

US EPA ARCHIVE DOCUMENT

Program Evaluation Report

San Bernardino Area Stormwater Program: County of San Bernardino (NPDES Permit No. CAS 618036)

Executive Summary

Tetra Tech, Inc., with assistance from the California Regional Water Quality Control Board, Santa Ana Region (Regional Board), conducted a program evaluation of the County of San Bernardino's (County) Stormwater Program in October 2004. The purpose of the program evaluation was to determine the County's compliance with its National Pollutant Discharge Elimination System (NPDES) permit (CAS 618036 and Board Order R8-2002-0012) and to evaluate the current implementation status of the County's Urban Runoff Program (Program). The program evaluation included an in-field verification of program implementation.

This program evaluation report identifies potential permit violations, program deficiencies, and positive attributes. This report is not a formal finding of violation. Potential permit violations are areas of concern that the Regional Board staff should review to determine whether a violation has occurred. Program deficiencies are areas of concern for successful program implementation. Positive attributes indicate overall progress in implementing the Program.

The following potential permit violations and deficiencies are considered the most significant:

- The County lacks full cooperation and coordination among all departments in the implementation of its stormwater program.
- The annual report does not provide sufficient information to assess the compliance of individual permittees.
- The County is not reviewing WQMPs for new development and significant redevelopment.
- The County is not adequately ensuring that stormwater-related issues are considered during the California Environmental Quality Act CEQA process.
- The County is not prioritizing construction sites as required in the permit.
- The County is not adequately tracking construction sites and inspections.
- The County is not adequately training construction inspectors.

Several elements of the County's programs were particularly notable:

- The County has developed an on-line stormwater training program for staff.

- The County-wide program has developed a series of bilingual pollution prevention fact sheets to help educate the public about specific stormwater practices.
- The County is proactive in addressing illicit discharges to the storm drain system.

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1.0 Introduction

1.1 Program Evaluation Purpose

The purpose of the program evaluation was to determine the County's compliance with its National Pollutant Discharge Elimination System (NPDES) permit (CAS 618036 and Board Order R8-2002-0012) and to evaluate the current implementation status of the County's Urban Runoff Program (Program) with respect to EPA's stormwater 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.

1.2 Permit History

The NPDES stormwater permit was issued on April 26, 2002, and is scheduled to expire on April 27, 2007. The County of San Bernardino, along with 16 cities and the San Bernardino County Flood Control District, jointly submitted an NPDES application for the area-wide stormwater permit program. The current permit, the third issued to the co-permittees, requires each co-permittee to implement an Urban Runoff Program, including the best management practices (BMPs) identified in the area-wide Drainage Area Management Plan (DAMP).

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. CAS 618036
- Santa Ana Region DAMP
- Santa Ana Region Enforcement/Compliance Strategy (December 20, 2001)
- Santa Ana Region Municipal Facilities Strategy (June 1997)
- Appendix C, Supplement A (New Development Guidelines), of the DAMP
- Model Water Quality Management Plan (WQMP) (April 30, 2004)
- 2002 annual report
- County Web site

On October 13–15, 2004, Tetra Tech, Inc., with assistance from the Regional Board, conducted the program evaluation. The evaluation schedule was as follows:

Tuesday, October 13	Wednesday, October 14	Thursday, October 15
<ul style="list-style-type: none"> • Program evaluation kickoff meeting • Program Management • Construction and New Development (office) 	<ul style="list-style-type: none"> • Construction (field) • Municipal Facilities and Activities (field and office) • Illicit Connections and Illegal Discharges (office) 	<ul style="list-style-type: none"> • Industrial and Commercial (office and field) • Education and Outreach • Program Effectiveness • Reporting • Program evaluation outbrief meeting

Upon completion of the evaluation, an outbrief was held to discuss the preliminary findings. During the outbrief, the attendees were informed that the findings were to be considered preliminary pending further review by EPA and the Regional Board.

1.4 Program Areas Evaluated

The following program areas were evaluated:

- Program Management (including the County’s assessment of program effectiveness)
- Municipal Facilities and Activities
- Industrial and Commercial Inspections
- Construction
- New Development
- Illicit Connections and Illegal Discharges
- Education and Outreach
- Reporting

1.5 Program Areas Not Evaluated

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

- Wet-weather monitoring program and monitoring program details (e.g., sampling location, types, frequency, parameters).
- Other NPDES permits issued to the County (e.g., industrial or construction NPDES stormwater permits).
- 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, observations by the evaluation team and statements from the County’s representatives were used 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 Evaluation

The evaluation team recommends the following additional assessments:

- An in-depth evaluation of the new development planning program implemented by the County, including an evaluation of the WQMP review and approval process after additional WQMPs have been approved.
- An evaluation of the co-permittees that are implementing programs developed in compliance with Board Order R8-2002-0012 but were not included in this round of evaluations.

2.0 Program Evaluation Results

This program evaluation report identifies potential violations, program deficiencies, and positive attributes. This report is not a formal finding of violation. Potential violations are areas of concern that Regional Board staff should review to determine whether a violation has occurred. Program deficiencies are areas of concern for successful program implementation. Positive attributes indicate a co-permittee's overall progress in implementing the Program. The evaluation team identified only positive attributes that were innovative and exceptional (beyond minimum requirements). Some areas were found to be simply adequate; that is, not particularly deficient or innovative.

The evaluation team did not evaluate all components of the County's Program. Therefore, the County should not consider the enclosed list of potential permit violations and program deficiencies 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 identified with text boxes in the following subsections.

2.1 Evaluation of Program Management and Effectiveness

Potential Permit Violation:

- *The County lacks full cooperation and coordination among all departments in the implementation of its stormwater program.*

As noted in provision XIV.11 of the permit, "successful implementation of the provisions of this Order will require the cooperation of all public agency organizations within San Bernardino County having programs/activities that have an impact on stormwater quality." The Public Works Department's Environmental Management Division, with authority from the County Administrative Officer, has the primary responsibility for implementing the stormwater program. However, other County departments, such as Land Use Services, Public Health, Fire, and the Sheriff, should also play a key role. The evaluation team found limited participation in the stormwater program outside the Public Works Department. Provision XIV.11 also states that County departments with the potential to affect stormwater quality "are

expected to actively participate in implementing this area-wide stormwater program.” The County should ensure that the roles and responsibilities of County departments are clear and that staff are trained and expected to participate in the implementation of the program.

Deficiencies Noted:

- *The annual report does not provide sufficient information to assess the compliance of individual permittees.*

Part IV of the Monitoring and Reporting Program of the NPDES permit requires the permittees to submit an annual progress report by November 15 of each year. At a minimum, the annual progress report is required to include the following:

- a. A review of the status of program implementation and compliance (or noncompliance) with the schedules contained in this Order.
- b. An assessment of the effectiveness of control measures established under the illicit discharge elimination program and the ROWD. The effectiveness may be measured in terms of how successful the program has been in eliminating illicit/illegal discharges and in reducing pollutant loads in storm water discharges.
- c. An assessment of any storm water management program modifications made to comply with Clean Water Act requirements to reduce the discharge of pollutants to the maximum extent practicable.
- d. An analysis and discussion of the monitoring results and any impacts on the receiving waters. Also, recommendations for corrective actions during the upcoming year of management program implementation and monitoring.
- e. An analysis of the effectiveness of the overall storm water management program and identification of proposed programs which will result in the attainment of the water quality standards, and a time schedule to implement the new programs.
- f. An assessment of the public education program (including industrial facilities and construction sites) and educational activities proposed for the upcoming year.
- g. A progress report on the prosecution of illegal dischargers and reduction or elimination of illegal discharges.
- h. An assessment of the permittees’ compliance status with the Receiving Water Limitations, Section IV of the Order, including any proposed modifications to the ROWD and MSWMP if the Receiving Water Limitations are not fully achieved.

The current annual report provides a concise summary of general activities the permittees have undertaken to comply with the permit. The report also provides summary statistics in tables or graphs for each permittee for specific activities such as construction inspections, street sweeping, and storm drain cleaning. However, the report does not provide sufficient information to assess the compliance of individual permittees. For example, the annual permit requirement for storm drain inlets inspected is 100 percent, and although 9 of the 18 permittees did not meet that requirement, the annual report does not explain why.

The County should work with the other permittees to build on the existing reporting format and develop an annual report that clearly describes the following for each program area:

- What the permittees were required to do (e.g., a summary or copy of the permit requirement, their SWMP commitment, or both).
- What the permittees accomplished to meet that requirement (similar to the tables, graphs, and text in the current annual report).
- An explanation or analysis of why the permittees did not meet particular permit requirements and what changes or additional BMPs are needed.

The County should also develop a brief (5- to 10-page) summary of activities specific to that permittee as an attachment to the report. This summary should be consistently formatted and refer to information in the main body of the report. The summary should provide more information on how the County has implemented the program in the past year and may include additional information not found in the main body of the annual report.

- *The County has not developed a County-specific stormwater management plan (SWMP).*

Although not specifically required in the permit, each permittee should develop an SWMP specific to that permittee. All permittees have adopted the area-wide SWMP; however, each permittee should build on this area-wide SWMP to develop a plan that addresses the unique legal and organizational structure in that permittee's jurisdiction. The SWMP should also serve as a comprehensive implementation management strategy for each permittee to allow the permittee to prioritize the implementation of its program based on the pollutants of concern and the sources of those pollutants specific to its jurisdiction. BMPs and activities in the plan should include specific performance standards, or measurable goals, against which implementation of the programs can be assessed.

The County has developed a draft SWMP that describes program organization, coordination and activities for each stormwater program area. The County is encouraged to complete this SWMP to ensure it serves as a useful guide to implementing the County stormwater program.

- *The County is not taking adequate steps to evaluate program effectiveness comprehensively.*

The County is not taking adequate steps to evaluate program effectiveness comprehensively and to go beyond the collection of water quality monitoring data. The current annual reports summarize past activities but do not provide detailed analysis evaluating those activities. The County should use the annual report preparation process to analyze not only *what happened* but also *why* it happened and *what needs to change* in the future to improve the Program. Ultimately, this evaluation will help the permittees to improve implementation of the Program and help document water quality improvements.

For additional information on program effectiveness, the County should review the presentations from the November 14, 2003, meeting of the California Storm Water Quality Association. That meeting focused on municipal separate storm system (MS4) program effectiveness and how MS4s can document such effectiveness. The presentation materials are available at

<http://www.casqa.org/meetings/presentations.htm>. An additional resource is *A Framework for Assessing the Effectiveness of Jurisdictional Urban Runoff Management Programs* developed by the San Diego Municipal Storm Water co-permittees. A copy of the report is available at http://www.projectcleanwater.org/pdf/copermittees/assessment_framework_final.pdf

Positive Attributes:

- *The County has developed an on-line stormwater training program for staff.*

The County’s training program includes four on-line modules that staff can use to learn about the stormwater program. The four modules are general stormwater issues, and the construction, municipal, and industrial/commercial programs. County staff taking the training are logged and quizzed at the end of each module. The stormwater coordinator receives a list of who has participated in the training and their scores. The on-line training represents an efficient mechanism to train staff located in different field offices across the largest county in the United States.

- *The County has hired several staff dedicated to the stormwater program.*
Within the past year, the County has hired several staff, including a stormwater program manager and inspector, to help implement the stormwater program. Although additional staff might be needed to fully implement all aspects of the program, the hiring of these dedicated staff represents a significant commitment by the County to the implementation of the program.
- *The County is leading the development of an MS4 database to help track and report on all aspects of the stormwater program.*
An on-line MS4 database (“Integrated MS4 Administration Solution”) is being developed to help all permittees track, manage, and report activities in compliance with the stormwater permit requirements. The database addresses all the major program areas, such as including inspections, illicit discharges, municipal maintenance, public education, WQMPs, and program management.

2.2 Evaluation of New Development and Redevelopment Program

Potential Permit Violations:

- *The County is not reviewing WQMPs for new development and significant redevelopment.*

The County has been required to review plans for new development and redevelopment BMPs since the start of the permit term in 2002. Provision XII.A.3 requires the County to “require applicants to prepare a WQMP in accordance with Appendix B of the ROWD and to incorporate structural and non-structural BMPs into

the development.” This requirement was in place until the permittees developed a new strategy to address stormwater runoff from new developments (also called a WQMP). Provision XII.B required the permittees to develop a WQMP for urban runoff by January 1, 2004. The permittees developed model WQMP guidance, and the Regional Board approved it on June 1, 2004.

During the evaluation, the County admitted that it was not reviewing plans to ensure compliance with the WQMP or in accordance with Appendix B of the ROWD. Nor had the County decided which department—Public Works or Land Use Services—would be responsible for reviewing the WQMPs.

New development represents a unique opportunity to address potential water quality problems before a project is designed and constructed. The County should ensure that project proponents submit WQMPs that meet the June 1, 2004, model WQMP guidance and that trained County staff adequately review the WQMPs.

- *The County is not adequately ensuring that stormwater-related issues are considered during the CEQA process.*

Provision XII.A.5 requires the County to review and to revise, if necessary, CEQA processes to consider and mitigate impacts on stormwater quality by February 15, 2004. Changes could include adding a section on urban runoff-related water quality issues to the CEQA checklist. The permit lists six potential impacts that must be considered during CEQA review:

1. Potential impact of project construction on stormwater quality.
2. Potential impact of project’s post-construction activity on stormwater runoff.
3. Potential for discharge of stormwater pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas.
4. Potential for discharge of stormwater to affect the beneficial uses of the receiving waters.
5. Potential for significant changes in the flow velocity or volume of stormwater runoff to cause environmental harm.
6. Potential for significant increases in erosion of the project site or surrounding areas.

The CEQA checklist that the County uses does not specifically address many of the potential impacts listed above. In particular, the checklist does not address item 3, which requires that the potential impacts from material storage and similar areas be considered. The County should revise the CEQA checklist and procedures to comply with the permit requirements.

Deficiency Noted:

- *The County needs to develop a process to review WQMPs and train staff.*
As described in the potential permit violation above, the County has not been reviewing WQMPs. The County needs to develop a process for reviewing WQMPs and should identify the County department ultimately responsible for the technical review of WQMPs. The June 1, 2004, model WQMP guidance is a complex document with a significant number of details. The County should develop a detailed review checklist or similar form to assist staff in consistently and accurately reviewing WQMPs. In addition, to ensure that WQMP requirements are fully implemented, WQMP review staff and other staff involved in the planning and inspection process should be trained.

In addition, the County should also update the "Hydrology and Water Quality" section of its CEQA checklist to include a question or several questions on WQMPs. At a minimum, the CEQA checklist should be updated to ask whether a project will require development of a WQMP. This will help the County screen for potential WQMP projects.

- *The County needs to develop a system to track and ensure maintenance of post-construction BMPs.*
The model WQMP Guidance requires that O&M requirements for source and treatment control BMPs be identified in the WQMPs. The County should develop a process to ensure that BMPs are adequately maintained after construction is completed. This process should include an inventory of approved source and treatment control BMPs for each project and periodic inspections to verify proper O&M. The County should also ensure that when transfer of ownership takes place, BMP maintenance responsibilities are also transferred to the new owners.

2.3 Evaluation of Construction Program

Potential Permit Violation:

- *The County is not prioritizing construction sites as required in the permit.*

Provision VIII.2 of the County's NPDES permit requires the County to prioritize construction sites within its jurisdiction as a high, medium, or low threat to water quality. The permit requires that high-priority sites include, at a minimum, sites over 50 acres and sites over 5 acres that are tributary to a waterbody impaired by sediment or turbidity or within 500 feet of an Area of Biological Significance. The permit does not specifically define medium- and low-priority sites.

The County has not been prioritizing construction sites in accordance with the permit or tracking sites that the permit designates (at a minimum) as high-priority sites. Provision VIII.3 of the permit requires that high-priority sites be inspected at least once a month, medium-priority sites at least twice during the wet season and once during the dry season, and low-priority sites at least once during the wet season and once during the dry season. Because the County has not been prioritizing construction

sites, the evaluation team could not verify compliance with the permit's minimum inspection frequencies.

- *The County is not tracking construction site inspections.*

As noted above, provision VIII.3 of the permit requires that high-priority sites be inspected at least once a month, medium-priority sites at least twice during the wet season and once during the dry season, and low-priority sites at least once during the wet season and once during the dry season. Provision VIII.3.c requires the County to submit, in the annual report, a database that includes the inspection dates, inspectors present, and inspection results for each construction site. The County is not tracking construction site inspections and has not submitted inspection information in its annual report. The County should develop a database to track inspections. The inspection results in this database should include the nature of each violation (not simply "noncompliance") so that subsequent inspectors and the Regional Board know the type and severity of the violation.

In addition, the County is not using a checklist during the construction site inspections. County inspectors should document their inspection results by using a checklist or similar form, from which information can then be entered into the database.

- *The County is not adequately training construction inspectors.*

Permit provision VIII.6. requires that the inspectors responsible for verifying compliance at construction sites in the County be "trained in and have an understanding of the federal, state, and local water quality laws and regulations as they apply to construction and grading activities, the potential effects of construction and urbanization on water quality, and implementation and maintenance of erosion control BMPs and sediment control BMPs." This training is required on an annual basis. The inspector that the evaluation team accompanied stated that he had not received specific training on erosion and sediment control BMPs. The County should ensure that inspectors are trained on how to identify permit violations, appropriate BMPs, and ineffective or missing BMPs at construction sites.

Deficiencies Noted:

- *The County database that the Land Use Services Department uses does not track disturbed acreage, making reporting and prioritization difficult.*

The County's Permits Plus database includes a grading and erosion control screen that tracks information such as cubic yards excavated, whether a Notice of Intent is required, WDID number, and fees associated with grading and erosion control. The database can identify lot size, but it does not track disturbed acreage of projects. This makes it difficult to differentiate between a 2-acre site that is completely disturbed and a 2-acre site with minor construction, such as a room addition. To assist in reporting, prioritization, and program implementation, the County should ensure that it has information on disturbed acreage for each construction site.

- *The County is not adequately reviewing, and documenting its review of, erosion and sediment control plans.*

The County uses a detailed “Grading Plan Correction Sheet” when reviewing grading plans, but a similar sheet or checklist does not exist for erosion control plans. The evaluation team’s review of several County-approved erosion control plans found them to contain only minimal sediment control BMPs. The County requires “Stormwater Management Plans” to be submitted as part of the Grading Permit, and these plans must include erosion control BMPs, sediment control BMPs, BMPs to prevent off-site tracking of sediment, and general site management BMPs for the wastes that will be on-site (such as materials, concrete waste, and sanitary waste). The plans reviewed included primarily sediment control BMPs and tracking control and did not include erosion control or general site management BMPs.

The County should ensure that plans are adequately reviewed and contain the minimum required construction BMPs described in the Building and Safety Division’s Stormwater Management Plan Instructions.

2.4 Evaluation of Municipal Facilities and Activities Program

Deficiency Noted:

- *The County should develop SWPPPs for each County facility.*
County facilities with the potential to discharge pollutants to the MS4 should develop SWPPPs to ensure that adequate BMPs are in place and staff are trained. The SWPPPs should be similar to those developed by industrial facilities under the General Industrial Permit and should include a pollution prevention team, facility site map, description of potential pollutant sources, list of BMPs, and periodic site evaluations. CASQA’s Municipal BMP Handbook (available from <http://www.cabmphandbooks.com>) also includes descriptions of BMPs commonly implemented at municipal facilities. Copies of these SWPPPs should be kept at each facility, and facility staff should be trained on their content.
- *The County needs to complete development of a database to track maintenance activities.*
The County is developing a database to help track maintenance activities. The County plans to add stormwater maintenance elements to the database, which will greatly aid in program reporting and tracking. The County should ensure that this database provides the information necessary to complete the annual report.

Positive Attribute:

- *The County’s main corporation yard was well maintained with minimal stormwater concerns.*
The evaluation team conducted a walk-through of the County’s main corporation yard and found it to be well maintained with major pollutant sources under cover or inside buildings. Minor issues to address included additional sweeping and stormwater controls for the bulk storage bins, which the County agreed were necessary.

2.5 Evaluation of Industrial and Commercial Inspection Programs

Positive Attribute:

- *The County is conducting thorough industrial inspections.*
The evaluation team accompanied the County inspector on two industrial stormwater inspections. The inspector conducted thorough inspections and was knowledgeable about stormwater requirements and BMPs. When violations were observed, the inspector completed a Notice of Correction form in duplicate, explained the violations to the facility operator, and left a copy of the Notice at the facility.

2.6 Evaluation of Public Education and Outreach Program

Positive Attribute:

- *The County-wide program has developed a series of bilingual pollution prevention fact sheets to help educate the public about specific stormwater practices.*

The permittees have developed bilingual fact sheets on a series of topics ranging from auto maintenance to home repair and remodeling. These colorful fact sheets include simple illustrations, clear language, and specific actions the reader can take to protect water quality. The fact sheets are printed in English on one side and Spanish on the other.

2.7 Evaluation of Illicit Connection and Illegal Discharge Program

Positive Attribute:

- *The County is proactive in addressing illicit discharges to the storm drain system.*
The evaluation team accompanied the County inspector on inspections of two commercial businesses that had been observed discharging wash water illegally. Vehicle washing at commercial businesses is a prohibited illicit discharge under the MS4 permit. The County inspector notified the facility operators of the illegal discharge, educated the operators on the requirements of the County's stormwater program, conducted full site inspections of the facilities, and issued a Notice of Correction to each facility. The inspector was well-trained and conducted a thorough inspection of each site.