

Municipal Stormwater Management Plan

NPDES permit No. CAS618036;2007-2 012

October 2006

Submitted to:

California Regional Water Quality Control Board,
Santa Ana Region

Submitted by:

San Bernardino County Stormwater Program

Principal Permittee

San Bernardino County Flood Control District

Co-Permittees

- ◆County of San Bernardino
- ◆City of Big Bear Lake
- ◆City of Chino
- ◆City of Chino Hills
- ◆City of Colton
- ◆City of Fontana
- ◆City of Grand Terrace
- ◆City of Highland
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Prepared by CDM in Association with Risk Sciences

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Section 1

Introduction

Within the San Bernardino County area of the Santa Ana River Basin, management and control of the municipal separate storm sewer system (MS4) is shared by a number of agencies, including the San Bernardino County Flood Control District (“District”); San Bernardino County (“County”); and the cities of Big Bear Lake, Chino, Chino Hills, Colton, Fontana, Grand Terrace, Highland, Loma Linda, Montclair, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, Upland, and Yucaipa (“16 cities”). The District is the Principal Permittee; the remaining jurisdictions are the Co-Permittees.

To control stormwater pollutants carried by urban runoff in San Bernardino County, the Santa Ana Regional Water Quality Control Board (RWQCB) issued area-wide waste discharge requirements for the County’s MS4 on April 26, 2002 (NPDES No. CAS618036; Order No. R8-2002-0012) (“MS4 Permit”). This MS4 Permit to discharge expires on April 27, 2007; however, as required by this MS4 Permit, the District, County, and the 16 cities submitted a Report of Waste Discharge (ROWD) to the RWQCB on October 27, 2006. The ROWD serves as the application for issuance of new waste discharge requirements for the MS4.

The previous ROWD submitted to the RWQCB, which resulted in the issuance of the MS4 Permit that expires on April 27, 2007, included the Municipal Stormwater Management Plan (MSWMP). The MSWMP and associated documents incorporated by reference, identify the specific stormwater program activities that will be carried out by the permittees during the permit term.

The ROWD and MSWMP have most recently been a single document with ROWD requirements and MSWMP elements commingled. The ROWD submitted on October 27, 2007 separated the ROWD from the MSWMP, effectively separating the discharge application from the Stormwater Management Program. Separation of this document does not change how the MS4 program is implemented; instead, the separation simply provides a clear demarcation between what constitutes the application for a MS4 Permit and what defines the Stormwater Management Program that is to be implemented under the MS4 Permit.

This document contains the MSWMP that will be implemented during the permit term beginning with issuance of the 2007 MS4 Permit. The MSWMP includes by reference any document prepared under the umbrella of the MSWMP, for example, the Water Quality Management Plan (WQMP) (June 9, 2005, or as amended). Reference to the MSWMP automatically infers the inclusion of these documents. In addition, when an MSWMP commitment includes both the Principal Permittee and Co-Permittees, the general terms “permittee” or “permittees” will be used.

Section 2

Program Management

Implementation of an area-wide MS4 Permit requires that the permittees work cooperatively. Therefore, the permittees have established an institutional framework and procedures to manage the stormwater program. This section describes the program structure and the decision-making process.

2.1 Implementation Agreement

The permittees operate under an Implementation Agreement (Agreement), which provides a framework for cooperative implementation of the MS4 Permit. The Agreement was first established in 1992, amended in 1995, and substantively revised in 2006. A final Agreement was adopted and approved by the permittees in 2007.

The Principal Permittee and the Co-Permittees share the costs for the area-wide program. Each permittee provides funding for the stormwater program within its respective jurisdiction and contributes to the area-wide program. The Agreement establishes a cost-share formula that determines individual permittee contributions to the area-wide program. In addition the Agreement also specifies the responsibilities of the Principal Permittee and Co-Permittees and identifies how the permittees will work together cooperatively within the Management Committee to implement Stormwater Management Program elements.

2.2 Management Committee

The Management Committee is the primary decision-making body for the Stormwater Management Program, and serves as the vehicle for managing the overall stormwater management effort across all jurisdictions. The Management Committee is made up authorized representatives of the Principal Permittee and each Co-Permittee. The Principal Permittee chairs the Management Committee and takes the lead role in initiating and developing area-wide program activities necessary to comply with the MS4 Permit. Management Committee decisions require a majority vote of the representatives on a one-vote-per-permittee basis for approval. The Management Committee meets once per month for 11 months each year (no meeting occurs during December).

Each permittee has designated a lead agency that will provide at least one authorized representative to the Management Committee (Table 2-1). Any change in the authorized representative to the Management Committee is made in writing and becomes effective upon filing with the Principal Permittee. An alternate representative may be designated to serve in the absence of the primary representative via written notification.

Table 2-1 Summary of Area-Wide MS4 Permit Participants		
Jurisdiction	Status	Lead Agency or Department
San Bernardino County Flood Control District	Principal Permittee	Public Works/Environmental Management Division
County of San Bernardino	Co-Permittee	Public Works/ Environmental Management Division
City of Big Bear Lake	Co-Permittee	Public Works/Engineering
City of Chino	Co-Permittee	Public Works/Engineering Division
City of Chino Hills	Co-Permittee	Community Development
City of Colton	Co-Permittee	Public Utilities
City of Fontana	Co-Permittee	Public Works
City of Grand Terrace	Co-Permittee	Community Services
City of Highland	Co-Permittee	Public Works/Engineering
City of Loma Linda	Co-Permittee	Public Works
City of Montclair	Co-Permittee	Public Works
City of Ontario	Co-Permittee	Engineering
City of Rancho Cucamonga	Co-Permittee	Engineering
City of Redlands	Co-Permittee	Public Works
City of Rialto	Co-Permittee	Public Works
City of San Bernardino	Co-Permittee	Development Services
City of Upland	Co-Permittee	Public Works
City of Yucaipa	Co-Permittee	Public Works

2.2.1 Management Committee Responsibilities

The Management Committee provides guidance to the Principal Permittee with respect to program administration and approves elements of the area-wide Stormwater Management Program. The Management Committee has the authority to:

- Guide the Principal Permittee in:
 - Preparing and implementing an annual Management Committee budget;
 - Filing applications for MS4 Permits as permittees;
 - Developing and implementing a local and area-wide integrated Stormwater Management Program, including special studies required by the MS4 Permit;
 - Filing compliance reports and annual reports with the RWQCB;
 - Establishing performance criteria for management programs;
 - Establishing uniform progress reporting formats;
 - Monitoring the implementation and effectiveness of area-wide Best Management Practice (BMPs); and,

- Performing stormwater quality and hydrographic monitoring for MS4 Permit compliance.
- Approve area-wide management program elements, including development and implementation of:
 - Annual area-wide operating budgets;
 - Recommended modifications to the MSWMP; and
 - Area-wide BMP programs.

2.2.2 Management Committee Subcommittees

While the overall responsibility for stormwater program development and implementation lies with the Management Committee, subcommittees provide an efficient mechanism for managing the development and implementation of program elements. Permittees may choose which subcommittees they wish to participate on; however, permittees with expertise directly related to a subcommittee's purpose are encouraged to participate. Subcommittees report their findings and recommendations to the Management Committee for approval and adoption. Currently, the Management Committee has six active subcommittees:

- Public Education
- Monitoring
- Development
- Fiscal
- Training
- MS4 Database

During the next permit term the Management Committee will establish subcommittees to address the following recommendations in the ROWD: (1) establish a mechanism to monitor grant programs for funding opportunities that could benefit the MS4 program; (2) explore regional treatment alternatives, including evaluation of regulatory and planning barriers and potential solutions to barriers identified; and (3) to explore opportunities for regional coordination, and, where feasible, develop and implement the mechanism(s) for implementing stormwater program elements across interested jurisdictions.

2.2.3 Management Committee Authority

The Management Committee does not assume any responsibility for implementing the Stormwater Management Program for individual permittees or for ensuring that individual permittees implement programs consistent with the recommendations of the Management Committee. This responsibility remains with each individual permittee.

As noted above, the Principal Permittee, with guidance from the Management Committee, is responsible for annual reporting of permit compliance to the RWQCB. If an individual permittee fails to implement program elements or report program progress, it will be reflected in the compliance reports to the RWQCB.

2.2.4 Program Funding

Funding to implement the MS4 Permit program is comprised of two parts: (1) local permittee program funding, which supports program implementation within each permittee's jurisdiction; and (2) area-wide program funding, which supports the implementation of Management Committee activities.

2.2.4.1 Permittee Program Funding

The permittees are committed to funding, to the extent practicable, their local Stormwater Management Program for the duration of the permit. To this end, each permittee prepares an annual budget and informs its governing board about program activities and funding requirements that are necessary to comply with MS4 Permit requirements and implement program activities within the local jurisdiction. However, it is the decision of the governing body within each permittee's jurisdiction that determines final individual annual program funding.

2.2.4.2 Area-Wide Program Funding

The area-wide program is funded by contributions from all permittees according to the cost-share methodology established in the Implementation Agreement. The Principal Permittee prepares an annual budget and presents this budget to the Management Committee for approval. Under the new MS4 Permit, the annual budget will be divided into four program areas:

- **Monitoring** – Includes any sample collection and laboratory analyses regardless of purpose, for example, includes both routine monitoring and additional monitoring conducted to implement a Total Maximum Daily Load (TMDL).
- **Public Education** – Provides funding for all public outreach programs.
- **Program Management & Regulatory Activities** - Includes activities such as annual report preparation, California Stormwater Quality Association (CASQA) membership, program administration, ROWD development, participation in the TMDL development process, and participation in special projects such as the Stormwater Quality Standards Task Force (SQSTF).
- **Training** – Provides funding for any staff training or training conducted to implement the stormwater management program, for example training provided to developers.

2.3 Area-wide Interagency Coordination

A number of agencies with responsibilities that cover multiple jurisdictions are listed in this section together with a description of their activities and responsibilities as they relate to the Stormwater Management Program. The designated stormwater coordinators for each permittee coordinate stormwater management activities with these agencies on an as needed basis.

2.3.1 County of San Bernardino Department of Public Health (DPH)

The San Bernardino County DPH operates several programs that may impact or help protect stormwater quality, including:

- ***Housing/Property Improvement Program*** - program promotes an environmentally safe and healthful dwelling environment for County residents and visitors. Program activities are directed to law enforcement and regulations pertaining to environmental quality, sanitation, maintenance, use and occupancy of housing and institutions.
- ***Safe Drinking Water Program*** - protects drinking water resources by maintaining a comprehensive permitting system for water well construction and destruction, serving as the Local Primary Agency for small water systems, providing input into the land use process for the County, assuring that medical wastes are properly handled, stored, and disposed of by generators, and reviewing on-site sewage disposal conditions.
- ***Vector Control Program*** - responsible for protection of public health by working to prevent the transmission of vector-borne disease to humans through the inspection, surveillance, and monitoring of known or suspected breeding and harborage places of vectors.
- ***Food Protection Program*** - protects public health and safety as it relates to the retailing, wholesaling, and handling of food in the County through inspections, training and certification, and compliance investigations.

2.3.2 County of San Bernardino Fire Department - Hazardous Materials Division (HMD)

The San Bernardino County Fire Department has a full service HMD that oversees the handling of hazardous wastes through implementation of the following:

- ***Emergency Response and Enforcement*** - responds to hazardous materials emergencies throughout the County, participates in an interagency coalition with all cities in the County, and works with the County District Attorney's Environmental Crime Unit to prosecute illegal dumpers.

- **Field Services** - inspects businesses that store hazardous materials, have underground storage tanks, or generate hazardous wastes.
- **Local Oversight Program (LOP)** - responsible for overseeing the long-term clean up of hazardous materials – mostly former underground storage tank sites. LOP also works with individual companies on a contractual basis to clean up more complex contamination.
- **Household Hazardous Waste Program** – implements the program to accept household hazardous waste from homeowners throughout the County.

2.3.3 Other Agency Cooperation

Permittees can benefit from developing stormwater program elements that can be jointly or cooperatively implemented with other agencies within and outside the County to improve program efficiency (and thereby minimize costs) and achieve region-wide benefits in water quality. For example, collaborative efforts can extend beyond the County to include cooperative opportunities with other permitted MS4s, for example, Riverside County. The primary program elements ripest for increased MS4 Permit cooperation are public education, outreach and training. During the next permit term, the permittees will further evaluate and, if possible, develop cooperative opportunities.

A number of federal, state and local agencies may have jurisdiction over all or part of the Santa Ana River Watershed stormwater permit area. Some of these agencies may conduct activities that could be coordinated under the Stormwater Management Program. For example, the Principal Permittee participates on the Middle Santa Ana River (MSAR) Bacteria TMDL Task Force, which includes participation by state and federal agencies. Due to the state-wide impact of federal and state programs, the Management Committee works with the RWQCB as needed to support coordination efforts (for example through participation in regional monitoring activities) and minimize duplication of effort (for example, inspections of facilities under state jurisdiction).

2.4 Intra-Agency Activities

Each permittee formally designates its Management Committee authorized representative and lead department for the Stormwater Management Program. However, within each permittee's agency, a number of other departments, bureaus, and/or divisions conduct activities that can potentially have an impact on stormwater quality and therefore must participate in the implementation of the Stormwater Management Program. Participation by other departments, bureaus, and divisions is generally obtained by the lead department communicating the requirements of the program to the responsible entities. Upper-level management support is critical for ensuring that the intra-agency cooperation required for program compliance is obtained.

A Local Implementation Plan (LIP) can facilitate intra-agency coordination by defining roles and responsibilities and a clear process for the implementation of Stormwater Management Program activities. During the next permit term, each permittee will develop an LIP for its jurisdiction based on a model developed by the Management Committee. Examples of the types of information that could be documented in the LIP include identification of:

- The roles and responsibilities of each department within a permittee's jurisdiction for implementation of the Stormwater Management Program;
- The types of reporting information that will be provided by each department to fulfill annual reporting requirements;
- The process for the review of program-related documents and sharing of information between departments, for example how the WQMP is developed, reviewed and approved; and
- The tools (for example, checklists or BMP handouts) that are used to support program elements.

Some activities conducted by the permittees would require coverage under the General Industrial Activities Stormwater Permit or the General Construction Activities Stormwater Permit if those activities were conducted by a non-permittee. However, the permittees expect that such activities will be covered under the area-wide MS4 Permit as they were during the previous permit.

For construction projects that would otherwise require coverage under the General Construction Permit, the permittees will submit a Notice of New Construction (NONC) to the RWQCB in lieu of submitting a Notice of Intent (NOI) and fee to the State Water Resources Control Board (SWRCB). The permittees will conduct such construction projects in conformance with all other requirements of the General Construction Permit, including preparing and implementing a Storm Water Pollution Prevention Plan (SWPPP).

Industrial activities that would otherwise require coverage under the General Industrial Permit will be conducted in compliance with the requirements of the area-wide MS4 Permit and this ROWD. The permittees will not be required to submit a NOI and fee to the SWRCB.

2.5 Legal Authority

The legal authorities to control discharges to the MS4 have been established in both federal and state laws and regulations. At the county and city level, all of the permittees have established adequate levels of legal authority to implement the Stormwater Management Program within their respective jurisdictions. This authority is periodically reviewed to determine whether existing ordinances are adequate to support program implementation, or if revision or updating is needed.

2.6 Performance Commitments

The permittees propose to implement the following performance commitments to support the area-wide Stormwater Management Program:

- 2-1. The Management Committee is the overall decision-making body for implementation of the MS4 Permit and will meet 11 times each reporting year. The performance commitment for permittee attendance is 9 out of 11 meetings in each reporting year by either the primary authorized permittee representative or a designated alternate.
- 2-2. Each permittee commits to maintaining an authorized representative to the Management Committee, as designated in writing. The authorized representative shall have the authority to represent the interests of their agency and vote on binding stormwater program elements that may result in significant impacts to their agency's fiscal, capital, and human resources.
- 2-3. The Management Committee will maintain and establish subcommittees as needed to support implementation of the MS4 Permit. Currently six subcommittees are active:
 - Public Education
 - Monitoring
 - Development
 - Fiscal
 - Training
 - MS4 Database
- 2-4. The Management Committee will review and revise the Implementation Agreement on an as needed basis.
- 2-5. The Principal Permittee commits to continuing its leadership role on the Management Committee for the duration of the permit.
- 2-6. Each permittee will implement, within its jurisdiction, a Stormwater Management Program that is consistent with the MSWMP and recommendations of the Management Committee for individual agency programs. To support this commitment, each permittee will develop a LIP based on an area-wide model developed by the Management Committee.
- 2-7. For construction projects that would otherwise require coverage under the General Construction Permit, each permittee commits to filing a NONC with the RWQCB and conducting such construction projects in conformance with all other requirements of the General Construction Permit.

- 2-8. Industrial activities that would otherwise require coverage under the General Industrial Permit will be conducted in compliance with the requirements of the area-wide permit and this MSWMP. Each permittee commits to updating the inventory of industrial facilities in the MS4 Solution database, at least annually, for use by the Principal Permittee in preparation of the annual report.
- 2-9. The permittees are committed to funding the area-wide Stormwater Management Program as established by the cost-share formula established in the 2006 Implementation Agreement, or as amended during the permit term. Each year the Management Committee will approve an annual budget that is consistent with current program priorities.
- 2-10. The permittees are committed to funding their local Stormwater Management Program to the extent practicable. To comply with the conditions of the permit and implement the recommendations of the Management Committee, the permittees will prepare annual budgets, keep their governing board informed of funding requirements, and obtain funding for the local stormwater program, to the extent practicable given competing jurisdictional priorities.
- 2-11. The permittees commit to maintaining adequate levels of legal authority, as required by federal and state stormwater permit regulations, sufficient to implement the Stormwater Management Program for the duration of the MS4 Permit.
- 2-12. The Management Committee will establish a subcommittee to evaluate the potential to implement stormwater program elements cooperatively with other regional agencies or area-wide MS4 Permit programs (for example Riverside County). The purpose of cooperative implementation is to create a more cost-effective program, especially with regards to inspections, public education, outreach, and training.
- 2-13. The Management Committee will work with the RWQCB to establish a mechanism to coordinate inspection scheduling to reduce or eliminate inspection redundancy.
- 2-14. The Management Committee will establish subcommittees to evaluate regional treatment alternatives and monitor the grant programs for funding opportunities that could support program implementation.

Section 3

Illegal Discharges

3.1 Purpose

Two important sources of stormwater pollution are illegal discharges and illicit connections. Illegal discharge refers to the disposal of non-stormwater materials, such as paint or waste oil, into the storm drain or the discharge of polluted waste streams to the storm drain. Illicit connections refer to unauthorized physical connections from a facility to a municipal storm drain system. The purpose of the this program element is to reduce or eliminate this source of stormwater pollution through informing the public of the detrimental effects of illegal discharges on stormwater quality, finding and correcting illicit connections, and responding, investigating, and cleaning up illegal discharges.

3.2 Illicit Discharge Program

The illegal discharge program element is organized into five program areas. Each of these elements is discussed in the following sections.

3.2.1 Outreach

The goal of this program element is to reduce the number of illegal discharges by informing the public of the detrimental effects of illegal discharges on stormwater quality and providing practical methods to reduce or eliminate discharges from common public activities. In addition to promoting stormwater pollution prevention, this program element provides information to the public on how and where to report spills and other illegal discharges. Outreach materials encourage the public to report illegal discharges to a 24-hour hotline number. When called, the hotline either dispatches the appropriate responders directly or refers the caller to the appropriate contact person. Additional outreach materials and contact information are available on the program website (www.co.san-bernardino.ca.us/flood/npdes/). The permittees will continue to distribute outreach materials that publicize the hotline at appropriate outreach events.

The permittees will continue to promote public participation in the County's successful and well-established household hazardous waste program. Under this program, residents can dispose of used oil and other types of waste free of charge at permanent collection facilities throughout the permit area. In addition, the County of San Bernardino Fire Department HMD conducts one-day collection events called "round-ups". The permittees will continue to confirm, update, and disseminate household waste collection information to the public.

The permittees will also maintain storm drain stenciling to increase public awareness and discourage individuals from illegal discharges into a storm drain.

3.2.2 Field Screening/System Surveillance

The goal of this program element is to perform field screening to locate signs of previous, current, and potential illegal discharges and illicit connections to the storm drain system. Activities will focus on preventing new illicit connections and addressing illegal discharges. During the course of regular maintenance activities, the permittees conduct visual inspections of existing storm drain inlets, open channels, and basins to look for illegal discharges. Staff from a variety of city and county departments, including storm drain maintenance crews, street sweeping personnel and others who regularly observe the storm drain system during scheduled maintenance activities (such as roadway, landscape and facilities staff) or through on-going facility inspections (such as county and city fire and hazardous materials units, building department staff, code enforcement officers, and wastewater pretreatment program personnel), provide the necessary resources for identifying illegal discharges.

Possible signs of illegal discharges include non-stormwater flows, stains, deposited materials, and pipes or hoses. Staff members will be instructed and trained to look for signs of illegal discharges as they conduct their regular activities and immediately report or respond to any observed incidents. By increasing the stormwater pollution prevention awareness of city and county staff, the stormwater facilities receive a higher frequency of surveillance, and the stormwater coordinator can concentrate on follow-up, resolution, and enforcement. Illegal discharge reports that cannot be resolved by local actions are forwarded to the RWQCB.

3.2.3 Incident Reporting, Response, and Tracking

The goal of this program element is to report, respond to, and monitor all identified illegal discharges. As discussed above, the area-wide stormwater program promotes a 24-hour hotline for reporting illegal discharges. However, reports of illegal discharges may originate from a number of different sources and may be reported to a number of different agencies. Potential sources and agencies include private citizens, maintenance and inspection staff, police and fire department, local and national hotlines, and emergency services (911). In the case of fire departments, the reporting and response agency may be the same. In general, incoming calls for hazardous or unknown discharges are routed to a county or local hazardous waste response unit. Calls for sewage spill and known non-hazardous discharges are referred to the appropriate city or county staff. Reported spills and discharges are tracked in the MS4 Solution database. This information is then available on an area-wide basis for inclusion in the annual report submitted to the RWQCB.

3.2.4 Enforcement

All permittees have adopted ordinances establishing legal authority to enforce against illegal discharges. In general, the stormwater codes and ordinances are enforced by permittee staff responsible for NPDES compliance. For many permittees, this may include staff from several different departments. To support implementation of

enforcement procedures throughout the area, the Management Committee established the *Area-Wide Enforcement Response Guidance* (“*Enforcement Guidance*”) (August 2003).

Staff usually enforces violations by first inspecting the illegal discharge and then verbally informing the discharger of the violation. In most cases, the violation is corrected and no further enforcement action is necessary. This approach focuses on eliminating illegal discharges by educating violators and encouraging their cooperation rather than using more formal enforcement actions.

If the initial effort to obtain compliance fails, enforcement actions may escalate to notices of correction, notices of violation, compliance time schedules, cease and desist orders, and fines. Referral to the district attorney’s office follows in extreme cases. The enforcement procedures include flexibility to impose an increased level of response at the outset, or out of the typical sequence depending on the severity and nature of the violation. In addition, enforcement may be accelerated if there is evidence of a clear failure to act or an increasing severity of the illicit discharge.

The *Enforcement Guidance* is applicable to all areas of Stormwater Management Program, not just the illicit discharge program element. During the next permit term, the Management Committee will review and, where appropriate, revise the *Enforcement Guidance*. However, regardless of the guidance’s content, each individual permittee has the responsibility for determining how to implement the guidance within its jurisdiction.

3.2.5 Training

The goal of this program element is for all staff enlisted to conduct stormwater inspections as part of their duties to understand and follow procedures for illegal discharge identification, reporting, response, cleanup, and tracking. Permittee staff implementing these activities needs training to perform these tasks effectively. For example, maintenance staff may come across evidence of potential stormwater pollution, illegal discharges, or illicit connections during routine storm drain facility inspections, and need to be trained to recognize, report, and respond to such findings.

Staff involved in storm drain maintenance, response, and enforcement, and staff enlisted to participate in the field screening/system surveillance program are targeted for stormwater-specific training and education. This may include staff from several departments and programs, including the fire department, code enforcement, wastewater pretreatment, road maintenance, landscape maintenance, and facilities management.

The targeted staff receives general stormwater training and task-specific education and coordination that introduce staff to basic stormwater concepts including regulations, pollutants of concern, potential sources, BMPs, and general program activities. The Municipal Activities Pollution Prevention Strategy (MAPPS) online training program, which is discussed further in Section 6, is the key method used to

provide general stormwater training. The MAPPs online training program comprises separate modules for: general stormwater; commercial/industrial inspections; construction inspections; field maintenance activities; and WQMP review processes. The online training is supplemented by various other training efforts, including live presentations, on the job site visits and tailgate meetings by the permittees. For those already trained, refresher training is provided at least once during the permit term to keep staff up-to-date. Training and education activities are documented and reported annually to the Principal Permittee.

Since new business practice methods and pollution prevention methods are being developed continually, the Training Subcommittee will continue to periodically assess and, if necessary, update educational materials previously developed for staff training.

3.3 Performance Commitments

The permittees propose to implement the following performance commitments to implement the program elements established to address illegal discharges:

- 3-1. Update as needed the information provided to residents on the county's Household Hazardous Waste and Oil Recycling website (http://www.co.san-bernardino.ca.us/flood/npdes/hhw_used_oil.htm).
- 3-2. Each permittee will visually inspect all publicly maintained inlets, open channels, and basins once each permit year. Visual inspections conducted and documented under the Public Agency Activities program element (Section 6) may be applied to meet this performance commitment.
- 3-3. Each permittee will refer all documented illegal discharges to the appropriate agency for investigation, containment, cleanup, and tracking.
- 3-4. Each permittee will provide a description of the following for inclusion in the annual report:
 - a. Current list of contacts and phone numbers for reporting illegal dischargers;
 - b. Reporting, response, and incident tracking procedures ("incident procedures") established by the city or county, that includes a procedure for conveying incident report to the stormwater coordinator;
 - c. Coordination and training activities that are conducted to help ensure that incident procedures are properly implemented; and
 - d. Any additional procedures or activities that were implemented to increase program effectiveness.
- 3-5. Each permittee will continue to coordinate with County or local HazMat teams for incident response.

- 3-6. Each permittee will continue to rely on the *Area-Wide Enforcement Response Guidance* (August 2003, or as amended) to guide enforcement actions. The Management Committee shall review and, where appropriate, revise this guidance during the next permit term.
- 3-7. Each permittee will provide general stormwater training for all targeted employees using online training modules (MAPPS training). Training materials will be updated or supplemented as needed to facilitate information sharing. New employees will be trained at the next scheduled course offering or within six months of starting, whichever occurs first. Refresher training will be provided at least once during the permit term for staff that has already received the basic training course materials.
- 3-8. Staff will be provided sufficient training to facilitate implementation of the incident procedures established by each permittee.
- 3-9. Each permittee will document and report training, education, and coordination activities to the Principal Permittee using the MS4 Solution database.

Section 4

Industrial/Commercial Sources

4.1 Purpose

Industrial and commercial businesses can potentially contribute varying types and amounts of pollutants to the stormwater system through poor housekeeping practices. As part of the overall stormwater management plan, stormwater pollution from industrial/commercial sources is controlled by educating businesses on prevention methods to reduce or eliminate pollutant discharges to the storm drain system. Education and outreach activities are supplemented with inspections and enforcement.

4.2 Industrial/Commercial Source Control Program

The industrial/commercial sources program consists of five program elements developed to cover various activities that have the potential to impact stormwater quality. Each of these elements is discussed in the following sections.

4.2.1 Source Identification

The goal of this program element is to identify the potential industrial/commercial sources of stormwater pollution. The permittees have established a comprehensive list, which is stored in the MS4 Solution database, of industrial and commercial businesses within each of their respective jurisdictions that have the potential to be significant sources of stormwater pollution. This information was compiled from available data sources such as business license applications, hazardous material inspection programs, and commercially available computer databases.

Each Co-Permittee updates its list of potential industrial/commercial sources regularly as new businesses are started and others go out of business. With this inventory, facilities subject to the General Industrial Permit are identified by using the following resources:

- The SWRCB database of businesses covered by the General Industrial Permit;
- Hazardous materials inventories maintained by the fire or HazMat departments;
- Lists of businesses subject to the local wastewater utility's industrial pretreatment program;
- City business license records, if applicable (Note that San Bernardino County does not issue business licenses);
- Commercially available business listings (e.g., the Dun & Bradstreet database); and
- Telephone listings (phone book).

4.2.2 Source Reduction

The goal of this program element is to establish stormwater BMPs that can reduce pollutants in stormwater discharges from industrial/commercial facilities. At a minimum, source reduction efforts include the following activities:

- Pollution prevention measures and public education
- Source identification and prioritization
- Monitoring and inspection of industrial/commercial sites; priority is on sites which are not under RWQCB jurisdiction.
- Verification of coverage under the State's General Permit
- Enforcement of local ordinances and other requirements for industrial/commercial sites
- Procedures for reporting non-compliance
- Verification of compliance with WQMP

The Management Committee will rely on the CASQA Stormwater BMP Handbooks for a comprehensive list of BMPs applicable to industrial/commercial facilities. As needed, the CASQA handbook information may be supplemented by other sources, for example, Environmental Protection Agency (EPA) materials.

4.2.3 Outreach, Site Visit, and Inspection

The goal of the outreach, site visit, and inspection program element is to encourage business owners and municipalities to work together to develop and implement appropriate and practicable stormwater pollution BMPs. This program activity combines outreach with educational site visits to minimize duplicated efforts and prioritize sites for further inspection and follow-up investigations.

Inspections can be a time-consuming, expensive, and difficult process, especially if there are numerous facilities and a limited number of qualified inspectors. In addition, most industrial and commercial properties in the permit area are already subject to one or more inspection programs. Adding another, separate inspection program could create resistance in the business community rather than encourage positive cooperation.

Instead of hiring several additional stormwater inspectors specifically to address stormwater issues, the Co-Permittees may utilize existing inspection programs to conduct the educational site visits, for example, inspection programs implemented by County Public Health, county and local fire and hazardous materials, code enforcement, industrial pretreatment, and building and safety. Temporary help may also be hired to conduct educational site visits. Each Co-Permittee has developed a responsibility matrix for their jurisdiction explaining which existing departments will be responsible for the educational site visits. This matrix, which is updated as needed, will be incorporated into the LIP.

The Outreach and Inspection Program is completed in phases as shown in Figure 4-1. The first phase of the program focuses on outreach by communicating with and providing outreach materials to each targeted business. Typically, the Co-Permittees will call each target business and talk with an appropriate representative about several topics, which may include the following:

- Business name and address
- Business activities at the site and applicable SIC code(s)
- Potential sources of stormwater pollution
- Potential impacts
- Appropriate BMPs
- Criteria for coverage under the State's General Industrial Permit
- How and where to obtain additional assistance



Figure 4-1 - Outreach and Inspection Program Phases

Each Co-Permittee follows-up the initial communication by sending a business-specific package of applicable BMPs and general stormwater information. For new businesses, this outreach may be accomplished over the counter during the business license application process. The RWQCB is notified of any new or closing businesses that are likely to be subject to the General Industrial Permit.

The second phase of the outreach and inspection program consists of educational site visit. Visits may be conducted by the Co-Permittee's stormwater staff or by staff from another department as identified in the responsibility matrix. The purpose, activities, and handout materials for the site visits are essentially the same as for the initial outreach; however, visiting staff also perform a visual inspection of the site to accomplish the following:

- Verify business location, name, contact person, and status (active, closed)
- Confirm the business type, activities, and SIC code
- Verify Waste Discharge Identification (WDID) number and confirm that a stormwater pollution prevention plan has been prepared (General Industrial Permit sites only)
- Look for outdoor storage areas and other outdoor activities that have the potential to cause stormwater pollution

- Look for proper BMP selection and implementation
- Look for signs of ongoing or past illegal discharges
- Establish priority for follow-up inspections or enforcement action (none, low, medium, high)

Follow-up inspections are conducted as needed based on the results of the educational site visits. Follow-up inspections are conducted by the stormwater coordinator or other trained stormwater inspection staff. Follow-up inspections focus first on eliminating existing discharges, second on providing additional assistance to the business on regulatory compliance, and third on enforcement actions. However, in some cases, immediate response and enforcement action may be necessary.

Each outreach contact, educational site visit, and any necessary follow-up inspection is documented and the documentation is provided to the Co-Permittee's stormwater coordinator. Annual summary information is provided to the Principal Permittee for inclusion in the annual reports to the RWQCB. Only documented outreach contacts and site visits are applied toward achieving the performance commitments identified below.

4.2.4 Inspection Prioritization

Experience gained under the existing stormwater permit has demonstrated the need to develop a new approach for prioritizing inspections so that resources are directed to the most important facilities/sites first. This shift in emphasis is particularly important considering the need to become TMDL-focused. The current inspection prioritization system treats all facilities within a particular category as equal (even though their contributions to stormwater pollutants may vary substantially) and assigns levels of priority that may be inappropriate given the experience learned over time regarding the risk of stormwater pollutant discharge from a particular facility type.

To update the inspection prioritization process, the permittees will develop a risk-based scoring system to govern the selection of sites to be inspected and the frequency of inspections. To establish appropriate priorities for scheduling inspections, the scoring system will consider factors including, but not limited to: the hazardous nature of materials used on site, the potential for pollutant discharges (particularly of pollutants for which a TMDL has been established), on-going efforts to implement effective BMPs, and site size and location, including proximity to receiving water. The scoring system will be reviewed and updated annually and a copy will be included with the annual report.

The scoring system shall separate industrial/commercial facilities into three risk categories: high, medium and low. High priority sites must be inspected at least once each year. Medium priority sites must be inspected at least once every three years. Low priority sites must be inspected at least once during the term of the permit (five

years). Any facility subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) or any site found in significant non-compliance with the Statewide General Permit(s) or the MS4 Permit is automatically deemed a high priority site and must be inspected at least once per month until full compliance is restored.

4.2.5 Coordination with the General Industrial Permit

All permittees have legal authority and ordinances in place to prohibit illegal discharges. An element common to all ordinances is that dischargers subject to any general NPDES permit must file an NOI and comply with permit requirements.

Although the Co-Permittees may conduct outreach activities and site visits to facilities covered by a General Industrial Permit, these permits are not under the permittee's jurisdiction and enforcement of the General Industrial Permit is the responsibility of the RWQCB. The Co-Permittees will cooperate with the RWQCB's enforcement efforts through implementation of the following:

- Helping to identify new and existing businesses that require coverage under the General Industrial Permit and to identify businesses that have ceased operation and should be removed from the permit list;
- Sharing summary, and if requested, detailed outreach, site visit, and inspection information;
- Initiating abatement, cleanup, and follow-up activities for observed illegal discharges; and
- Notifying the RWQCB of Industrial General Permit infractions and recommending enforcement actions, where appropriate.

4.2.6 Training

Permittee staffs implementing the outreach and inspection program outlined above need training to perform these tasks effectively. For example, staff conducting educational site visits may come across evidence of illicit connections. These staffs need to be trained to recognize, report, and respond to such findings.

Staff conducting the outreach and inspection program is targeted for stormwater-specific training and education. This may include staff from several departments and programs, including the fire department, code enforcement, wastewater pretreatment, road maintenance, landscape maintenance, and facilities.

The targeted staff receives general stormwater training and task-specific education and coordination that introduce staff to basic stormwater concepts including regulations, pollutants of concern, potential sources, BMPs, and general program activities. The MAPPS online training program, which is discussed further in Section 6, is the key method used to provide general stormwater training. The online training is supplemented by various other training efforts, including live presentations, on the

job site visits and tailgate meetings by the permittees. For those already trained, refresher training is provided at least once during the permit term to keep staff up-to-date. Training and education activities are documented and reported annually to the principal permittee.

Since new business practice methods and pollution prevention methods are being developed continually, the Training Subcommittee will continue to assess and, if necessary, update educational materials previously developed for staff training.

4.3 Performance Commitments

The permittees propose to implement the following performance commitments to implement the program elements established to address industrial/commercial sources of stormwater pollution:

- 4-1. The permittees will develop a risk-based scoring system to govern the frequency of inspections and the selection of sites to be inspected. To establish appropriate priorities for scheduling inspections, the scoring system will consider factors including, but not limited to: the hazardous nature of materials used on site, the potential for pollutant discharges (particularly of pollutants for which a TMDL has been established), on-going efforts to implement effective BMPs, site size and location, including proximity to receiving water. The scoring system must be reviewed and updated annually and a copy will be included with the annual report.
- 4-2. For facilities where the RWQCB does not have the primary responsibility, the Co-Permittees will use the CASQA Stormwater BMP Handbooks as the primary source for industry-specific BMPs for businesses targeted by the industrial/commercial outreach program. Supplemental BMPs will be obtained from other sources, e.g., EPA materials, as needed.
- 4-3. For industrial/commercial facilities where the RWQCB does not have the primary responsibility, as part of outreach programs the Co-Permittees will provide information regarding appropriate information sources of industry/commercial facility-specific BMPs.
- 4-4. For industrial facilities where the RWQCB does not have the primary responsibility, each Co-Permittee will provide one initial outreach to each facility in their jurisdiction within the targeted industries.
- 4-5. For industrial facilities where the RWQCB does not have the primary responsibility, each Co-Permittee will conduct one educational site visit to each facility in their jurisdiction within the targeted industries. Follow-up inspections will be conducted if necessary based on the results of the educational site visits.

- 4-6. RWQCB has the primary responsibility for conducting outreach, inspecting and enforcing General Industrial Permits. The permittee's will cooperate with the RWQCB's enforcement efforts.
- 4-7. Each permittee will provide general stormwater training for all targeted employees using online training modules (MAPPS training). Training materials will be updated or supplemented as needed to facilitate information sharing. New employees will be trained at the next scheduled course offering or within six months of starting, whichever occurs first. Refresher training will be provided at least once during the permit term for staff that has already received the basic training course materials.
- 4-8. Staff will be provided sufficient training to facilitate implementation of applicable outreach, site visit, and inspection tasks.
- 4-9. Each Co-Permittee will document and report annual training, education, and coordination activities to the principal permittee using the MS4 Solution database.

Section 5

New Development and Redevelopment

5.1 Purpose

New development and redevelopment activities often offer opportunities to design and implement modern, permanent site and building features that may reduce or eliminate stormwater pollution throughout the lifetime of a facility or development. On the other hand, construction activities associated with development can contribute significant amounts of pollutants if BMPs are not properly deployed or "housekeeping" practices are not implemented. This section describes the process by which the permittees will continue to manage new development and redevelopment projects to help reduce or eliminate pollutant discharges to the Maximum Extent Practicable (MEP).

5.2 New Development and Redevelopment Program

The New Development/Redevelopment program element is organized into six program areas. Each of these elements is discussed in the following sections.

5.2.1 Water Quality Management Plan (WQMP)

The Management Committee developed the *Model Water Quality Management Plan Guidance* (2004, amended June 2005) to meet the following goals:

- Develop and implement programs and policies to minimize the effects of urbanization on site hydrology, urban runoff flow rates or velocities and pollutant loads. This goal may be achieved through watershed-based structural treatment controls, in combination with site-specific BMPs.
- Reduce pollutants in post-development runoff to MEP.
- Reduce or eliminate discharge of any listed pollutant to an impaired waterbody on the 303(d) list that causes or contributes to an exceedance of a receiving water quality objective.

Although a separate document, the WQMP (as amended) is part of this MSWMP. Thus, when the MS4 Permit states that the permittees are to implement the MSWMP, the WQMP is incorporated by reference.

The WQMP is a living document in the sense that what is required to achieve MEP continues to change over time as experience is gained in what technologies work best to control pollutants. In addition, the findings from the bacteria source evaluation study that will be conducted to support the MSAR Bacteria TMDL may result in the need to update the WQMP (see Section 9 for additional information). Accordingly, the WQMP will be periodically reviewed and, if needed, revised to incorporate new or revised procedures to control pollutants discharged in stormwater from new

developments and redeveloped areas. For example, the permittees have identified the need to review and, where appropriate, update Tables 2-1 and 2-5 of the WQMP.

For industrial sites, structural infiltration treatment BMPs may be used to protect groundwater as long as the proposed project can demonstrate that the use of such BMPs will not cause or contribute to an exceedance of groundwater water quality objectives, source control and pollution prevention control BMPs are implemented at the site, and the structural infiltration treatment BMPs are located at least 100 feet horizontally from any water supply wells.

When a building is being proposed for which no anticipated use is designated, or when an unanticipated element of land use or occupancy is proposed after the basic building has already been completed, the permittees will include language in the permit conditions to require the applicant to submit chemical management plans, if applicable. The submitted chemical management plans will be distributed to the appropriate departments for review and approval. Certificates and permits may be withheld if required BMPs are not or cannot be incorporated. Certificates and permits may also be withheld if, because of the proposed use of the building, the presence of onsite structural infiltration treatment BMPs may pose a risk to groundwater.

5.2.2 Construction Activities

Proper implementation of BMPs during construction activities is essential for reducing water quality impacts. Though the time required for construction is minimal compared to the life of a project, construction activities can be responsible for a majority of the impact if stormwater runoff issues are not handled properly. To reduce pollutants in runoff from construction sites during all construction phases, the permittees have implemented a program that addresses:

- Pollution prevention measures and public education
- Grading ordinance and other local requirements
- Verification of coverage under the State's General Permit
- Prioritization and inspection of construction sites
- Procedures for reporting non-compliance
- Verification of compliance with WQMP

Construction sites will be inspected at least twice each year, once during the rainy season and once during the dry season, and any construction site larger than 50 acres, will be considered a high priority site. In addition, any site found in significant non-compliance with the Statewide General Permit(s) or the MS4 Permit is automatically deemed a high priority site and must be inspected at least once per month until full compliance is restored.

As noted above, applicable construction activities are required to comply with the NPDES General Construction Permit from the State Water Resources Control Board (SWRCB). Although the permittees do not have the authority to enforce the state-issued general construction permit, the permittees have implemented the following requirements to support compliance with this permit:

- Require a copy of the State Board WDID notification as proof that a NOI was filed with the SWRCB prior to issuing grading permits; and
- Notify the RWQCB of any General Construction Permit infractions or non-compliance.

For projects that do not require coverage under the General Construction Permit, the permittees will ensure that the following requirements are defined on permit plan cover sheets as either general or special notes:

- All grading projects, regardless of size, will require an erosion control plan to prevent sediment from entering storm drains or waterbodies.
- Construction sites shall be maintained by implementation of BMPs to the maximum extent practicable.
- The following discharges into the storm drain system are prohibited: discharges that could have an impact on human health or the environment, cause or threaten to cause pollution, contamination, or nuisance; discharges that exceed any applicable water quality standard contained in a Statewide Water Quality Control Plan or local Basin Plan; and discharges containing a hazardous substance equal to or in excess of a reportable quantity listed in Federal Regulations 40 CFR Parts 117 and 302.
- Materials that can cause or contribute to pollution or a violation of any applicable water quality standard include, but are not limited to, sediments, solid or liquid chemicals spills; wastes from paints, stains, sealants, glues, limes, pesticides or herbicides, wood preservatives or solvents; asbestos fibers, paint flakes or stucco fragments; fuels, oils, lubricants, or hydraulic, radiator and battery fluids; fertilizers; vehicle/equipment wash water or concrete wash water; concrete, detergent or floatable wastes; wastes from any engine/equipment steam cleaning or chemical degreasing; and chlorinated potable water line flushings.
- Unless exempted or authorized by an NPDES permit, all non-stormwater discharges require prior approval by the local stormwater agency or the SWRCB.
- During construction, temporary storage of such materials, identified above, must occur in a designated area, physically separated from potential stormwater runoff, with ultimate disposal in accordance with local, state, and federal requirements.
- Dewatering of contaminated groundwater, or discharging contaminated solids via surface erosion is prohibited.

5.2.3 Post-Construction Requirements

Co-Permittee activities related to development projects that are complete and have begun to function for their intended use are discussed in other sections of the MSWMP. Specifically, industrial and commercial activities are discussed in Section 4 and residential activities are addressed in Section 7. Additional corollary activities are discussed in Section 3 (Illegal Discharges) and Section 8 (Public Information and Participation).

5.2.4 Educational Program for Developers and Contractors

The WQMP, with all of its attachments, contain the legal, administrative, and technical information needed to acquaint developers and contractors with the NPDES program. San Bernardino County developers and contractors have been implementing erosion control plans for many years and are familiar with that portion of the program.

The Building Industry Association and the Associated General Contractors have been asked to assume responsibility for alerting their members of the information contained in the WQMP, which is made available by the Co-Permittees as part of the development review process.

5.2.5 Performance Bond Program

Performance bonds are commonly used for reclamation permits associated with mining activities. These bonds are required to ensure that funds are available to address environmental clean-ups, especially if the mining company fails. The concept of a performance bond could also be applied to stormwater program elements (for example, new development activities). Examples of the application of performance bonds to these types of stormwater elements exist in other states.

During the next permit term the permittees will consider developing a performance bond program that can serve as a model for the region. Given the legal issues involved in establishing and implementing the bond program locally, once a model is developed implementation of the program within each permittee's jurisdiction would be at their discretion.

5.2.6 Training

Co-Permittee staffs that implement the new development and redevelopment program are targeted for stormwater-specific training and education. This may include staff from several departments and programs, including the building department, fire department, and code enforcement.

The targeted staff receives general stormwater training and task-specific education and coordination that introduce staff to basic stormwater concepts including regulations, pollutants of concern, potential sources, BMPs, and general program activities. The MAPPs online training program, which is discussed further in Section

6, is the key method used to provide general stormwater training. The online training is supplemented by various other training efforts, including live presentations, on the job site visits and tailgate meetings by the permittees. For those already trained, refresher training is provided at least once during the permit term to keep staff up-to-date. Training and education activities are documented and reported annually to the principal permittee.

Since new business practice methods and pollution prevention methods are being developed continually, the Training Subcommittee will assess and, if necessary, update educational materials previously developed for staff training.

5.3 Performance Commitments

The permittees propose to implement the following performance commitments to implement the program elements established to address new development and redevelopment activities:

- 5-1. The Management Committee will periodically review and, where appropriate, revise the WQMP to incorporate program updates, for example new technologies to control pollutants, findings from studies, and recommendations from program audits. In addition, in the first year of the MS4 Permit term, the permittees will review and revise, as needed, WQMP Tables 2-1 and 2-5.
- 5-2. Each Co-Permittee will implement the approval process for building, grading, and similar permits as described by the WQMP. Individual departments within each permittee's jurisdiction (for example, Engineering or Planning) will incorporate the BMPs which are subject to their review.
- 5-3. Each Co-Permittee will require applicants to prepare a WQMP that conforms to the requirements of the WQMP Guidance (June 9, 2005, or as amended) and incorporate all identified structural and non-structural BMPs into the completed development.
- 5-4. When a development is being proposed for which no specific use is identified, each Co-Permittee will require that appropriate BMPs be considered before the development is approved for use and occupancy.
- 5-5. For projects that require coverage under the General Construction Permit, at a minimum, each Co-Permittee will continue to require the applicant to submit a copy of the State Board WDID notification prior to issuance of a grading permit.
- 5-6. Each permittee will notify the RWQCB of any General Construction Permit violations noted during the permittees' site inspection activities conducted as part of inspection activities for other local permits.

- 5-7. For grading projects that do not require coverage under the General Construction Permit, each Co-Permittee will require general or special notes on plan sheets as detailed in the MSWMP.
- 5-8. Each permittee will provide general stormwater training for all targeted employees using online training modules (MAPPS training). Training materials will be updated or supplemented as needed to facilitate information sharing. New employees will be trained at the next scheduled course offering or within six months of starting, whichever occurs first. Refresher training will be provided at least once during the permit term for staff that has already received the basic training course materials.
- 5-9. Staff will be provided sufficient training to facilitate implementation of stormwater program procedures applicable to new development and redevelopment activities.
- 5-10. Each Co-Permittee will document and report training, education, and coordination activities to the Principal Permittee in the MS4 Solution database.
- 5-11. To promote consistency in WQMP implementation, the permittees will develop standardized WQMP review checklist templates that may be adapted by each Co-Permittee for their jurisdiction.
- 5-12. Management Committee will develop a performance bond program model for use by individual permittees. Once developed, implementation of the program will be at the discretion of each permittee.

Section 6

Public Agency Activities

6.1 Purpose

The permittees recognize the potential impacts, both positive and negative, that municipal activities can have on stormwater quality. The Public Agency Activities program discussed herein is directed at reducing the potential for negative stormwater quality impacts from activities such as municipal landscape maintenance, and implementing other municipal activities that may have a beneficial impact, such as street sweeping and storm drain cleaning. The Public Agency Activities program specifically excludes municipal activities and discharges that are covered under a separate NPDES permit, such as publicly owned treatment works.

6.2 Public Agency Program

The Public Agency Activities program element is organized into seven program areas. Each of these elements is discussed in the following sections.

6.2.1 Sewage Systems

Sewage spills can be a major source of pollution, especially if the discharge reaches the storm drain system or receiving water. Accordingly, the goal for all permittees is to prevent sewage spills from entering the storm drain system to the MEP. To address this goal, the permittees established a *Sanitary Sewer Overflow Unified Sewage Response Plan* (July 1, 2003), which establishes overflow response procedures in case of a spill.

On May 2, 2006, the SWRCB adopted general waste discharge requirements for all publicly owned sanitary sewer collection systems in California with more than one mile of sewer pipe. The goal of this General Permit is to provide a consistent statewide approach for reducing Sanitary Sewer Overflows (SSOs). Key requirements contained in the permit include:

- In the event of an SSO, all feasible steps should be taken to control the overflow and prevent untreated wastewater from entering storm drains and receiving waters;
- If an SSO occurs, it must be reported to the state using an online reporting system developed by the SWRCB; however, if the spill is greater than 1000 gallons it must also be reported to the Office of Emergency Services; and
- All publicly owned collection system agencies with more than one mile of sewer pipe in the state must develop a Sewer System Management Plan according to the requirements specified in the permit.

To ensure consistency, during the next permit cycle the Management Committee will review its *Sanitary Sewer Overflow Unified Response Plan* to verify that the plan is consistent with the new general waste discharge requirements for SSOs.

6.2.2 Maintenance Areas and Materials Storage Areas

The goal of this program element is to eliminate non-stormwater discharges from maintenance and material storage areas exposed to rainfall or subject to stormwater run-on. This element only addresses those facilities and activities that are exposed to rainfall or stormwater runoff. The targeted municipal facilities and activities include the following:

- Facilities used for servicing, fueling, or washing vehicles or equipment. Most often, these facilities are found at corporation yards, however they may also be found at local or regional parks, golf courses, fire stations, police stations, and other areas.
- Outdoor storage areas for chemicals, materials, and wastes associated with municipal activities, e.g., at corporation yards, parks, golf courses, and fire stations. Chemicals, materials, and wastes of concern include, but are not limited to vehicle fuels; fluids and wash waters; paving and base materials; pesticides, herbicides, and fertilizers; pool chemicals; algaecides; and materials recovered through household hazardous waste collection programs or spill response (HazMat).

The MAPPS training program focuses on reducing or eliminating pollution from corporation yards, and addresses other municipal activities such as developing site-specific plans for maintenance and material storage areas. At a minimum, these site-specific plans include the following:

- A site map showing pertinent site features and storage areas, runoff patterns, and drainage facilities;
- A discussion of potential sources of pollution;
- A list of applicable BMPs;
- Contact information for the person or position responsible for the site; and
- The name and function of additional staff responsible for implementing BMPs (that will be targeted for training).

Generic BMPs and plan elements can be used for activities that are performed at more than one site, but each site must be evaluated separately. At least annually, the site-specific plans are reviewed and updated as necessary to reflect current site conditions.

The permittees have also developed a model inspection checklist, based on the checklist developed for the MAPPs program, and inspect each facility at least once each year. Applicable portions of the model checklist are incorporated into site-specific checklists by each permittee. The inspection results are reviewed and signed by the person responsible for the site and the signed inspection forms are kept on file by the permittee. Staff targeted for training, as noted in the site-specific plans, receive appropriate training.

6.2.3 Landscape Maintenance

The goal of this program element is compliance with good housekeeping practices and pollution prevention BMPs for landscape and waterbody maintenance activities. This element specifically addresses the following outdoor landscape maintenance activities:

- Landscape irrigation;
- Storage and disposal of landscape materials and wastes;
- Use of pesticides, herbicides, and fertilizers;
- Maintenance of public waterbodies, including swimming pools, lakes, ponds, and fountains; and
- Pavement and walkway cleaning (pressure washing) and related discharges.

All of these maintenance activities have a potential for contributing pollutants to stormwater. However, pollutant discharges can be reduced or eliminated to the MEP by developing and implementing good housekeeping practices and other pollution prevention BMPs.

Previously, each permittee reviewed, and if necessary modified, maintenance practices used at parks and recreation facilities and public waterbodies to include stormwater pollution prevention methods. Each permittee has also required employees and contractors to comply with state regulations for pesticide use and applicator licensing and certification.

To ensure that maintenance staff is familiar with, understands, and implements appropriate good housekeeping practices and pollution prevention BMPs, the Management Committee developed BMP fact sheets to cover landscape and waterbody maintenance activities. The fact sheets are reviewed periodically by maintenance staff during tailgate meetings. Maintenance staff receives training as outlined in Section 6.2.6.

6.2.4 Storm Drain Systems

Each permittee inspects all of their inlets, open channels, and basins at least once during each reporting year and cleans those facilities where the inspection reveals one or more of the following conditions:

- 1) The sediment/debris storage volume is 40 percent or more full;
- 2) There is evidence of an illegal discharge; or
- 3) Accumulated sediment or debris impairs the hydraulic function of the facility.

Each inspection is documented and each permittee provides inspection and cleaning summaries to the Principal Permittee for inclusion in the annual report.

The permittees have developed a BMP fact sheet for drainage facility inspection, cleaning, and debris disposal. The BMP fact sheet is reviewed by all inspection and cleaning staff as described below and drainage facility inspection and maintenance staff receives training.

6.2.5 Streets and Roads

The Management Committee has incorporated road construction BMPs into construction specifications that are included in the contract documents for each applicable project. As contractors review the contract documents and prepare bid packages, these specifications provide a reminder of specific BMPs and practices that must be implemented and provide a separate enforcement mechanism for permittees to implement.

Because road maintenance BMPs may not receive the same recurring scrutiny by municipal maintenance crews, the Management Committee prepared a road maintenance BMP fact sheet that can be reviewed during "tailgate" safety meetings. The fact sheet addresses typical road maintenance activities such as saw cutting, paving, slurry/fog sealing, painting and striping, and pavement grinding. Road maintenance staff also receives training as outlined in Section 6.2.6.

The permittees will continue street sweeping according to the performance commitments outlined below. The street sweeping commitments apply to areas where there is sufficient continuous curb and gutter to justify street sweeping. Street sweeping does not occur in areas that do not have significant continuous curbs and gutters.

6.2.6 Municipal Activities Pollution Prevention Strategy (MAPPS) Training

Table 6-1 summarizes the content of the current MAPPS online training program. These online training modules are supplemented by field training which is offered once each year.

Table 6-1. Municipal Activities Pollution Prevention Strategy Training Modules
Field Maintenance
Construction Inspection
Industrial/Commercial Inspection
General Stormwater Training
WQMP Training

The Training Subcommittee regularly reviews, and, as needed, revises the MAPPS training program to provide a more thorough overview of all stormwater program

areas. The Training Subcommittee will continue to review and revise this training as needed during the next permit term. When developing major revisions to the MAPPs training program, the Training Subcommittee seeks input and coordination from the various intra-agency departments involved in the stormwater program.

6.2.7 Training

Permittee staff conducting the public agency activities described in this section need training to effectively incorporate stormwater pollution prevention practices. For example, landscape maintenance staff needs to learn how to properly store and dispose of landscape wastes and how to develop effective irrigation schedules. All permittee staff conducting public agency activities is targeted for stormwater-specific training and education. Targeted staff includes those from departments and programs such as public works, parks and recreation, community services, and maintenance.

The targeted staff receives general stormwater training and task-specific education and coordination that introduce staff to basic stormwater concepts including regulations, pollutants of concern, potential sources, BMPs, and general program activities. The MAPPs training program (see above) is the key method used to provide general stormwater training. The online training is supplemented by various other training efforts, including live presentations, on the job site visits and tailgate meetings by the permittees. For those already trained, refresher training is provided at least once during the permit term to keep staff up-to-date. Training and education activities are documented and reported annually to the principal permittee.

6.3 Performance Commitments

The permittees propose to implement the following performance commitments to implement the program elements established to address public agency activities.

- 6-1. To ensure that contract staff, who perform public agency activities identified by this section, receives the same or equivalent education and training as permittee staff, each permittee will incorporate training requirements into all contracts.
- 6-2. Each permittee will continue, to the MEP, to prevent sewage spills from reaching a receiving water, through timely response, containment, and clean-up. The Management Committee will review its draft *Sanitary Sewer Overflow Unified Sewage Response Plan* to update it as needed and ensure that the Plan is consistent with the state's general waste discharge requirements for SSO's.
- 6-3. Each permittee shall develop and maintain site-specific pollution prevention plans for each maintenance or material storage area. Where practical, plans will be retained on site at all times. A sign indicating where the plan is located will be provided at all areas for which plans are located off-site.

- 6-4. For maintenance and material storage areas, the Management Committee will review and revise, as needed, the model inspection checklist. The MAPPS checklist may be used as a starting point.
- 6-5. Each permittee will perform annual inspections of each outdoor maintenance and materials storage area.
- 6-6. Site-specific plans prepared for maintenance and material storage areas will list key staff for the site; site-specific plans will be reviewed at least once per year.
- 6-7. The Management Committee will review and, as needed, revise BMP fact sheets for landscape and waterbody maintenance activities.
- 6-8. Landscape and waterbody maintenance staff will review the current BMP fact sheet at least once per year as part of their regular "tailgate" safety meetings.
- 6-9. Each permittee will inspect all of inlets, open channels, and basins associated with their storm drain systems at least once during each reporting year.
- 6-10. Each permittee will clean those storm drain facilities where the inspection reveals one or more of the following conditions:
 - a. The sediment/debris storage volume is 40 percent or more full;
 - b. There is evidence of illegal discharge; or
 - c. Accumulated sediment or debris impairs the hydraulic function of the facility.
- 6-11. Each storm drain system inspection will be documented and each permittee will provide inspection and cleaning summaries to the Principal Permittee for inclusion in the annual report.
- 6-12. The Management Committee will develop a BMP fact sheet for storm drain cleaning and maintenance activities.
- 6-13. The storm drain system BMP fact sheet will be revised, as needed, and reviewed at least once per year by storm drain inspection and maintenance staff as part of their regular "tailgate" safety meetings.
- 6-14. Each permittee will incorporate road construction BMPs into the construction specifications that are included in the contract documents let for bid on each applicable project.
- 6-15. The Management Committee will review and revise, as needed, the road maintenance BMP fact sheet.

- 6-16. The road maintenance BMP fact sheet will be reviewed by maintenance staff at least once per year.
- 6-17. Each Co-Permittee will sweep at least 75 percent of public streets with curb and gutter at least once per year with more frequent sweeping in areas known to require more frequent sweeping or where problems have been reported.
- 6-18. The Training Subcommittee will review, and revise as necessary, the MAPPS training materials to keep them up to date with current practices and requirements.
- 6-19. Each permittee will identify key staff involved in sewage system maintenance, storm drain system inspection and maintenance, landscape maintenance, road and street maintenance, and key staff at maintenance and storage facilities and provide general stormwater training using a online training modules (MAPPS). Training materials will be updated or supplemented as needed to facilitate information sharing. New employees will be trained at the next scheduled course offering or within six months of starting, whichever occurs first. Refresher training will be provided at least once during the permit term for staff that has already received the basic training course materials.
- 6-20. Staff will be provided sufficient training to facilitate implementation of stormwater program procedures applicable to public agency facilities.
- 6-21. Each permittee will document and report annual training, education, and coordination activities to the principal permittee in the MS4 Solution database.

Section 7

Residential

7.1 Purpose

The purpose of the residential component is to implement BMPs to improve the quality of stormwater runoff from residential areas. The residential program element is focused on pollution prevention for the following residential activities:

- Private vehicle washing and maintenance;
- Use of chemicals such as pesticides, herbicides and paints;
- Private swimming pool maintenance;
- Other types of household and landscape maintenance; and
- Use of safe substitutes for materials presently used.

7.2 Residential Program

The permittees propose to continue existing activities to reduce or eliminate pollutant discharges from residential sources. In addition to public education programs, which are discussed in Section 8, the residential program elements described in the following sections will be implemented.

7.2.1 Vehicle Washing and Maintenance

This program element encompasses activities conducted by individuals that involve discharge of pollutants such as vehicle fluids, including motor oil, soaps, and other auto-related pollutants. These sources of residential pollutant will be addressed on an area-wide basis according to the following practices:

- Household hazardous waste round-ups and drop-off centers;
- Used motor oil collection centers for recycling used oil; and
- Public education.

7.2.2 Landscaping

This program element encompasses residential activities that involve the use of chemicals such as herbicides, pesticides, and fertilizers. It also encompasses landscape waste and excess irrigation. Source control BMPs for this program element include the public education program, which targets all such activities on an area-wide basis and encourages residents to use alternative (non-polluting) products, proper disposal of landscape wastes, and avoiding excessive irrigation. In addition, the city of Ontario provides compost bins, and the cities of Fontana, Highland, Ontario, and Upland have curbside pickup of green waste. Big Bear requires tree clearing contractors to chip and compost all tree waste.

As part of the public education program, the Public Education Subcommittee will target information displays for alternative products at major retail outlets that carry gardening supplies (point-of-purchase). Displays will include fact sheets and/or brochures that describe: the possible impacts to stormwater that can result from using toxic materials; provide listings of non-toxic alternative products; and provide tips for proper disposal of leftovers when toxic materials are used (also, see Section 8, Public Information and Participation).

7.2.3 Home Maintenance

This program element encompasses homeowners' improper disposal (or use) of such toxic materials as paints, thinners, strippers, varnishes, and insecticides. Two primary BMPs that address these activities for all permittees are household hazardous waste round-ups and drop-off centers, and public education encouraging alternative (non-polluting) products and/or proper disposal.

The public education effort is a partnership with home improvement stores, garden centers, nurseries, paint stores, and hardware stores. The effort includes point-of-purchase displays at major retail outlets, to inform residents of non-toxic alternative products and proper disposal methods for leftover toxic materials, and the training of retail store employees on proper disposal of paint, pesticides and fertilizers. Direct training of store employees expands the public outreach effort by providing pollution prevention information that the employees can pass on to customers.

San Bernardino County has implemented an area-wide household hazardous waste collection program with several permanent collection points throughout the permit area and temporary "mobile" collection facilities that are used for local household hazardous waste "round-ups." Many of the Co-Permittees participate in the County program and some also operate their own household hazardous waste program. The Co-Permittees will continue to implement the existing household hazardous waste programs.

7.2.4 Illegal Dumping

This program element encompasses the full array of activities by residents that involve discharge of objects or materials into storm drains, gutters, catch basins, or anywhere rainfall or runoff could carry the materials into the storm drain system. The related pollutants include objects that are part of general littering, as well as large household items and toxic materials. The BMPs that will be continued to reduce or eliminate illegal dumping include: public education, conducted in an integrated fashion by all permittees; the storm drain inlet storm drain stenciling program; the 24-hour hotline number for reporting illegal dumping activities; catch basin cleaning; and street sweeping (see Sections 3, 6 and 8 for additional information on applicable BMPs).

7.2.5 Pet Ownership

This program element refers to improper disposal of fecal matter from pets, primarily in public areas (streets, parks). The area-wide public education program will continue to be the primary method for addressing this activity. On a regulatory level, County ordinance prohibits owners from allowing their dogs to defecate in many public areas.

7.2.6 Swimming Pool/Spa Maintenance

Swimming pool and spa maintenance activities can result in discharges of chlorine, algaecides, and other chemicals. Programs already in place, such as public education and ordinances requiring dechlorination prior to discharge, will be continued.

7.3 Performance Commitments

The permittees propose to implement the following performance commitments to implement the program elements established to address residential sources of stormwater pollutants:

- 7-1. The Management Committee, with guidance from the Public Education Subcommittee, will coordinate public education for residential sources that is consistent with Section 8, Program Information and Participation.
- 7-2. The Management Committee, with guidance from the Public Education Subcommittee, will continue to support outreach efforts to retail businesses that sell potentially toxic gardening products, fertilizers, and household maintenance materials, such as paint.
- 7-3. The permittees will continue to rely on the San Bernardino County area-wide household hazardous waste collection program or other similar local programs to minimize stormwater pollutants from residential sources.
- 7-4. The permittees will continue the use of a 24-hour hotline to provide a mechanism for reporting illegal dumping.

Section 8

Public Information and Participation

8.1 Purpose

The Public Information and Participation (PIP) program is targeted at educating the general population about potential sources of stormwater pollution, resulting impacts, and practical methods of reducing or eliminating pollutant discharges from public activities. This education is particularly important for pollutants for which a TMDL has been established. Elements from the PIP program are directly incorporated into other program areas such as the Illegal Discharges and Residential programs. Activities conducted under this program may also benefit the Industrial/Commercial program as informed citizens practice pollution prevention measures in the workplace.

8.2 Public Information and Participation Program

For the next permit term, the PIP program will focus on the key water quality concerns in the area, especially bacteria and nutrients as directed by the MSAR Bacterial Indicator TMDL and Big Bear Lake Nutrient TMDL, respectively. In addition, the permittees will investigate the potential to expand area-wide outreach activities to include cooperative efforts with neighboring Riverside and Orange Counties. Cooperation may be particularly beneficial with Riverside County since that county is also subject to the MSAR Bacterial Indicator TMDL requirements.

The area-wide public information and participation program is directed by the Management Committee with input from a Public Education Subcommittee. The subcommittee typically meets monthly to develop and review education materials, coordinate with public education consultants, and recommend program activities to the Management Committee. For the next term, as information is developed on pollutant sources during implementation of TMDLs, the Public Education Subcommittee will use this information to develop and implement a more targeted educational program.

The following sections describe specific public information and participation program elements.

8.2.1 Program Prioritization

Stormwater program emphasis is shifting from characterizing water quality and building a sound general program toward improving water quality with more

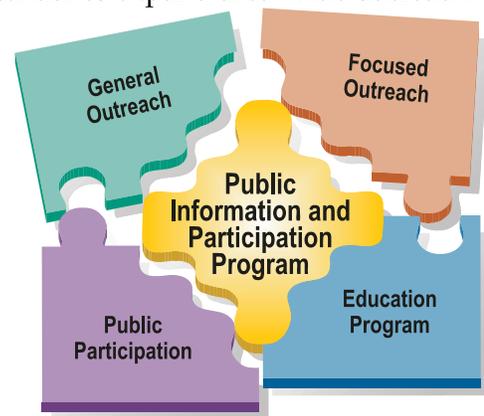


Figure 8-1 – Public Information and Participation Program Components

targeted implementation efforts. Targeted implementation applies to PIP as much as it does to any other program element. Previously, the implementation of the PIP element has been broadly directed – with a goal of sharing information with as many different pollutant source categories as possible.

During the next permit term, permittees will use monitoring data and the results of TMDL studies to identify and prioritize the most significant water quality problems in the MS4 receiving waters. This information will be used to regularly review and revise the PIP program to ensure that outreach efforts are in line with the water quality priorities.

Accordingly, at least once each year, the permittees will review and revise the PIP program element to ensure the long-term effectiveness of the Stormwater Management Program in sharing needed information with the public. Revisions to the PIP program must be consistent with the annual reassessment of program priorities with particular emphasis on addressing the most critical stormwater pollution problems. Any changes in the priorities associated with this program element will be described in the annual report.

8.2.2 Regional Outreach

The permittees can benefit from developing PIP program elements that can be jointly or cooperatively implemented with other regional stormwater programs. Cooperative implementation can improve program efficiency, ensure that a consistent message on stormwater pollution prevention is disseminated to the public, and achieve region-wide improvements in water quality. This cooperation can extend beyond the area-wide permittees to include cooperation with other regional permittees (for example, Caltrans and Riverside County).

As part of the effort to implement the MSAR Bacterial Indicator TMDL (and other TMDLs as they are developed and implemented), the permittees will evaluate opportunities to implement cooperative programs to maximize the benefits achieved from targeted public outreach.

8.2.3 Facility Outreach

The permittees will continue to develop and disseminate focused outreach materials targeted at specific pollutants, activities, population groups, and businesses (as determined by the prioritization established for the program). Facility/site outreach may include, but not be limited to, brochures, BMP fact sheets, videos, displays, and focused mass media advertising. Outreach will be provided to industrial and commercial, construction sites and trade associations through whatever means is deemed most effective by the permittees.

Each year the Management Committee will identify specific outreach efforts for development and implementation and will work with the Public Education

Subcommittee to execute the recommendations. In addition to these recommendations, facility outreach will also include:

- Point-of-purchase programs targeting proper use and disposal of common household products and chemicals. Potential target pollutants include herbicides, pesticides, automotive fluids, cleaners, solvents, paint, and pool chemicals. Pet supply retailers may be targeted for outreach on proper clean up and disposal of animal wastes.
- Business/industry outreach targeting specific industries such as restaurants, automotive, service centers, gasoline stations and other similar facilities. The permittees will continue voluntary dissemination of outreach materials in support of the "clean business award" program, including materials designed to reach participating target businesses and to advertise awarded businesses to the public.
- Reviewing and revising guidelines for the control of potentially polluting activities not otherwise regulated by any other state or federal agency (vehicle maintenance activities, carpet cleaners, commercial landscape maintenance and pavement cutting).
- Providing appropriate educational materials to all new commercial enterprises in their jurisdiction at the time building and construction permits (or occupancy permits) are issued and/or at the time business licenses are issued.

8.2.4 Public Outreach

Public outreach efforts will be directed towards areas targeted as a high priority for information dissemination. Similar to the expectations for facility/site outreach, the permittees will also continue to develop and disseminate focused outreach materials targeted at specific pollutants, public activities (for example pet management) and population groups (as determined by the prioritization established for the program). Public outreach may include, but not be limited to, brochures, BMP fact sheets, videos, displays, and focused mass media advertising.

Each year the Management Committee will identify specific outreach efforts for development and implementation and will work with the Public Education Subcommittee to execute the recommendations. Outreach to the public will be by whatever means is deemed most effective by the permittees.

The public will also continue to be encouraged to report clogged storm drains, faded or missing warning stencils on catch basin drains, and other hazards to water quality they may observe. To facilitate this particular need, the stormwater hotline telephone number and website address will be included in all public education materials and will be listed in the governmental pages of appropriate regional phone directories.

8.3 Performance Commitments

The permittees propose to implement the following performance commitments to implement the public information and participation program elements:

- 8-1. Each year the Management Committee will review and revise the PIP program to ensure that annual program expenditures are directed towards water quality problems identified as the highest priority. The Public Education Subcommittee will be tasked with implementing the annual recommendations.
- 8-2. The permittees will evaluate the potential to implement PIP program elements cooperatively with other jurisdictions and agencies. The purpose of such cooperation is to create a more cost-effective program and ensure that a consistent stormwater pollution prevention message is delivered.
- 8-3. The Management Committee will annually identify appropriate outreach activities that will be directed to the public. Identified outreach activities will be consistent with the priorities identified for the area. Public outreach may include, but not be limited to, brochures, BMP fact sheets, videos, displays, and focused mass media advertising. Outreach to the public will be by whatever means is deemed most effective by the permittees.
- 8-4. The permittees shall continue to maintain a hotline telephone number and website to allow the public to report illegal dumping from residential, industrial, construction or commercial sites into public streets, storm drains and other waterbodies. The public will also be encouraged to report clogged storm drains, faded or missing warning stencils on catch basin drains, and other hazards to water quality they may observe.
- 8-5. In addition to the facility outreach activities described in Section 8.2.3, the Management Committee will annually identify other appropriate outreach activities that will be directed to industrial and commercial facilities, trade associations and construction sites. Identified outreach activities will be consistent with the priorities identified for the area. Outreach will be provided through whatever means is deemed most effective by the permittees.
- 8-6. Each permittee will maintain legible stencils on all publicly maintained storm drain inlets.
- 8-7. Each permittee will provide stormwater program outreach to all staff at least once per permit year. The approach used for this outreach will be determined by the Management Committee.

Section 9

Program Evaluation

9.1 Purpose

The permittees are required to evaluate the implementation of MSWMP activities on a periodic basis. Such an evaluation allows the permittees to take stock of their program and to modify it, as needed, as part of their ongoing effort to reduce pollutants in stormwater to the MEP and meet regional TMDL implementation requirements. This section describes the program evaluation activities that are carried out annually or will be carried out to support compliance with known TMDL requirements. As additional TMDLs are implemented in the region, program evaluation activities may be modified to address any additional requirements.

9.2 Program Evaluation Activities

Program evaluation elements consist of data collection and reporting using both direct and indirect monitoring methods. Direct water quality (conventional) monitoring is important because it can provide data that demonstrates whether receiving waters are meeting water quality objectives. This is particularly important for waters identified as impaired or waters for which a TMDL has been established. Indirect (non-conventional) monitoring provides a means to evaluate status or level of effort achieved on the implementation of permit requirements and specific program elements, for example, BMPs, training or public education. The following sections identify the indirect monitoring elements contained in the MSWMP that may be evaluated. The proposed direct monitoring program is described in Section 10.

9.2.1 Measuring Program Effectiveness

Measuring program effectiveness using indirect measures continues to be a challenge for any stormwater program. Often many of the indirect measures (for example, numbers of inspections, number of Notices of Corrections) provide little to no information on whether or not water quality has been improved or at least not degraded. These indirect measures of success typically fall into one of the following four areas:

- *Permit Requirements* – Measure of the degree of success in implementing specific time-sensitive permit elements, for example the completion of studies, and preparation of workplans.
- *Management Milestones* - Quantitative measures of implemented stormwater management activities, for example, the number of inspections, number of spills responded to, or the number of brochures mailed out.
- *Pollutant Loads Avoided* – Quantitative measures of pollutants removed and thus eliminated from having the potential to be flushed into receiving waters, for example the number of pounds of sediment removed from catch basins or the number of pounds of debris removed from streets.

- *Public Behavior* – Use of public surveys to measure changing public sentiments.

Currently, the mechanisms are in place to measure all of these areas. However, with the exception of the area addressing pollutant loads avoided, it is difficult to link most measures to actual improvements in water quality.

With the stormwater program moving away from a process-based program to an outcome-based program, the annual program evaluation would benefit from focusing more on direct measures of improvements in water quality rather than status reports for each program area. To that end, the permittees propose to reduce or eliminate reports or reporting elements that do not serve the essential purpose of improving stormwater quality.

9.2.2 Data Management

9.2.2.1 MS4 Solution

Individual permittees are responsible for monitoring and evaluating the adequacy of their respective stormwater programs. In addition, permittee-submitted data, which are analyzed and assembled into reports by the Principal Permittee, are used by the Management Committee to monitor and evaluate the adequacy of area-wide program implementation.

To facilitate a unified approach for documenting and reporting stormwater program information, the Management Committee has developed an MS4 Data Management System (“MS4 Solution”) for the County MS4 Permit program. The MS4 Solution allows the permittees to individually enter and manage their own MS4 data in a central database via the Internet and then summarize and format the data to support preparation of the annual report. The types of data managed by MS4 Solution include:

- Inspections of businesses and construction sites
- Illegal discharges and illicit connections
- Municipal maintenance records
- Public education/outreach events
- Staff training
- Water quality management plans
- Agency-specific policies, procedures and ordinances
- Management and subcommittee meetings
- Fiscal data

The MS4 Solution is currently mostly functional; most of the permittees are already using the database to manage the inspection program. Over the next two years, the MS4 Solution will become fully functional and more refined as the permittees gain experience using it.

9.2.2.2 Post-Construction BMPs

As a means to increase the efficiency of program implementation throughout the County, it is recommended that the Management Committee develop a post-construction BMP database that is associated with the MS4 Solution database. The primary purpose of the database would be to provide a means for tracking long-term responsibility and accountability for operating and maintaining BMPs throughout the area. In addition, the database could also be used to facilitate technology transfer by allowing construction engineers to search the base of installed alternatives for appropriate stormwater mitigation strategies. However, inclusion of a particular BMP in the database would not constitute a specific endorsement by the Co-Permittees of suitability for use in a different project. Responsibility for demonstrating the effectiveness of the selected BMP approach would remain solely with the project developer. Information that could be contained in the database includes identification of BMPs to address specific pollutants, effectiveness data for BMP types, construction costs, parties responsible for maintenance, and operating costs. Information would be developed based on actual experience in San Bernardino County and could also contain information from other regional or national BMP databases.

9.2.3 Information Sharing

The RWQCB or EPA may periodically conduct stormwater program audits. While these audits may identify program deficiencies, they also can highlight commendable program practices. When such practices are highlighted, they should be recognized as “Best Program Practices.” To benefit all permittees, during the next permit term a mechanism or methodology will be developed to facilitate tech-transfer so that, where desired, these practices can be easily incorporated into the local stormwater programs of the other permittees.

9.2.4 Annual Reporting

As required by the permit, by October 1 of each year the permittees are required to evaluate the MSWMP to determine the need for any revisions. The permittees will continue to submit this annual report to provide the opportunity to evaluate program progress and make recommendations for modifications to address changing program priorities, for example, as needed to comply with TMDL requirements. This reporting function will be aided to a large degree by continued implementation and refinement of the MS4 Solution.

In previous years, the content of the annual report included the following primary sections:

- *Introduction* – Provides an overview of the MS4 Permit program.
- *Program Administration* - Provides background information on how the area-wide program is organized and administered. It includes summaries of permittee participation and program budget and program expenditures.

- *Program Status* – This section is the heart of the report, providing summaries of outcomes from each program area, for example, inspections, control of illegal discharges and PIP activities.
- *Water Quality Monitoring Program* – Summarizes the results and analysis of the water quality monitoring effort.
- *Overall Program Effectiveness* – Evaluates progress in BMP implementation, water quality protection, and meeting program goals.
- *Program Activities for Next Reporting Year* – Identifies proposed goals and activities for the next permit year and outlines any proposed changes to the permit program.

While the permittees may retain this report structure during the next permit term, the permittees will consider making revisions to the structure to provide an alternative format and content that is better suited for reporting on water quality accomplishments, for example ongoing efforts to comply with TMDL implementation requirements.

9.2.5 Program Evaluation to Incorporate TMDL Requirements

During the next permit term, the permittees may need to revise the Stormwater Management Program to incorporate the findings from TMDL implementation activities. Modifications to the program may be reported as part of the annual report submittal, or, because of RWQCB requirements, may be provided as a separate program evaluation report.

Specific MSAR Bacterial Indicator TMDL requirements that will require the permittees to evaluate, and potentially revise, the stormwater program include:

- Based on the results of the Urban Source Evaluation Plan(USEP) or other studies conducted in the watershed, develop a plan and schedule to review and revise the MSWMP as necessary to incorporate measures to address the results of the USEP.
- Provide a proposal and schedule for (1) evaluating the effectiveness of BMPs and other control actions implemented and (2) evaluating compliance with the bacterial indicator waste load allocations for urban runoff.
- Based on the results of the USEP or other studies conducted in the watershed, develop a plan and schedule to review and revise the WQMP that addresses the bacterial indicator input from new developments and significant redevelopments.

As other TMDL implementation plans are established, additional requirements may be identified that require review and revision of the Stormwater Management Program.

9.3 Performance Commitments

The permittees propose to implement the following performance commitments to implement program evaluation program element:

- 9-1. The Management Committee will review and revise the MSWMP and WQMP requirements based on the findings of studies conducted as part of TMDL implementation. Revisions will be submitted to the RWQCB for approval.
- 9-2. The Management Committee will review the annual report structure and make changes as needed to be consistent with a TMDL implementation-focused program.
- 9-3. The Management Committee will refine the MS4 Solution database reporting system as needed to facilitate reporting on program status.
- 9-4. The Management Committee will evaluate its annual reporting approach and structure and, where appropriate, (a) reduce or eliminate reports or reporting elements that provide little or no information on water quality improvements; and (b) incorporate reporting elements that have an increased emphasis on water quality accomplishments, for example, pollutant investigations.
- 9-5. The Management Committee will develop a mechanism or methodology to facilitate sharing "Best Program Practices" so that the knowledge of practices that are particularly effective for reducing pollutants in the MS4 is shared.
- 9-6. As described in Section 9.2.2.2., the permittees will develop a post-construction BMP database to provide a means for tracking long-term responsibility and accountability for operating and maintaining BMPs.

Section 10

Monitoring

10.1 Purpose

The water quality monitoring program can provide information to:

- Evaluate progress in meeting TMDL targets;
- Evaluate the effectiveness of site-specific structural BMPs;
- Assess stormwater contributions to receiving water pollutant loadings and evaluate potential receiving water impacts;
- Identify and prioritize stormwater pollutants of concern; and
- Provide support for stakeholder efforts that result in changes in how monitoring may be done in the future, for example, work with Southern California Coastal Water Research Project (SCCWRP), Stormwater Monitoring Coalition (SMC) and the SQSTF.

The following sections describe the water quality monitoring program that will be conducted during the permit term.

10.2 Monitoring Program

The overall goal of the monitoring program is to provide information regarding compliance with water quality objectives applicable to waterbodies receiving discharges from the MS4. The monitoring program outlined below not only builds on data generated previously, but also refocuses program activities towards the implementation of the MSAR Bacterial Indicator TMDL and the identified key pollutants of concern. This program will be further modified as needed to meet other TMDL monitoring and implementation requirements as these requirements become known.

The monitoring program will be guided by the monitoring design established by the SMC's Model Monitoring Technical Committee (*Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California*, Technical Report #419, August 2004) (Figure 10-1). This approach balances periodic water quality assessments with more intensive studies that are focused on identifying the magnitude and extent of a water quality concern, potential sources, and opportunities for implementing controls.

To meet the goals of the monitoring program, both routine and TMDL-based monitoring activities will occur. The following sections describe the monitoring-related activities that will be implemented within each of these program areas.

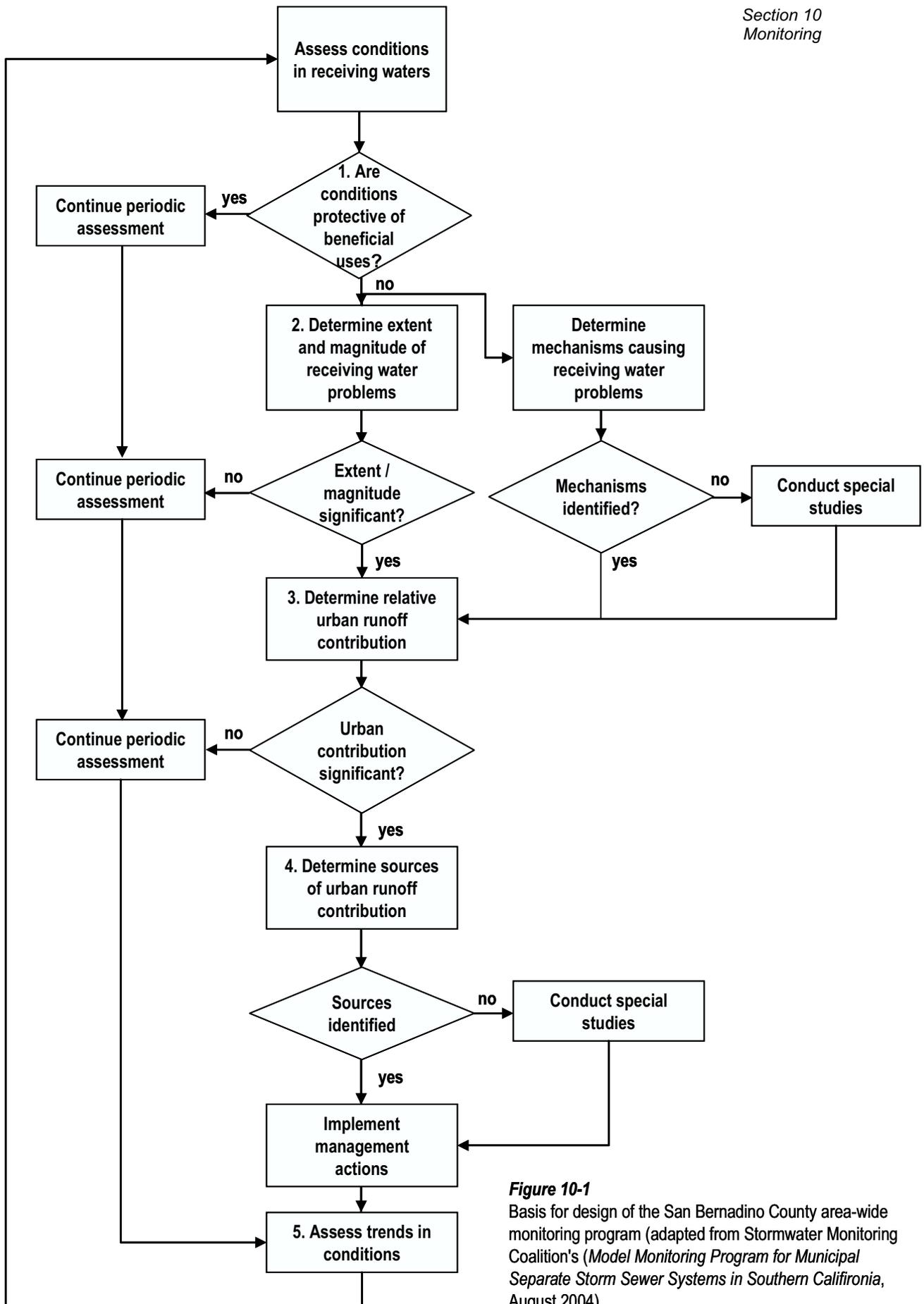


Figure 10-1
Basis for design of the San Bernadino County area-wide monitoring program (adapted from Stormwater Monitoring Coalition's *Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California*, August 2004)

10.2.1 Routine Monitoring Program

The following activities will be conducted to support routine monitoring activities conducted to evaluate water quality in the County:

- **Drainage Area Characterization and Mapping** - Land use characterization and drainage system mapping efforts will be continued and refined, using the San Bernardino County GIS as a basis. The permittees have authorized a project to create a geodatabase that includes the MS4 system and adjacent natural channels. The objective of this effort is to identify drainage channels that are vulnerable to hydrologic impacts. However, this geodatabase will also serve as a very complete and accessible map of the drainage system.
- **Receiving Water Monitoring:** Monitoring for key chemical and physical constituents will continue at the sites from which data were collected during the 2002-2007 permit term. All of these sites have been sampled for more than ten years (Table 10-1).

The water quality data will be used to supplement sampling conducted for the MSAR Bacterial Indicator TMDL, evaluate water quality trends, identify pollutants of concern, and support related watershed management efforts, for example, development of future TMDLs. Receiving water monitoring will be coordinated with other regional monitoring efforts in the local watersheds.

Site No.	Location	Primary Land Use	Nearest District Rain Gauge	Station Number
2	Cucamonga Creek above crosswalls	Open/forest	Cucamonga Canyon at mouth	1309
3	Cucamonga Creek @ Hwy 60	Commercial and Industrial	Ontario Fire Department	1335
5	Stormwater pipe @ Hunts Lane north of Hospitality Lane	Commercial and Light Industrial	District Office	2001B3
8	Santa Ana River @ Hamner Ave.	Urbanized, Mixed Use	Chino Airport	1360
10	Santa Ana River – 6 mi. upstream of 7 Oaks Dam	Open/forest	Santa Ana - Manzanita Flat	3002

Regarding monitoring procedures (including sampling, laboratory analyses and reporting methods), the 2005 Annual Report stated:

Sampling methods and sample handling procedures used in the monitoring program were generally consistent with procedures described in the Stormwater System and Receiving Waters Monitoring Program

(SBCFCD, January 1993) as amended in the Report of Waste Discharge (SBCFCD, April 1995). The primary differences between the two source documents are the number of storms to be monitored and the use of lower detection limits for selected parameters. Also, consistent with last year's Annual Report recommendations, during FY 2004/05, samples were collected from early, mid-season, and late season storms.

Over the years, certain monitoring constituents have been eliminated due to a preponderance of "non-detect" results. The number of sites monitored on a routine basis also has been reduced following analysis of the accumulated monitoring data. Substantial amendments to the monitoring program proposed in the 2000 Report of Waste Discharge, and recommended in previous Annual Reports are still being evaluated and, in part, have begun to be implemented.

Given the various documents and sources of recommendations for making program improvements, the routine monitoring program would benefit from the preparation of a new monitoring guidance document for the area-wide program. Development of such a document is timely given the need to consider how the monitoring program could be modified to support changing watershed priorities, for example, TMDL development and implementation. Creation of this document would also provide an opportunity to formalize the monitoring concepts developed in the Integrated Watershed Monitoring Program previously submitted to the RWQCB.

- ***Support of Regional Monitoring Efforts*** – The permittees will continue to participate in regional studies or task forces (for example, SQSTF, SCCWRP projects, TMDL monitoring efforts, and BMP effectiveness studies) to coordinate activities such as basin planning, monitoring or special studies.
- ***Special Water Quality Studies*** – Section 3 of the Discharge Characterization prepared for the ROWD identified a priority list of pollutants of concern in the watershed based on the findings of water quality monitoring efforts. These pollutants and their order of priority from high to low were: bacteria, metals (zinc, copper, lead), nutrients (nitrate as nitrogen, total phosphorus), TSS and COD.

During the next permit term, the permittees will assess each of the pollutants considered a concern (except bacteria, which is already addressed by a TMDL) and prepare a strategic plan for addressing each pollutant. For some pollutants such as the metals, special studies would likely be recommended such as the development of site-specific objectives or total recoverable/ dissolved translators. Where such studies are recommended, they would be implemented as part of the routine monitoring program.

- ***Bioassessment*** – The permittees will select appropriate stream sites and initiate bioassessment activities in consultation with SCCWRP and the SMC.

10.2.2 TMDL-based Monitoring

The following activities will be implemented in support of requirements established in the MSAR Bacterial Indicator TMDL:

- **Watershed Monitoring** - The permittees will work with other TMDL-affected parties in the MSAR watershed to develop and implement a RWQCB-approved watershed-wide monitoring program consistent with TMDL requirements to provide the data necessary to review and update the MSAR Bacterial Indicator TMDL as well as evaluate compliance with TMDL targets.
- **Urban Source Water Evaluation Plan (USEP)** - The permittees will work with other TMDL-affected parties to develop and implement a Bacterial Indicator USEP as required by the MSAR Bacterial Indicator TMDL.

As other TMDLs are approved within the area covered by the MS4 Permit, the permittees will implement the monitoring-related requirements established by each TMDL.

10.2.3 Participation in Regional Activities

A number of regional activities or organizations continue work in the Santa Ana River Watershed area, including the SQSTF, SMC, SCCWRP, and regional universities. Participation in water-related studies or planning efforts, which may include monitoring, provides valuable information for the area-wide monitoring program.

A key example is the ongoing work by the SQSTF. The Task Force is preparing recommendations for changes in the Basin Plan that will affect the applicability of REC-1 and REC-2 use designations, modify the water quality objectives for bacteria, and establish an acceptable methodology to refine or reclassify recreational uses in the basin. Once this methodology is established, it may be used by the permittees to evaluate and, if appropriate, reclassify recreational uses. The District is an active participant in this Task Force, and once completed the outcome of the effort could affect how and where bacteria monitoring is done within the area covered by the MS4 Permit.

As part of its regular activities in implementing the monitoring program, the Principal Permittee will continue to participate in regional activities.

10.2.4 Reporting

Annual reporting of monitoring results will include the following elements:

- **Pollutants of Concern Identification** - The stormwater discharge and receiving water quality monitoring data will be used in conjunction with GIS-based mapping information to identify pollutants of concern. This evaluation will involve assessing the monitoring results in the context of regulatory objectives, benchmarks and other concerns within the watershed and using this assessment

to prioritize program activities. Examples that may be used to identify and prioritize pollutants of concern include:

- Pollutants listed as causes of impairment on the 303(d);
 - Stormwater pollutants that may cause or contribute to exceedances of Basin Plan or California Toxics Rule objectives;
 - Pollutants that exceed USEPA benchmarks established in the Multi-Sector General Permit for industrial facilities; and
 - Pollutants known to be of significant local or regional public concern.
- *Data Analyses* - Monitoring data will be analyzed using appropriate techniques to assess trends, evaluate compliance with water quality objectives and evaluate the long-term effectiveness of the area-wide stormwater program. Data analyses will be completed annually to support annual reporting requirements and periodically, as needed, to support TMDL reporting requirements.

10.3 Performance Commitments

The permittees propose to implement the following performance commitments to implement the monitoring program elements:

- 10-1. As needed to support the County's area-wide stormwater program, the permittees will continue to participate in regional activities to coordinate their program with activities such as basin planning, task forces (for example the SQSTF and TMDL development), monitoring, or special studies.
- 10-2. As needed, the Management Committee will develop area-wide guidelines for use by the permittees if any permittee chooses to implement SQSTF findings. Development of such guidelines will help ensure that any effort to modify recreational uses on waters within the MS4 Permit area is coordinated among affected permittees.
- 10-3. The permittees will participate in the Integrated Stream Bioassessment Monitoring Program led by the SMC.
- 10-4. Update, periodically, the GIS-based mapping of drainage area information, including drainage system facilities, land uses, and receiving waters.
- 10-5. Continue to implement the routine stormwater monitoring program at the sites identified in Table 10-1 to characterize stormwater quality at both stormwater monitoring and receiving water monitoring sites.
- 10-6. In coordination with other TMDL-affected parties, develop and implement:
 - a. RWQCB-approved watershed-wide monitoring program consistent with the MSAR Bacterial Indicator TMDL requirements.

- b. Bacterial Indicator USEP as required by the MSAR Bacterial Indicator TMDL.
 - c. Other TMDL requirements established within the MS4 Permit area during the permit term.
- 10-7. Prepare a strategic plan for each of the pollutants of concern identified in the ROWD to determine if any additional studies or actions are needed to address the potential concern. One or more strategic plans will be prepared that address zinc, lead, copper, nitrate as nitrogen, total phosphorus, total suspended solids and chemical oxygen demand. The result of this effort may be a recommendation to remove the constituent from the pollutant of concern list.
- 10-8. Prepare an updated monitoring program guidance document for the area-wide program to (a) document all current sampling, laboratory, data analysis and quality control/quality assurance procedures used in the monitoring program; and (b) ensure that the monitoring program is consistent with state Surface Water Ambient Monitoring Program requirements.