Program Evaluation Report

Santa Rosa Area Stormwater Program (NPDES Permit No. CA0025038)

Executive Summary

Tetra Tech, Inc., with assistance from U.S. EPA Region 9 and the California Regional Water Quality Control Board, North Coast Region (RWQCB), conducted a program evaluation of the Santa Rosa Area Stormwater Program in March 2002. The purpose of the program evaluation was to determine the copermittees' compliance with the National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Discharge Permit and to evaluate the current implementation status of the Stormwater Program with respect to EPA's stormwater regulations. The evaluation team reviewed the copermittees' compliance with the NPDES permit requirements and stormwater management plan and conducted an in-field verification of program implementation. The program evaluation focused on all three copermittees—the City of Santa Rosa, Sonoma County, and the Sonoma County Water Agency.

This program evaluation report discusses only program deficiencies and positive attributes. This report is not a formal finding of violation. Program deficiencies might, in some cases, represent permit violations. Program deficiencies are areas of significant concern for successful program implementation. Positive attributes are indications of a copermittee's overall progress in implementing a multifaceted program to address stormwater discharges.

The following program deficiencies are considered to be the most significant:

- The Program should focus additional efforts on identified pollutants of concern while continuing to implement existing program elements.
- The Program should identify additional measurable goals for each program element.
- The current criteria used to define a representative storm event have unnecessarily limited past sampling opportunities such that the existing monitoring program may not adequately support Program goals.
- The City and County should improve management of their construction site erosion and sediment control programs by adopting, respectively, formal standards for BMPs and a grading ordinance.

Several elements of the copermittees' programs were particularly notable:

- The Program includes a variety of monitoring programs used to evaluate the impact of stormwater discharges on receiving waters.

- The City has dedicated erosion and sediment control inspectors for private construction projects.

- The City's Environmental Crimes Unit has proven to be instrumental in enforcing stormwater regulations.

CONTENTS

Executive Summary ..... **i**
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 Santa Rosa Area MS4 Program—All Copermittees 4
2.2 Copermittee Specific Findings 7

1.0 Introduction

1.1 Program Evaluation Purpose

The purpose of the program evaluation was to determine the copermittees' compliance with the conditions and requirements in the NPDES permit (NPDES Permit No. CA0025038 and Board Order No. 97-3) and to evaluate the current implementation status of the Santa Rosa Area Stormwater Quality Management 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) and Appendix A Standard Provision 9 of the NPDES permit provide the authority to conduct the program evaluation.

The Program includes the City of Santa Rosa, Sonoma County, and the Sonoma County Water Agency (Water Agency) as copermittees. This evaluation reviewed the practices and permit compliance status of all three copermittees.

1.2 Permit History

The NPDES MS4 stormwater permit was issued on March 27, 1997, and is scheduled to expire on March 27, 2002. The permit requires implementation of a Stormwater Management Plan (SWMP) developed as part of the Part II NPDES Stormwater Permit Application. This is the first NPDES permit issued to the copermittees. The existing permit has been administratively extended until a new permit is issued in June 2002.

1.3 Logistics and Program Evaluation Preparation

Before initiating the on-site program evaluation, Tetra Tech, Inc., reviewed available Program materials. The two goals of the file review were to gain greater knowledge of the existing program, permit requirements, past activities, and to prepare for on-site activities. The following materials were reviewed:

- NPDES Permit No. CA0025038
- NPDES Part II Application (dated September 1996)
- Annual Report No. 4 for Year ending March 27, 2001 (dated June 2001)
- NPDES MS4 permit reapplication (dated September 28, 2001)
- Copermittee web sites
- File correspondence with the copermittees and the permitting authority

On March 5–7, 2002, Tetra Tech, Inc., with assistance from the RWQCB, conducted the program evaluation. The evaluation schedule was as follows:

Tuesday, March 5	**Wednesday, March 6**	**Thursday, March 7**
All Parties – Program evaluation kickoff. *Santa Rosa* – Team 1 – Land use planning and private construction site discharges. *Santa Rosa* – Team 2 – Municipal maintenance.	*Santa Rosa* – Illicit discharges, spill response, and industrial program; public construction site discharges. *Sonoma County* – Land use planning and private construction site discharges; illicit discharges, spill response, and industrial program.	*Water Agency* – Municipal maintenance, illicit discharges, spill response, and public outreach. *Sonoma County* – Public construction site discharges. *All Parties* – Exit interview and presentation of preliminary findings.

Upon completion of the evaluation, an exit interview was held with the copermittees to discuss the preliminary findings. During the exit interview, the parties were informed that the findings were to be considered preliminary pending further review by EPA and the RWQCB. After completing the on-site activities, the evaluation team conducted a detailed review of the new permit application document and the latest annual report.

1.4 Program Areas Evaluated

The following program areas were evaluated:

- Program management
- Monitoring programs
- Public education programs
- Annual reporting
- Municipal maintenance operations
- Land use planning and private construction
- Public construction
- Illicit discharge, spill response, and industrial program

1.5 Program Areas Not Evaluated

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

- Monitoring program details (e.g., sample location, types, frequency, parameters, etc.).

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

- Legal authority. (RWQCB had reviewed the legal authority when the permit was initially issued.)

- 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. Rather, 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 areas of the Program for further evaluation:

- An in-depth review of the monitoring program, monitoring results, identification of pollutants of concern, and the Program's current and future plans for addressing identified pollutants of concern.

- A more in-depth assessment of the maintenance of erosion and sediment controls at representative City-sponsored construction sites to determine whether the evaluation findings are typical or atypical. Additional reviews of County-sponsored construction projects during a more active construction season (summer) to determine the adequacy of erosion and sediment controls also is recommended.

- Additional inspections of private construction projects throughout the County. This evaluation included an inspection of only one large private construction site in the County (Sears Point Raceway), while eight such sites were visited throughout the City.

2.0 Program Evaluation Results

Evaluation results for the Santa Rosa Area Stormwater Quality Management Program are presented in the following subsections, organized by program area.

This program evaluation report discusses only program deficiencies and positive attributes. This report is not a formal finding of violation. Program deficiencies are areas of significant concern for successful program implementation. Program deficiencies may, in some cases, represent permit violations. Positive attributes are indications of a copermittee's overall progress in implementing a multifaceted program to address stormwater discharges. The evaluation team identified only positive attributes that were innovative (i.e., beyond minimum requirements). Some areas were found to be simply adequate; that is, not particularly deficient or innovative.

As indicated in Section 1.0, the evaluation team did not evaluate all components of the copermittee's program. Therefore, the copermittees should not consider the enclosed list of program deficiencies, or the program evaluation report itself, as 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 Santa Rosa Area MS4 Program—All Copermittees

2.1.1 Evaluation of Program Management

Positive Attribute:

- *The copermittees have established a solid foundation for the Program.*
  In the 5 years since the permit was issued, the copermittees have established effective public education, illicit discharge, and spill response programs. The high level of enthusiasm, commitment, and communication among the copermittees was apparent. The Program is also actively preparing to develop and adopt a regional standard urban stormwater mitigation plan (SUSMP) program to address water quality issues in development planning.

Deficiencies Noted:

- *The Program should focus additional efforts on identified pollutants of concern while continuing to implement existing program elements.*

  Local and regional monitoring efforts have identified sediment, bacteria, and nutrients as primary pollutants of concern in the receiving waters. As the Program continues to mature, the copermittees should focus their efforts on reducing the loadings and concentrations of these (and potentially other) identified pollutants. The Program should evaluate the effectiveness of existing program elements and, if necessary, develop new elements, or suites of BMPs, focused on targeting these identified pollutants. The Alameda Countywide Clean Water Program and the Sacramento Stormwater Management Program have implemented such programs, which may be useful to review. Other non-stormwater program activities discussed during the evaluation such as stream habitat improvement projects, reductions in agricultural contributions, and guidelines for rural land use practices, should be designed to complement these targeted water quality improvement objectives.

- *The Program should identify additional measurable goals for each program element.*

  Other than improved water quality (which is very difficult to demonstrate), the copermittees have not documented alternative measurable goals for the Program. The existing SWMP does not identify how the success of the Program will be assessed. To ensure continued support for the Program and to provide a means to measure its effectiveness, the Program should establish additional measurable goals for each program element.

  The measurable goals should be linked to programmatic, social, or environmental indicators such as those listed in the 1996 Center for Watershed Protection report *Environmental Indicators to Assess Stormwater Control Programs and Practices*. For example, the City of Phoenix monitors social indicators such as the public's knowledge of stormwater issues as a measure of success. In another example, the Sacramento Stormwater Management Program (Sacramento 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 sub-element 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.

Although the copermittees do track some of these programmatic activities through indirect indicators listed in the annual report, they should expand on the number of activities tracked and should link these activities and indicators to measurable, numeric goals or other measures of success.

- *The Program could benefit by expanding the use of subcommittees for key program areas.*
  The Program currently has a management committee that meets annually and a "working committee" that meets monthly. They have also created an informal subcommittee to assist with the development and implementation of the SUSMP. The evaluation team recommends that the Program develop additional, more structured subcommittees for other program elements (e.g., construction oversight, municipal operations, monitoring programs). Evaluation of other municipal stormwater programs has indicated that the establishment of subcommittees has provided invaluable assistance to all copermittees. Specific examples of benefits to copermittees includes the development of standard forms, report, and other information as well as accelerating the decision-making process for tasks such as alternative BMP analysis. The subcommittee structure saves copermittees time and money while ensuring program-wide consistency. It also allows copermittees to share implementation experiences and provides additional opportunities for Regional Board participation.

2.1.2 Evaluation of Monitoring Programs

Positive Attribute:

- *The Program includes a variety of monitoring programs used to evaluate the impact of stormwater discharges on receiving waters.*

  In addition to standard chemical monitoring, the copermittees conduct bioassay tests and benthic community surveys to evaluate the impact of stormwater discharges. Two sets of bioassay samples were analyzed during the 2001–2002 rainy season at various locations in the receiving water. The bioassay tests consisted of exposing 20 baby rainbow trout to collected water samples for 96 hours under controlled conditions. The bioassay results generally reflected high survivability/water quality at all sites except for Colgan Creek, where a restaurant was found to be discharging oil and grease, and cleaning products into the drainage immediately upstream of the sampling site. After the discharge of pollutants was eliminated, the next bioassay sample had double the initial survival rate, showing improved water quality.

Benthic community surveys, using aquatic macroinvertebrates as indicators of stream health, also have been conducted. The Program has included surveys conducted by professionals as well as by local high school students. In 2001 five high schools and more than 60 students participated in the benthic community surveys. The high school participation provides additional data for program evaluation and also educates the students and involves them in local water quality issues.

Deficiency Noted:

- *The current criteria used to define a representative storm event have unnecessarily limited past sampling opportunities such that the existing monitoring program may not adequately support Program goals.*

Although the Santa Rosa area receives an average annual total precipitation of 30 inches (Source: Western Regional Climate Center), the copermittees were unable to obtain all three of their planned samples in 2001, apparently because of overly conservative criteria for representative storm events. Modifying the criteria will ensure that the Program obtains the necessary data needed to evaluate program effectiveness. The Program should work with the RWQCB to adopt more flexible criteria to ensure that a minimum of three separate storm events, as required by the current monitoring plan, are monitored each year.

Additionally, the Program currently has identified improved water quality as its ultimate goal. Therefore, adequate data collection and interpretation will be critical in determining changes in receiving water quality. The copermittees should evaluate their current monitoring program to determine whether its full implementation will generate sufficient data not only to measure changes in receiving water quality but also to substantiate that such changes are a result of the stormwater program. As an example, the Sacramento Program has conducted statistical analyses to determine the number of samples required over a period of 20 years that would be necessary to directly measure changes in the receiving waters based on an assumed pollutant reduction achieved from implementing their stormwater program. The Sacramento Program expanded their definition of a representative storm event and, while not expanding the number of samples collected, has modified their monitoring program to collect the data necessary to document water quality improvements. The Sacramento Program also conducts targeted monitoring activities designed to measure the effectiveness of specific BMPs. These targeted monitoring programs are not dependent on representative storm events and are often focused on particular parameters. The Santa Rosa Program, working with the RWQCB, is encouraged to review these activities and potentially incorporate similar activities within their monitoring program.

2.1.3 Evaluation of Public Education Programs

Positive Attributes:

- *The Program has developed a large variety of public education materials.* Targeted publications have been developed for the construction, dry cleaning, and food facility industries. These targeted materials supplement an impressive inventory of general informational materials, which are regularly distributed to the public as utility bill inserts. The City of Santa Rosa's stormwater ordinance booklet and the Santa Rosa Area Stormwater Discharge Permit Fact Sheet are examples of some of the general information.

- *Water Agency conducts an extensive public outreach and education program.* The Water Agency's Water Education Program is an extensive educational effort targeted toward teachers and toward students in kindergarten through grade 6. Two Water Agency staff members conduct programs for teachers and participate in both in-class instructional presentations and field trips. Teachers and schools are not charged for the material distributed by the Water Agency. This program is unique in that the classroom presentations are designed to meet part of the State's classroom educational testing topics, so there is an incentive for teachers to use the material.

  The Water Agency has an extensive lending library, including an Enviroscape Model. The Water Agency also sponsors stream cleanup events and is proposing to take the lead on an Adopt-a-Creek program.

2.1.4 Evaluation of Annual Reports

Deficiency Noted:

- *The annual report does not clearly describe the activities of the copermittees.* Annual Report No. 4 is informative and concise, but the description of copermittee activities in Section V, Management Program, is not always consistent. For example, some sections list the activities of all three copermittees, whereas other sections list the activities of only one or two copermittees. If an individual copermittee does not implement a particular activity, the annual report should indicate so with a "not applicable" or similar notation. In addition, the description of the future year's work plan should include, where possible, measurable goals or measurable activities for the copermittees. This approach would help in setting targets for each of the copermittees for the following year.

2.2 Copermittee Specific Findings

The following program elements were reviewed with the copermittees, and deficiencies and positive attributes were noted. Program areas that were found to be simply adequate are not discussed.

2.2.1 Evaluation of Program Management

Positive Attribute:

- *The City of Santa Rosa's Stormwater Utility provides a solid financial basis for program implementation.*
  The stormwater utility provides a dedicated operating budget for program implementation and a clear representation of program expenditures. Fees collected through the utility are split between covering the operating expenses of the stormwater program and providing funding for stream habitat improvement projects. The City noted that dedicating a specific portion of the funds collected to stream restoration helped with public acceptance of the stormwater utility. To date, these funds have been used for several habitat improvement projects.

Deficiency Noted:

- *The copermittees could benefit from a standardized employee-training program.*
  The copermittees do not have a formal stormwater training program for their employees. Employee training consists of verbal instruction provided by department management, supervisors, and in the case of the City, the Public Works stormwater team. The evaluation team recommends the creation of a general stormwater awareness program for new employees ("Stormwater 101") and potentially more targeted training for industrial and commercial business inspectors, as well as private and public construction inspectors. Such programs would provide the Program with a consistent and easily reproducible training program.

2.2.2 Evaluation of Municipal Maintenance Operations

Deficiencies Noted:

- *The City does not have stormwater BMP standards for routine and emergency municipal maintenance projects.*
  Although stormwater awareness was evident from discussions with field staff, the City does not have documented standards (or BMPs) for employee reference. Documented BMPs for municipal maintenance activities such as drop inlet protection, trench dewatering, saw cutting rinse water disposal, and postexcavation cleanup are not provided to field crews. Field crews indicated that guidance has been provided verbally. The standard BMPs could be distributed as a component of the targeted training programs discussed previously.

- *The City should enforce its existing pet waste ordinance along channel and creek paths.*
  Given the prevalence of public walking paths along the receiving streams and documented bacterial counts, the City should actively enforce its existing pet waste ordinance. The development of a public awareness program specifically targeting dog waste along open channels and creeks also should be considered. Although Santa Rosa's ordinance does not currently apply to unincorporated areas within the permit

boundary, the Water Agency and the County could work with the City to develop and implement an efficient public awareness campaign.

2.2.3 Evaluation of Land Use Planning and Private Construction

Positive Attributes:

- *The City has dedicated erosion and sediment control inspectors to oversee private construction projects.*

  Community Development has two dedicated erosion and sediment control inspectors who work closely with the Community Development plan review staff to ensure that adequate controls are in place during the planning, construction, and postdevelopment phases of each project. The erosion and sediment control inspectors also work with other City Public Works and Building and Code construction inspectors to identify and remedy erosion and sediment control deficiencies. In addition, the inspectors have worked with the Environmental Crimes Unit to ensure compliance with the City's grading ordinance and conformance with approved erosion and sediment control plans.

- *Water Agency drainage reviews offer an opportunity to ensure reviews of SUSMP projects.*

  With the exception of unincorporated areas, the Water Agency conducts drainage reviews on construction projects in most of the cities in Sonoma County. Currently, these reviews are used primarily to ensure adequate capacity in the storm drain system for storm flows. As the SUSMP requirements are developed the Water Agency drainage reviews could also be used to provide a consistent review of SUSMP projects.

Deficiencies Noted:

- *The County does not have a grading ordinance.*

  The County currently uses the Uniform Building Code for grading standards but has planned for several years to develop a grading ordinance to provide clearer standards and more specific legal authority for the County's oversight of grading projects. The ordinance has not yet been developed, and the County representatives could not clearly identify an anticipated completion date. The County should establish a timeline for the rapid development and adoption of a grading ordinance.

- *City does not have formal standards for the design, installation, and maintenance of erosion and sediment control BMPs.*

  The City does not have an adopted or recommended set of standards for adequate design, installation, and maintenance of erosion and sediment control BMPs. These standards would help to ensure consistency of erosion and sediment controls among plan reviewers, construction site owners, and City inspection staff. Guidance documents the City could reference include the Association of Bay Area Governments' *Erosion and Sediment Control Measures Guidance*, the *California Storm Water BMP Handbook for Construction Activity*, and San Francisco Bay

Regional Water Quality Control Board's *Guidelines for Construction Projects*. The formal standards could be distributed as a component of the targeted training programs discussed previously.

- *The copermittees need to ensure that erosion and sediment controls are maintained when ownership of single-family lots is transferred from developers to individual builders.*
  Reviews of subdivisions under construction found that when single-family lots are transferred from a developer to individual builders, installation and maintenance of erosion and sediment controls on individual lots is often lacking. Larger developers are often more knowledgeable about regulatory requirements, while some builders are small local firms, or even homeowners, who are not aware of the requirements for erosion and sediment controls. The copermittees should work to ensure, through both education and inspections, that the owners of these sites are aware of the local erosion and sediment control requirements and that BMPs are being implemented. This could be achieved by training building and code inspectors on erosion and sediment control BMPs and requirements. For example, Sacramento County in 1999 expanded the list of County staff who are authorized to enforce their erosion control ordinance and issue citations to include construction and building inspectors. In some cases, owners of these individual lots might also need to submit an NOI for coverage under the Statewide Construction General Permit because the lots are part of a larger common plan of development.

- *The successful development and implementation of the SUSMP program will require improved interdepartmental communication.*
  The selection, approval, and maintenance of postconstruction structural controls will require a coordinated approach from a variety of City and County departments. Past program evaluations have indicated that the most successful municipal stormwater programs have good communication between the planning, construction oversight, and maintenance departments. The exact location, ownership status, sizing considerations, and operation and maintenance requirements of the controls must be well documented and communicated to the public sector maintenance departments. If possible, this information should be included in geographic information systems (GIS) and crew map books.

  Most of the SUSMP requirements will be new to developers, City and County staff, and the public. Therefore, education of municipal staff and local construction site owners on the final SUSMP requirements will be an important key to the Program's success. In addition, the operation and maintenance requirements for structural controls often are known by the developers and project engineers and applied during development but are not ultimately communicated to the facility tenants. In the City of Oxnard, City employees educate the tenants of newly constructed facilities (through homeowners associations and on-site managers) on the operational and maintenance requirements for constructed water quality controls at the facilities.

2.2.4 Evaluation of Public Construction

Deficiencies Noted:

- *Maintenance of BMPs at two City public construction sites was lacking.* Inspection of the City's Prince Greenway and Pedestrian Linkages projects indicated that some of the temporary erosion and sediment control BMPs were not being adequately maintained. Although BMPs were installed as planned at the Prince Greenway project, in some instances they were not being adequately maintained during construction (e.g., excessive tracking and lack of sediment control at the staging area, straw waddles inefficiently located, and straw unevenly distributed along slopes). At the much smaller Pedestrian Linkages project, temporary BMPs were nonexistent; for example, drop inlets were not protected and excavated dirt and broken concrete were piled on the road. The construction inspector at this site indicated that controls had been used during excavation but had apparently been removed.

  The City needs to review its procedures for reviewing and enforcing the adequacy of temporary erosion and sediment controls at public construction projects. Contractors should be held accountable for implementing and maintaining the controls listed in the job specification, Stormwater Pollution Prevention Plan (SWPPP), and/or equivalent plan. City construction inspectors need to more aggressively identify deficiencies and require immediate remedies. Future evaluations could include inspection of more City-sponsored construction sites to determine whether these findings are indicative of a widespread problem.

- *Public construction inspectors do not know the Statewide Construction General Permit requirements, which could be a significant liability to the City and County.* The City's Public Works construction inspectors and the County's Transportation and Public Works construction inspectors do not know the requirements of the Statewide Construction General Permit and are therefore unable to determine whether contractors are adhering to the permit conditions. For projects with greater than 5 disturbed acres, these departments are responsible for apply for NOIs to obtain coverage under the Statewide Construction General Permit. The department applying for permit coverage is the registered construction operator and is ultimately legally liable for compliance with the General Permit. The inspection process should therefore ensure that contractors are in compliance with the General Permit and local sediment and erosion control standards. In the event that a project is not in compliance with the permit, the EPA or Regional Board could take enforcement action against the department. To ensure public construction projects are in compliance, construction inspectors need to be trained on the requirements of the Construction General Permit conditions, including visual monitoring, periodic site inspection, and SWPPP requirements.

2.2.5 Evaluation of Illicit Discharge, Spill Response, and Industrial Programs

Positive Attribute:

- *The City's Environmental Crimes Unit has proven to be instrumental in enforcing stormwater regulations.*

The City has an Environmental Crimes Unit that consists of one full-time investigator, two officers, and a sergeant assigned to the unit on a collateral basis. These officers have received specialized training in environmental crime investigation and recognition of hazardous materials and work closely with regulatory specialists from other City departments—Fire Department, Hazardous Materials; Utilities Department, Industrial Waste Section; Community Development, Building Code and Erosion and Sediment Control Inspectors; and Public Works Department, Stormwater Team.

The full-time investigator has extensive training, access to equipment and analytical laboratories, and a high-profile vehicle emblazoned with the Environmental Crimes Unit signage. In the past 3 years, numerous developers, business owners, and private citizens have been successfully prosecuted and convicted for a variety of crimes, including failure to implement and maintain erosion and sediment controls, illegal dumping, and unauthorized connections. The officers follow an enforcement response plan that includes verbal warnings, written notices of violations, and arrest. The public is encouraged to call 911 to report crimes in process or to call the Environmental Crimes Hotline number for nonemergencies.

The following elements have been critical to the success of the Environmental Crimes Unit:

- *A full-time dedicated investigator.* The City considers this position to be an integral component of the police force and has provided the required training, equipment, and resources. Federal and State grants also have been used to fund this position.

- *Availability of a Sonoma County Assistant District Attorney to prosecute environmental crimes.* The prosecutor works directly with the investigator and other City departments to develop legally sound cases. The prosecutor's active participation has been critical to the success of the program.

- *Participation with other City departments.* The Environmental Crimes Unit routinely communicates with a variety of City departments to ensure coordination of activities. All City employees interviewed during the evaluation were aware of the unit and the procedures for involvement. The extensive communication maximizes the utility and involvement of the unit and creates a team environment.

- *Slow start and initial "ramp-up" period.* The investigator indicated that the first year of activities was spent exclusively on learning the environmental laws and the types of information needed for convictions, building relationships with City

staff, and completing identification and response training. This ramp-up period was critical to the successful identification and prosecution of crimes.

- *The City has a comprehensive spill response program.*
  The City has well coordinated and thorough procedures for spill response and illicit discharge investigation. A dedicated spill response vehicle is available at all times, field staff are well trained and have access to equipment, and the City has a history of successfully tracking down and eliminating illicit discharges. Communication within City departments and with other local and regional agencies appears to be well established. The City dispatches two crews to each incident. One crew is tasked with spill response, containment, and cleanup, while the other crew investigates the cause of the spill and the responsible party. This process has proven to be effective in recovering spill response expenditures and limiting spill recurrence.