

Program Evaluation Report

San Bernardino Area Stormwater Program: City of Redlands (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 City of Redlands Stormwater Program in October 2004. The purpose of the program evaluation was to determine the City'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 City'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 City has not developed a City-specific stormwater management plan (SWMP).
- The City is not adequately ensuring that stormwater-related issues are considered during the California Environmental Quality Act CEQA process.
- The City did not require water quality management plans (WQMPs) for projects prior to June 2004.
- The City needs to review its watershed protection principles.
- The City is not adequately tracking construction sites and inspections.
- The City is not prioritizing construction sites as required in the permit.
- The City is not adequately training construction inspectors.
- The City has not prioritized industrial or commercial sites.
- The City is not conducting inspections at industrial and commercial sites in accordance with the permit.

- The City is not effectively eliminating illicit connections and illegal discharges to the MS4.
- The City needs to address potential septic system failures.

CONTENTS

1.0 Introduction 1

- 1.1 Program Evaluation Purpose 1
- 1.2 Permit History..... 1
- 1.3 Logistics and Program Evaluation Preparation 1
- 1.4 Program Areas Evaluated 2
- 1.5 Program Areas Not Evaluated 2
- 1.6 Program Areas Recommended for Evaluation 3

2.0 Program Evaluation Results 3

- 2.1 Evaluation of Program Management and Effectiveness 3
- 2.2 Evaluation of New Development and Redevelopment Program 5
- 2.3 Evaluation of Construction Program..... 7
- 2.4 Evaluation of Municipal Facilities and Activities Program 8
- 2.5 Evaluation of Industrial and Commercial Inspection Programs 9
- 2.6 Evaluation of Public Education and Outreach Program..... 9
- 2.7 Evaluation of Illicit Connection and Illegal Discharge Program..... 10

1.0 Introduction

1.1 Program Evaluation Purpose

The purpose of the program evaluation was to determine the City'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 City'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 City of Redlands is one of 16 cities, along with the County of San Bernardino and the San Bernardino County Flood Control District, who 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
- City 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 City’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 City (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 City 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 City, 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 City's Program. Therefore, the City 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

Deficiencies Noted:

- *The City has not developed a City-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 City is not taking adequate steps to evaluate program effectiveness comprehensively.*

The City 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 City 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 City 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

- *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 City 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:

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

The City 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 City has implemented the program in the past year and may include additional information not found in the main body of the annual report.

2.2 Evaluation of New Development and Redevelopment Program

Potential Permit Violations:

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

Provision XII.A.5 requires the City 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 City 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 City should revise the CEQA checklist and procedures to comply with the permit requirements.

• *The City did not require WQMPs for projects prior to June 2004.*

The City 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 City 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 this model WQMP guidance, and the Regional Board approved it on June 1, 2004.

The City did not actively require post-construction BMPs for new development/redevelopment prior to the model WQMP guidance in June 2004. The City has established a Development Review Committee and has procedures in place to approve post-construction BMPs through its development review and approval process, but had not been requiring that post-construction BMPs be provided prior to June 2004. The City has also hired a consultant, funded through June 2005, to help review WQMPs and provide technical assistance.

In addition, the City 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 City screen for potential WQMP projects.

• *The City needs to review its watershed protection principles.*

On the basis of a review of Titles 13 and 18 of the City’s Municipal Code, the evaluation team could not determine whether permit provision XII.A.7, requiring review of the General Plan, had been implemented. This permit provision requires the City to review its watershed protection principles and policies and incorporate

appropriate provisions to implement the new development and redevelopment standards in the permit by July 1, 2004. The General Plan was not provided for review. The City's Conditions of Approval Checklist is provided to each applicant as part of a completeness review. The City plans to have the consultant hired to support implementation of the WQMP revise the checklist and the associated development project guidance.

Deficiency Noted:

- *The City needs to develop a system to help track and ensure maintenance of post-construction BMPs.*
The City will require post-construction BMPs as part of the WQMP approval process and plans to have property owners maintain the BMPs. However, the City has no effective means for tracking the location, specifications, and maintenance requirements of the BMPs that it will require. The City should develop a stormwater infrastructure tracking system/database to support its entire MS4 program, including the maintenance of water quality BMPs on private property. The City should also ensure that when transfer of ownership takes place, BMP maintenance responsibilities are also transferred to the new owner.

Positive Attribute:

- *The City plans to use the Development Review Committee in the review of WQMPs.*
The City uses a Development Review Committee to evaluate the impacts associated with prospective land development. This approach has proven to be effective in many locations for considering stormwater quality in the development review process. Although few development proposals to date have been required to provide water quality BMPs, the procedures for approving BMPs appear to be in place, which will be beneficial in reviewing WQMP submittals.

2.3 Evaluation of Construction Program

Potential Permit Violations:

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| <ul style="list-style-type: none"> • <i>The City is not adequately tracking construction sites and inspections.</i>
Permit provision VIII.1 requires that the City's inventory of construction sites include relevant information on site ownership, WDID Number (if applicable), site size, and location. Provision VIII.3.c requires the City to submit in its annual report a database that includes the inspection dates, inspectors present, and inspection results for each construction site. The City is not tracking construction site inspections and has not submitted the required inspection information in its annual report. The City 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. The hard copy of the inventory provided by the City included only information on site ownership. |
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- *The City is not prioritizing construction sites as required in the permit.*

The City has not established priorities for construction site inspection requirements as high, medium, or low threat to water quality. Permit provision VIII.2. requires the City to establish such a priority ranking system and implement its construction site inspection program accordingly.

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

Permit provision VIII.6. requires that the inspectors responsible for verifying compliance at construction sites in the City 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.” Although the two Public Works construction inspectors had received some training, it was not evident that this training was effective and met the permit requirements. Effective training should include both plan review staff and inspection staff and ideally should include field training as well as a classroom component. The training should also help staff identify permit violations, appropriate BMPs, an ineffective or missing BMPs at construction sites.

Deficiencies Noted:

- *The City should ensure that erosion control plans are consistently reviewed for adequate BMPs.*

The City should ensure that adequate reviews of erosion control plans occur during the plan review/plan check process to ensure that appropriate erosion and sediment control BMPs are included in such plans. This was found not to be the case at several sites visited during the program evaluation. For example, a concrete washout area was specified on the erosion control plan notes, but was not built in time for some concrete activity that had occurred the day before the evaluation team visited the site. On another site, the plans indicated that a silt trap would be installed after road subgrade was completed, but there was no provision to address sediment-laden runoff in that area prior to the road installation. Development of checklists or other relevant guidance to support plan reviewers and inspectors is recommended.

2.4 Evaluation of Municipal Facilities and Activities Program

Deficiency Noted:

- *The City should ensure annual cleaning of catch basins.*

The City’s catch basin maintenance program targets annual cleaning, but City staff acknowledged that this schedule is not being met. Effective use of a stormwater infrastructure database would allow identification of priority catch basins, helping to alleviate problems.

- *The City should develop SWPPPs for each City facility.*
 City 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 written SWPPPs should be kept at each facility, and facility staff should be trained on their content.

2.5 Evaluation of Industrial and Commercial Inspection Programs

Potential Permit Violations:

- *The City has not prioritized industrial or commercial sites.*

The City has not established priorities for industrial or commercial sites as a high, medium, or low threat to water quality. Permit provisions IX.2. and X.2 require the City to establish a priority ranking system and implement its industrial and commercial site inspection program accordingly. All high-priority industrial sites were to have been inspected by November 15, 2003, and all high-priority commercial sites by July 1, 2004. The City acknowledged that it has not established such priorities within its jurisdiction.

- The City is not conducting inspections at industrial and commercial sites in accordance with the permit.

Permit provision IX.4 requires that the City inspect all high-priority industrial sites at least once a year, which has not happened. All medium-priority industrial sites are to be inspected every 2 years and all low-priority sites at least once during the permit term. Permit provision X.5 states that all high-priority commercial sites were to have been inspected at least once by July 1, 2004. The City acknowledged that it has not been conducting these inspections because the full-time NPDES inspector position has been vacant for about 2 years. The City should identify staff to begin inspections as soon as possible and should develop inspection criteria and schedules for completing all required inspections.

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.

Deficiency Noted:

- *The City should assess whether additional, targeted outreach material is needed.* Other than the 5-page handout *Urban Runoff and Water Pollution*, the City appears to rely exclusively on the County for the stormwater program materials it disseminates to the public. Although the City has retained a consultant to support implementation of the WQMP and will provide outreach and education materials for that program element, the City should determine whether there are other stormwater program topics, unique to the City, for which additional outreach and education materials should be developed.

2.7 Evaluation of Illicit Connection and Illegal Discharge Program

Potential Permit Violations:

- *The City is not effectively eliminating illicit connections and illegal discharges to the MS4.*

Permit provision VII.1 requires that the City prohibit illicit connections and illegal discharges to the MS4 through its ordinances, inspections, and monitoring programs. The City's Illicit Connection and Illegal Discharges program is entirely complaint-driven, and it was not evident that the City maintains a database identifying permitted and unpermitted connections. The City does not proactively conduct routine inspections and dry-weather monitoring. There was ample evidence of improper use of wash-down water on city streets making its way to the MS4, but these incidents are not distinguished from the irrigation return flows from citrus groves that also occur throughout the City.

- *The City needs to address potential septic system failures.*

More than 50 septic tank disposal systems are in use in the city of Redlands. Per permit provision XI.2., the City had not identified, with the appropriate governing agency, a mechanism to determine the effect of septic system failures on stormwater quality and a mechanism to address such failures.