Program Evaluation Report

City of Stockton/San Joaquin County Stormwater Program (NPDES Permit No. CAS083470)

Executive Summary

Tetra Tech, Inc., with assistance from U.S. EPA Region 9 and the California Regional Water Quality Control Board, Central Valley Region (Regional Board), conducted a program evaluation of the City of Stockton and the County of San Joaquin's Stormwater Programs (Programs) in December 2002. The purpose of the evaluation was to determine the copermittees' compliance with a National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Discharge Permit and to review the overall effectiveness of the Program with respect to EPA's stormwater regulations. The evaluation team reviewed the copermittees' compliance with the NPDES permit requirements, and the evaluation included an in-field verification of program implementation.

This program evaluation report identifies 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 are indications of overall progress in implementing the program.

The following program deficiencies are considered the most significant:

- The City's and County's corporation yards lack sufficient controls to prevent stormwater contamination.
- The City and County face a number of challenges in implementing the new NPDES permit, including development standards required by December 2003, the stenciling of 95 percent of drain inlets by the end of the permit term, completion of a treatment feasibility study by September 2004, and the development of various water quality-based control plans.
- The City's construction inspector should use a more detailed construction inspection form during site inspections.
- The County field crews lack adequate guidance and training on proper maintenance and inspection of structural stormwater controls.

Several elements of the copermittee's program were particularly notable:

- The City reviews construction SWPPPs and verifies that required projects have submitted a Notice of Intent (NOI) to the State Board.

- The City's industrial inspection program could be a model for other Phase I MS4 programs.
- The City has developed a *Stormwater Maintenance Staff Guide* for its employees.
- The City has developed a well-organized and responsive illicit discharge/spill response program.
- The County has developed a guidance document for small developments.

CONTENTS

1.0 Introduction

1.1 Program Evaluation Purpose

The purpose of the program evaluation was to determine the copermittees' compliance with the NPDES permit (CAS083470 and Board Order No. R5-2002-0181) and to evaluate the current implementation status of the copermittees' Stormwater Programs (Programs) 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 October 18, 2002, and is scheduled to expire on October 1, 2007. The current permit, the second issued to the copermittees, requires each copermittee to develop and implement a stormwater management plan. The permit area includes the Stockton Urbanized Area.

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. CAS083470
- 2001/02 Annual Report (report for the previous NPDES Permit)
- Correspondence and reports sent to the Regional Board by the copermittees to comply with requirements in the NPDES permit
- Permittee Web sites

On December 10–12, 2002, Tetra Tech, Inc., with assistance from the Regional Board, conducted the program evaluation. The evaluation schedule was as follows (for both copermittees, except as noted):

Tuesday, December 10	Wednesday, December 11	Thursday, December 12
• Program evaluation kickoff meeting • Planning and Land Development • Construction • Industrial and Commercial (City only)	• Municipal Operations • Public Construction	• Illicit Discharges • Public Education and Outreach • Industrial and Commercial (County only) • Outbrief exit interview

Upon completion of the evaluation, an exit interview was held with the copermittees 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 EPA and the Regional Board.

1.4 Program Areas Evaluated

The following program areas were evaluated:

- Program Management
- Construction Program
- Planning and Land Development Program
- Industrial and Commercial Program
- Municipal Operations Program
- Public Education Program
- Illicit Discharge Program

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., sample location, types, frequency, parameters).

- Other NPDES permits issued to the copermittees (e.g., industrial or construction NPDES stormwater permits).

- 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, observations by the evaluation team and statements from the copermittees' 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 program assessments:

- A more intensive review of local development standards, which are required by December 2003.
- Additional review of municipal maintenance activities and BMPs practiced during minor earth-working activities.
- A more intensive review of mass grading sites within both the City and the County to ensure adherence to the respective grading ordinances and implementation and maintenance of erosion and sediment control BMPs.
- Reinspection of the municipal maintenance yards to ensure the deficiencies identified in this report are rectified.
- Once established, a detailed review of the City and County commercial business inspection programs.

2.0 Program Evaluation Results

This program evaluation report identifies 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 are indications of a copermittee'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 particularly deficient or innovative.

The evaluation team did not evaluate all components of each copermittee's program. Therefore, the copermittees should not consider the enclosed list of program deficiencies a comprehensive evaluation of individual program elements.

The most significant 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 City of Stockton

2.1.1 Evaluation of Program Management and Effectiveness

Positive Attribute:

- *The City has established a solid program structure for stormwater management*. The Department of Municipal Utilities has established a clear, well-organized stormwater program structure. Roles and responsibilities are clearly described, staff members are experienced and well trained, and the program manager has a long-term

plan for program implementation and permit compliance. Stormwater program activities and requirements appeared well disseminated throughout the appropriate City departments and field staff.

Deficiencies Noted:

- *The City faces a number of challenges in implementing the new NPDES permit*.
  Although the City's Stormwater Program is well established, the City still faces a number of challenges in implementing the new NPDES permit issued in October 2002. These challenges include the development standards required by December 2003, the stenciling of 95 percent of drain inlets by the end of the permit term, completion of a treatment feasibility study by September 2004, and the development of various water quality based control plans. In addition, the City is considering the privatization of some stormwater activities. If this occurs, the City should ensure that any contract providing stormwater services also addresses compliance with the new NPDES permit. The City is working to meet these requirements and is encouraged to work closely with the Regional Board to ensure the requirements are met in a timely manner.

- *The City is encouraged to include measurable goals in the development of its new stormwater management program*.
  The City is required to submit a modified stormwater management program by September 2003. The City is required to include assessment tools/performance standards in the stormwater management plan (SWMP) and is required to address specific direct and indirect measurements that the City will use to track the long-term effectiveness of the SWMP in achieving improvements in water quality.

  Past MS4 evaluations found that many programs were not adequately documenting measurable goals and the status of performance standards. The City is encouraged to consider programmatic, social, or environmental indicators such as those listed in the 1996 Center for Watershed Protection report *Environmental Indicators to Assess Stormwater Control Programs and Practices*. For example, the City of Phoenix monitors social indicators like the public's knowledge of stormwater issues as a measure of success. In another example, the Sacramento Stormwater Management Program uses a variety of special studies, evaluation of performance measures, subwatershed studies, statistical analysis, modeling, and/or environmental indicators to assess the effectiveness of its program. Specifically, the Sacramento Program has identified performance and/or effectiveness measures for each program element BMP and subelement task. For example, Sacramento County tracks the number of warnings, corrective actions, penalties, and stop work orders issued as a performance measure and uses the number of illegal non-stormwater discharges reported as an effectiveness measure. The City of Sacramento has set minimum performance standards for each BMP, such as a standard to visit 20 classrooms each year to conduct stormwater presentations.

Additionally, the City should consider the use of geographical targeting and/or the identification of specific pollutants of concern. Such practices could focus City resources and program activities toward addressing impairments in specific waterbodies. The Sacramento and Alameda County Programs can be used as examples for these activities.

2.1.2 Evaluation of Construction, Planning and Land Development Program

Positive Attributes:

- *The City reviews construction SWPPPs and verifies that required projects have submitted a Notice of Intent (NOI) to the State Board.*

Although not required to do so, the City requires projects to submit construction stormwater pollution prevention plans (SWPPPs) that comply with the State Board's NPDES General Permit for Construction Activity. By requiring the same construction SWPPP that the State Board requires, the City ensures that local construction operators do not need to develop different plans for the City and the State. The City also reviews and approves these plans and makes staff available in the City's Permits Center to review permits and assist permit applicants.

- *The City has developed a* Model Stormwater Pollution Prevention Plan for Construction Activities *to assist developers in complying with the program.*
The City prepared the *Model Stormwater Pollution Prevention Plan for Construction Activities*, available on the City's Web site, to help local property owners, developers, engineers, and contractors to comply with the State Board's NPDES General Permit for Construction Activity. The Model SWPPP contains a checklist of information required and blank forms for the construction operator to complete. The plan also lists standard control practices and BMPs from which construction operators may choose.

- *The City uses a dedicated erosion and sediment control inspector for construction projects.*
The City uses a dedicated erosion and sediment control inspector to ensure stormwater compliance on local construction projects. This inspector also spends time in the Permits Center, reviewing permit applications to ensure that they are complete and address the stormwater permit requirements.

Deficiencies Noted:

- *The City construction inspector should use a more detailed construction inspection form during site inspections.*

The City has a dedicated erosion and sediment control inspector who regularly inspects construction sites. The inspector notes violations on a blank form but would benefit from a more detailed inspection form that would allow the inspector to check off whether certain BMPs were installed. For example, the form could list construction BMPs common to the Stockton area, such as catch basin inserts, concrete truck washouts, trash containers, and perimeter sediment controls. This inspection form could also be included in the City's Model SWPPP for Construction

Activities. An example of a detailed inspection checklist can be found in the *Caltrans Storm Water Quality Handbook: SWPPP/WPCP Preparation Manual* in Attachment H, "Storm Water Construction Site Inspection Checklist."

- *A public construction project lacked erosion control along a canal.* Although perimeter sediment controls were installed along the adjacent road, a public construction project creating a new park did not have erosion controls along a canal that ran through the park. The City's erosion and sediment control inspector notified the contractor of this deficiency immediately.

2.1.3 Evaluation of Industrial and Commercial Program

Positive Attribute:

- *The City's industrial inspection program could be a model for other Phase I MS4 programs.*

The City's industrial inspection program is well organized and coordinated within the Storm Water Division. The Division maintains a comprehensive inventory of applicable industries within its jurisdiction and updates the inventory regularly. Detailed files are kept for each facility, including general facility information, permitting status, past inspection reports and follow-up activities, and relevant correspondence. The inspection process witnessed during the evaluation was thorough, and the inspector appeared well trained and readily able to identify deficiencies and require remedies. A city regulatory compliance officer is also available to assist the Storm Water Division inspection staff, and the relationship between these two organizations appeared well integrated. The municipal ordinance provides the appropriate legal authority, including the authorization for select Division staff to issue Notices of Violation (NOVs). The Division also has the backing of the City Attorney's office, when needed.

The City's inspection process is very similar to the State's process. The City determines whether the inspected facility has submitted an NOI for coverage under the General Industrial Permit. Important and unique among MS4 programs, City inspectors review the facility's SWPPP and annual reports for adequacy and thoroughness. The inspection reports detail both yard and paperwork deficiencies and required remedies. Additionally, the City has been compiling a list of potential "non-filers" and plans to distribute this information to the Regional Board for review and follow-up.

At the time of the evaluation, the City was considering its available options for initiating the required commercial business inspection program and had yet to finalize an approach. Preliminary discussions centered on outsourcing the inspection program to the County Health Department.

2.1.4 Evaluation of Municipal Operations Program

Positive Attribute:

- *The City has developed a* Stormwater Maintenance Staff Guide *for its employees.*

  The *Stormwater Maintenance Staff Guide* addresses the implementation of stormwater BMPs during maintenance activities and during activities conducted at maintenance facilities. The Guide provides background about the Stormwater Program, pollutants of concern, and program evaluation. The Guide primarily consists of a series of about 60 "cut-sheets" describing, for each BMP, the environmental concerns, definition and purpose, and operational procedures. The Guide provides maintenance staff with an easy reference to determine appropriate stormwater practices for a variety of activities. City staff admitted during the evaluation that additional training on the Guide is needed.

Deficiencies Noted:

- *The City's corporation yard lacks sufficient controls to prevent stormwater contamination.*

  The City's corporation yard lacks adequate stormwater controls for portions of the yard. The corporation yard has applied for the State Board's NPDES General Permit for Industrial Activities and has developed an industrial SWPPP. A site evaluation of the corporation yard revealed the following stormwater issues:
  - The landscaping storage area lacked stormwater controls, and monitoring conducted for the permit indicated that high sediment loads are a problem.
  - A number of drums and barrels were exposed without secondary containment.
  - Asphalt and soil piles lacked stormwater controls to prevent runoff.
  - A covered and bermed storage shed was plumbed to the storm drain instead of to the sanitary system.
  - Some areas of the yard contained exposed paint, used oil, and oil filter containers that were not properly stored or covered.

  The City began to address some of these issues immediately after the evaluation.

- *Green waste deposited in the street is a potential illicit discharge and maintenance concern.*

  City residents are allowed to deposit noncontainerized green waste (lawn and garden clippings) onto the street for biweekly collection. Although residents are instructed to put the green waste out only right before collection and to avoid putting it in gutters or near storm drains, this material represents a potential illicit discharge to the MS4 and a significant maintenance concern. The City is encouraged to find additional ways to educate residents on the potential problems this practice can cause or to find alternatives to the current practice.

2.1.5 Evaluation of Public Education Program

Positive Attribute:

- *The City has developed a broad public outreach program that reaches a variety of groups.*
  The City's stormwater public education program has developed a broad range of material, including a general stormwater brochure written in five different languages. The City also has a school program, targeted at 5th and 6th graders, that satisfies the school board's earth science curriculum standard while teaching children about stormwater impacts. In addition, the public education program includes community events, movie theater ads, radio ads, and other activities to reach the public.

2.1.6 Evaluation of Illicit Discharge Program

Positive Attribute:

- *The City has a developed a well-organized and responsive illicit discharge/spill response program*.
  The City has developed a comprehensive illicit discharge program that includes inspections of industrial facilities for illicit discharges, dry weather monitoring, and a spill response program. A central hotline directs calls to the appropriate department and staff using standard emergency spill response notification flowcharts. The City's primary spill response investigator is well trained. The investigator ensures that spills are cleaned up and illicit connections are corrected by conducting repeated reinspections and by accompanying the crews during the cleanup.

2.2 County of San Joaquin

2.2.1 Evaluation of Program Management and Effectiveness

Deficiencies Noted:

- *The County lacks interdepartmental coordination for Stormwater Program implementation.*
  The County lacks interdepartmental organization to determine and establish roles and responsibilities regarding stormwater pollution prevention practices. The Public Works Department has not been able to obtain the participation of all County departments affected by the Stormwater Program. Participation of these departments should be ensured and roles and responsibilities clearly defined for each department.

  As an example, the City of San Diego's Jurisdictional Urban Runoff Management Program (JURMP) designates a primary department and supporting department(s) for each program component. Each responsible department is then required to:
  - Certify acceptance of the document.
  - Establish applicable written policies and procedures.
  - Maintain records as required by the permit.
  - Provide staff training.
  - Report the status of the JURMP implementation to the stormwater program.
  - Provide annual compliance certification with all permit requirements that apply to the department.

  The JURMP recommends that each department follow a process with nine steps: (1) adopt, (2) distribute, (3) train/develop awareness, (4) practice/implement, (5) assess/review, (6) update, (7) report, (8) inspect, and (9) certify. The JURMP also requires each department to designate a departmental coordinator who ensures implementation and coordinates activities with the stormwater program. A similar process in San Joaquin County would ensure a more coordinated approach to program implementation.

- *The County faces a number of challenges in implementing the new NPDES permit.*
  The County faces a number of challenges in implementing the new NPDES permit issued in October 2002. These challenges include the development standards required by December 2003 and the stenciling of 95 percent of drain inlets by the end of the permit term. Additionally, the County responsibilities will significantly increase with the Phase II requirements. The County is working to meet these requirements and is encouraged to work closely with the Regional Board to ensure the requirements are met in a timely manner.

- *The County is encouraged to include measurable goals in the development of its new stormwater management program.*
  The County is required to submit a modified stormwater management program by September 2003. The County is required to include assessment tools/performance

standards in the SWMP and is required to address specific direct and indirect measurements that the County will use to track the long-term effectiveness of the SWMP in achieving improvements in water quality.

Past MS4 evaluations found that many programs were not adequately documenting measurable goals and the status of performance standards. The County is encouraged to consider programmatic, social, or environmental indicators such as those listed in the 1996 Center for Watershed Protection report *Environmental Indicators to Assess Stormwater Control Programs and Practices*. For example, the City of Phoenix monitors social indicators like the public's knowledge of stormwater issues as a measure of success. In another example, the Sacramento Stormwater Management Program uses a variety of special studies, evaluation of performance measures, subwatershed studies, statistical analysis, modeling, and/or environmental indicators to assess the effectiveness of its program. Specifically, the Sacramento Program has identified performance and/or effectiveness measures for each program element BMP and subelement task. For example, Sacramento County tracks the number of warnings, corrective actions, penalties, and stop work orders issued as a performance measure and uses the number of illegal non-stormwater discharges reported as an effectiveness measure. The City of Sacramento has set minimum performance standards for each BMP such as a standard to visit 20 classrooms each year to conduct stormwater presentations.

2.2.2 Evaluation of Construction, Planning and Land Development

Positive Attribute:

- *The County has developed a guidance document for small developments.*

  The County created a *Small Site Storm Water Management Plan* to assist developers of small construction projects in complying with the County's program. The plan describes the regulatory requirements and basic principles for controlling stormwater on small sites. It also includes step-by-step instructions for pollution prevention and describes typical BMPs at small sites. The guidance appears ideal for custom homebuilders.

Deficiencies Noted:

- *The County's development review procedures for land development and building permits lack necessary detail.*

  The County's development review procedures for land development and building permit review, dated October 2002, lack detailed language on exactly how erosion and sediment control plans will be reviewed, the required elements in a plan for application approval, minimum thresholds for plan review, and the technical standard against which plans will be reviewed. The County was required to establish development review procedures by November 2002, and it is required to adopt local development standards by December 2003. The County is encouraged to revise these development review procedures and to provide training to staff conducting reviews as the local development standards are adopted.

- *The County has not developed training on stormwater issues in the planning and construction process.*
  The County has not developed stormwater training for the departments responsible for plan reviews, building permits, and construction site inspections of erosion and sediment controls. Staff should be trained on County requirements and proper stormwater practices.

2.2.3 Evaluation of Industrial and Commercial Program

Positive Attribute:

- *The County has an efficient and effective industrial inspection program.*
  The County's program largely resembles the City of Stockton's program, and both entities worked together to ensure a consistent inspection program. Detailed facility files and inventory are maintained, and the County inspector appeared well trained. The County determines whether the inspected facility has submitted an NOI for coverage under the General Industrial Permit and reviews the facility's SWPPP and annual reports for adequacy and thoroughness. The inspection reports detail both yard and paperwork deficiencies and required remedies. The County is also maintaining a list of potential "non-filers" and plans to distribute it to the Regional Board for review and follow-up.

  At the time of the evaluation, the County was focusing on the health department to implement its commercial business inspection program. The process was in an evolutionary state, and the County had not yet established inspection protocols or any inventory of applicable businesses.

Deficiency Noted:

- *Additional resources might be required to fully implement the industrial and commercial inspection program.*
  At the time of the evaluation the number of regulated industries within the Phase I permit boundary was very small (approximately 20 facilities), there was no commercial inspection program, and a sole staff person was largely implementing the program. With the addition of Phase II responsibilities to parts of the County, the workload for this staff person will likely increase significantly. Therefore, the County will need to evaluate the resource requirements for effectively implementing this program once the commercial program and the Phase II requirements are added. Additionally, the County's industrial program appeared to be oriented mostly toward compliance assistance; escalated enforcement had not yet been required. A formal relationship with the district attorney's office had not yet been established. At the time of the evaluation, the County's written process was to refer all escalated cases to the Regional Board for processing. The County should be prepared to effectively enforce its local stormwater requirements and should establish a formal enforcement process with the district attorney's office.

2.2.4 Evaluation of Municipal Operations Program

Deficiencies Noted:

- *The County lacks coordination among divisions in the maintenance department.* There is only limited coordination among the Road, Municipal, and Channel Divisions regarding stormwater issues. During the evaluation the division chiefs explained that there were meetings every week, but the meetings did not include the County stormwater coordinator or a discussion regarding stormwater pollution prevention practices. At this point there is no written guidance for maintenance division roles and responsibilities for stormwater pollution prevention awareness.

- *The County's corporation yard lacks adequate controls to prevent stormwater contamination.*

The evaluation team conducted a site visit to the County's corporation yard located behind the San Joaquin County Public Works Department Building. The corporation yard lacks basic stormwater controls, and the County does not adequately train staff on stormwater pollution prevention practices. An evaluation of the corporation yard revealed the following stormwater issues:

- Stockpiles of aggregate for road maintenance were exposed. No cover was provided for the stockpiles during the recent rains. Signs of sediment transport were apparent.
- Used car batteries and other miscellaneous household waste were found exposed with no secondary containment. Discussion with staff revealed that there was no written criterion for frequency of disposal.
- The gas and refueling station did not contain spill kits. The corporation yard did not have procedures for spill cleanup, and a spill prevention plan was not available.
- The wash rack was full of stagnant water. The area surrounding the wash rack was unclean and contained debris from washing operations. Further discussions with staff revealed no procedures for wash rack cleaning and maintenance.
- Stalls showed signs of debris and sediment transport to a nearby storm drain. The storm drain inlet had a sediment filter bag. The corporation yard did not have procedures for the cleaning or replacement of the filter bags.

Interviews with staff members revealed that there is minimal awareness of stormwater pollution prevention practices. Site inspections are not conducted regularly, and inspections do not consider stormwater pollution prevention practices. Information regarding stormwater is not adequately disseminated to all staff.

- *The County field crews lack adequate guidance and training on proper maintenance and inspection of structural stormwater controls.*

The County does not have written guidance for proper cleaning of stormwater facilities, such as storm drain inlets and detention basins. The County also does not conduct adequate training for field staff regarding stormwater maintenance. 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. As an example, see the City of Stockton's *Maintenance Staff Guide*.

- *The County lacks a pesticide/herbicide application plan.*
  Discussion with the Channel Division of the Public Works Department revealed that the County does not have a pesticide/herbicide application plan. The County should develop an application plan so that registered County applicators are aware of the appropriate BMPs and restrictions when applying pesticides. Where possible, integrated pest management (IPM) practices should be incorporated into the plan.

2.2.5 Evaluation of Public Education Program

Deficiency Noted:

- *The County has not set up a public stormwater hotline.*
  An interview with the County's stormwater public outreach staff revealed that the County does not have a public stormwater hotline. The staff explained that the County is researching feasible facets of hotline development. The County has been communicating with other departments and organizations that have existing hotlines to determine the most effective method of implementation.

2.2.6 Evaluation of Illicit Discharge Program

Deficiency Noted:

- *The County lacks adequate guidance on detecting and eliminating illicit discharges.*
  The County has developed an *Illicit Discharge/Spill Response Protocol* and an *Illicit Connection Protocol*, but these protocols do not include sufficient detail to adequately direct staff. For example, the protocol does not list specific County contacts for various spill types and does not describe procedures to be used during a spill. In addition, the County has not developed a training program for County staff responding to spills or investigating illicit discharges or connections. The County is directed to the City of Stockton's *Emergency Spill Response Notifications* as an example of a detailed spill response protocol listing appropriate City contacts for different spill events.