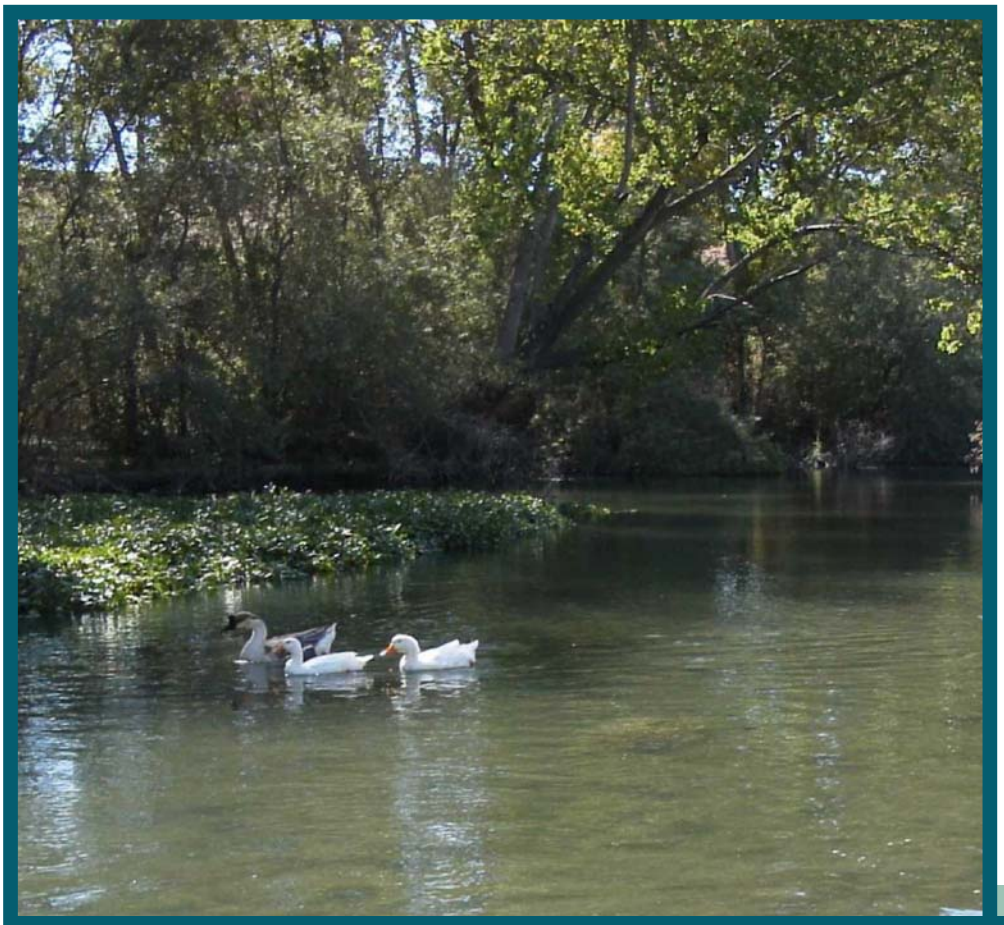

City of San José

Stormwater Management Plan

2009-2014

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

On the Cover

Large Photo:
Coyote Creek, San José

Smaller Photos (left to right):

(1) Roosevelt Community Center
(2) Rincon II Pump Station
(3) Bioretention cell at Cadence parking lot, San José
(4) Trash in Coyote Creek

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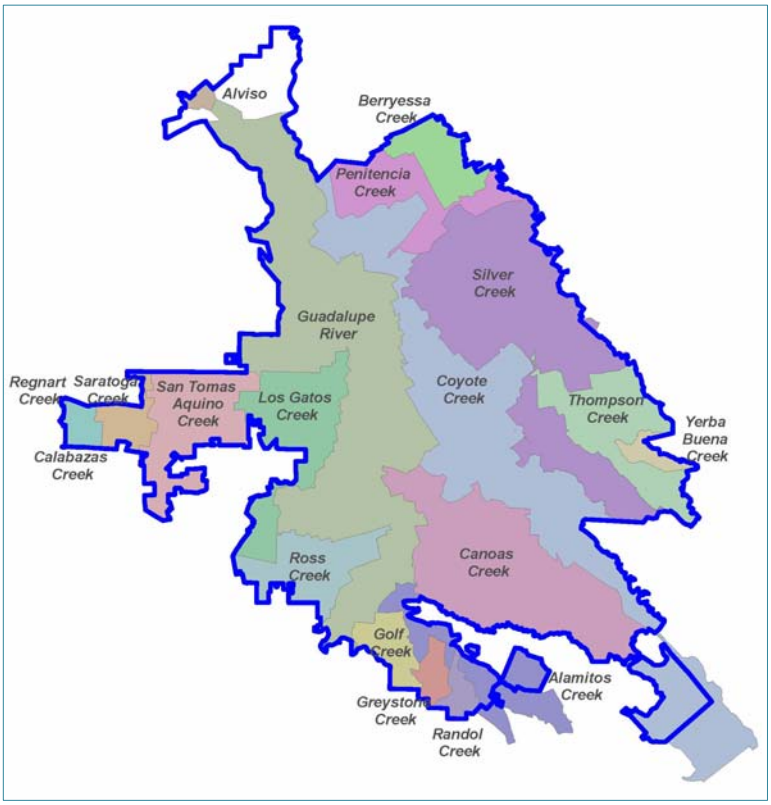
Managing Stormwater in San José

Water enters the City's storm sewer system through approximately 29,000 storm drain inlets. Stormwater flows are conveyed without treatment to local creeks and streams and ultimately to San Francisco Bay. This water is comprised of rainfall, irrigation water, and other water used outdoors. It collects pollutants as it flows across rooftops, sidewalks, driveways, streets and parking lots, and landscaping.

San Jose's Urban Service Area and Urban Reserves contain 35 distinct streams, creeks, and rivers, with a total length of at least 136 miles. Most are naturally vegetated with trees and plants that support a rich variety of birds, mammals, reptiles, amphibians and fish. In rural and undeveloped areas, small creek channels drain adjacent land and infiltrate rainwater back into the group, cleaning it as it is slowly released to larger creeks. In more urban areas, rainwater flows quickly off rooftops and streets through storm drains, preventing flooding but delivering quick, large pulses of water that can contain sediment and pollutants directly to our creeks, where they may affect habitat and wildlife.



Watersheds within the San José Urban Service Area

Water quality regulators regard stormwater as the largest uncontrolled source of pollutants to creeks and the Bay. The Federal Clean Water Act requires the City to operate under a National Pollutant Discharge Elimination System (NPDES) municipal stormwater permit for the discharge of stormwater to surface waters via the City's storm sewer collection system.

The Stormwater NPDES Permit

In 1987, the federal Clean Water Act (CWA) was amended to address urban stormwater runoff pollution of the nation's waters. One requirement of the amendment was that many municipalities throughout the United States were obligated for the first time to obtain National Pollutant Discharge Elimination System (NPDES) permits for discharges of urban runoff from their Municipal Separate Storm Sewer Systems (MS4s). In response to the CWA amendment (and the federal NPDES regulations which implement the amendment), the San Francisco Regional Water Quality Control Board (Water Board) issued municipal stormwater Phase I permits in the early 1990s. These permits were issued to the entire county-wide urban areas of Santa Clara, Alameda, San Mateo, and Contra Costa Counties, rather than to individual cities over 100,000 population threshold. The cities

chose to collaborate in countywide groups, to pool resources and expertise, and to share information, public outreach, and monitoring costs, among other tasks.

The Permit is intended to ensure attainment of applicable water quality objectives and protection of the beneficial uses of receiving waters and associated habitat. It requires that discharges shall not cause exceedances of water quality objectives nor shall they cause certain conditions to occur that create a condition of nuisance or water quality impairment in receiving waters.

Stormwater Permit History

The City of San José along with the 12 other municipalities in Santa Clara County, the Santa Clara County, and the Santa Clara Valley Water District (SCVWD) were issued the first joint MS4 NPDES Permit in 1990 adopted by the Water Board. To coordinate permit compliance, the co-permittees entered into a Memorandum of Agreement (MOA), establishing the Santa Clara Valley Nonpoint Source Pollution Control Program (now known as the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP)) in 1990. SCVURPPP submitted the first draft Stormwater Management Plan (SWMP) in 1991, as a means to fulfill permit requirements. NPDES permits are typically issued for five-year terms. Subsequent permits were issued in 1995 and 2001.

These Municipal stormwater permits have evolved over the past two decades. With each permit reissuance, requirements built on capacity developed through the previous permit, the performance standards developed for permit provisions, and experience gained through implementation of various stormwater management practices.

Municipal Regional Stormwater Permit

On October 14, 2009, the Water Board adopted the Municipal Regional Stormwater NPDES Permit (Stormwater Permit) for the San Francisco Bay Region. This Stormwater Permit replaces the formerly separate countywide municipal stormwater permits with a Stormwater Permit for all 77 Bay Area municipalities in an effort to standardize stormwater requirements throughout the region. The Stormwater Permit was the result of a four-year process involving Water Board staff, permittees, and non-governmental organizations.

The Water Board's goals, strongly supported by the Environmental Protection Agency, for this generation of the Stormwater Permit included establishing minimum measures to demonstrate compliance and allowing the public to more easily assess each permittee's compliance. Each Permit provision and its reporting requirements are written with these goals in mind. That is, each provision establishes the required actions, minimum implementation levels (e.g., minimum percentage of facilities inspected annually, escalating enforcement, reporting requirements for tracking projects, number of monitoring sites), and specific reporting elements to substantiate that these implementation levels have been met. Water Board staff will evaluate each individual Permittee's compliance through annual report review and an audit process.

The Stormwater Permit became effective December 1, 2009, and remains in effect through November 30, 2014. It specifies actions necessary to reduce the discharge of pollutants in stormwater to the maximum extent practicable and effectively prohibits non-stormwater discharges into the municipal storm sewer system to

protect local creeks and the Bay. The Stormwater Permit includes actions and requirements in the following areas, each organized into permit provisions as follows:

- Municipal Operations
- New Development and Redevelopment
- Industrial and Commercial Site Controls
- Illicit Discharge and Elimination
- Construction Site Controls
- Public Information and Outreach
- Water Quality Monitoring
- Pesticides Toxicity Controls
- Trash Reduction
- Mercury Controls
- PCBs Controls
- Copper Controls
- Polybrominated Diphenyl Ethers (PBDE), Legacy Pesticides, and Selenium
- Exempt and Conditionally Exempt Discharges

Within these provisions, the Stormwater Permit frequently prescribes minimum measurable outcomes, while providing Permittees with some flexibility in the approaches they use to meet those outcomes. In the previous permits, the detailed actions to be implemented by the Permittees were contained in Stormwater Management Plans, which were separate from the permits and incorporated by reference. Those plans were developed by the permittees and were an integral part of the permits, subject to a public notice, review, and comment process. The current Stormwater Permit incorporates those plan level details in the permit itself, thus merging the Permittees' stormwater management plans and the permit in one document, and no longer providing for a separate Stormwater Management Plan.

Stormwater Management in San José

When the City's stormwater management program began over two decades ago, little was known or understood about how such a program might work. The City and its co-permittees were among the first cities in the nation to be permitted. The initial approach centered on collecting existing data and coordinating existing municipal activities. Stormwater Management in San José has since evolved into a driver for a number of City activities and area-wide programs. Though not a separate requirement of the Stormwater Permit, this Stormwater Management Plan describes the City's approach and strategies for implementing the requirements of the Stormwater Permit, and for protecting local creeks and the Bay.

Functional and aesthetic stormwater artwork at Roosevelt Community Center

In the context of the Municipal Regional Permit, San José is the largest community discharging to the Bay, with its population comprising one fifth of that represented and regulated by the permit.

The City can have great influence over the quality of stormwater runoff that flows into its storm sewer system. Through its direct activities, and the City's ability to guide and direct the actions of others through education, enforcement, and policy development, there are many junctures where City programs can affect stormwater runoff, water quality, and creek health. Many City departments and operations can impact water quality directly and indirectly. These departments include: Environmental Services (ESD); Public Works (PW); Transportation (DOT); Parks, Recreation and Neighborhood Services (PRNS); Planning,

Building and Code Enforcement (PBCE); and the San José Redevelopment Agency (RDA). The City's compliance with the Stormwater Permit is the responsibility of all these departments.

Over the past two decades, the City's experience with managing stormwater and controlling stormwater pollutants has expanded immensely. City staff continue to gain more direct experience implementing Best Management Practices (BMPs), stormwater treatment control measures, collecting data and evaluating program effectiveness, and participating in local and regional water quality monitoring initiatives to track the health of local creeks and waterways.

ESD's Watershed Protection Division provides oversight of the Stormwater Permit and leads and coordinates activities across multiple City departments. Individual program elements and requirements are implemented in those City Departments where existing responsibilities are consistent with the work that is required.

Through implementation of the Stormwater Management Plan, the City strives to achieve the following objectives:

- Manage stormwater to ensure clean, healthy creeks and Bay;
- Ensure that City complies with Stormwater Permit requirements in a cost-effective manner;
- Integrate new permit requirements into existing programs to minimize resource impacts, whenever possible; and
- Utilize opportunities in permit implementation to pilot new approaches and familiarize City staff with these approaches so the City is well positioned to inform and influence development of the next permit.

Other collateral benefits of effective stormwater management include contributing to an improved quality of life in our community; maintaining recreational space free of pollutants; improving community aesthetics, and other natural benefits, such as more natural creek flows and improved fish and wildlife habitat.

The Stormwater Management Plan aligns with and supports other City environmental policies and plans, including but not limited to the:

- *General Plan*: The draft Envision 2040 includes goals and policies that recognize that stormwater as a resource, protect and enhance riparian and Bay habitat, encourages stormwater treatment and management as a tool for sustainable development.
- *Green Vision*: Many of efforts detailed in this Plan also support with the City's Green Vision goals related to Green Building, Zero Waste, and Sustainable Development;
- *Green Building Policy*: Integrating stormwater management and treatment into building design and construction can contribute to a building's Green Building accreditation score.
- *Storm Sewer Master Plan*: Current efforts to develop a multi-year Storm Sewer Master Plan present opportunities to integrate water quality considerations in conjunction with infrastructure improvements to address long-term rehabilitation and capacity needs.

Key Implementation Areas

Stormwater Permit implementation and compliance affects many components of City operations. It also has broad community implications including increasing public awareness of the storm sewer system and its connection to local creeks, as well as encouraging implementation of Best Management Practices and behavior changes to reduce pollutants entering the storm sewer system and local creeks. Key program elements of the Stormwater Permit and associated implementation actions fall into six Key Implementation Areas which are summarized below. Each Key Implementation Area is discussed in the following sections and significant implementation actions are shown in the *Putting the Plan into Action section of this Plan*.

Key Implementation Areas	Permit Provision	City Departments
Ensure City Operations Integrate Water Quality Protection	C2 Municipal Operations C5 Illicit Discharge Detection and Elimination C15 Exempted and Conditionally Exempted Discharges	DOT ESD PRNS PW
Prevent Pollutant Discharges through Effective Enforcement	C4 Industrial and Commercial Site Controls C5 Illicit Discharge Detection and Elimination C6 Construction Site Controls C15 Exempted and Conditionally Exempted Discharges	ESD PW DOT
Guide Development to Protect the Watershed	C3 New and Redevelopment C6 Construction Site Controls	PBCE ESD PW RDA
Develop and Implement Strategies to Reduce Target Pollutants	C9 Pesticide Toxicity Control C10 Trash C11 Mercury C12 PCBs C13 Copper C14 PBDEs, Legacy Pesticides, and Selenium	ESD PRNS PW DOT PBCE
Motivate Public Stewardship of the Watershed	C7 Public Information and Outreach ALL	ESD
Collect High Quality Monitoring Data	C8 Water Quality Monitoring	ESD

≈ Ensure City Operations Integrate Water Quality Protection

Permit Provisions: C2 Municipal Operations
C5 Illicit Discharge Detection and Elimination
C15 Exempted and Conditionally Exempted Discharges

City Departments: DOT
ESD
PRNS
PW

Overview

The Stormwater Permit establishes requirements for many areas where City operations can impact water quality in local creeks. The focus of this implementation area is to ensure City operations integrate water quality protection Best Management Practices (BMPs) in order to minimize non-stormwater and pollutant discharges into the storm sewer system. These requirements are wide ranging, and involve activities such as:

- storm sewer system maintenance;
- pump station operations;
- sediment control during street and road repair and maintenance;
- corporation yard housekeeping and operations;
- public facilities maintenance activities; and
- discharges from the municipal water system.

DOT has primary responsibility for maintenance of the storm sewer system. Among other activities, this includes among other activities scheduled cleaning of storm inlets or catch basins and maintenance of stormwater pump stations. DOT also repairs and maintains roads and all associated transportation infrastructure, including lights, pavement maintenance, and pavement striping. All of these activities can potentially affect stormwater quality and cause pollutants to enter the storm drain. BMPs are implemented during these activities to ensure that staff take the appropriate precautions are in place to prevent polluted discharges from entering the storm drain system.

Potable water discharge

To support these activities, the DOT operates and maintains three of the City's five corporation yards. In addition, PW operates and maintains the Central Service Yard and the Municipal Garage. Each of these facilities has a site-specific Storm Water Pollution Prevention Plan (SWPPP) that ensures proper BMPs are in place to protect water quality. Each of these facilities is inspected annually.

PW and PRNS staff are responsible for maintenance of public facilities, spaces, and parks. Actions such as surface cleaning, graffiti removal, plaza washing, and road maintenance can create non-stormwater discharges to the system. These operations, including contracted services, also implement specific BMPs to control and minimize potential pollutants that can come from these discharges.

As a part of routine maintenance of the City's potable water system, San José Municipal Water System staff conduct system maintenance activities that generate potable water discharges to the storm sewer system, such as flushing and inspecting fire hydrants or water main repairs. The Stormwater Permit requires BMPs be deployed during these discharges to minimize the potential impact on receiving waters from pollutants such as chlorine and sediment, and further requires in-field water quality monitoring protocols are in place to evaluate BMP effectiveness.

The stormwater permit recognizes and targets requirements at many areas where City operations can impact water quality in local creeks. The City's objective is to integrate permit required activities into existing practices wherever possible, and to tailor new practices to have the least impact on resources while maintaining effective control of pollutants.

Accomplishments

- Developed and implemented new monitoring, inspection, and cleaning protocols for stormwater pump stations; and instituted new system to track and analyze monitoring and inspection results.
- Conducted Rural Public Works Construction and Maintenance training and made technical assistance guidance resources available to municipal staff through City intranet.
- Updated corporation yard Storm Water Pollution Prevention Plans (SWPPPs) to align with changes in Stormwater Permit.
- Developed and implemented new collection system screening protocols for illicit discharge detection and elimination.
- Developed and implemented new BMPs and monitoring protocols for routine operations and maintenance of the San José Municipal Water System; and instituted new system to track and analyze monitoring results.

Upcoming Priorities

Best Management Practices and Training

New BMPs and standard operating procedures have been implemented as required for these provisions. Staff training is important to ensure consistent performance despite the City's change in service delivery and resources. ESD staff have developed new training practices and modified existing trainings to align with the Stormwater Permit and to ensure the appropriate application of SOPs and BMPs during the performance of operations and maintenance activities. ESD staff will work with key departments to assess implementation and inform training needs. Trainings for City staff will be conducted at least annually to ensure all key staff with DOT, PW, and PRNS are fully aware and integrating the BMPs as appropriate. These key activities targeted for training include street and road repair and maintenance, sidewalk/plaza maintenance and pavement washing, bridge and structure maintenance and graffiti removal, rural public works construction and maintenance, and corporation yard operations and housekeeping practices.

Rincon 1 Pump Station

Stormwater Pump Stations

A new focus of the Stormwater Permit requires pump station monitoring during dry season and inspections during wet season to ensure that water discharged from pump stations does not pose a threat to local creeks. This is a challenge because stormwater pump stations were designed to efficiently convey stormwater to protect property and people, and not with the intention of protecting water quality. If monitoring shows that dissolved oxygen levels fall below the specified level, the Stormwater Permit contains triggers requiring that corrective actions be implemented until dissolved oxygen levels reach acceptable levels. These corrective actions could include a lower rate of discharge, mixing or aerating the water prior to discharge, diverting the water to the sanitary system, or other measures. Pump stations can serve as a check point before water enters the creek and as such may offer potential opportunities for pollutant interception. Currently, DOT and ESD staff are implementing procedures to monitor water quality during wet and dry seasons. Future inclusion of Supervisory Control and Data Acquisition (SCADA) systems at pump stations will present the ability to better track operation details to streamline maintenance activities, and provide possible opportunities to modify pump station operations to benefit water quality. DOT and PW are working together to strategically incorporate this into pump station operations. ESD will continue to work with DOT maintenance staff to collect and analyze operational and water quality data, take appropriate corrective actions as needed, and work to better understand the impact of pump station operations on receiving waters.

Collection System Screening

Storm system maintenance operations can serve as one mechanism to identify illegal discharges and illicit connections to the system. DOT inspects stormwater outfalls for operation and maintenance needs and conducts annual cleaning and maintenance of storm drain inlets. A collection system screening program has been integrated with this activity beginning in FY 2009-2010. Screening program results are documented and any incidents found are reported to the City's illegal dumping hotline with follow-up investigation conducted by ESD's Watershed Enforcement section as needed. As staff gain more experience and familiarity with the results of the screening program, opportunities for increasing efficiency and effectiveness will be considered. Projects to enhance and share data collection and analysis are already underway between ESD and DOT.

Gateway storm sewer outfall

Municipal Water System Discharges

Certain municipal water system maintenance operations, such as hydrant flushing or main line repairs, can have the potential to affect creek water quality by mobilizing street sediment or discharging chlorinated water. The Stormwater Permit requires municipalities who are also water purveyors to employ BMPs to minimize the effects of such discharges, and to monitor and report the discharges to ensure effectiveness. For San José's Municipal Water System, this means monitoring and reporting more than 900 events per year. Staff have incorporated BMPs and monitoring into maintenance activities beginning on December 1, 2009. Continued improvements such as effectiveness of BMP deployment and efficiency of monitoring activities can be ensured through regular data review and training for maintenance staff. Data reporting and accuracy has been improved through the use of technology, and further improvements are expected as staff become more familiar with the new BMPs. To date, data show continuous improvement on the effectiveness of applied BMPs as crews become more familiar with their use. Further targeted monitoring may be necessary to fine tune practices associated with certain types of planned discharges.

≈ Prevent Pollutant Discharges through Effective Enforcement

Permit Provisions: C4 Industrial and Commercial Site Controls
C5 Illicit Discharge Detection and Elimination
C6 Construction Site Controls
C15 Exempted and Conditionally Exempted Discharges

City Departments: ESD
PW
DOT

Overview

Daily activities at industrial and commercial businesses and construction sites can result in pollutants from the site entering the storm drain system and receiving waters. Illicit connections and illegal dumping activities cause pollutants to be directly discharged to the storm drain system and receiving waters. Active inspection, investigation, education, and enforcement programs are effective in preventing these pollutant discharges. This implementation area focuses on:

- assessing the compliance of San José businesses with federal, state, and local regulatory requirements regarding discharges to the storm drain system;
- identifying and eliminating illicit connections to the storm drain system;
- preventing, detecting, and requiring clean-up of illegal discharges and dumping into the storm drains and creeks; and
- reducing and preventing construction site discharges of pollutants and impacts on receiving waters

ESD's Watershed Enforcement section conducts inspections of over 4,000 industrial and commercial facilities and over 2,000 food services facilities; responding to and investigating over 600 reported cases of illegal discharge; and inspecting over 150 private construction sites for proper stormwater pollution control measures throughout the City every year. The Watershed Enforcement Inspectors provide the following services:

Properly stabilized construction site entrance/exit.

- Inspections and investigations at industrial and commercial facilities and construction sites;
- Response and investigations of illegal discharge complaints;
- Education on stormwater issues and best management practices;
- Enforcement in response to municipal code violations, where needed.

PW takes lead for construction project management and inspection of public construction projects to ensure that BMPs are implemented during construction. Additionally, PW and PBCE's Building Division assess stormwater issues as they are inspecting projects at different construction phases such grading or vertical construction. Public and private construction projects requiring escalated enforcement are referred to ESD Watershed Enforcement for follow-up. ESD continues to provide training support and ongoing coordination with PW and PBCE inspection programs.

Accomplishments

- Revised Industrial and Commercial Business Inspection Plan to incorporate new business types identifies in the Stormwater Permit as having a reasonable potential to contribute pollutants to the storm drain system or receiving waters.
- Updated and implemented Enforcement Response Plan completed by April 1, 2010.
- Reviewed and modified existing procedures and data management system to incorporate new data reporting requirements.
- PCBs and PCBs-containing equipment identification has been incorporated into existing industrial inspection programs within San José.
- Completed annual inspector training for City staff.
- Construction site inspectors trained and working to attain certification as Qualified Stormwater Pollution Prevention Plan Practitioners.

Upcoming Priorities

Industrial and Commercial Inspections

The City will continue to inspect and educate industrial, commercial, and construction sites. Inspections ensure that adequate stormwater protection measures are being employed by businesses and construction sites. Inspections also provide an opportunity to educate the people who perform business activities that can negatively impact the storm drain system and receiving waters.

ESD's Watershed Protection Division will transition to an updated data management system in 2011. This new system will more effectively incorporate the Stormwater Permit's new data tracking and reporting requirements and increase the efficiency of the Inspection programs.

Construction Site Inspections

ESD will continue to coordinate with the PW and PBCE inspection programs to implement and further refine the "hand-off" system initially developed by the three departments in 2004. This system has proven useful in monitoring construction sites and allows PW and PBCE inspectors to refer construction sites to ESD Watershed Enforcement inspectors for enforcement when needed**.** Staff will continue to improve information sharing and training amongst the inspection programs to increase efficiency and effectiveness.

Municipal Code Review

City staff reviewed the San José Municipal Code in FY 09-10 and determined that the City has adequate legal coverage to obtain effective stormwater pollutant control at commercial and industrial facilities. The City will continue to review municipal codes and explore improvements to ensure that inspectors have efficient and effective legal tools to protect water quality.

Mobile Business Program

The City will continue to respond to all complaints of illicit discharges from mobile businesses. When violations are identified, mobile businesses are educated on the local stormwater sections of the San José Municipal Code; issued enforcement actions consistent with the Watershed Enforcement Response Plan; and given outreach materials which detail Best Management Practices (BMPs) for surface cleaning projects. The City encourages mobile surface cleaning businesses to take the online BASMAA mobile surface cleaner training. BASMAA plans to revise and update its mobile surface cleaner program in 2011-2012, and the City will provide input into the revisions.

≈ Guide Development to Protect the Watershed

Permit Provisions C3 New Development and Redevelopment

City Departments PBCE
PW
ESD
SJRA

Overview

New development and redevelopment projects provide opportunities to address water quality on a site-by-site basis by integrating appropriate pollutant control and stormwater treatment measures within the project. While the Stormwater Permit requires development projects of a certain size to include stormwater treatment features, San José also strives to integrate water quality with other sustainable development objectives. This implementation area focuses on:

- Ensuring the development review and entitlement process approves projects that comply with Stormwater Permit requirements.
- Negotiating a strategy for implementing Low Impact Development requirements that support effective stormwater management and San Jose's Smart Growth strategies.
- Inspecting stormwater treatment features for correct installation and proper maintenance to ensure ongoing effectiveness.
- Collaborating with co-permittees to achieve consistent and efficient Permit implementation region-wide.
- Fostering coordination between City departments involved with both public and private development to integrate stormwater management objectives with Green Vision and Smart Growth goals, and to ensure San José's leadership in implementing green infrastructure.

Bioretention Treatment Control Measure to treat parking lot runoff

ESD works with PBCE and PW to ensure new development and redevelopment projects demonstrate compliance with the Stormwater Permit. Through close coordination with the development industry, these City departments aim to maintain an efficient and robust stormwater plan review process. Collaboration with other Santa Clara County and Bay Area permittees ensures consistent Permit implementation across the region and maximizes opportunities to share resources such as educational materials, design guidelines, and technical documents. ESD supports PW's City Facilities and Architectural Services and Transportation and Hydraulics Services Divisions, as well as DOT efforts to implement capital projects that not only meet Permit

requirements, but also help maintain San José's position as a leader in sustainable capital and infrastructure development.

While public and private development projects in San José have successfully provided stormwater treatment and flow management with landscape-based and mechanical methods for some time, the current challenge is to provide the same level of stormwater management with fewer available stormwater treatment technologies. The Stormwater Permit's requires that all private development over a specified size threshold use a prescribed suite of Low Impact Development (LID) practices to manage stormwater beginning December 1, 2011. This requirement extends to public development projects beginning December 1, 2012. This effectively eliminates the use of other commonly used landscape technologies and mechanical flow-through facilities, some of which were previously considered LID and have been important tools for integrating stormwater treatment into urban projects.

Accomplishments

- Updated City Policy 8-14 Post Construction Hydromodification Management policy to align with Stormwater Permit requirement. Analyzed impervious surface areas within priority catchments and based on that analysis submitted a revised map of applicable areas to the Water Board on October 14, 2010.
- Completed development of a proposal (Special Projects Report) defining Smart Growth projects that, based on their water quality and other environmental benefits, would be allowed to use a broader range of stormwater treatment measures. This report was submitted to the Water Board on December 1, 2010.
- Identified and completed initial cost studies for three Green Street projects that would integrate stormwater treatment with street rehabilitation and construction, and submitted grant application for project funding in January 2011.
- Developed inspection protocol and data tracking tools for new and existing stormwater treatment features on public and private projects. PW began initial inspections of stormwater treatment system to ensure proper installation and conformance of design.

Upcoming Priorities

Required Low Impact Development Measures

To successfully implement the Stormwater Permit's Low Impact Development (LID) requirement that takes effect on December 1, 2011 for private development, the City will continue to conduct outreach and training through workshops, and make available print and web-based technical resources aimed at guiding developers and design professionals through the transition from established stormwater treatment and control approaches using mechanical and flow-through devices to those using the Stormwater Permit's more limited suite of LID treatment measures. These measures include harvesting and re-use of stormwater, or treatment of stormwater via infiltration, evapotransporation, or biotreatment. With the exception of stormwater harvesting, these techniques are generally landscaped-based measures rather than underground mechanical measures that have traditionally been utilized in more urban, infill settings. City policies and permit application documents will also be revised to ensure these new requirements are appropriately integrated into the City's development review processes.

Spiral swale at Happy Hollow

A parallel effort is underway for City staff charged with reviewing and designing public projects to gain familiarity and experience with LID measures prior to December 1, 2012. San José has voluntarily implemented LID measures that provide valuable real-life examples of successful LID construction in public projects such as Happy Hollow Park and Zoo.

Alternative Compliance Opportunities

The current Permit's LID mandate is expected to pose greater challenges for some development projects to meet their stormwater obligations. As such, the City is actively researching and evaluating Alternative Compliance options for new development. The viability of Alternative Compliance via off-site LID projects is expected to be limited, as these development projects would need to meet certain conditions involving forward land use planning, development rights, liability, and funding. Alternative Compliance via payment of in-lieu fees that fund single large regional stormwater treatment projects or multiple retrofit projects administered by the City may be more attractive to developers but creates new responsibilities and challenges for the City such as identifying available land for such projects, as well as operations and maintenance of the facilities and program administration. ESD and PW staff will evaluate feasibility and options for structuring an Alternative Compliance Program in 2011 and 2012. Coordinated with development of the Storm Sewer Master Plan and other City capital programs, an Alternative Compliance program could lead toward construction of new stormwater treatment infrastructure or retrofit opportunities that provide water quality benefits beyond those of individual development projects.

Green Streets

These LID stormwater treatment requirements will also be required of public road projects effective December 1, 2012. Additionally, the Permit requires that ten Green Street Pilot Projects be constructed throughout the Bay Area, with at least two in each county. Staff from ESD, PW, DOT, and SJRA identified a short list of potential opportunities to construct a Green Street Pilot project in San José, and are working to secure project funding. The successful completion of a Green Street Pilot Project will provide a practical example of integrating stormwater treatment with green infrastructure, provide City staff with valuable experience designing and overseeing the construction or retrofit of a green street or parking lot project, and prepare the City to meet LID stormwater treatment requirements for road projects. The Permit requires that the Green Street Pilot Projects be completed by December 1, 2014.

Site Design Requirements for Small Projects

Beginning in December 1, 2012, smaller projects and detached single-family home projects will be required to select and implement one or more stormwater site design measures. These site design measures are basic methods to reduce the amount and flow of stormwater runoff from projects and provide some treatment of the runoff that would leave these sites. City will initiate efforts to educate these project proponents on these new requirements beginning in 2012. Additionally, City policies and permit application documents will be revised to ensure efficient incorporation of these requirements.

≈ Develop and Implement Strategies to Reduce Target Pollutants

Permit Provisions C9 Pesticide Toxicity Control
C10 Trash
C11 Mercury
C12 PCBs
C13 Copper
C14 PBDEs, Legacy Pesticides, and Selenium

City Departments ESD
PRNS
PW
DOT
PBCE

Overview

Several of the Stormwater Permit provisions focus on specific pollutants or groups of pollutants. These include trash, PCBs, mercury, pesticides, copper, PBDEs, legacy pesticides, and selenium. Different control strategies must be employed because pollutants can have different source, transport, and fate characteristics. This implementation area focuses on development and implementation of programs to:

- Reduce or eliminate the impact of pesticide use on water quality, both from City operations and from property owners;
- Investigate and take specific actions to control or reduce PCBs and mercury sources;
- Conduct targeted education to reduce copper-containing discharges; and
- Develop and implement a comprehensive Trash Load Reduction Plan designed to achieve trash load reductions of 40 percent by 2014; 70 percent by 2017; and 100 percent by 2022;

In general, these approaches can be broadly categorized into prevention, interception, and cleanup. Some pollutants, such as pesticides, are best addressed by prevention-based control such that they are not introduced into the environment in the first place. Pollutants such as PCBs, mercury, and legacy pesticides are no longer in use, but persist in the environment in trace amounts that are usually impractical to clean up and so must be intercepted on land (e.g. street sweeping or system cleaning). Trash reduction integrates all three approaches.

Workshop participant using soil probe at city-sponsored sustainable landscape maintenance class

The City's Pesticide Management Committee (PMC) which consists of staff from DOT, PW, ESD, and PRNS, oversees efforts to minimize pesticide use by City operations in conformance with the Integrated Pest Management (IPM) section of the City's Pollution Prevention Policy. Standard Operating Procedures (SOPs) and BMPs for City operations which include IPM measures were developed by the PMC. These departments coordinate to ensure that employees responsible for applying pesticides receive proper training on the IPM policy, SOPs, and BMPs, in addition to other safety and proper pesticide application training.

Prevention, interception, and cleanup strategies will all be required to achieve trash load reduction goals. Various City departments are involved in these activities, including but not limited to ESD, DOT, PW, and PRNS. Prevention activities center on public education and enforcement. Interception is achieved through mechanical treatment such as trash capture devices retrofitted to the storm sewer system, and through City maintenance activities such as inlet cleaning and street sweeping. ESD leads the annual cleanup for the required 32 creek hotspots through use of volunteer and paid labor. Trash cleanup strategies are resource intensive once the trash has reached the creeks, so it is the least preferable means of control.

Accomplishments

- The City of San José was recognized by the CA Department of Pesticide Regulations (DPR) with an IPM Innovator Award in 2010.
- Awarded $200,000 DPR grant to train municipal employees, landscape professionals, and the public and build demonstration gardens to showcase sustainable landscaping practices, especially IPM.
- Cleared more than 857 cubic yards of trash from San José creeks through cleanup efforts in partnership with the Santa Clara Valley Water District.
- Completed the first annual cleanup and assessment of 32 creek trash Hot Spots which removed 80.5 cubic yards of trash.
- In December 2010, the City Council adopted an Ordinance to Ban Single Use Carry Out Bags. This ordinance becomes effective on January 1, 2012.
- Completed design and award of contract for first of eight hydrodynamic separator systems (large full trash capture devices) that will capture trash before reaching local creeks.
- Selected as a finalist to receive $680,000 EPA San Francisco Bay Water Quality Improvement Fund Grant to begin innovative trash reduction program on Coyote Creek.

Upcoming Priorities

Specific pollutants are prioritized differently within the Stormwater Permit. Polychlorinated Biphenyls (PCBs), mercury, and trash are considered to have the highest priority, and as such, requirements for their control are more extensive than those for other pollutants such as copper, polybrominated diphenyl ethers (PBDEs), legacy pesticides (such as DDT, dieldrin, and chlordane), and selenium. Requirements for the control of PCBs and mercury are similar since both are associated with sediment, often in older industrial areas.

PCBs and Mercury – system retrofits, investigations, pump station diversion pilots

Regional pollutant reduction strategies for PCBs and Mercury require large reductions from stormwater sources. Permit provisions for the control of PCBs and mercury require investigation and inspection, sediment control, monitoring, studies of the fate and transport of these pollutants in the Bay environment; and efforts to reduce public risk. Requirements for control of sediment with potentially elevated levels of PCBs and mercury include pilots to enhance municipal sediment removal, on-site retrofits, and diversion of stormwater to the sanitary sewer for treatment. City staff are actively participating with county and regional partners to guide planning and implementation in a way that satisfies the permit requirements and tailors activities to fit San José's municipal practices. San José has been identified as a potential host community and has designated the Leo Avenue drainage area

Rincon 2 Wet Well

as a potential PCB Project Area. Implementation will require continued participation in county and regional project planning activities that will include investigations of industries within the target area in 2011; evaluation of the effectiveness of potential sediment management actions in 2011-2012; and identification, design, and construction of potential storm system retrofit in 2011-2013. The Bay Area Stormwater Management Agencies Association (BASMAA) has secured an EPA grant for their "Clean Watersheds for a Clean Bay" project designed to help satisfy many of these provisions region-wide. The grant will implement various projects to control PCBs and mercury, and provide some funds to the City to offset capital and other project costs related to some of the activities implemented by San José.

The PCBs and mercury provisions also contain requirements for pilot diversions of dry weather and first flush flows to the sanitary sewer system, particularly to address the role of stormwater pump stations as a source of pollutants of concern. It requires that five pump stations and five alternates be selected for pilot diversion projects throughout the region with one primary and one alternate in each county-wide program area. In the Santa Clara Valley program area, an existing diversion in Palo Alto will be used as the primary project, and a project to implement street and storm drain flushing at the Leo Avenue drainage area in San José has been selected as an alternate. Previous studies have identified relatively high concentrations of PCBs in storm drain sediments in this area, and it is the same as the area identified for BASMAA's Clean Watersheds for a Clean Bay project. The primary diversion projects are to be completed in time to measure PCBs load reduction and report on their effectiveness by March 15, 2014.

Staff are also currently participating in a regional grant-funded project to evaluate managing building materials and wastes containing PCBs during building demolition and renovation. Buildings with particular construction types and ages sometimes have PCBs-containing sealants that can be released to the environment during renovation or demolition. This project involves the development of BMPs, permitting procedures, and model implementation plans for controlling this potential source of PCBs in 2011.

Pesticides

Requirements in the stormwater permit strengthen the need for clear policies and practices that institutionalize Integrated Pest Management (IPM). Though sufficient to meet permit requirements, staff will consider evaluating the current policy regarding pesticides contained in the City's Pollution Prevention Policy to include more specific language and clearer steps on how IPM is integrated into City activities. The City's Pesticide Management Committee will review and update where necessary the City's SOPs and BMPs for those activities that relate to the application of pesticides. The City will continue to track the municipal use of priority pesticides and to report on use trends annually. Municipal use of priority pesticides in San José has declined steadily, and is currently at very low levels; however improvement on other lower priority pesticides is also important. Certain pesticides such as pyrethroids (used for household ant control) are specifically targeted in stormwater permit provisions. Additionally, management strategies must adapt as newer, often more toxic chemicals replace older ones. This is recognized in regional control strategies which use measured toxicity from all pesticides as the target for demonstrating achievement of water quality goals. Long-term successful pesticide toxicity reduction can only be achieved through changes in design and maintenance practices that reduce or eliminate the need for the application of toxic pesticides. In recognition of this, City staff are implementing a Department of Pesticide Regulations grant that contains a number of elements designed to reduce overall municipal pesticide use, and help residents change landscaping design and maintenance practices to reduce their pesticide use as well. The City will also continue to investigate and pilot new IPM technologies and approaches that can be considered and evaluated for City application. Additionally, the City will continue to encourage property owners and residents to adopt IPM practices through local and regional public educations efforts.

Trash Reduction

Coyote Creek clean-up

Trash is the most visible of all pollutants and areas where trash accumulates tend to grow and self-perpetuate by creating attractive locations for illegal dumping and littering. Trash in creeks originates from many different sources and crosses jurisdictional boundaries. A holistic approach, coordinated among many partners, is needed to address trash reduction in the face of these issues. The City is in the process of developing its Trash Load Reduction Plan. This Plan is a Stormwater Permit requirement and will describe actions the City will implement to reach the 40 percent trash load reduction goal by 2014. The City's trash reduction plan is anchored on three core strategies: prevention, interception, and cleanup. ESD is participating in regional data collection and research efforts beginning spring 2011 that will result in development of the methodology for determining baseline trash loading and trash reduction credit and tracking. Staff will initiate a stakeholder process to gather input and feedback on the Plan in late summer 2011, and present the final Trash Load Reduction Plan for City Council consideration and approval in December 2011. The Trash Load Reduction Plan is due to the Regional Water Board by February 1, 2012.

Addressing commonly littered products is an effective means of reducing and preventing trash. Activities are currently underway to reduce both single-use bags and polystyrene foam foodservice ware. Staff are currently working to prepare retail businesses for the single-use bag ban which takes effect on January 1, 2012. Additionally, in 2011 the City will begin to working with stakeholders to develop a local program to control litter that results from the improper disposal of polystyrene foodservice ware.

Trash Interception focuses on removing litter from local streets and collecting it on land or within the storm sewer system before it is deposited into our local creeks. Many existing City services and maintenance activities intercept trash before reaches the storm sewer system, including but not limited to street sweeping, storm drain inlet cleaning, and public litter can collection. Installation of "Full Trash Capture Devices," designed to intercept trash and litter in the storm sewer system before it reaches the creek, is a critical component of this strategy. These approaches create a sizable financial burden on the City. Installing trash capture devices in individual storm system inlets results in an on-going maintenance need; while constructing large trash capture devices within the storm sewer system are large capital investments. The City will be able to access more than $600,000 in federal grant funds to offset costs to purchase these full trash capture devices. Large trash capture device installations will begin in 2011. DOT and ESD are exploring opportunities to improve trash interception by increasing street sweeper efficiency which may include new storm sewer infrastructure devices or the use of parking restrictions in areas where street trash and litter are most prevalent. Additional actions will be implemented to achieve the required trash reduction goals specified in the Trash Load Reduction Plan.

Copper

The City is required to implement measures to control copper generated from cleaning of copper architectural features; managing pool and spa discharges that contain copper; controlling industrial sources; efforts to reduce copper from brake pads; and studies to reduce uncertainty in the environmental impacts of copper. San José staff have nearly two decades of experience with copper controls and technical studies, and will continue to participate in efforts to control this pollutant. Previously, the City participated in the Brake Pad Partnership, a stakeholder-based working group that helped develop legislation to reduce the amount of copper in original equipment brake pads, considered one of the largest sources of copper to the environment. ESD expects to continue support this effort. Control measures for copper from other sources such as discharges from pools or

spas that contain copper based chemicals or wastewater generated from treating or cleaning copper architectural features are implemented through public education and enforcement programs.

PBDEs, Legacy Pesticides, and Selenium

These pollutants are currently of lower concern than those mentioned previously, but warrant tracking efforts. Poly Brominated Diphenyl Ethers (PBDEs) are widely used as flame retardants, and share some chemical similarities with PCBs. They have been detected in Bay sediments and in wildlife tissues in increasing amounts. Sources are numerous and include stormwater and wastewater. Currently, regional activities are under way to track these compounds and develop appropriate management actions. Legacy Pesticides (especially DDT, Chlordanes, and Dieldrin) have been phased out and concentrations in the Bay continue to decline. These chemicals are currently tracked by the RMP to ensure continued progress, and a regulatory control program is under development to address them. Although these have been phased out, legacy pesticides persist in the environment and small amounts are still delivered to the Bay through stormwater. Selenium remains a problem in some reaches of San Francisco Bay where diving ducks concentrate selenium in their tissues. Humans who hunt and eat these ducks are exposed to unhealthful levels of selenium. Selenium is also concentrated in white sturgeon tissues to levels that can impair their reproduction. Selenium occurs naturally in rocks in our area, so management options are limited.

The Stormwater Permit requires Permittees to characterize the representative distribution of these pollutants in the urban areas of the Bay Region to determine if they are present in urban runoff, how they are distributed, and whether storm drain systems convey those sources. City staff address these requirements through direct participation in RMP and SCVURPPP work groups. This participation ensures that City interests are considered when designing and prioritizing actions to control these pollutants.

Opportunities within the Storm Sewer Master

PW has initiated a multi-year Storm Sewer System Master Planning effort that will address long standing system rehabilitation and capacity needs. Storm sewer system master planning efforts should consider and include water quality improvement wherever possible by taking advantage of renovation and construction activities to incorporate features that can capture pollutants before they enter San José's creeks. Such improvements could be "soft" improvements, such as more accurate data on sizing and system capacity, or capital improvements such as new pipes, outfalls, capture devices, detention basins, fore bays, or pump stations. ESD, DOT, and PW staff will coordinate water quality and master planning efforts, share information, and identify opportunities to integrate stormwater capture or treatment and prioritization in areas with known pollutant sources with long range master plan projects.

≈ Motivate Public Stewardship of the Watershed

Permit Provisions C7 Public Information and Education

City Department ESD

Overview

Everyday behaviors and activities of residents, businesses, and property owners can lead to stormwater pollution and impact water quality in local creeks and the Bay. This implementation area focuses on changing specific behaviors that negatively impact stormwater quality and increasing the understanding and appreciation of creeks and the Bay through effective outreach and public education. The City crafts its outreach to:

- Educate citizens and property owners on behaviors which adversely affect water quality;
- Increase understanding and appreciation of the South Bay watershed;
- Promote reasonable alternatives to pollutant causing behavior; and
- Provide citizens with opportunities to become involved in watershed protection.

The City coordinates its outreach and public participation efforts with local and regional groups, including the Santa Clara Valley Urban Runoff Pollution Prevention Program, Bay Area Stormwater Management Agencies Association, Bay Area Pollution Prevention Group, and the Watershed Management Initiative. The goal is to develop and implement consistent, effective outreach and education programs. The City provides significant resources for region-wide outreach through these regional groups. The City also conducts outreach efforts to increase awareness and creek stewardship among the local community and property owners by attending events, and reaching out to specific target audiences about behaviors where they might be most receptive to key messages, such as at festivals for trash and litter prevention, at gardening events about pesticides, and in pool-supply stores for proper handling of copper based chemicals from draining pools and spas.

ESD outreach at VTA Earth Day Festival

Accomplishments

- Attended a broad array of public event (49 in 2009-2010) including cultural events targeted at the Spanish and Vietnamese speaking community in San José.
- Collaborated with businesses to promote pollution prevention: partnered with IBM to test and promote the *Creek Watch* App; partnered with Home Depot and Orchard Supply Hardware to promote the *Our Water Our World* program to reduce pesticide and fertilizer use and promote IPM; and partnered with pool supply stores to distribute information about copper based pool chemicals and proper draining of pools.
- Provided popular outlet for public participation in creek cleanups through partnership with Creek Connections Action Group which organizes National River Cleanup Day and California Coastal Cleanup Day in San José

- Worked with regional groups and non-profits to promote stewardship efforts such as supporting the annual Santa Clara County Creeks Coalition Conference and continued leadership and support for the Watershed Management Initiative.
- Developed of a Five Year Strategic Communications Plan that integrates stormwater and wastewater pollution prevention messages.

Upcoming Priorities

Storm Drain Inlet Marking

Storm drain inlet marking is a long-established program that educates the public that the storm drain system connects directly to creeks and the Bay without treatment, and that encourages the reporting of illegal dumping activity. The Stormwater Permit requires the City to mark and maintain at least 80 percent of the approximately 29,000 municipally-maintained storm drain inlets with an appropriate stormwater pollution prevention message by June 2014. The City previously painted a stenciled "No Dumping" message on most of its storm drain inlets; however after comparing more durable inlet marking options, such as adhesive plastic curb markers, metal plates, and thermoplastic markers, staff found that thermoplastic markers provided the best balance between initial cost and long-term durability and legibility. To date, 6,500 thermoplastic inlet markers have been installed through contract services. Beginning in late 2010, DOT maintenance crews began installing thermoplastic storm drain markers. To meet the Stormwater Permit requirements, the City will need to continue installing approximately 4,500 markers per year to satisfy the permit requirements.

"NO DUMPING" message on thermoplastic storm drain inlet marker

Regional Bay Protection and Behavior Change Campaign

Based on lessons learned and opportunities identified through the development of the Watershed Protection Strategic Communications Plan, staff have initiated discussions to create a new partnership among Bay Area stormwater and wastewater agencies. This partnership would pool resources and leverage potential grants to create a cohesive, long-term awareness and behavior-change campaign. This approach offers great promise of achieving the needed results and garnering the necessary behavior change across a region of seven million-plus residents. Feedback on this potential regional partnership has been positive. Staff will work to secure partners interesting in pooling resources, and seek grant opportunities, to fund the creative development and initial launch of this new Bay Area-wide education and behavior change campaign. Staff intend to begin development of campaign messaging and materials in 2011, with plans to roll out targeted campaigns in subsequent years. Trash and litter are among the critical messages will be emphasized through campaign.

Citizen Monitoring

By monitoring their local creeks, citizen volunteers learn about creek health, and the plants and animals it supports. Citizen monitoring can help pinpoint pollution sources or identify widespread problems. Volunteers can help provide background information needed to develop restoration projects or pollution prevention measures. Citizen involvement has been shown to be an effective means of gathering broad scale information on watersheds and a strong motivator for local stream stewardship. The Stormwater Permit requires permittees to support citizen monitoring, and San José has many active groups collecting various types of information for different purposes. City staff have had some involvement with these groups, and has begun to help facilitate communication between them and to provide technical support to both organizers and volunteers. Further development of these support activities can result in bringing greater numbers of volunteers into more active roles in watershed protection and stewardship.

≈ Collect High Quality Monitoring Data

Permit Provisions C8 Water Quality Monitoring

City Department ESD

Overview

High quality monitoring is a definitive means by which progress toward water quality goals can be measured. San José has been a leader in the effort to use high quality data to inform decisions that impact the environment. The City takes an active role in both regional and local monitoring programs. Direct participation in these programs has encouraged regional monitoring activities that provide pertinent data to answer San José's water quality management questions.

The Stormwater Permit contains extensive requirements for monitoring that include Bay monitoring through the Regional Monitoring Program (RMP), status monitoring, monitoring projects for stressor and source identification and BMP effectiveness, long term monitoring for pollutants of concern, and encouragement of citizen monitoring.

Accomplishments

- Completed the first comprehensive monitoring of the main stem of Coyote Creek using continuous monitoring equipment in collaboration with the SCVURPPP.
- Formally established the Regional Monitoring Collaborative.

Rincon 2 Wet Well – Water Quality Monitoring

Upcoming Priorities

Historically, the San Francisco Bay RMP focused on direct discharges to the Bay from industrial and wastewater sources of pollutants, with less attention on watershed inputs. In the last decade, the focus has increasingly shifted towards the influence of tributaries, including smaller urban tributaries such as those draining the City of San José. The SCVURPPP monitoring program has conducted a variety of robust studies, making it a model for urban runoff programs region-wide. San José staff have been directly involved in both programs, serving on steering committees, participating in planning activities, and assisting with field work when it occurs within San José's jurisdiction.

SCVURPPP is now part of a regional monitoring collaborative, and is actively planning work to comply with the extensive MRP requirements. Building on the robust monitoring work done in previous permit terms, the SCVURPPP completed a collaborative monitoring project in Coyote Creek during the 2010 wet season, and is planning a second study in the Guadalupe River watershed for 2011. San José staff are integrally involved with planning, execution, and reporting of both studies. Additionally, SCVURPPP supports citizen monitoring groups in the South Bay Area, and San José will be piloting a local citizen monitoring program to complement these efforts.

To maintain regional collaboration, San José staff will continue to participate in the RMP technical review committee, and on various RMP workgroups to ensure work products have high value for answering management questions of interest to San José. These activities will support and augment activities related to specific pollutants of concern such as PCBs, mercury, and others.

Strategic Partnerships and Regulatory Development

Regional Partnerships and Collaboration is Critical

The Stormwater Permit was adopted on a regional basis in order to ensure consistent implementation of stormwater pollution prevention programming around the San Francisco Bay Area. The Permit also includes several key requirements that are expected to be implemented on a region-wide scale, or for which regional compliance is achieved through local implementation by a subset of permittees. These are included in various sections of the Stormwater Permit and are intended to increase regional experience with new control measures such as storm sewer system retrofits, Green Streets, and stormwater diversions to a treatment plant.

Additionally, regional implementation can strengthen a project's competitiveness for grant funding. Several grants have been secured through the regional partners such as the Bay Area Stormwater Management Agencies Association (BASMAA) and the San Francisco Estuary Partnership. The City is actively working with these groups and will be able to access these grant dollars to offset some San José specific implementation costs.

Both BASMAA and SCVURPPP have established working committees that coordinate Stormwater Permit implementation efforts. These groups often develop and share training materials, implementation guidance documents, and other resources to assist with permitee implementation. As the largest municipality in the San Francisco Bay region, direct participation in these regional activities often has a high value to the City. Decisions made at the regional level directly affect operations in municipalities, and participation early in the process ensures that those decisions consider San José's processes and operations so that new programs can be more easily integrated with existing City programs and impacts minimized to the extent feasible. The region also benefits from this direct involvement by having the perspective of municipal staff to shape decisions. These regional forums allow for sharing of experiences, expertise, and resources leading to more cost effective implementation. San José will continue to actively participate in these regional groups and work to forge new partnerships with other organizations and agencies to support water quality protection.

Specific program initiatives also rely on close coordination and partnerships with other agencies, community groups, and non-profit organizations. Key partners include but are not limited to other local cities, the Santa Clara Valley Water District, Caltrans, and the Santa Clara Valley Transportation Authority. Staff will continue to identify and bring together new and existing partners, and work towards creative solutions and leveraging of resources to ensure that stormwater is properly managed in a sustainable and cost-effective manner.

Regulatory Development

City staff also play an active role in regulatory development, ensuring the views and needs of San José are incorporated in the process. As with direct participation in regional activities, this ensures that regulations are developed that protect environmental and water quality concerns in a way that optimizes public resources and is based on both scientifically defensible and realistic information.

San José staff frequently study, analyze, and comment on developing regulations. This process provides valuable feedback to regulators who may not always be familiar with the perspectives and operational constraints and practical consequences of various proposed regulatory actions. As the regulatory landscape changes and develops, San José has been a proactive partner in the development of regulations that protect the environment while wisely utilizing available municipal resources.

Many water quality issues cannot be addressed by regulating permitted discharges. In such cases, true source control is often the only practical means of addressing the problem. Such is the case with products such as expanded polystyrene foam packaging, pesticides, and single-use plastic bags. Since these products are released

into the environment in a highly dispersed manner and through so many pathways, their control by conventional means is impractical. Often the only practical solution is to find less environmentally harmful solutions. San José has taken a leadership role in many product stewardship activities and will continue to support the efforts of the California Product Stewardship Council.

Because San José is such a large municipality, changes in operational practices require more lead time and have a relatively larger impact than in smaller agencies. It is therefore in San José's interests to take a proactive approach with the Water Board staff in permit development, especially when permit requirements are likely to be increasingly more prescriptive with each permit iteration. Direct, early participation in permit development can influence regulations that fit within the City's operational context. Staff must work with internal partners to understand constraints and opportunities, so that requirements can fit into routine operations with a minimum impact on resources. The current Stormwater Permit establishes pilot project requirements that are designed to evaluate future permit provisions such as pilot stormwater pump station diversions, pilot infrastructure and system retrofits to control for PCBs and mercury, and pilot green street projects. The City will make every effort to pursue implementation of such pilots locally and learn from other projects implemented throughout the region. This will ensure that by the end of the permit term, the City is well positioned to inform and participate in development of the next permit.

Effectiveness and Evaluation

The Stormwater Permit provisions and reporting requirements are intended to establish and clearly define levels of implementation in an effort to simplify assessment of compliance by the Water Board and the public. To that end, each provision establishes the required actions, minimum implementation levels (i.e., minimum percentage of facilities inspected annually, reporting requirements for tracking and documenting Hot Spot cleanups, number of water quality monitoring sites, etc.), and specific reporting elements to substantiate that these implementation levels have been met. Water Board staff evaluate compliance through the annual report review and the audit process. An annual report template was developed by the BASMAA to demonstrate compliance with permit implementation and consistently fulfill all reporting requirements.

ESD's Watershed Protection Division provides oversight of the Stormwater Permit and leads and coordinates activities across multiple City departments, including implementation of this Stormwater Management Plan and the permit deliverables. Each implementing department is responsible for documenting work and maintaining data as required by the Permit. ESD has provided programmatic and technical support to streamline data collection and facilitate information sharing, analysis, and evaluation. Each department is also expected to provide evaluation of its efforts, feedback of effectiveness of its activities, and provide suggestions on how to improve their programs and efforts. This information will be incorporated into each Stormwater Management Annual Report and used to update activities as needed. ESD oversees compilation of the annual report consistent with the Annual Report template. It is prepared and submitted to the City Council for approval and certification prior to submittal to the Water Board by September 15 of each year. Additionally, significant program implementation efforts may be presented for City Council review and consideration at key milestones in program development or implementation.

Program Funding

Most programs related to the Stormwater Permit, along with the costs of operating and maintaining the City's storm sewer system, are currently funded by the Storm Sewer Operating Fund (Fund 446). However, certain

provisions related to City Operations affect General Fund (Fund 001) activities and the Water Utility Fund (Fund 515).

Staff successfully worked with local and regional partners to obtain grant funding to offset some of the costs of implementing the Stormwater Permit requirements, and will continue to aggressively pursue grant funding as opportunities arise. The Water Board has acknowledged that the Stormwater Permit contains goals and requirements which pose significant financial demands on local agencies to implement and Water Board staff encourage and support efforts to obtain State and Federal funding to support permit implementation.

Direct costs impacts to the City can be offset or alleviated by securing regional funding for regional compliance activities, or pursuing grant or alternative funding. Staff will utilize each of these strategies to cost effectively meet the goals of the Stormwater Permit and protect our local creeks and waterways.

Putting the Plan into Action

Key Implementation Area		Implementation Tasks	Responsibility	2009	2010	2011	2012	2013	2014
Ensure City Operations Integrate Water Quality Protection	1	Review and update SOPs and BMPs as needed for Street and Road Repair and Maintenance, sidewalk/plaza maintenance, pavement maintenance and pavement washing, and bridge and structure maintenance and graffiti removal. Provide staff training on SOPs and BMPs.	ESD, DOT, PRNS, PW		✓	O	O	O	O
	2	Inventory all pump stations including all characteristics listed in the permit.	DOT		✓				
	3	Develop pump station monitoring plan for dissolved oxygen (DO).	ESD, DOT		✓				
	4	Conduct dry season monitoring of stormwater pump stations.	ESD, DOT		✓	O	O	O	O
	5	Develop and implement response plan for pump stations that trigger corrective actions based on DO levels.	ESD, DOT	✓	✓	O	O	O	O
	6	Conduct wet season inspections of stormwater pump stations.	DOT		✓	O	O	O	O
	7	Develop and implement collection system screening program.	DOT		✓	O	O	O	O
	8	Develop and implement training and BMPs related to rural road construction and maintenance.	ESD, PRNS, DOT		✓			O	
	9	Update all Corporation Yard SWPPPs and BMP Implementation.	ESD, DOT, PW		✓				
	10	Develop and implement Corporation Yard inspection program, identify and track findings and follow-up.	ESD, DOT, PW		✓	O	O	O	O
	11	Develop and implement potable water system monitoring program for planned, unplanned, and emergency discharges from the City's Municipal Water System.	ESD	✓	✓	O	O	O	O
Prevent Pollutant Discharges through Effective Enforcement	1	Review and update Industrial and Commercial Business Inspection Plan.	ESD		✓				
	2	Update Enforcement Response Plan to serve as a reference document for inspection staff.	ESD		✓				
	3	Provide training for staff conducting business and illicit discharge inspections.	ESD	✓	✓	O	O	O	O
	4	Identify revisions to the municipal code to ensure the City has the ability to require effective stormwater pollutant controls and escalate progressively stricter enforcement to achieve expedient compliance year round.	ESD, PBCE, PW		✓	O	O	O	O

Key Implementation Area		Implementation Tasks	Responsibility	2009	2010	2011	2012	2013	2014
	5	Update Construction Inspection Program Standard SOP to meet the Implementation Levels identified in the Permit.	ESD, PW		✓	O			
	6	Review and update the SOPs and inspection report forms to include the specified BMP categories for construction site activities.	ESD, PW		✓	O			
	7	Verify that sites disturbing one acre or more of land have filed a Notice of Intent for coverage under the Construction General Permit.	PW		✓	O	O	O	O
	8	By September 1st of each year, remind all site developers and/or owners of private projects disturbing one acre or more of soil to prepare for the upcoming wet season.	PW		✓	O	O	O	O
	9	Provide training or access to training for staff conducting construction site stormwater inspections.	ESD		✓	O	O	O	O
	10	Modify existing data management system to incorporate new tracking and reporting requirements.	ESD		✓				
	11	Complete a complaint and spill response phone list to respond to illicit connection and/or illegal dumping complaints.	ESD		✓				
	12	Transition to updated data management system and new field devices. Ensure that all permit-required information is tracked in the update database.	ESD		✓	O			
	13	Work with municipalities throughout the Bay Area to develop a Mobile Business program designed to address the unique business practices and pollutants from mobile businesses.	ESD		✓	O	O		
Guide Development to Protect the Watershed	1	Evaluate development projects for conformance with Stormwater Permit requirements.	PBCE, PW	✓	✓	O	O	O	O
	2	Integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies in Envision 2040.	ESD, PBCE		✓	O			
	3	Revise City Council Policy 6-29 - Post-Construction Urban Runoff Management to incorporate changes to definitions of Regulated Projects, and any other applicable changes to align with Permit requirements (i.e., Low Impact Development, adjustment to size thresholds for projects, etc.).	PBCE, ESD, PW			O			
	4	Revise Planning and Building Permit Application Forms and Instructions, as needed, to align with new LID requirements.	PBCE, ESD			O			

Key Implementation Area		Implementation Tasks	Responsibility	2009	2010	2011	2012	2013	2014
	5	Participate in the development of a regional C.3 Guidance Manual as a critical tool for developers and City staff.	ESD, PBCE, PW			O			
	6	Provide outreach to developers and businesses, and training to City staff, on changes to development procedures, policies, and design guidelines as needed to conform with the permits new LID requirements.	ESD, PBCE, PW	✓	✓	O	O		
	7	Evaluate development projects for conformance with the LID requirements of the permit.	PBCE, PW			O	O	O	O
	8	Identify roadway projects that can implement Green Street infrastructure techniques.	ESD, PW, DOT, RDA		✓	O	O	O	O
	9	Develop a conceptual and construction design for one or more candidate green street pilot projects in the City of San Jose.	ESD,PW, DOT, RDA		✓	O	O	O	
	10	Pursue grants and secure funding to construct one or more green street pilot projects in San Jose.	ESD,PW, DOT, RDA		✓	O	O	O	
	11	Evaluate feasibility and develop options for development projects to meet stormwater management requirements by providing LID treatment at an off-site location or by contributing in-lieu fees toward a regional stormwater treatment facility.	ESD, PW, PBCE			O	O		
	12	Develop plan that describes operations and maintenance (including inspections) of all Regional Projects and regional Hydromodification (HM) controls that are City-owned and/or operated. (This is only applicable if the City has regional projects and/or HM controls.)	ESD, PW, DOT			O	O		
	13	Identify opportunities to demonstrate LID measures at an existing or new public facility(s).	PW, ESD		✓	O	O	O	O
	14	Participate in development of the *LID Feasibility/Infeasibility Criteria Report* on the criteria and procedures employed to determine when harvesting and reuse, infiltration, or evapotranspiration is feasible and infeasible at a Regulated Project site.	ESD, PBCE, PW		✓	O			
	15	Provide s*tatus report on Application of Feasibility/Infeasibility Criteria* at Regulated Project sites.	ESD, PBCE, PW				O	O	
	16	Participate with regional partners in development of *Model Biotreatment Soil Media Specifications and Green Roof Specifications*.	ESD, PBCE, PW		✓	O			
	17	Include in 2012 Annual Report a report on methods of implementing the permit's LID requirements.	ESD, PBCE, PW				O		

Key Implementation Area		Implementation Tasks	Responsibility	2009	2010	2011	2012	2013	2014
	18	Participate in development of the *Special Projects* proposal defining which Smart Growth projects would be allowed to use a broader range of stormwater treatment measures.	ESD, PBCE, PW	✓	✓	O			
	19	Revise City Council Policy 8-14 - Post-Construction Hydromodification Management (HM) as necessary to incorporate the changes in hydromodification management as required by the Permit.	ESD, PBCE, PW		✓				
	20	Complete mapping analysis to determine if the "under review" areas on the HM applicability map are less than, equal to, or greater than 65% impervious, and thus subject to or exempt from the HM requirements.	ESD, PBCE, PW		✓				
	21	Develop a prioritized plan and procedures for inspecting all installed stormwater treatment systems and HM controls as per minimum specifications in the permit.	ESD		✓				
	22	Conduct prioritized inspections of required stormwater treatment system to ensure proper operations and maintenance.	ESD	✓	✓	O	O	O	O
	23	Develop procedures to ensure all newly installed stormwater treatment systems and HM controls at private and public project sites are inspected within 45 days of installation.	ESD, PW		✓				
	24	Conduct inspections of all newly installed stormwater treatment systems and HM controls to ensure proper installation.	PW		✓	O	O	O	O
	25	Develop and implement procedures to ensure that Small Projects and Detached Single-Family Home Projects install one or more of the specified stormwater site design measures.	ESD, PBCE				O	O	O
Develop and Implement Strategies to Reduce Target Pollutants	1	Provide mercury containing product disposal services for City facilities and for residents and small businesses by supporting and promoting County's HHW program.	PW	✓	✓	O	O	O	O
	2	Coordinate with partners to increase awareness of proper disposal of mercury-containing products and non-mercury alternatives.	ESD	✓	✓	O	O	O	O
	3	Participate in pilot projects to investigate and abate PCB and mercury Sources in the Leo Avenue drainage area.	ESD			O			
	4	Evaluate and enhance municipal sediment removal and management practices in the Leo Avenue drainage area in conjunction with the regional grant project.	ESD, DOT			O	O	O	

Key Implementation Area		Implementation Tasks	Responsibility	2009	2010	2011	2012	2013	2014
	5	Identify and conduct pilot projects to evaluate on-site stormwater treatment via retrofit of the storm sewer system.	ESD, PW, DOT			O	O	O	
	6	Serve as an alternate storm water pump station diversion project location. Participate in project development, implementation and evaluation as needed.	ESD, PW, DOT		✓	O	O	O	
	7	Participate in regional efforts to evaluate the presence of PCBs in building materials (such as caulk) that may result in environmental release during demolition or renovation activities.	ESD		✓	O			
	8	Participate in regional efforts to develop and test a model implementation process to reduce the release of PCBs from building materials during building demolition.	ESD, PBCE, PW		✓	O	O	O	O
	9	Participate in regional efforts to monitor stormwater pollutant loads, study fate and transport, and implement a risk reduction program for mercury and PCBs.	ESD			O	O	O	O
	10	Review the City's IPM Policy, evaluated and consider opportunities to enhance policy.	ESD, PRNS, DOT, PW			O	O		
	11	Implement IPM Policy and provide updates in annual report.	ESD, PRNS, DOT, PW	✓	✓	O	O	O	O
	12	Review and update IPM SOP for identifying, purchasing, installing, and maintaining pesticide application operations pursuant to City's IPM Policy.	ESD, PRNS, DOT, PW			O	O		
	13	Review, analyze, and report the City's pesticide use data.	ESD, PRNS,DOT, PW	✓	✓	O	O	O	O
	14	Provide education and training regarding IPM Policies, SOPS & BMPs to municipal employees, specifically those who are pesticide applicators.	DOT, PRNS, PW, ESD		✓	O	O	O	O
	15	Participate in various activities for tracking pesticide evaluations and regulations by various state/federal agencies.	ESD		✓	O	O	O	O
	16	Develop and engage stakeholders in Trash Load Reduction Plan which will specify how the City will attain 40 percent trash load reduction by July 1, 2014.	ESD, DOT, PW, PRNS		✓	O			
	17	Participate in regional development of the methodology to determine baseline trash load and for tracking trash load reductions.	ESD		✓	O			
	18	Develop structural control strategy and select devices and locations that meet, at minimum, a catchment area of 895 acres.	ESD, DOT, PW		✓	O			

Key Implementation Area		Implementation Tasks	Responsibility	2009	2010	2011	2012	2013	2014
	19	Install full trash capture devices as specified in the structural control strategy.	PW, DOT			O	O	O	O
	20	Submit the City's Short Term Trash Load Reduction Plan including baseline trash load and trash load reduction tracking methodology to Water Board.	ESD				O		
	21	Identify 32 creek trash Hot Spots, and submit locations, initial assessment, and photo documentation to Water Board.	ESD		✓				
	22	Clean 32 selected Hot Spots once per year to the point of no visual impact.	ESD		✓	O	O	O	O
	23	Develop and submit a Long Term Trash Load Reduction Plan with implementation plan to Water Board to reduce trash loading by 70% by July 1, 2017 and by 100% by July 1, 2022.	ESD, DOT, PW					O	O
	24	Provide outreach and education on prohibition of discharge of waters from pools, spa, and fountains containing copper-based chemicals.	ESD	✓	✓	O	O	O	O
	25	Collaborate and participate in regional Brake Pad Partnership efforts.	ESD	✓	✓	O	O	O	O
	26	Incorporate identification of industrial sites that are likely to discharge copper in Industrial Inspection Program. Educate business owners regarding the installation and use of these BMPs.	ESD		✓	O	O	O	O
	27	Collaborate in regional studies on copper toxicity and effects on wildlife.	ESD			O	O	O	O
	28	Collaborate in regional studies on characterizing stormwater concentrations of and developing control strategies for PBDEs, selenium and legacy pesticides (DDT, dieldrin, chlordane).	ESD			O	O	O	O
Motivate Public Stewardship of the Watershed	1	Develop and implement plan to mark at least 80% of all storm drain inlets in the public right-of-way.	ESD, DOT	✓	✓	O	O	O	O
	2	Inspect storm drain inlet markings in public right-of-way according to inspection plan.	ESD, DOT	✓	✓	O	O	O	
	3	Participate in or contribute to public education campaigns on trash and litter in waterways and pesticides with goal of significantly increasing overall awareness of runoff pollution prevention messages and behavior changes in target audience.	ESD	✓	✓	O			
	4	Participate and/or host, at least 8 outreach events.	ESD	✓	✓	O	O	O	O

Key Implementation Area		Implementation Tasks	Responsibility	2009	2010	2011	2012	2013	2014
	5	Create and distribute materials as appropriate to encourage residents and property owners to adopt stormwater pollution prevention practices including those related to car washing.	ESD	✓	✓	O	O	O	O
	6	Support local collaborative watershed efforts such as the Watershed Management Initiative.	ESD	✓	✓	O	O	O	O
	7	Participate in two annual volunteer creek cleanups, specifically National River Cleanup Day and California Costal Cleanup Day. Support PRNS Anti-Litter volunteer programs such as Pick-up San Jose, Adopt-A-Trail, and Adopt-A-Park. Support at least five of these events annually.	ESD, PRNS	✓	✓	O	O	O	O
	8	Implement outreach activities designed to increase awareness in school age children, including continued administration of the Youth Watershed Education Grant and Creeks Come to Class programs.	ESD, PRNS	✓	✓	O	O	O	O
	9	Establish partnerships and secure funding to initiate implementation of a region-wide Bay Protection Communications Campaign.	ESD		✓	O			
	10	Develop campaign messaging and materials, and implement campaign.	ESD			O	O	O	O
Collect High Quality Monitoring Data	1	Formalize establishment and participation in the Regional Monitoring Coalition (RMC) in collaboration with SCVURPPP.	ESD		✓				
	2	Contribute to the San Francisco Estuary Regional Monitoring Program (RMP) through participation in steering and technical review committees, and workgroups.	ESD	✓	✓	O	O	O	O
	3	Assist in developing Regional Creek Status Monitoring Plan to include field Standard Operating Procedures and Data Quality Objectives comparable to established state standards.	ESD		✓	O			
	4	Participate in development of a regional information management system to store and share monitoring data collected regionally.	ESD		✓	O			
	5	Prepare for local creek status monitoring, including field equipment and supply preparation, SOP training, site reconnaissance, and final site selection.	ESD			O	O		
	6	Assist with wet weather water toxicity monitoring.	ESD			O	O	O	O
	7	Assist with biological assessments, chlorine, general water quality, bedded sediment toxicity and pollutants, CRAM, and water column toxicity monitoring.	ESD				O	O	

Key Implementation Area		Implementation Tasks	Responsibility	2009	2010	2011	2012	2013	2014
	8	Participate in planning and implementation of a follow-up/investigative study in Guadalupe River in conjunction with SCVURPPP.	ESD			O	O		
	9	Participate in follow-up/investigative study in Coyote Creek to determine potential causes of poor water quality conditions observed in main stem in conjunction with SCVURPPP.	ESD			O	O	O	
	10	Participate in BMP effectiveness studies as part of the regional grant project.	ESD			O	O	O	
	11	Assist and participate in development of Pollutants of Concern and Long-Term Trends Monitoring strategy to refine stormwater pollutant loading estimates.	ESD		✓	O	O	O	O
	12	Contribute to regional efforts to design a Sediment Delivery budget in local tributaries and urban drainages.	ESD			O	O	O	
	13	Participate in regional efforts to develop a work plan and schedule for initial loading estimates and source analysis for emerging pollutants.	ESD	✓	✓	O	O	O	O
	14	Assist and participate in development of a comprehensive Urban Creeks Monitoring Report.	ESD				O	O	O
	15	Assist and participate in development of the Integrated Monitoring Report.	ESD					O	O
	16	Encourage Citizen monitoring through coordination with existing groups.	ESD	✓	✓	O	O	O	O
	17	Encourage Citizen monitoring by piloting volunteer water quality monitoring program in San José.	ESD			O	O	O	O