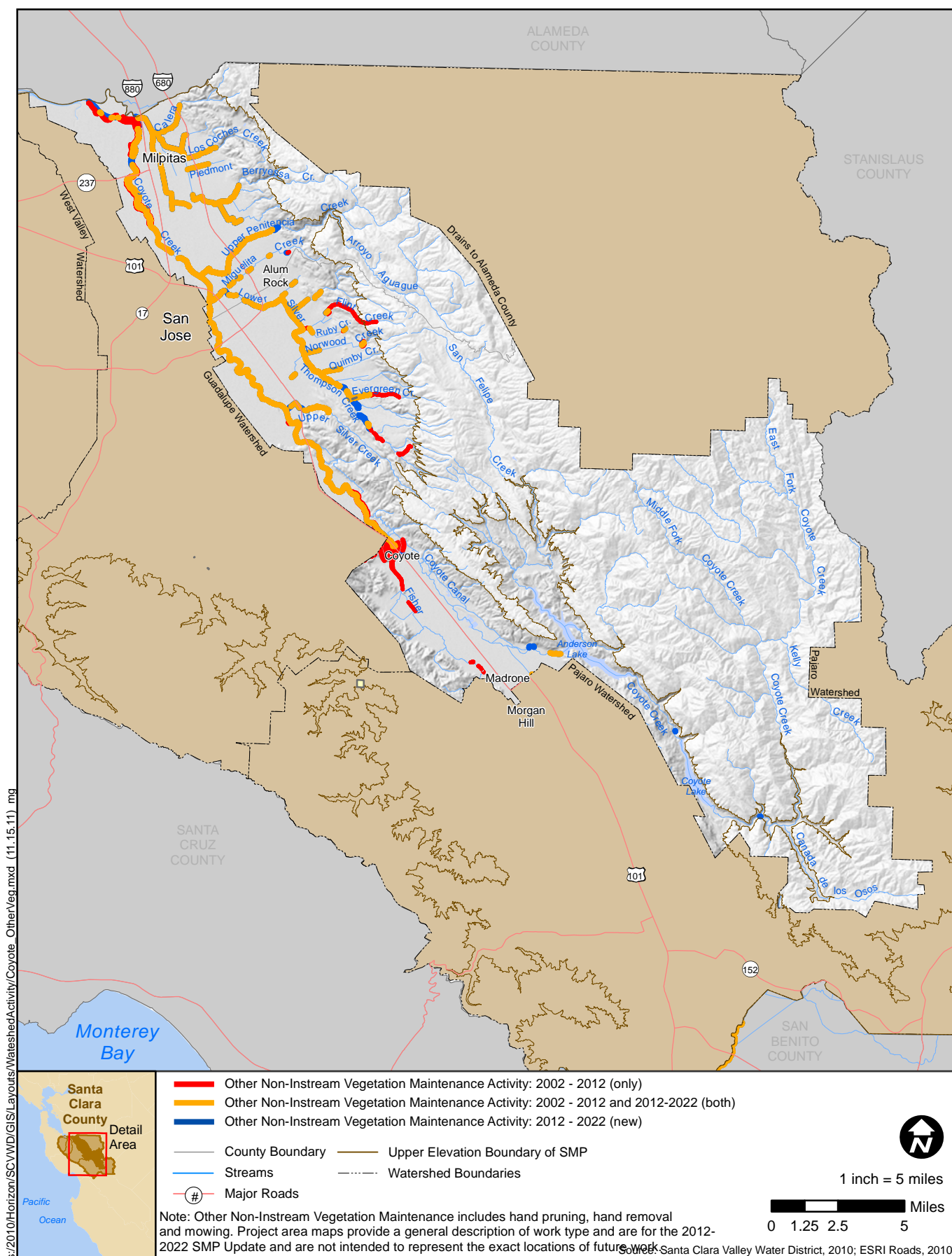


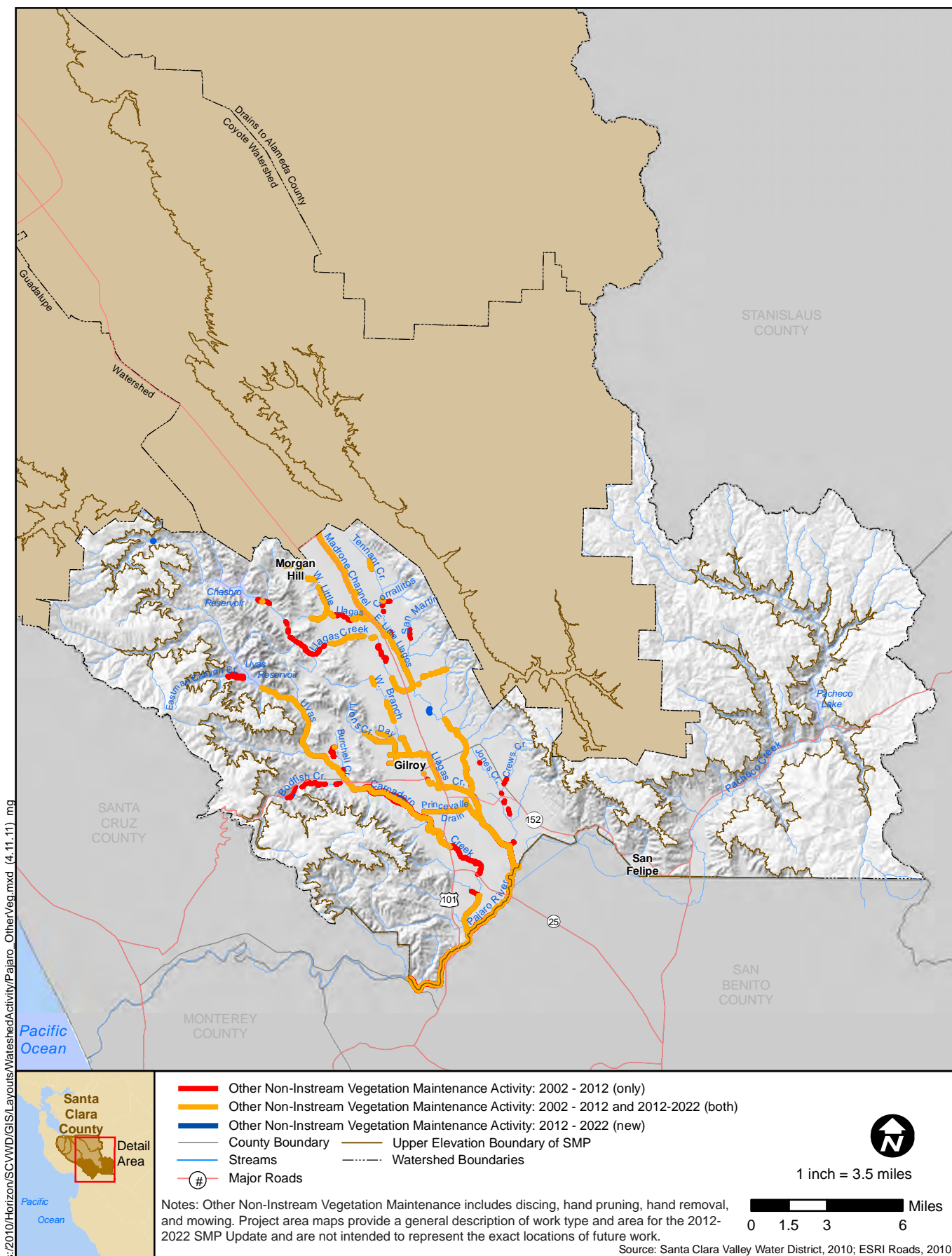
Figure 2-26: Guadalupe Watershed Maintenance Activity
Other Non-Instream Vegetation Maintenance

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**Figure 2-27: Coyote Watershed Maintenance Activity
Other Non-Instream Vegetation Maintenance**

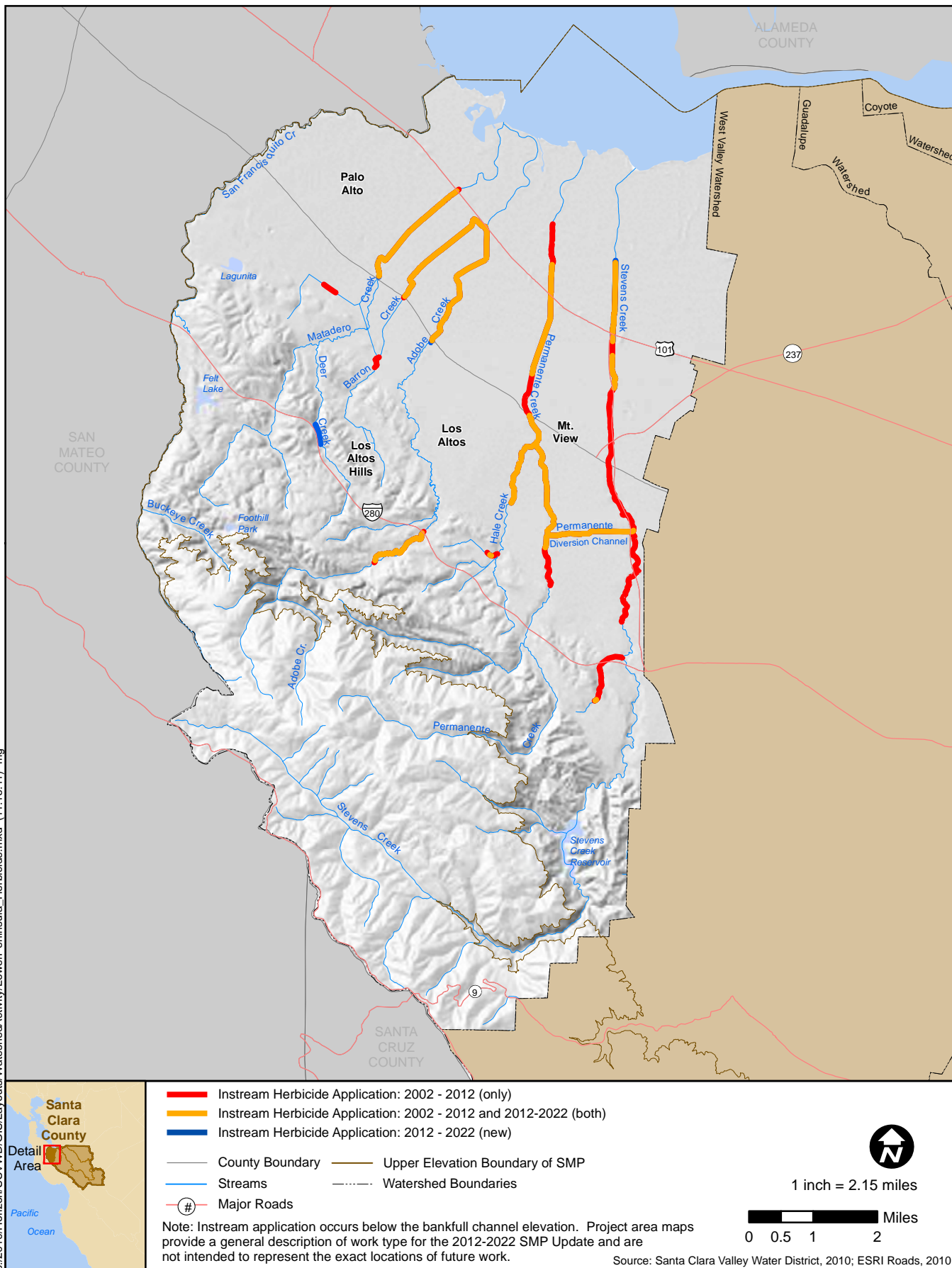
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**Figure 2-28: Pajaro Watershed Maintenance Activity
Other Non-Instream Vegetation Maintenance**

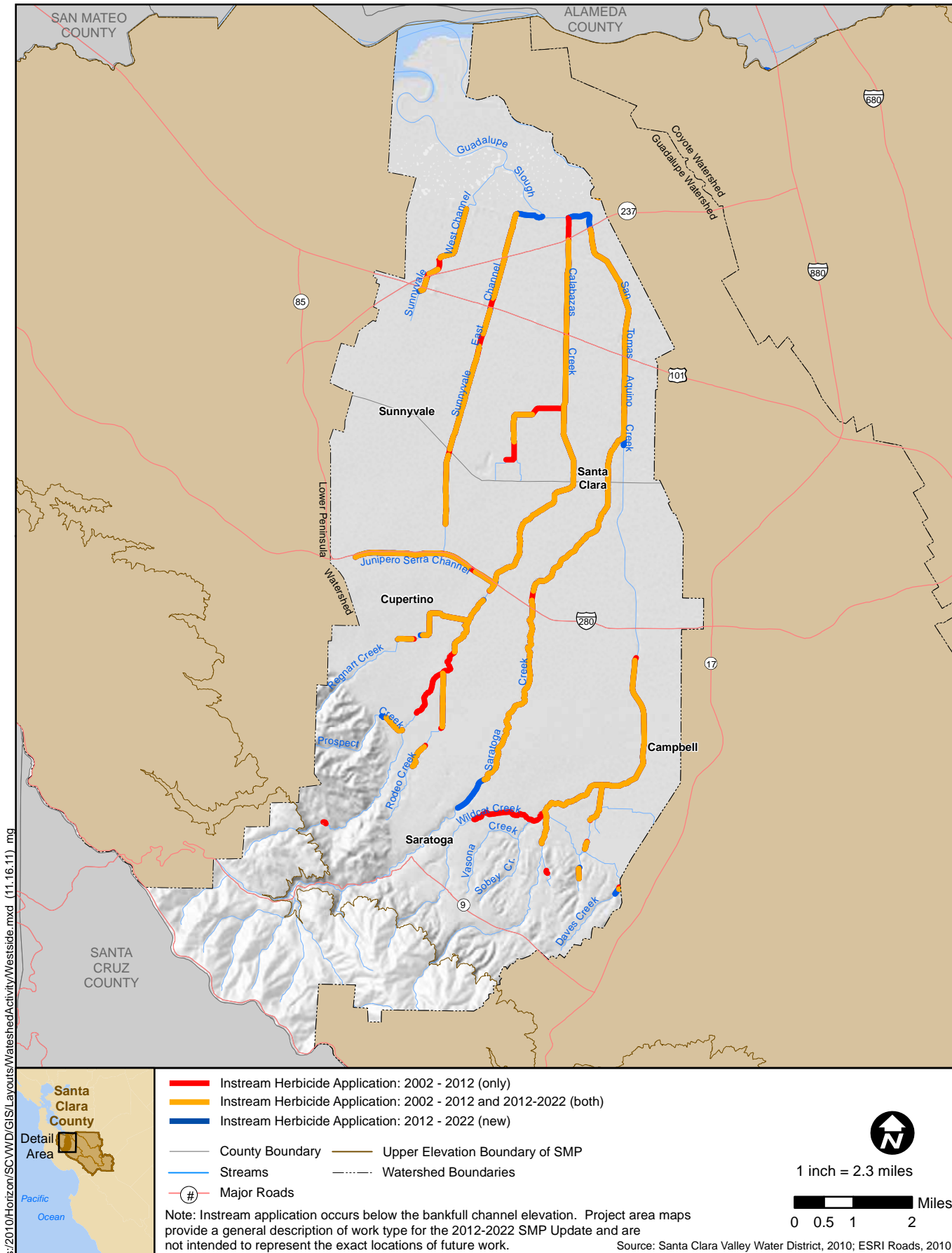
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**Figure 2-29: Lower Peninsula Watershed Maintenance Activity
Instream Herbicide Application**

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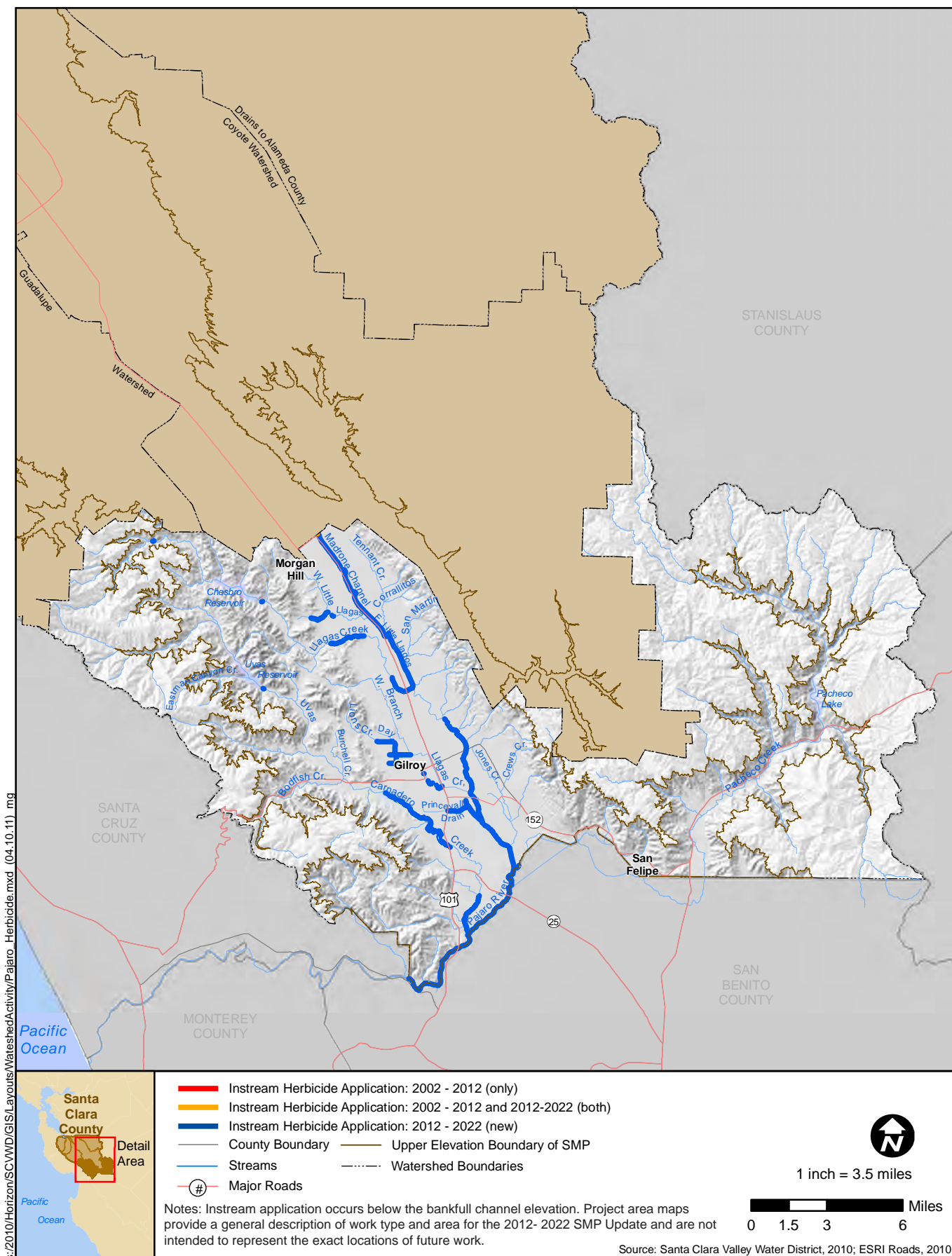


**Figure 2-30: West Valley Watershed Maintenance Activity
Instream Herbicide Application**

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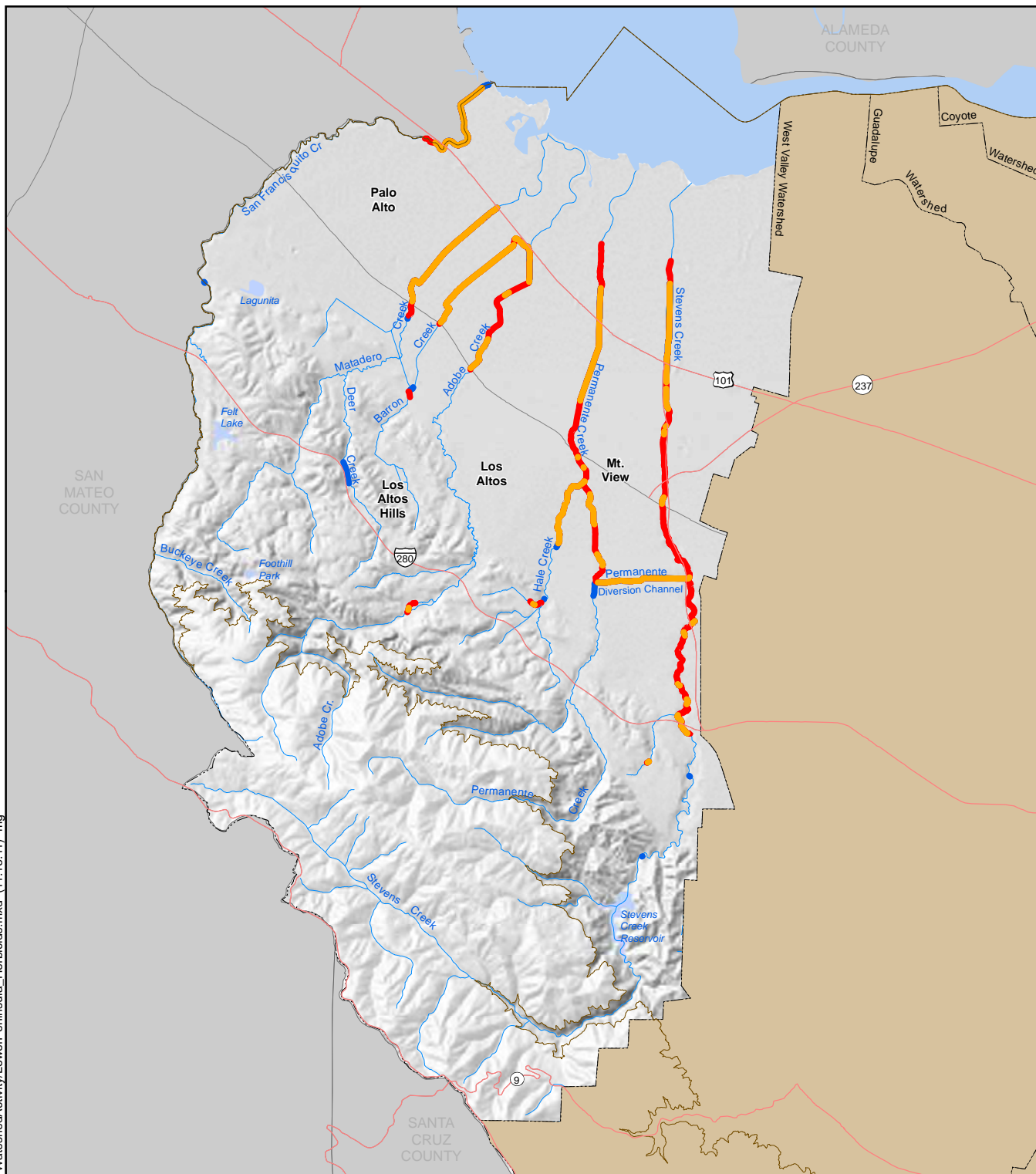
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**Figure 2-33: Pajaro Watershed Maintenance Activity
Instream Herbicide Application**

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	Non-Instream Herbicide Application: 2002 - 2012 (only)
	Non-Instream Herbicide Application: 2002 - 2012 and 2012-2022 (both)
	Non-Instream Herbicide Application: 2012 - 2022 (new)
	County Boundary
	Upper Elevation Boundary of SMP
	Streams
	Watershed Boundaries
	Major Roads

Note: Non-Instream application occurs below the bankfull channel elevation. Project area maps provide a general description of work type for the 2012-2022 SMP Update and are not intended to represent the exact locations of future work.

Source: Santa Clara Valley Water District, 2010; ESRI Roads, 2010

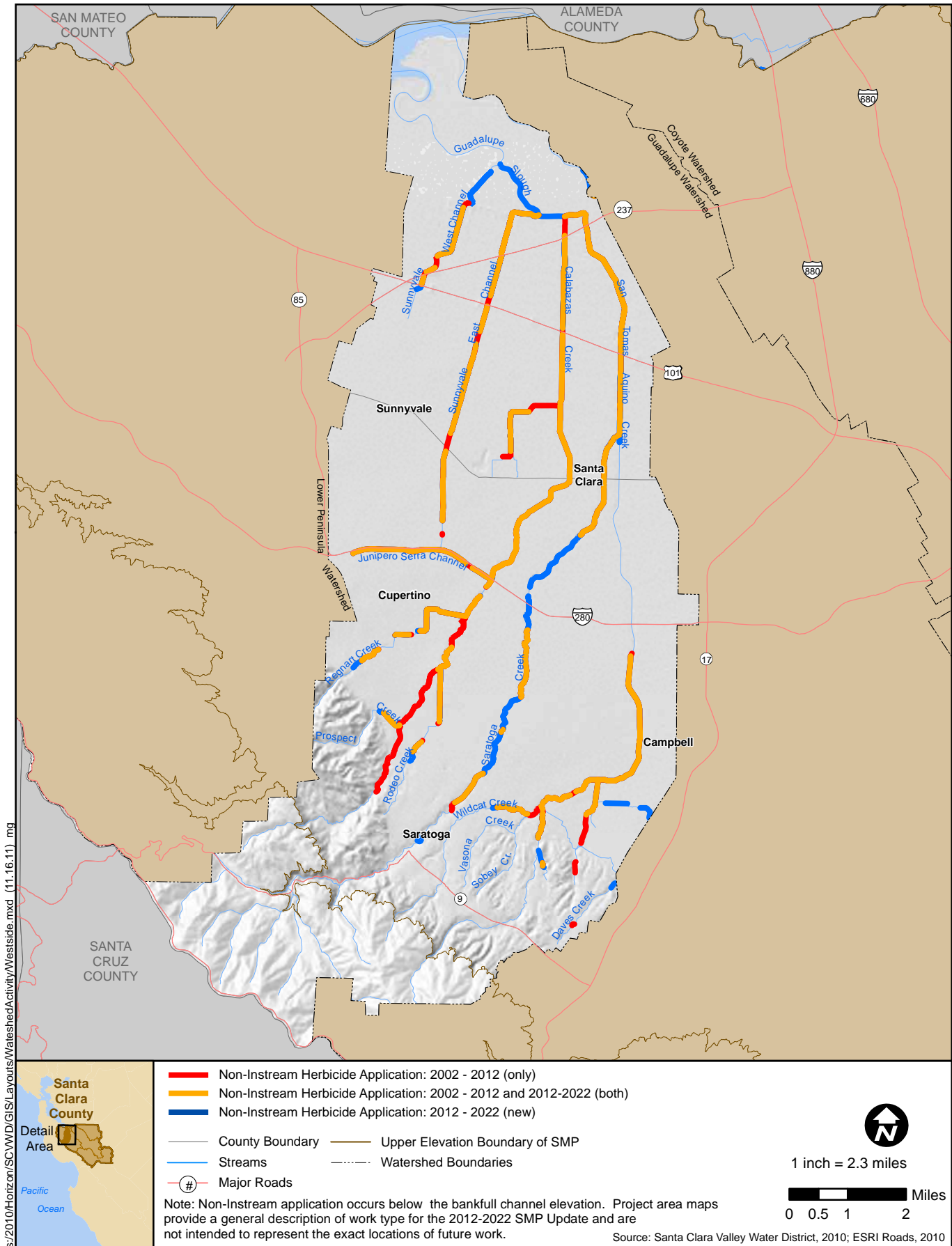
1 inch = 2.15 miles

 0 0.5 1 2 Miles



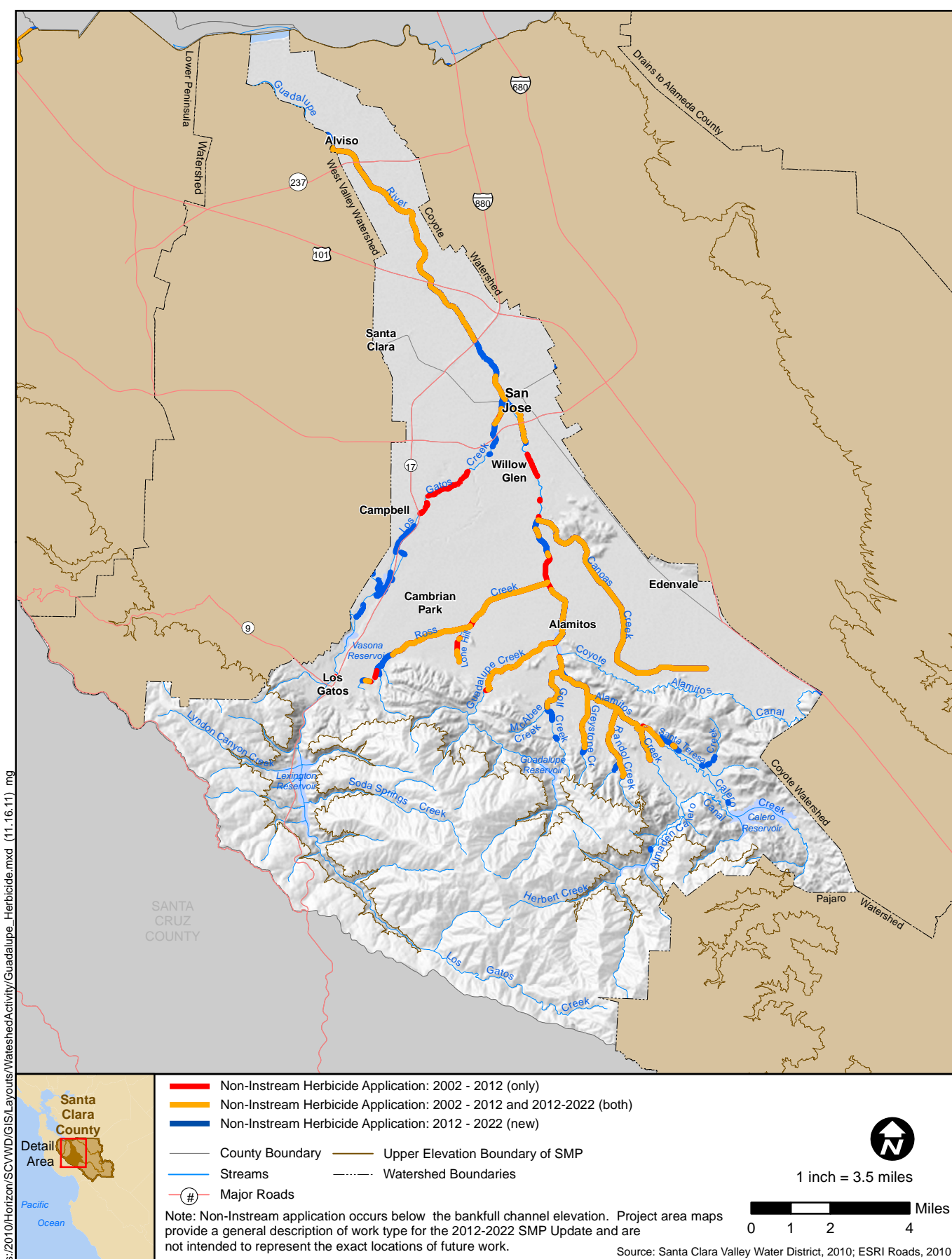
**Figure 2-34: Lower Peninsula Watershed Maintenance Activity
Non-Instream Herbicide Application**

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**Figure 2-35: West Valley Watershed Maintenance Activity
Non-Instream Herbicide Application**

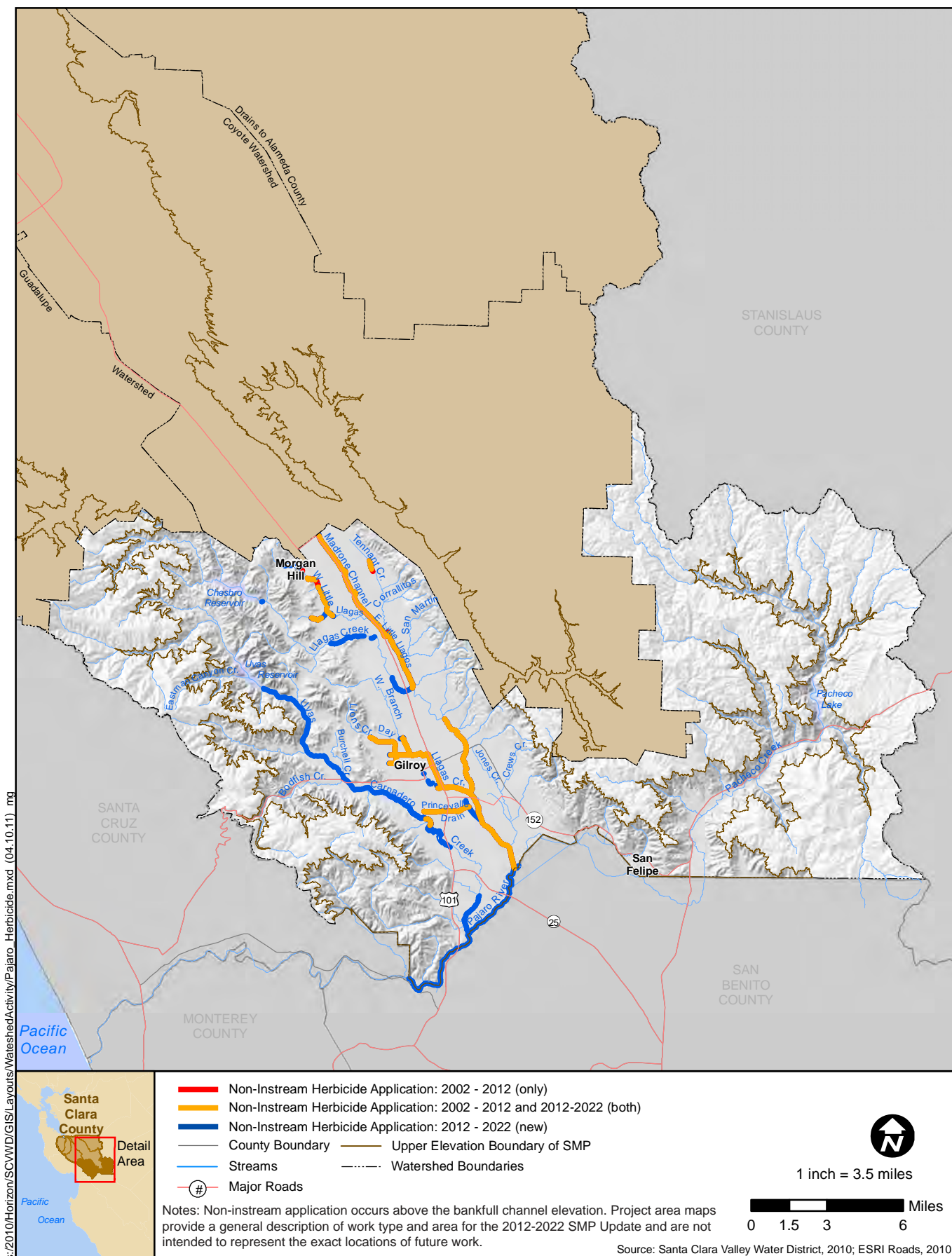
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**Figure 2-36: Guadalupe Watershed Maintenance Activity
Non-Instream Herbicide Application**

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**Figure 2-38: Pajaro Watershed Maintenance Activity
Non-Instream Herbicide Application**

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Figure 2-39. Canals

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