

US EPA ARCHIVE DOCUMENT

Program Evaluation Report

Orange County Storm Water Program: County of Orange and the Cities of Mission Viejo, San Clemente, and San Juan Capistrano (Order No. R9-2002-0001, NPDES Permit No. CAS0108740)

Executive Summary

Tetra Tech, Inc., with assistance from the California Regional Water Quality Control Board, San Diego Region (Regional Board) and U.S. Environmental Protection Agency (EPA) Region 9, conducted a program evaluation of 4 of the 13 permittees implementing the Orange County Storm Water Program (the Program) in June 2003. The purpose of the program evaluation was to determine the permittees' compliance with the National Pollutant Discharge Elimination System (NPDES) permit (CAS0108740 and Board Order No. R9-2002-0001) and to evaluate the current implementation status of the permittees' Local Implementation Plans (LIPs) with respect to EPA's storm water regulations. The program evaluation included an in-field verification of program implementation. The four permittees evaluated were the County of Orange Public Facilities and Resources Department (County) and the cities of Mission Viejo, San Clemente, and San Juan Capistrano. Although Orange County is subject to NPDES municipal storm water permits issued by both the San Diego and Santa Ana Regional Boards, this program evaluation examined solely the permittees and activities within the purview of the San Diego Regional Board.

This program evaluation report identifies potential permit violations, program deficiencies, and positive attributes and is not a formal finding of violation. Program deficiencies are areas of concern for successful program implementation. In some select cases the deficiency applied to all of the permittees. Those particular findings are presented in this Executive Summary but are not included in the permittee-specific sections of the report. Positive attributes indicate overall progress in implementing the program.

The following potential permit violations were identified:

- The County's inventory of industrial sites does not include County-owned facilities subject to the state NPDES industrial general permit.
- The County lacked adequate storm water controls at the South County Repair Facility/Transportation Shop.
- Mission Viejo construction inspection staff did not appear to be enforcing the erosion and sediment control requirements contained in the municipal separate storm sewer system permit.
- Numerous potential permit violations and illegal discharges were found at several municipal facilities in Mission Viejo.

- San Clemente’s South Yard and adjacent facilities near the golf course maintenance building lacked best management practices (BMPs) while additional BMPs were warranted at other municipal facilities.

The following deficiencies were considered the most significant:

- The County should develop methods or indicators to help document program effectiveness.
- The County should provide additional guidance to developers on developing effective water quality management plans (WQMPs).
- A local WQMP implementation guide should be developed in San Clemente to better assist city staff and the development community.
- San Juan Capistrano should develop methods or indicators to help document program effectiveness.
- San Juan Capistrano lacks formalized procedures for the internal WQMP review and approval process.
- San Juan Capistrano should consider augmenting the County-sponsored dry-weather monitoring program to better establish baseline conditions and evaluate trends in water quality.

The following deficiencies applied to all of the permittees evaluated:

- The permittees should proactively identify and then address areas with a known high occurrence of illicit discharges.
Part F.5.a of the permit requires the permittees to “actively seek and eliminate illicit discharges and connections into its MS4.” While each permittee should be commended for initiating activities to eliminate known illicit discharges, it appeared that additional activities were warranted to actively seek out such discharges. The southern portion of the county is not highly industrialized and the light industrial and commercial areas are largely consolidated within each city. Each permittee should consider focusing additional illicit discharge identification efforts in these known areas, or alternatively focus their efforts on their largest water quality threat. Either way, it appeared that a more focused prioritization for proactively identifying illicit discharges was needed. For example, the City of Livermore has an established drive-by schedule for light industrial parks that is intended to increase its oversight presence and identify active discharges. The program requires limited staff resources and has proven very effective in eliminating discharges by educating tenants and owners. Given the high level of storm water awareness throughout the southern portion of the county, frequent and continued visibility could prove very effective in reducing the prevalence of illicit discharges.

- Portions of each City's LIP should be revised to more accurately describe each City's current and planned procedures.

In many cases, the evaluation found that the procedures employed by a City were sound, yet they were not accurately described in the corresponding LIP section. Instead, all or a portion of that section of the LIP appeared largely copied from the DAMP. The LIP should accurately describe the current and/or anticipated actions each City intends to implement in response to the permit requirements. The LIP needs to be accurate as it provides guidance to the City employees. Each City should identify and modify those parts of the LIP that need revision and propose revisions to the LIP in the next annual report as required in part I.1.d of the permit. Finding 2.3.1 of this report provides some specific examples of this occurrence.

Several elements of the permittees' program were particularly notable:

- The County has developed extensive training materials on all major components of the storm water program.
- In advance of the MS4 permit imposed deadline, the City of Mission Viejo developed its local WQMP template, posted it online and is currently requiring its use for applicable new and redevelopment projects.
- Mission Viejo has developed a framework for a coordinated industrial and commercial inspection program, specific to the City.
- Mission Viejo code enforcement staff are currently conducting proactive field reconnaissance investigations of the watersheds within the City (beginning with Aliso Creek) to identify potential sources of pollution and violations of the City's Water Quality Ordinance.
- San Clemente finances its storm water program from two sources, one of which was adopted in compliance with Proposition 218, which requires voter approval of property-related fees.
- San Clemente is planning to measure the effectiveness of its storm water program with both direct and indirect measures.
- San Clemente conducts a dry-season monitoring program that supplements the County's program.
- San Juan Capistrano building inspectors were well informed, trained, and equipped to ensure erosion and sediment control compliance on construction sites.

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1.0 Introduction

1.1 Program Evaluation Purpose

Tetra Tech, Inc., with assistance from the California Regional Water Quality Control Board, San Diego Region (Regional Board) and U.S. Environmental Protection Agency (EPA) Region 9, conducted a program evaluation of 4 of the 13 permittees implementing the Orange County Storm Water Program (the Program) in June 2003. The purpose of the program evaluation was to determine the permittees' compliance with the National Pollutant Discharge Elimination System (NPDES) permit (CAS0108740 and Board Order No. R9-2002-0001) and to evaluate the current implementation status of the permittees' Local Implementation Plans (LIPs) with respect to U.S. Environmental Protection Agency's (EPA) storm water regulations. Secondary goals included the following:

- Review the overall effectiveness of the Program.
- Identify and document positive elements of the Program that could benefit other Phase I and Phase II municipalities.
- Acquire data to assist in reissuance of the permit.

40 CFR 122.41(i) provides the authority to conduct the program evaluation.

Although Orange County is subject to NPDES municipal storm water permits issued by both the San Diego and Santa Ana Regional Boards, this program evaluation examined solely the permittees and activities within the purview of the San Diego Regional Board.

1.2 Permit History

The NPDES storm water permit was issued on February 13, 2002, and is scheduled to expire on February 13, 2007. The current permit, the third issued to the permittees, requires each permittee to develop and implement a Jurisdictional Urban Runoff Management Plan (JURMP), which the permittees have renamed a Local Implementation Plan (LIP).

1.3 Logistics and Program Evaluation Preparation

Before initiating the on-site program evaluation, Tetra Tech, Inc., reviewed the following program materials:

- NPDES Permit No. CAS0108740
- County of Orange, Storm Water Local Implementation Plan (February 2003)
- City of Mission Viejo, Storm Water Local Implementation Plan (February 2003)
- City of San Clemente, Storm Water Local Implementation Plan (February 2003)
- City of San Juan Capistrano, Storm Water Local Implementation Plan (February 2003)

- 2002 Annual Report (November 2002)
- Regional Board correspondence with each permittee
- Permittees' Web sites

On June 10–12, 2003, Tetra Tech, Inc., with assistance from the Regional Board and EPA Region 9, conducted the program evaluation. The evaluation schedule was as follows:

Tuesday, June 10	Wednesday, June 11	Thursday, June 12
<ul style="list-style-type: none"> • Program evaluation kickoff meeting • Land Use Planning for New Development (office) • Construction (office and field) 	<ul style="list-style-type: none"> • Industrial and Commercial Components (office and field) • Illicit Discharge Component (office and field) 	<ul style="list-style-type: none"> • Municipal Activities • Residential, Education, and Public Participation Components • Program Effectiveness • Outbrief

Upon completion of the evaluation, the evaluation teams held an exit interview separately with each permittee to discuss the preliminary findings. During the exit interview, the attendees were informed that the findings were to be considered preliminary pending further review by the Regional Board and EPA.

1.4 Program Areas Evaluated

The following program areas were evaluated:

- Program management, including the permittees' effectiveness assessment.
- New Development/Redevelopment Component.
- Construction Component.
- Industrial/Commercial Component.
- Illegal Discharges and Illicit Connections Component.
- Municipal Activities Component.
- Public Education and Residential Components.

1.5 Program Areas Not Evaluated

The following areas were not evaluated in detail as part of this program evaluation:

- Wet-weather monitoring program and monitoring program details (e.g., sample locations, types, frequency, parameters).
- Other NPDES permits issued to the permittees (e.g., industrial or construction NPDES storm water permits).
- Fiscal resources required or expended to implement the programs outlined in the LIPs.

- Legal authority.
- Inspection reports, plan review reports, and other relevant files. The program evaluation team did not conduct a detailed file review to verify that all elements of the Program were being implemented as described. Instead, the team relied on its observations and on statements from the permittees' representatives to assess overall compliance with permit requirements. A detailed file review of specific program areas could be included in a subsequent evaluation.

1.6 Program Areas Recommended for Further Evaluation

The evaluation team recommends the following additional assessments:

- An evaluation of the other permittees not evaluated.
- Intensive reviews of the permittees' implementation of the local WQMPs, after they have been approved.
- A review of each permittee's industrial and commercial inspection and enforcement process, once a sufficient number of inspections has been performed.
- A review of the commercial inspections to be performed by the Orange County Health Department.
- A reinspection of municipal yards where potential permit violations were identified.
- A review of the methods the permittees intend to use to measure the long-term effectiveness of the LIPs.

2.0 Program Evaluation Results

This program evaluation report identifies potential permit violations, program deficiencies, and positive attributes and is not a formal finding of violation. Program deficiencies are areas of concern for successful program implementation. Positive attributes indicate a permittee's overall progress in implementing the Program. The evaluation team identified only positive attributes that were innovative (beyond minimum requirements). Some areas were found to be simply adequate; that is, not deficient or innovative.

The evaluation team did not evaluate all components of each permittee's Program. Therefore, the permittees should not consider the list of program deficiencies contained in this report as constituting a comprehensive evaluation of individual program elements.

The most significant potential permit violations, program deficiencies, and positive attributes identified during the evaluation are noted in the Executive Summary and are described in text boxes in the following subsections.

2.1 County of Orange

2.1.1 Evaluation of Program Management and Effectiveness

Positive Attributes:

- *The County has developed extensive training materials on all major components of the storm water program.*

Appendix B of the DAMP includes training modules for the major components of the program. Each PowerPoint training module identifies the appropriate audience and indicates the amount of time needed to cover the material. These training modules have been developed for all permittees, but can be customized to conform to the details in each LIP. Training modules have been developed for various topics, including municipal activities program management, fixed facility maintenance procedures, inspections of construction site BMPs, and the training of authorized inspectors of illicit discharges and illegal connections.

Deficiency Noted:

- *The County should develop methods or indicators to help document program effectiveness.*

The County developed a draft Program Effectiveness Assessment (Appendix C of the LIP) that focuses on the collection of information necessary to prepare the annual report. The Program Effectiveness Assessment helps the County track programmatic information for the past fiscal year, such as the number of meetings attended, the number of illicit discharges corrected, and the number of public education outreach events. Except where the permit sets specific frequencies for certain activities (such as permit provision F.3.b(6) requiring annual industrial inspections), the LIP and Program Effectiveness Assessment do not set measurable goals or performance expectations for various program components.

The DAMP sets broad goals for the various program components. For example, the goal for the new development program is to provide a program framework “for reducing the adverse impacts that new development and significant redevelopment may have on water quality.” In addition, although the Program Effectiveness Assessment provides data on past activities to the Regional Boards, the assessment is not used in the LIP to set goals for future activities. The County should develop more specific goals or performance expectations, based on the program effectiveness assessment, to help measure progress in achieving these goals. Because of the difficulty in measuring impacts and changes in water quality, the goals should also include programmatic and interim measures.

For example, the Program Effectiveness Assessment includes the number and percentage of catch basins cleaned. The LIP should use this information to assess whether this level of effort is adequate and whether the activity needs to change for the following year, and to specify the level of effort expected for this activity in the next year. The County could also consider developing goals or performance expectations based on the programmatic, social, or environmental indicators listed in

the 1996 Center for Watershed Protection report *Environmental Indicators to Assess Storm Water Control Programs and Practices*. Locally, the City of San Clemente has established direct and indirect measures to assess the effectiveness of its program.

2.1.2 Evaluation of Land Use Planning for New Development and Redevelopment

Positive Attribute:

- *The County has developed the Automated Permitting and Planning System (APPS) to assist in permit tracking.*

The APPS system helps the County track plan check status, inspection requests, and account deposits and charges for various types of permits. The County also uses this system to schedule and track inspections. APPS is being updated to include information on NPDES water quality plan reviews and inspections.

Deficiency Noted:

- *The County should provide additional guidance to developers on developing effective water quality management plans (WQMPs).*

Part F.1.b of the permit requires the County to develop standard urban storm water mitigation plans, which the permittees are addressing by substantial revisions to their WQMPs. The permittees developed a model WQMP as part of the DAMP (Exhibit 7.II), and the County developed (as part of its LIP) a WQMP Template (Exhibit A-7.IV) and WQMP Checklist (Exhibit A-7.III). Although these documents will assist the County in reviewing and approving WQMPs, they do not provide local developers with an explanation of the criteria and standards required to develop an adequate WQMP. The County should consider developing guidance and outreach materials specifically for the development community that include the design criteria, BMPs, maintenance provisions, and example plans required for an effective WQMP.

2.1.3 Evaluation of Construction Program

Positive Attribute:

- *The County has developed a storm water pollution prevention plan (SWPPP) template for public construction projects.*

The SWPPP template provides for notes to both the County designer and the contractor or contractor's engineer explaining where additional information is needed. The 12-page template includes space for a site map and an erosion and sediment control map, an area to list BMPs for construction and post-construction, and space for the contractor to indicate the construction schedule and material inventory to be stored on site. The SWPPP template is required for all public construction projects.

Deficiencies Noted:

- *The County should consider using construction site SWPPPs to assist in its plan review and inspection procedures.*

During the evaluation, County representatives stated that they typically do not review construction SWPPPs. Private developers disturbing more than 1 acre need to develop

a SWPPP to comply with the state NPDES construction general permit and an erosion and sediment control plan to comply with the County's storm water program. The County should consider using construction SWPPPs to assist in plan review and inspections to minimize the duplication of effort by local developers. In addition to allowing local developers to submit only one plan to both the County and the State, the County could reduce the inspection frequency for high-priority sites as outlined in the permit (F.2.g). The evaluation team noted that the County already reviews industrial SWPPPs during industrial/commercial inspections as described in the County's inspection procedures (Exhibit A-9.III of the LIP).

For example, the City of Stockton has developed a model construction SWPPP and reviews all SWPPPs in the City (additional information can be found at <http://www.ci.stockton.ca.us/MUD/stormwater/construction.htm>).

- *Construction inspectors, although knowledgeable about erosion and sediment controls, should develop more formal inspection procedures and documentation.* The evaluation team visited three different private construction projects in the Ladera planned community. Although the construction inspectors appeared knowledgeable about erosion and sediment control practices, the inspectors did not complete the storm water program inspection form for any of the projects visited. The storm water program inspection form was developed for private projects issued grading and building permits by the County's Planning and Development Services Department. The County should include more detail in the Construction section of the LIP describing standard inspection procedures. These procedures should describe inspector preparation activities (e.g., making sure all inspectors have inspection forms, safety gear, boots, and camera), on-site inspection procedures (including walking the entire site and inspecting discharge points), and post-inspection or follow-up activities.

2.1.4 Evaluation of Existing Development: Industrial and Commercial Programs

Potential Permit Violation:

- *The County's inventory of industrial sites does not include County-owned facilities subject to the state NPDES industrial general permit.* Part F.3.a.(3)(b) of the permit requires the County to include in the high priority municipal areas "active or closed municipal landfills." Permit provision F.3.b(2) requires the County to develop an inventory of all industrial sites within its jurisdiction regardless of whether the site is subject to the state NPDES industrial general permit. The County did not include County-owned facilities subject to the industrial general permit, particularly landfills, on these lists. For example, the Prima Deshecha Landfill is in the jurisdiction of the San Diego Regional Board but not included on the municipal facility or industrial facility list developed by the County. The County should include all required facilities, including those subject to the industrial general permit, on its list of high priority municipal and industrial facilities.

Deficiency Noted:

- *The County has not yet inspected industrial and commercial facilities within the San Diego Regional Board's jurisdiction.*

In the LIP, the County identified 9 industrial facilities and 25 commercial facilities in the South County portion of Regional Board 9. The County has developed a commercial/industrial inspection/site report form, but has not yet inspected any facilities. The County plans to inspect all industrial facilities annually and commercial facilities once every 5 years. The County will need to complete these inspections within the allotted time to be in compliance with the permit.

2.1.5 Evaluation of Illicit Discharge Detection and Elimination ProgramPositive Attribute:

- *The County employs a mobile lab for its dry-weather discharge screening program, allowing the County to analyze a number of pollutant parameters immediately.*

The County of Orange's mobile lab is used for in-field analysis of samples taken under the dry-weather discharge screening program. The County screens for 18 different parameters, 12 of which are analyzed in the mobile lab. Pollutants the County measures in the field include phenols, ammonia, nitrates, total chlorine, turbidity, and hardness along with physical parameters such as dissolved oxygen, conductivity, pH, and temperature. The instant results of these analyses allow the County to take timely action if problems are found.

2.1.6 Evaluation of Existing Development: Municipal ProgramPotential Permit Violation:

- *The County lacked adequate storm water controls at the South County Repair Facility/Transportation Shop.*

Part F.3.a(4)(b) of the permit require the County to implement minimum BMPs at each municipal area within its jurisdiction. A site visit to the South County Repair Facility/Transportation Shop on Pacific Island Drive revealed inadequate storm water controls. The following are specific potential permit violations identified at the site:

- Five hazardous waste drums were stored outside without secondary containment.
- Residue from previous spills was found in the parking lot.
- A valve draining the secondary containment for a waste oil container was not locked, making it possible for an unauthorized person to discharge contaminants in the event of a spill or leak.
- A covered fueling station lacked spill kits nearby.
- A trash bin did not have a cover to protect against storm water runoff.

These issues must be corrected immediately.

Positive Attribute:

- *The County used data collected for GASB 34 in inventorying municipal facilities and drainage structures.*

Government Accounting Standards Board (GASB) Statement No. 34 requires state and local governments to begin reporting the value of their infrastructure assets—roads, bridges, storm sewer systems, and other facilities—in their annual financial reports. The value of these physical infrastructure assets is spread over the useful life of the asset (typically 20–50 years), allowing the agency to depreciate the asset and plan replacement costs. The County used the inventory developed for GASB 34 to create the source identification list of municipal land use areas and activities. This process could be used by other permittees to inventory their municipal facilities.

Deficiency Noted:

- *The County should develop storm water plans for all high-priority municipal facilities and independently inspect these facilities.*

Although not specifically required to do so by the MS4 permit, the County should consider developing storm water plans for its high-priority municipal facilities. A storm water plan describes the potential pollutant sources, pollution prevention measures and BMPs, inspections, and record keeping required for each site. As evidenced by the problems discovered at the South County Repair Facility, a site-specific storm water plan is needed so each facility is aware of the appropriate storm water management practices applicable for that site.

The LIP describes quarterly inspections of high-priority municipal facilities; however, the County indicated the on-site facility representative would conduct these inspections. The County should consider having the same staff responsible for industrial inspections also conduct periodic inspections at municipal facilities. These industrial inspectors could identify issues that the on-site facility representatives may have missed in their routine inspections.

2.1.7 Evaluation of Residential, Education and Public Participation Programs

Positive Attribute:

- *The Countywide Public Education Program uses a variety of tools to educate the public about storm water pollution prevention, including a Web site and a hotline, general and targeted pollutant-specific outreach materials, an advertising media plan, and public awareness surveys.*

The Countywide Public Education Program's Web site

(<http://www.ocwatersheds.com>) provides information on the storm water program and public education, including copies of various public education brochures and links to a 24-hour water pollution problem reporting hotline. Targeted brochures on specific pollutants have been developed for exterior restaurant cleaning, pools, pet care activities, horses, and carpet cleaning, among other activities. Also, the County is developing a media plan, including advertisements on radio and transit/bus shelters and in publications and movie theaters. Finally, the County has conducted several public awareness surveys to measure public knowledge of storm water pollution prevention.

2.2 City of Mission Viejo

2.2.1 Evaluation of Program Management and Effectiveness

Adequate.

2.2.2 Evaluation of Land Use Planning for New Development and Redevelopment

Positive Attributes:

- *In advance of the MS4 permit-imposed deadline, the City developed its local WQMP template, posted it online, and is currently requiring its use for applicable new development and redevelopment projects.*

According to Part F.1.b of the permit, each permittee is required to develop a local SUSMP (which the permittees are addressing by substantial revisions to their WQMPs) and ensure its implementation within 180 days of development of the model WQMP (or August 13, 2003). The City of Mission Viejo has developed its template and checklist and is distributing them at City Hall and through the City's Web page (www.ci.mission-viejo.ca.us). The City is now requiring that all new development and significant redevelopment projects that qualify (under Part F.1.b(2)(a) of the permit and section A-7.5.1 of the LIP) develop and meet all WQMP requirements. During the evaluation, two WQMPs were reviewed, one received prior to the development of the new WQMP template/checklist and one after. The WQMP that was based on the template showed a marked improvement in quality in comparison with the WQMP drafted without the aid of the template. The City plans to provide developers with an approved WQMP to serve as an example for future applicants.

- *The City requires all existing gas stations that install or modify fuel dispensers, fueling equipment, or fuel tanks to prepare a WQMP in conformity with the City's template.*

As described in section A-7.5.1.2 of the LIP, gas stations that modify their plumbing to accommodate or modify fueling equipment are required to have a nonresidential plumbing permit. To obtain this permit, the City requires that the applicant prepare a WQMP that addresses the quality and quantity of storm water runoff from the site. The WQMP must be reviewed and approved by the Public Works Department. Although this type of property alteration is technically not "redevelopment" and is not required under the MS4 permit (Part F.1) or included in the model WQMP submitted by the County, the City developed this requirement in order to better address potential water quality problems from gas stations.

- *The City requires all existing properties that apply for a tenant improvement (TI) permit to cover and contain outdoor trash enclosures and connect the drain inlet to the sanitary sewer system.*

Tenant improvement approval is required whenever a property changes use (e.g., when an antique store is converted to a grocery store). Prior to approval of TI plans, modifications of trash enclosure areas are required of existing developments in Mission Viejo. The City requires the coverage and containment of trash enclosures as

an NPDES improvement to the site, in addition to other types of modifications. This creates an additional “trigger” to incorporate storm water management measures on existing developments and demonstrates a commitment to using existing regulatory mechanisms to implement the NPDES permit.

- *The City includes NPDES requirements in all Capital Improvement Project (CIP) Requests for Proposal (RFPs) and in resulting contracts with winning bidders.* Section A-7.5.2 of the City’s LIP states that all public projects must incorporate the “requirement for a WQMP into the process of planning, design, approval, and construction oversight of its public agency projects.” To facilitate this, the City includes a scope item in all RFPs released that requires that all work comply with the requirements of the City’s NPDES permit and the WQMP. Resulting contracts also include special provisions for “Water Pollution Control (NPDES Compliance)” that outline the specific BMP requirements for various types of CIP work: concrete mortar products, asphalt and bituminous products, construction water, saw-cutting water runoff, housekeeping and cleanup, sanitary waste management, vehicle and equipment management, and surface and subsurface water control.

2.2.3 Evaluation of Construction Program

Potential Permit Violation:

- *Construction inspection staff did not appear to be enforcing the erosion and sediment control requirements contained in the MS4 permit.* Part F.2.c of the permit states each permittee shall require “all individual proposed construction and grading projects to implement measures to ensure that pollutants from the site will be reduced to the maximum extent practicable and will not cause or contribute to an exceedance of water quality objectives.” This is in addition to requirements of the state NPDES construction general permit. Parts F.2.f–h of the MS4 permit also require the permittees to implement BMPs, inspect construction sites to determine compliance, and enforce the City’s ordinances and permits to ensure compliance with the MS4 permit. Mission Viejo’s LIP concurs with these requirements: Section A-8.4 of the LIP states, “all construction projects, regardless of size or priority, are required to implement BMPs to prevent discharges into the storm drain system or watercourses” and “all private and public works CIP projects are required, at a minimum, to implement and be protected by an effective combination of erosion and sediment controls and waste and materials management BMPs.” The minimum requirements are summarized in table 8-6 of the DAMP and are conveyed to construction contractors as part of the permit conditions and plan notes.

The program evaluation revealed that City inspectors consider erosion and sediment control to be a part of the state NPDES construction general permit SWPPP and not a City responsibility. Although erosion control was included on grading plan sheets required by the City prior to permit issuance, these plans were not used by inspectors or enforced. It appeared that inspection staff enforce erosion and sediment control requirements only to the extent the lack of controls result in a public nuisance (e.g., street sweeping required to clean up sediment tracked into the street). When questioned about the effectiveness of a particular sediment control BMP during an

inspection, one inspector indicated that he assumed they were doing what was required in their SWPPP (he had not looked at it) and he had been instructed not to make recommendations for BMPs to alter or improve what was included in the SWPPP. He indicated that could subject the City to undue liability. Inspection records for erosion and sediment controls were sporadic, normally generated in response to noncompliance activities (e.g., change work orders), and no official inspection forms were consistently used. It was apparent that the inspection staff considered erosion and sediment control to be a responsibility of the Regional Board and were not aware of the City's requirements under the MS4 permit or as described in the LIP.

The City must better demonstrate a commitment to compliance through regular, documented erosion and sediment control inspections; adherence to erosion and sediment controls plans (regardless of the requirements of the SWPPPs); and improved assistance to site operators on possible BMP options during the course of a project. Failure to do so constitutes multiple violations of the MS4 permit.

2.2.4 Evaluation of Existing Development: Industrial and Commercial Programs

Positive Attribute:

- The City has developed a framework for a coordinated industrial/commercial inspection program, specific to Mission Viejo.*

The program uses the inspection and enforcement efforts of contract staff, Mission Viejo Code Enforcement, the Orange County Health Department, and other agencies. The NPDES Coordinator reviews each inspection report and manages the entire process. The City has prioritized its commercial and industrial sites, hired an experienced contractor, and worked to tailor the model inspection form to the needs of the City. A database of approximately 3,900 facilities has been developed and these facilities will be reviewed/inspected during the permit term (as outlined in LIP section A-9.1.5). The City has developed an informal enforcement strategy, which is to use various agencies and departments to ensure compliance by potential dischargers. It was apparent during the evaluation and field inspections that the City is knowledgeable and prepared to use the necessary agency partners during enforcement. In addition, the City will be reviewing and using other agency inspection results to monitor all enforcement action and compliance efforts within city limits, not just those generated by City efforts.

Deficiency Noted:

- Mission Viejo may not be adequately prepared to perform the necessary follow-up inspections that result as part of the contracted inspections.*

The City has contracted with a local consulting firm to perform all required compliance inspections of industrial and commercial sites in the City. However, the consulting firm has no enforcement authority and may only make recommendations. City staff are to assist the consultant by performing all required follow-up inspections. It was determined during the evaluation that the City might not have adequate staff to follow up on the initial recommendations made by the consulting

firm and might need to dedicate additional staff to the task. This could be especially important during the next 12 months as the City conducts the first round of all high-priority industrial facility inspections and the medium-priority industrial/commercial facility inspections within the Aliso Creek watershed (see below). The highest degree of noncompliance is expected to occur during the first round of industrial and commercial inspections because this is the educational phase of the program. As facility operators become more aware, compliance should improve.

2.2.5 Evaluation of Illicit Discharge Detection and Elimination Program

Positive Attribute:

- *Mission Viejo code enforcement staff are currently conducting proactive field reconnaissance investigations of the watersheds within the City (beginning with Aliso Creek) to identify potential sources of pollution and violations of the City's Water Quality Ordinance.*

The San Diego Regional Board's Aliso Creek 13225 Directive was issued on March 2, 2001, based on the findings that the mouth of Aliso Creek is impaired by elevated levels of bacteria. The directive requires the municipalities in the watershed to conduct an evaluation of the relative contribution of urban storm water discharges to the impairment and to take appropriate action to eliminate the sources of pollution where necessary.

In addition to the monitoring and inspections required by the MS4 permit, Mission Viejo is using Code Enforcement Authorized Inspectors to conduct field reconnaissance inspections in each subwatershed of Aliso Creek. The goal is to complete one subwatershed per quarter (six subwatersheds total). After Aliso Creek is completed, the City will conduct field reconnaissance investigations throughout the rest of the City based on a prioritization scheme. The investigations target all commercial centers, schools, restaurants, and residential areas. The inspectors are primarily looking for potential sources of bacteria, but they report all potential illegal discharges or illicit connections found. Each violation generates a water quality code enforcement "case," is assigned a number and file for follow-up, and is tracked in the code enforcement database. As a result of these field reconnaissance investigations, the number of water quality cases generated has nearly doubled between 2002 and 2003 (from 74 to 141). In addition to possible code enforcement action, educational materials are provided to potential dischargers during the reconnaissance inspection.

Photographs, field notes, and follow-up files are used to generate a report for each sub-watershed, and the reports are submitted to the Regional Board. The reports document reconnaissance findings per land use type (e.g., residential areas), an action plan to remedy the findings, and updates on actions plans developed for previously investigated sub-watersheds.

2.2.6 Evaluation of Existing Development: Municipal Program

Positive Attribute:

- *Mission Viejo includes NPDES conditions, model maintenance procedures, and BMPs appropriate for the activity in all municipal contracts.*
Mission Viejo is a “contract city” and hires contractors and consultants for a majority of municipal activities. These contracts are issued every 2 years (with an additional 2-year option). To date, the City has reissued approximately 30 contracts that include NPDES conditions, applicable BMPs, and model maintenance procedures as outlined in the LIP. The conditions reference the requirements of the DAMP and the MS4 permit and are discussed and emphasized during pre-bid meetings. As outlined in the LIP, if the NPDES conditions are not met during the life of the contract, the City can use penalty clauses within the contract to fine or excuse the contractor, stop work, or deny or revoke permits necessary to do the work.

Potential Permit Violations:

- *Numerous potential permit violations and illegal discharges were found at municipal facilities in Mission Viejo.*
Under Part F.3.a(4)(b) of the permit, the City is required to implement minimum BMPs at each municipal area within its jurisdiction. Several municipal facilities were inspected during the evaluation and the following potential violations were identified:

Mission Viejo Animal Shelter

- Open trash bins were filled with animal waste.
- Detergent and soap containers were stored uncovered outside next to a storm drain drop inlet.
- There was evidence that portable kennels and other equipment were being washed with soap and bleach directly over a storm drain drop inlet.
- There was evidence that water from the hosing of kennels and walkways was entering adjacent storm drain inlets.
- Employees of the animal shelter had not been educated about proper pollution prevention techniques, had not been trained, and were not using BMPs to prevent storm water contamination.

Mission Viejo Corporation Yard

- Asphalt patch material was stored outside and several of the bags were ripped.

Curtis Park

- Storm drain inlets in the park had not been stenciled.
- Perimeter controls were in need of maintenance.

These facilities are categorized as “high-priority” facilities and had been previously inspected by the City. Many of the violations had been previously noted but had not been addressed, while several new potential violations were noted during the evaluation. The City must ensure that appropriate BMPs are implemented at these sites. In addition, the City should conduct more frequent and thorough inspections of

each municipal facility and develop an action plan to ensure that all potential violations are rectified immediately. It is imperative that all City facilities be in compliance while private industrial and commercial facilities are being inspected and potentially cited for similar violations. The City needs to lead by example.

2.2.7 Evaluation of Residential, Education and Public Participation Programs

Positive Attributes:

- *Before implementing the Education Component of the permit (F.4), Mission Viejo surveyed students in grades 3 through 12 to “gauge urban run-off prevention and water conservation awareness levels.”*

A survey of young people was done at a local environmental event in Mission Viejo in April 2002. Students in grades 3–12 were questioned about where storm water goes, sources of pollution in runoff, who can help reduce the pollution, and what can be done. The results of the *Urban Run-off and Water Conservation Research Report* were used to determine which age group should initially be targeted with specific messages. The City focused the first educational effort on 5th graders (see below). Although the County is conducting more extensive and formal surveys of residents regarding various storm water issues, this type of survey can also be helpful not only in measuring awareness, but in educating children (and their parents) at the same time.

- *Mission Viejo sponsored a curb marker design contest among fifth and sixth graders.* In response to a survey of Mission Viejo children, the City focused on fifth and sixth graders for a curb marker design contest in 2001. The contest served a dual purpose: creating a curb marker that would be easy to understand and unique to Mission Viejo, and educating the participants about storm water and nonpoint source pollution. More than 500 students participated in the contest. The design was so well received that the County now uses it for general education. It is being posted on buses and at bus stops and is used in public service announcements and print media.

2.3 City of San Clemente

2.3.1 Evaluation of Program Management and Effectiveness

Positive Attributes:

- *The City finances its storm water program from two sources, one of which was adopted in compliance with Proposition 218, which requires voter approval of property-related fees.*

Since 1993 the City has funded its storm water program with revenue generated by the Storm Drainage Fee Program. The fee is based on the estimated imperviousness of each parcel of land, and collected revenue is placed in a fund designated for program implementation. In the 2001/2002 fiscal year, the fee funded approximately 70 percent of the total program costs, with general funds used for the remainder. In 2002, the City adopted the Urban Runoff Management Fee to provide funding to comply with the additional requirements contained in the MS4 permit. The temporary fee was approved by a popular vote (approximately 55 percent for and 45 percent against) and will remain in effect until 2007. The fixed fee structure is based on the type of property (residential, nonresidential, undeveloped graded) and collected revenue is also put into a special fund. The dual source of funding was evident throughout the evaluation as the City appeared focused on providing highly visible and effective projects for its residents. Some of the initial projects included a doubling of street-sweeping activities, development and distribution of a multipage informational brochure, and initiation of a dry-season monitoring program.

- *The City is planning to measure the effectiveness of its storm water program with both direct and indirect measures.*

Unlike many other MS4 programs throughout the country, the City plans to measure the effectiveness of its program by using both direct and indirect measures of success. For example, the City plans to monitor the results of its expanded dry-season monitoring program to assess changes in the physical and chemical water quality parameters and the presence or absence of dry-weather flows. The dry-season program results will be used to identify and target areas, or specific pollutants, requiring additional attention (e.g., intensified public outreach and drive-by inspections). The City is also planning to track the occurrence of beach postings as a direct measure of effectiveness. It is hoped that these direct measures will complement the County's wet-weather monitoring program. Indirect measures the city plans to use include, but are not limited to, the percentage of 2nd, 3rd, and 12th graders that receive water conservation and water quality protection education, tons of material removed under the enhanced street-sweeping program, and ultimately the renewal of the voter-approved Urban Runoff Management Fee. This last would likely be the result of high public perception and approval that the fee was being appropriately used to improve water quality.

Deficiency Noted:

- *Portions of the LIP should be revised to more accurately describe the City's current and planned procedures.*

For example, section A-10.0, Illicit Connections/Illicit Discharges, appeared to be largely copied from the County's DAMP and did not reflect the City's current or anticipated procedures. The current procedures were studied during the course of the evaluation and were found to be comprehensive and widely known throughout city divisions, yet not described in the LIP. Although comprehensive and informative, section A-7.0, New Development/Significant Redevelopment, is not entirely consistent with the actual plan check, review, and approval process. Specifically, section A-7.5.5 states, "the construction plans submitted by the applicant for plan check must incorporate all of the structural BMPs identified in a project's approved WQMP." City staff indicated that the inclusion and approval of structural and source control BMPs will largely be performed throughout the plan check process and that it is therefore unlikely, if not impossible, that plans could be approved in advance. In addition, section A-7.7, Post Construction BMP Inspection and Verification, procedures should be evaluated, as City staff did not appear knowledgeable of the stated inspection schedule (e.g., verifications of 90 percent of developments with approved WQMPs). The City should identify and modify those parts of the LIP that need revision and propose revisions to the LIP in the next annual report as required in part I.1.d of the permit.

2.3.2 Evaluation of Land Use Planning for New Development and RedevelopmentDeficiencies Noted:

- *A local WQMP implementation guide should be developed to better assist city staff and the development community.*

Part F.1.b(2) of the permit requires the submittal of a local SUSMP document, which the permittees have addressed through substantial revisions to their WQMPs, in August 2003 (180 days after development of the model WQMP). To meet this requirement, the City is encouraged to evaluate the existing LIP section and, if necessary, restructure applicable portions into a stand-alone document that clearly defines the implementation process for city staff and the development community. Although the current New Development and Significant Redevelopment section in the LIP is comprehensive and informative, it appears largely written for the Regional Board. The section appears to explain how the City intends to comply with the permit requirements. Specific consideration should be given to section A-7.6, Water Quality Management Plan Preparation, to assess the feasibility and appropriateness of using and referencing the model WQMP provided in the DAMP.

City staff appeared very knowledgeable of BMPs and capable of implementing this program, and had conditioned several projects with both source and treatment post-construction controls. The intent of the stand-alone document is to further cement these principles for the existing staff and to train new staff and the development community. Many cities throughout California have used this approach to implement the SUSMP requirements. For example, the City of Los Angeles developed the

Development Best Management Practices Handbook, Part B Planning Activities (Development Handbook) to aid developers and streamline the project conditioning and approval process. Los Angeles City staff report that the document has accelerated the learning curve for project applicants and more applicants are submitting initial plans that meet the SUSMP requirements. Moreover, the document has been helpful in educating city managers, engineers, and counter staff and has increased the efficiency of plan reviews. The Development Handbook can be accessed via <http://www.ci.la.ca.us/SAN/wpd/>.

- *The City should evaluate its intended post-construction BMP inspection and verification process to ensure adequate tracking, tenant education, and ongoing maintenance.*

It is recommended that the City establish a tracking system that begins in the plan review stage with a database or geographic information system (GIS). This database or tracking system should include information on both public and private projects. In addition to standard information collected for all projects (such as project name, owner, location, and start and end dates), the City should consider tracking the following:

- Source control BMPs (type, number)
- Treatment control BMPs (type, number)
- Coordinates (latitude and longitude) of controls using Global Positioning Systems
- Photographs of controls, if necessary
- Maintenance requirements
- Frequency of required maintenance and inspections
- Cost of controls as a percentage of total project costs

This information is easy to collect during the plan review/construction stage and will prove effective in determining the location, ownership status, and maintenance requirements of installed controls. The information will also allow City staff to rapidly determine the required private versus public responsibilities for complaints and calls from residents.

The City should also consider establishing a tenant education program that informs the industrial, commercial, or residential tenant of the presence and purpose of the control measure and the required maintenance. Often a contractor or developer designed the control measure and the tenant is entirely unaware of its presence or purpose. Cities such as Oxnard and Sacramento use a variety of tenant education measures that include signs, on-site tours, and mailings. The City could also use this process to highlight the accomplishments of the Urban Runoff Management Fee.

Part F.1.b.(1)(f) requires the “project proponent to provide proof of a mechanism which will ensure ongoing long-term maintenance of all structural post-construction BMPs.” Although the City successfully incorporated post-construction BMP maintenance requirements in the CC&Rs for the Telega Master Planned Community, the process for including such requirements did not appear well documented or formalized. The City should formalize its process of requiring long-term

maintenance of post-construction BMPs and continued implementation of source control BMPs (e.g., sweeping of private parking areas).

As an example, the City of Los Angeles requires a covenant and agreement (C&A) document to be submitted along with the final design plans. The C&A must be signed by the legal owner and recorded with the County Recorder. The City has the authority to withhold the grading or building permit until this requirement is satisfied. The owner must also submit an operation and maintenance (O&M) plan as an attachment to the C&A. The O&M plan must describe the system's operation and maintenance procedures, operating schedule, maintenance frequency, and routine service schedule. The O&M plan is a required component of the C&A and is a binding legal document.

Last, the City should also develop a procedure to verify maintenance of structural and treatment control BMPs. This can be accomplished by requiring property owners to submit periodic (annual or semiannual) certifications that maintenance has been performed. The permittee should verify maintenance by performing inspections of selected structural and treatment control BMPs. These inspections could include conducting on-site inspections, drive-by inspections, or follow-up to complaints. Section A-7.7 of the LIP is vague and it was unclear how the City intended to verify maintenance of post-construction BMPs. Equal consideration should be given to source and treatment controls.

A large structural control inspected during the evaluation demonstrated the need to ensure maintenance is occurring. The device (referred to as "Rabbit Ears" by the City) was completely filled with sediment reducing its effectiveness for both sediment and flood control. City inspectors stated that the sediment was likely the result of one or more very large rainstorms that had occurred in earlier in the year (January – April). The evaluation occurred in June of 2003, therefore the device might have been none functional for up to six months. While maintenance is the responsibility of the Telega HOA, the City needs to do better to ensure that required maintenance is conducted.

2.3.3 Evaluation of Construction Program

Positive Attribute:

- *City infrastructure inspectors appeared knowledgeable of erosion and sediment control BMP use and maintenance. The level of BMP implementation at construction sites in the City appeared high.*

The City has two experienced infrastructure inspectors who oversee the grading and infrastructure installation activities at private construction sites. Although these inspectors did not routinely evaluate project SWPPPs or use a construction inspection checklist, they appeared particularly knowledgeable of erosion and sediment control BMP implementation and maintenance. During the grading and earth-moving stage, daily inspections focused on the placement of erosion control BMPs, the appropriateness of the selected BMPs, and their maintenance. Once in the active building stage, the focus appeared to shift to sediment control and general

construction maintenance and BMPs for both visible and nonvisible pollutants. Overall, the use of BMPs and their appropriateness for the site conditions appeared high throughout the City.

Deficiency Noted:

- *San Clemente CIP inspectors should be knowledgeable of BMPs prescribed in SWPPPs.*

For CIP projects, the City obtains the state NPDES construction general permit for the selected contractor and performs the on-site inspections. As the permit holder, the City is ultimately responsible for full compliance, which includes adherence to the established SWPPP. However, the City's CIP inspectors did not review the SWPPPs for the projects they were inspecting and instead based their BMP determinations on best professional judgment. In order to ensure full implementation of controls as defined in the SWPPP, CIP inspectors must be aware of the prescribed BMPs. The current process appeared to unnecessarily put the City at risk of violating the conditions of the state NPDES construction general permit.

2.3.4 Evaluation of Existing Development: Industrial and Commercial Programs

Positive Attribute:

- *A very high level of storm water pollution prevention awareness existed in the commercial and industrial sectors.*

Several businesses were visited during the course of the evaluation, and in all cases the facility representative was aware of the City's storm water program and that the facility's actions could lead to storm water pollution. The business representatives stated that outreach activities conducted in part with the voter-approved Urban Runoff Management Fee and the City's multi-page storm water brochure/mailer had raised their awareness. The business community's awareness and willingness to comply appeared unique in comparison with other cities evaluated throughout California.

Deficiencies Noted:

- *The City should reevaluate its facility prioritization process to capture a larger inventory of light industrial facilities.*

Part F.3.b(3) of the permit requires the City to prioritize industrial sources based on their threat to water quality. The City initially created an extensive inventory of businesses within its jurisdiction and then applied the prioritization formula prescribed in the DAMP to establish high- and medium-priority sites. Of the approximately 125 businesses identified, two ranked as high priority, thus requiring annual or even biannual inspections. Although this process is consistent with the DAMP and the permit, the City should consider expanding the universe of high-priority sites or increasing the inspection frequency for medium-priority sites.

The City and its industrial base are relatively small and the light industrial areas are highly concentrated in a few specific areas. One such area, Los Molinos, is located

immediately adjacent to the county flood control channel. Drive-by reconnaissance conducted during the course of the evaluation indicated that this area and other light industrial parks had a high potential to contaminate storm water runoff. The City is hiring a Water Quality Code Enforcement Officer to conduct the inspections and indicated that a second officer could be hired, if needed. The City's NPDES Coordinator was highly proficient at conducting the inspections and planned to train the new officers. Therefore, it appeared that adequate resources were available to conduct either routine inspections at a larger number of facilities (designated medium or high priority) or frequent drive-by inspections as part of the industrial, commercial, or illicit discharge program elements.

- *An enforcement response plan (ERP), or equivalent, should be developed to ensure consistent application of the City's municipal code.*
Part F.3.b(7) of the permit requires the City to enforce its storm water ordinance. The City appeared to have sufficient legal authority and had effectively used elements in the past to achieve compliance. However, the City should formalize and strengthen its enforcement process by developing a formal ERP, or equivalent, specific to industrial and commercial oversight. Such a plan would ensure a defensible and consistent approach to future enforcement activities and would ensure consistency in the event of staff turnover.
- *The City should develop a process to evaluate the effectiveness and thoroughness of the County Health Department's restaurant inspections.*
Parts F.3.c.(2), (3), and (4) of the permit require the City to inventory eating and drinking establishments, establish and implement minimum BMPs, and conduct inspections. Eating and drinking establishments are to be inspected by the County Health Department and the City had no plan to either participate or review the thoroughness or effectiveness of these inspections. To comply with the MS4 permit, the City must ensure that proper minimum BMPs are identified and implemented at each site. Available options to ensure proper identification and implementation of BMPs could include, but are not limited to, participating in the initial inspections, reviewing completed inspection reports, and performing parallel inspections at the same sites to calibrate expectations and application of control measures. As examples, the cities of Mission Viejo and San Juan Capistrano both intend to conduct such activities at the onset of the restaurant inspections.

2.3.5 Evaluation of Illicit Discharge Detection and Elimination Program

Positive Attributes:

- *The City conducts a dry-season monitoring program that supplements the County's program.*
The City had developed an urban runoff management plan prior to the development and adoption of the current MS4 permit. The plan created a dry-season monitoring program that comprises 17 sampling locations. The locations were established to characterize flows within each of the primary watersheds and tributaries. The City monitors fifteen of the sites while the Talega Homeowner Association monitors two sites. Several of the locations are near or adjacent to the five Orange County

locations, and the City plans to use these sites for comparative purposes. The 17 sites are to be monitored twice a year. Monitoring will include documenting the physical characteristics, performing field screening, and collecting samples for analysis, if warranted. The City plans to use the data to establish baseline conditions and monitor trends as a direct measure of program effectiveness. In addition, the data will be used to identify illicit discharges.

- *The City's spill response and illicit discharge reporting system were thorough and clearly disseminated throughout the City staff.*

The City has a local spill reporting hotline in addition to the County-sponsored hotline. Incidents reported via the hotline or directly reported by City crews are entered into the City's STAT system. STAT is a desktop service response system that maintains detailed information regarding all service calls (whether related to storm water or other matters). The City uses STAT to ensure timely and thorough response and could use the system to track incident occurrence. The overall spill reporting and response process in the City appeared highly effective and senior management staff routinely responded to incident calls. The City staff interviewed during the evaluation knew of the spill response procedures and how to identify and respond to illicit discharges.

- *Facilities or individuals found to be creating an illicit discharge were required to immediately halt and clean up the discharge.*

During a 2-hour period, the City NPDES Coordinator and the evaluation team identified three ongoing illicit discharges: a radiator repair in a commercial parking lot, commercial vehicle and equipment washing, and a mobile automotive detailer discharge. The NPDES Coordinator addressed the individuals, had the discharge terminated, and required the individuals to clean up the residual flow while the team remained present. Pre- and post-photographs were taken and the individuals were informed of the City's ordinance, available BMP options, and the ramifications of repeat offenses. The activities were handled tactfully and the responsible individuals appeared embarrassed and in two cases thanked the NPDES Coordinator for her diligence and for informing them.

Deficiency Noted:

- *The City should proactively identify and then address areas with a known high occurrence of illicit discharges.*

Part F.5.a of the permit requires the city to "actively seek and eliminate illicit discharges and connections into its MS4." The City should be commended for its dry-season monitoring program, hotline, STAT incident tracking system, spill response process, and its approach and thoroughness in terminating identified illicit discharges. However, the prevalence of illicit discharges identified in a short time period would indicate that additional efforts could be made to proactively identify and eliminate illicit discharges. As previously noted in section 2.3.4 of this report, the light industrial and commercial areas within the City are consolidated and the City should consider focusing efforts in these known areas. For example, the City of Livermore has an established drive-by schedule for light industrial parks that is

intended to increase its oversight presence and identify active discharges. The program requires limited staff resources and has proven very effective in eliminating discharges by educating tenants and owners. Given the high level of awareness noted, frequent and continued visibility could prove very effective in reducing the prevalence of illicit discharges.

2.3.6 Evaluation of Existing Development: Municipal Program

Potential Permit Violation:

- The South Yard and adjacent facilities near the golf course maintenance building lacked BMPs while additional BMPs were warranted at other municipal facilities.* The lack of BMPs for these sites constitutes a potential permit violation of part F.3.a.(4)(b) of the permit, which requires implementation of designated minimum BMPs at each municipal area or activity in the City's jurisdiction. City crews temporarily store green wastes, debris, and items discarded in public right of ways at the South Yard. The fence surrounding the yard was broken and access was uncontrolled. City staff stated that residents also use the site as a dumping area. Debris was present on the paved yard, which slopes back to front. There were no BMPs present and runoff appeared to flow uncontrolled toward the adjacent skeet shooting range and ultimately into a tributary drainage of Christianitos Creek. Another yard complex, currently used by the Orange County Conservation Corps, is adjacent to the South Yard. This unpaved yard contained equipment and several small soil stockpiles. The yard also lacked BMPs to control or treat runoff. Last, there was a large stockpile of sand between the golf course maintenance building and the South Yard. This stockpile was uncontained and a storm drain inlet was immediately adjacent. Appropriate BMPs need to be implemented at these sites immediately.

General housekeeping at the golf course maintenance facility needed improvement. For example, batteries were stored outside and the paved areas were in need of sweeping. Due to space limitations, many of the trackers, mowers, and other equipment were stored outside, which exacerbates the housekeeping issues. Nearly all runoff from the facility drains through one drop-inlet structure. The inlet was protected with sand bags, but the facility representative stated that trucks and tractors frequently damage the sand bags. The drop-inlet appeared to be an ideal candidate for deployment of a permanent structural treatment control (e.g., a filter insert). These issues should be corrected immediately.

Although the controls and housekeeping at the main corporate yard on Avenida Pico were generally very good, several minor issues were identified, including

- A large roll-off dumpster, used to store street-sweeping debris and other miscellaneous trash, lacked a cover.
- Containment and/or cover for soil, aggregate, broken asphalt, and sand stockpiles could be improved (i.e., the existing containment berm was low and drag-out was evident), or the down-gradient BMP could be improved.

These issues should be corrected as soon as possible.

Positive Attributes:

- *Street-sweeping frequency had been doubled and a new street-sweeper dumping and rinse station was under construction.*
The increase in street-sweeping frequency was made possible by funds generated by the Urban Runoff Management Fee. In addition, the City was in the process of constructing a new street-sweeper cleanout area that would treat the rinsate before it enters the City's wastewater reclamation plant.
- *The Beaches and Parks Division had implemented several pollution reduction projects.*
Projects designed to reduce the potential of storm and surface water contamination included, but were not limited to,
 - Cast iron pipe replacements in all beach buildings, because pipes corrode and frequently break.
 - Removal of area drains in concessionaire buildings to prevent sanitary overflows (resulting from blockages) from entering storm drains.
 - Voluntary removal of large trash enclosures in park and beach parking lots, because the enclosures attract unauthorized dumping and they leak.
 - Installation of roofs on remaining trash enclosures.
 - Active and comprehensive use of Integrated Pest Management techniques.
 - Renegotiation of active contracts with contractors to include pollution prevention and storm water requirements.
 - Extensive staff training and certification for all herbicide and pesticide applicators.

2.3.7 Evaluation of Residential, Education and Public Participation ProgramsPositive Attribute:

- *The City's public education and participation program educates 2nd-, 3rd-, and 12th-grade students, home owners associations, and landscape contractors on water conservation and water quality protection.*
The Utilities Division has a full-time staff person who provides water conservation and water quality protection education to a variety of target groups. The following are among the highlights of this program:

Water Use Program—Second Grade

Since 2001, this program has reached approximately 900 second graders (100 percent of San Clemente's private and public school population) regarding water supply and climate, indoor and outdoor water usage, and urban runoff.

Urban Runoff Program—Third Grade

Started in 2002, the program has reached 660 private and public school students regarding urban runoff, the local storm drain system, water quality, and pollution prevention.

Water Reclamation and Conservation—12th Grade

San Clemente High School students participate in an education and awareness course taught at the Water Reclamation Plant. The entire 12th grade class participates annually.

Residential Community—Efficient Water Use

The program includes door tags notifying residents of inefficient irrigation systems, bill inserts, free irrigation audits, letters for high use of water, and landscape classes.

Homeowner Associations and Management Companies

The program developed and maintains a contact list and provides presentations regarding outdoor water conservation, customized irrigation audits, and estimates of water bill savings. All HOA and management company participants are invited to participate in the landscape certification program.

Landscape Certification Program—Jointly sponsored by the Metropolitan Water District and the Municipal Water District of Orange County

The program provides site-specific monthly water budgets for registered users. The City hosted the workshop in 2002, and the Beaches and Parks Division and 10 HOAs participate in the program. Registered users can access, evaluate, and modify their monthly water usage on-line at Waterbudgets.com. The City also monitors all irrigation meter accounts (approximately 700) to identify high water users.

This program was extensive and could be a model for other communities.

2.4 City of San Juan Capistrano

2.4.1 Evaluation of Program Management and Effectiveness

Positive Attribute:

- *The City has good interdepartmental coordination and communication among the departments responsible for implementing the storm water management program.* City departments responsible for the storm water program implementation—such as planning, inspections, public works, and parks and recreation—participate in monthly coordination meetings to discuss upcoming storm water issues, municipal-related BMPs, and program progress. City storm water staff have worked closely with the Public Works Department to educate its staff about the potential impacts of municipal maintenance activities on storm water quality. This internal communication and training was evident during the in-field evaluations, which revealed good housekeeping practices and associated BMPs were being widely implemented for municipal maintenance activities.

Deficiency Noted:

- *San Juan Capistrano should develop methods or indicators to help document program effectiveness.* Part F.8.a of the permit requires each permittee to develop a long-term strategy for assessing the effectiveness of its program. The City's program does not include a formalized method or indicators that could be used to measure program effectiveness. To ensure continued support for the storm water program and provide a means to measure its effectiveness, the City should establish direct and indirect measurable goals for each program element. Direct measures focus on characterizing the quality of water bodies receiving discharges from permittee MS4s. Indirect measures are based on the assumption that specific program activities are effective in decreasing storm water pollution and ultimately protecting water quality.

The measurable goals should be linked to programmatic, social, or environmental indicators, such as those listed in the 1996 Center for Watershed Protection report *Environmental Indicators to Assess Storm Water Control Programs and Practices*.

The following are examples:

- The City of Phoenix monitors social indicators, such as the public's knowledge of storm water issues, as a measure of success.
- The City of Sacramento has set minimum performance standards for each program element, such as a standard of 20 classroom visits each year to conduct storm water presentations.
- Sacramento County tracks the number of warnings, corrective actions, penalties, and stop-work orders issued at construction sites as a performance measure and uses the number of illicit discharges reported as an effectiveness measure.
- The City of San Clemente has established both direct and indirect measures to assess the effectiveness of its program.

2.4.2 Evaluation of Land Use Planning for New Development and Redevelopment

Positive Attribute:

- *The City requires contractors and developers to sign a “Conditions of Approval” agreement.*

The City has developed a “Conditions of Approval” agreement that must be signed by the responsible developer or contractor before any construction activities begin. This binding agreement includes language regarding the NPDES regulations, required erosion and sediment control BMPs, as well as local ordinances and codes. This agreement gives the City the authority to enforce local ordinances and respond to noncompliant construction sites.

Deficiency Noted:

- *The City lacks formalized procedures for the internal WQMP review and approval process.*

Part F.1.b of the permit requires the permittee to modify their development project approval processes to ensure that pollutants and runoff from development will not impact water quality. In addition, part F.1.b(2)(f) requires the development of an implementation process for the local SUSMP (which the permittees are addressing through substantial revision to their WQMPs), which are required to be adopted by August 2003. The evaluation team found that the City lacked flow charts, guidance manuals, and decision support systems for staff to follow. To ensure consistent implementation and continued organization, the City should develop formalized procedures, preferably in a stand-alone document, to address the WQMP review and approval process. The document would be oriented toward internal staff and the development community and could include flow charts, example WQMPs, and BMP selection guides. Formalized procedures would delineate roles and responsibilities for departments during each phase of the plan review and approval process. An example of a document that achieves this level of implementation is discussed in section 2.3.2 of this report. Locally, the City could review the process being deployed by the City of Mission Viejo.

2.4.3 Evaluation of Construction Program

Positive Attribute:

- *The City’s building inspectors were well informed, trained, and equipped to ensure erosion and sediment control compliance on construction sites.*

The building inspectors attend a monthly internal training workshop specifically addressing construction BMPs as well as other construction-related activities. In addition, the building inspectors’ trucks were equipped with BMP fact sheets, local ordinances, and educational materials for construction activities. The building inspectors were knowledgeable of enforcement escalation and had the legal authority to issue notices of corrections.

Deficiencies Noted:

- The City's construction inspection program could benefit from formalized procedures.*

Although the City's inspectors were very knowledgeable, written procedures for conducting consistent inspections could improve the overall construction inspection program. The development of formalized inspection procedures would provide new and experienced inspectors with consistent guidance on adequate BMP installation, BMP maintenance, and record keeping. Information could be provided to assist in determining compliance with local ordinances and evaluating erosion and sediment control, construction waste, and equipment and material storage BMPs. BMP maintenance should also be addressed, as this is one of the most commonly identified problems at construction sites.
- The City-supplied construction fact sheets do not clearly note the minimum required BMPs.*

Part F.2.f(2) of the permit requires the permittee to "implement, or require the implementation of designated minimum BMPs at each construction site within its jurisdiction year round." Although the City's building inspectors were well equipped with construction BMP fact sheets, the fact sheets did not clearly designate minimum BMPs or specifically require their use at all sites. The facts sheets should be modified to include language requiring a designated set of construction BMPs at all sites. The inspectors should also be trained and instructed to inform site operators of these minimum requirements.

2.4.4 Evaluation of Existing Development: Industrial and Commercial ProgramsDeficiency Noted:

- The City has yet to implement an inspection program for industrial and commercial sources.*

Part F.3.b(6) of the permit requires the permittee to implement an inspection program to ensure compliance with local ordinances and permits, as well as review BMP implementation plans. The program must include an inspection schedule and procedures for follow-up actions and enforcement. At the time of the evaluation, the industrial and commercial program was only partially established. The City had created an inventory of industrial and commercial sources, prioritized the sources, and created inspector checklists; however, the City had not initiated inspections or identified training needs for new inspectors. The City will need to complete these inspections within the allotted time to be in compliance with the permit.

The evaluation identified the following significant areas of concern, which the City will likely need to address as the industrial and commercial program evolves to meet applicable permit requirements.

Training and Inspection Protocol. The City will need to provide training to

City code enforcement staff as well as contracted inspectors regarding local storm water ordinance requirements, permits, and BMPs associated with industrial and commercial facilities. Once trained, these inspectors should be expected to readily identify potential violations, including unauthorized non-storm water discharges, and require remedial measures where appropriate. In addition, the inspection process (e.g., notification, introduction, walk-through, discussion of findings, and follow-up) should be provided to each inspector as a written procedure. This would help to ensure consistent inspections. Also, the City should consider developing standardized language to ensure that all inspectors provide a consistent message to the regulated community.

Enforcement Responsibilities and Response. The City needs to devise a consistent and systematic approach regarding inspection prioritization, follow-up inspections, and enforcement. Such procedures did not appear to exist at the time of the evaluation. Similar to San Clemente, the City should formalize and strengthen its enforcement process by developing a formal ERP, or equivalent, specific to industrial and commercial oversight. Such a plan would ensure a defensible and consistent approach to future enforcement activities and would ensure consistency in the event of staff turnover. The City of Sacramento's *Guidelines for Determining Administrative Penalties for Prohibited Non-Storm Water Discharges* could be used as a template for formal escalation procedures.

2.4.5 Evaluation of Illicit Discharge Detection and Elimination Program

Positive Attribute:

- *The City's storm water hotline was well organized to ensure that storm water-related calls were directed to appropriate staff.*
The City had developed a flow chart describing appropriate storm water questions to direct the issues to responsible City staff as well as other associated agencies (the fire department, police department, and other municipal agencies). The hotline is also active on weekends, ensuring that appropriate staff are notified to respond. Furthermore, the hotline number was on every fact sheet, brochure, and other public outreach publication.

Deficiency Noted:

- *The City should consider augmenting the County-sponsored dry-weather monitoring program to better establish baseline conditions and evaluate trends in water quality.* Part F.5.b of the permit requires the permittee to conduct dry-weather monitoring inspections, field screening, and analytical monitoring of MS4 outfalls. The City relies on the County's dry-weather monitoring program for all outfall investigations. Only one outfall within the city limits is included in the County program and the City had not conducted dry-weather monitoring. The City should consider the creation of a dry-weather monitoring program to address, at a minimum, outfalls discharging into San Juan Creek (a 303(d) listed water body). The program could assist in assessing the effectiveness of the overall storm water program and in detecting and eliminating illicit discharges and connections.

2.4.6 Evaluation of Existing Development: Municipal Program

Deficiencies Noted:

- The City's field crews lack formalized guidance on the proper maintenance of structural storm water controls.*

Part F.3.a(4) of the permit requires the permittee to develop a designated set of BMPs for high, medium, and low threats to water quality in municipal areas and activities (as determined under Part F.3.a(3) of the permit). Part F.3.a(5) of the permit requires the permittee to develop a schedule of maintenance activities that include, at a minimum, the maintenance activities listed in part F.3.a(5)(c). Although the public works crews appeared well informed and to be adequately implementing the conditions of the permit, the City did not appear to have written guidance for the proper cleaning of storm water facilities, such as storm drain inlets and detention basins. New staff are typically placed with senior field staff and trained on the job. Although on-the-job training is valuable, more formal guidance and training techniques should also be developed. For an example, refer to the City of Stockton's *Maintenance Staff Guide*, as well as the City of Oceanside's *Municipal Maintenance Guidance Book*.
- The City lacks formalized training for municipal maintenance contractors.*

Part F.4 of the permit requires the permittee to implement an educational component using all media as appropriate to measurably increase the target communities' knowledge of MS4s, the impacts of urban runoff on receiving waters, and potential BMP solutions. The permit requires that the educational component address municipal departments and personnel as well as other targeted audiences. Although the City's municipal maintenance staff is well informed and trained in storm water BMPs and good housekeeping practices, municipal maintenance contractors hired by the City do not receive this training. Contract personnel should be trained in storm water controls and routine municipal maintenance BMPs. The training is required and the City needs to ensure that contractors have the tools and education necessary to ensure proper storm water control practices during routine maintenance activities.

2.4.7 Evaluation of Residential, Education and Public Participation Programs

Positive Attribute:

- The City has developed a broad public outreach program that reaches a variety of target groups.*

The City's storm water public education program has developed a broad range of material, including a general storm water brochure in both English and Spanish. The City has also started targeting the 17 equestrian facilities with activities that include education regarding on-site good housekeeping practices. The City has created and distributed materials to retail gas outlets, restaurants, homeowners associations, and other audiences in the community. In addition, the City has been proactive in seeking out new storm water materials and publications from neighboring municipalities, the California Storm Water Quality Task Force, EPA, Project Pollution Prevention, and other organizations that address storm water.

Deficiencies Noted:

- *The City has not established a plan to ensure that urban runoff in common interest areas and HOAs meets the objectives of the permit.*

Part F.6.a of the permit requires the permittee to “develop and implement a plan for ensuring that urban runoff from private roads, drainage facilities, and other storm water conveyance systems in common interest areas and in areas managed by homeowners associations” meets the objectives of the permit. Other than the materials described above, the evaluation determined that the City has not taken a proactive role in monitoring these facilities (primarily the 95 HOAs) or taking other steps to ensure compliance with the permit. For example, post-construction source and treatment controls are not being monitored for maintenance needs. The City needs to develop and implement a plan to address these areas.

- *The City lacks a mechanism to measure the effectiveness of its public education program.*

Part F.8.a of the permit requires the permittee to develop a long-term strategy for assessing the effectiveness of the program. Currently, the public education and participation components are broad in nature and the city does not have a process to measure their effectiveness. To better focus the program, the City should consider developing a surveying mechanism to track the effectiveness of its current and future public education program. A more focused approach may ultimately conserve valuable program resources. The survey, or equivalent, could be developed to augment the existing the countywide survey and could include questions specific to San Juan Capistrano. For example, County of San Joaquin has developed a half-sheet questionnaire handed out at Earth Day and other special events. The questionnaire incorporates five general storm water questions and asks for the residential area of the participant. The County of San Joaquin uses the questionnaire to determine how well the storm water information is being disseminated.