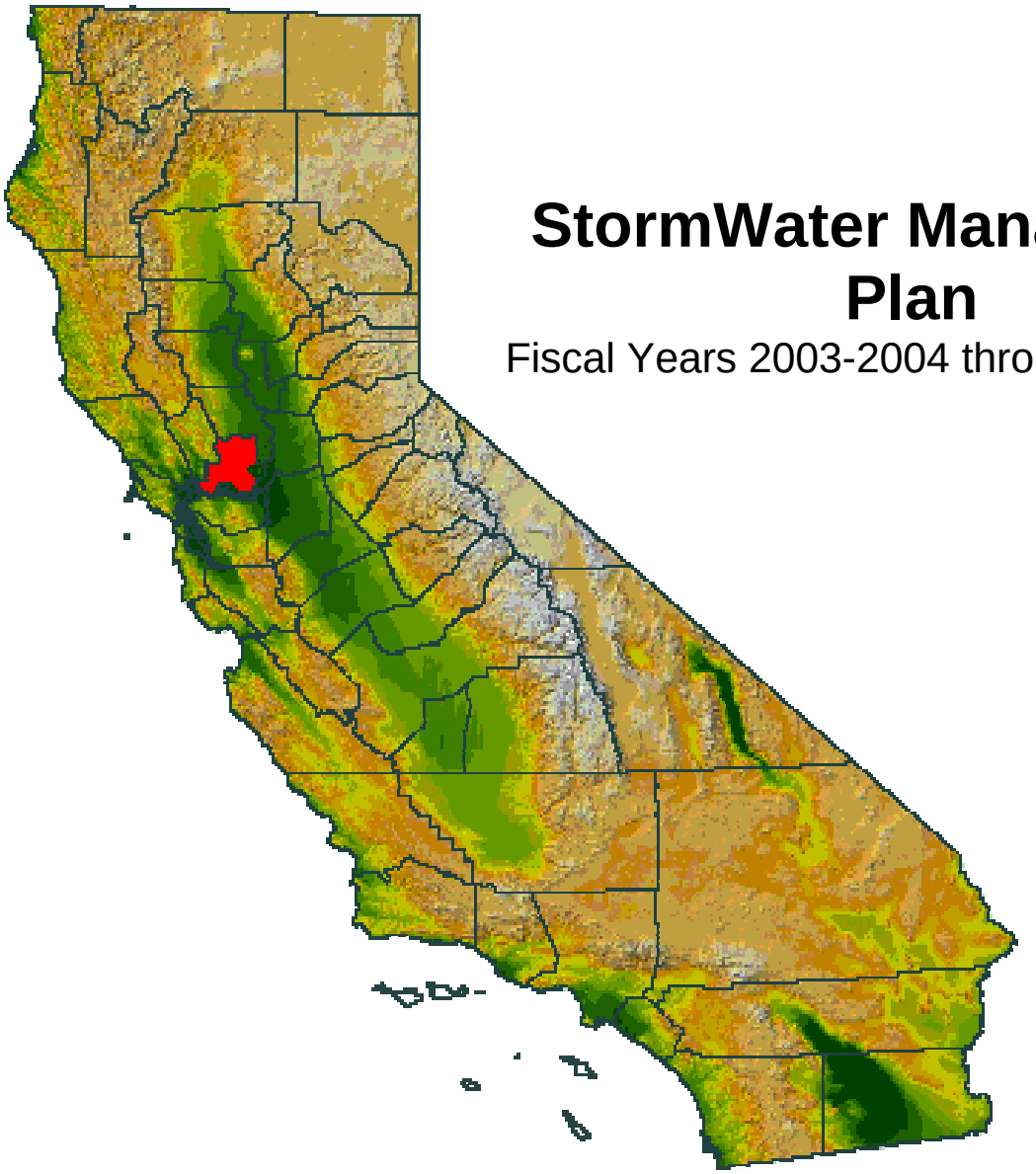
APPENDIX 5.15B

Stormwater Management Plan



StormWater Management Plan

Fiscal Years 2003-2004 through 2007-2008

City of Vacaville
City of Dixon

Stormwater Pollution Prevention Program

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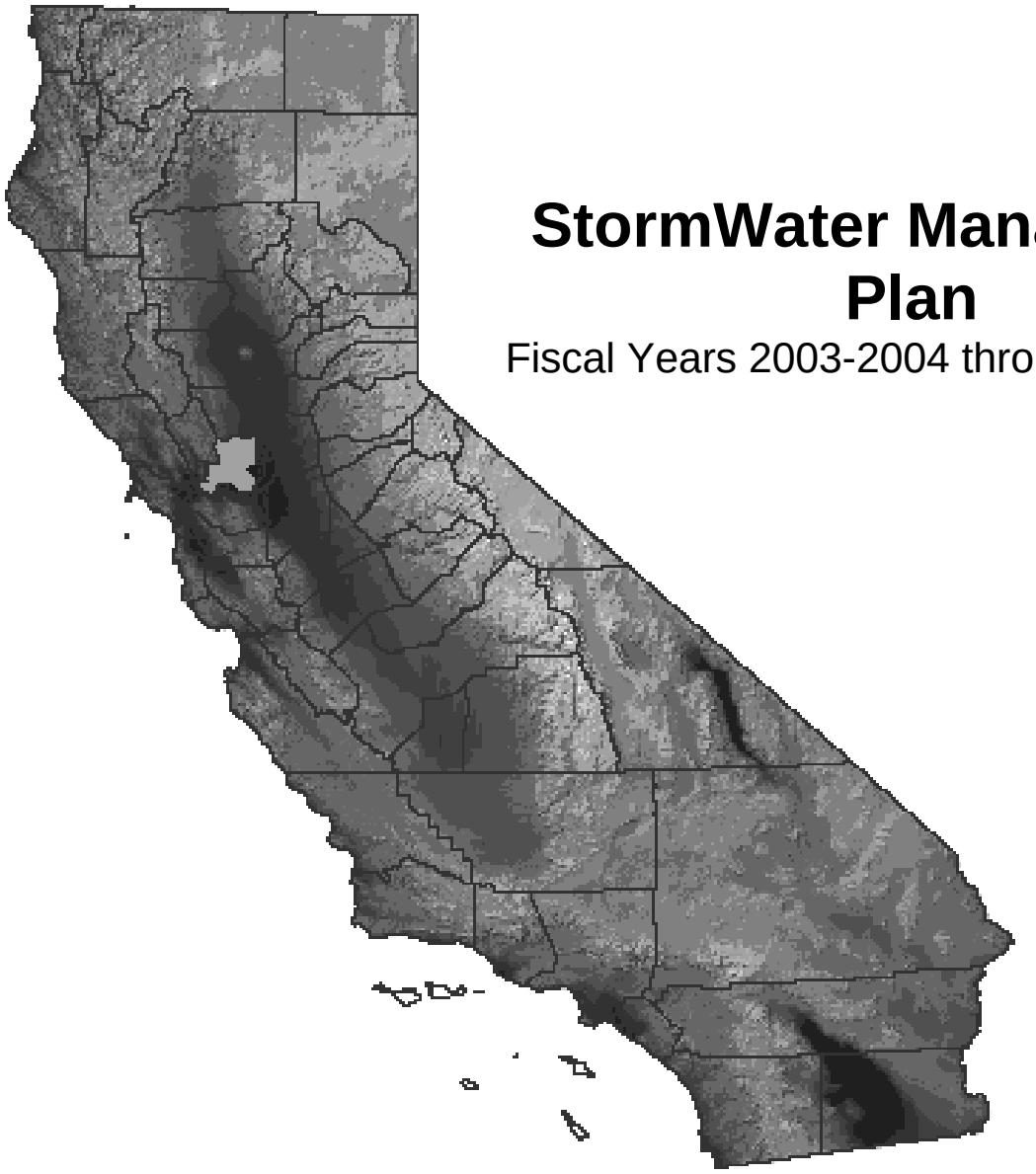

StormWater Management Plan

Fiscal Years 2003-2004 through 2007-2008

City of Vacaville
City of Dixon

Stormwater Pollution Prevention Program

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ACRONYMS AND ABREVIATIONS

ASC	Agency Staff Committee
BASMAA	Bay Area Stormwater Management Agencies Association
BMP	Best Management Practices
CAC	Citizens Advisory Committee
CASQA	California State Stormwater Quality Association
CEQA	California Environmental Quality Act
CWA 303(d)	Clean Water Act 303 (d) List
EPA	United States Environmental Protection Agency
GIS	Geographic Information System
MEP	Maximum Extent Practicable
MS4s	Municipal Separate Storm Sewer System
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
RWQCB	Central Valley Regional Water Quality Control Board
SPCC Plan	Spill Prevention, Control and Countermeasure Plan
SUSMP	Standard Urban Stormwater Management Program
SWMP	Stormwater Management Plan
State Board	California State Water Resource Control Board
WMI	Watershed Management Initiative

DEFINITIONS

I.	Phase II Regulations	Requirements adopted by U.S. EPA on October 29, 1999 and published in the Federal Regulations on December 8, 1999.
II.	Maximum Extent Practicable	Maximum Extent Practicable (MEP) is the technology-based standards established by Congress in the Clean Water Act Section 402 that municipal discharges of stormwater must meet. Technology-based standards establish the level of pollutant reductions that dischargers must achieve. MEP is generally a result of emphasizing pollution prevention and source control BMPs as the first lines of defense. The MEP approach is an evolving, flexible concept that considers technical and economic feasibility. As the knowledge about controlling urban runoff continues to evolve, so does that which constitutes MEP. The way in which MEP is met may vary between communities.
III.	BMPs	Practices implemented by private industry and public agencies that prevent or reduce water pollution.

Overview

This Stormwater Management Plan (*SWMP*) is the City of Vacaville and the City of Dixon's response to the new statewide National Pollutant Discharge Elimination System (NPDES) General Permit for cities designated by the State Water Resources Control Board. Under this General Permit, the cities are mandated to implement specific types of urban runoff pollutant control measures and submit reports to the Central Valley Regional Water Quality Control Board. Urban runoff includes stormwater that is discharged by municipal storm drainage systems and any other water that flows, is discharged, or infiltrates into the storm drainage system.

The activities described in this *SWMP* are based on the U.S. Environmental Protection Agency's (EPA) stormwater regulations, and the State Water Resources Control Board General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer System (Small MS4).

I. Regulatory Background

Congress created the NPDES program in 1970 when it adopted the Clean Water Act to help make the nation's waters fishable, swimmable, and drinkable. In the 1970's and 1980's the NPDES permit program made substantial progress in cleaning up water pollution from wastewater treatment plants and industrial dischargers. However, about one-third of the nation's waters were still identified as polluted, so in 1987 Congress clarified and expanded the NPDES permit program to cover discharges of stormwater from municipal-owned storm drain systems.

Numerous national and statewide studies have determined that municipal stormwater is an important source of the following types of pollutants to creeks and waterways: sediment, trash, bacteria, pesticides, certain metals (such as copper and mercury), and other organic chemicals (such as dioxin and polychlorinated biphenyls).

In California cities over 100,000 in population and a number of smaller cities in urbanized areas obtained municipal stormwater NPDES permit coverage in the early 1990s ("Phase I" stormwater regulation). The EPA adopted regulations in December 1999 that specified the schedule for smaller cities to obtain NPDES permit coverage under "Phase II" stormwater regulation.

The Stormwater Phase II Final Rule is the next step in EPA's effort to preserve, protect, and improve the nation's water resources from polluted stormwater runoff.

The Phase II program expands the Phase I program by requiring additional operators of MS4s in urbanized areas and operators of small construction sites, through the use of NPDES permits, to implement programs and practices to control polluted stormwater runoff.

Cities over 10,000 in population, and operators of MS4s that serve areas that are designated by the State Water Resources Control Board, need to obtain NPDES permit coverage for discharging stormwater from their storm drains. Provisions in the Federal Clean Water Act as implemented in the California Water Code, enables the enforcement of this new General Permit.

The General Permit requires that each city seeking permit coverage implement six types of minimum control measures through its development of a Stormwater Management Plan and Program. The six minimum measures are as follows:

- ◊ Public Education and Outreach on Stormwater Impacts
- ◊ Public Involvement and Participation
- ◊ Illicit Discharge Detection and Elimination
- ◊ Construction Site Stormwater Runoff Control
- ◊ Post-Construction Stormwater Management in Redevelopment and New Development
- ◊ Pollution Prevention/Good Housekeeping for Municipal Operations

In addition, the General Permit requires supplemental receiving water limitations and design standards for areas subject to high growth or serving a population of at least 50,000 (Attachment 4 of the General Permit).

II. *SWMP* Objectives and Guiding Principles

The widespread nature of stormwater pollution requires a comprehensive solution. The *SWMP* describes how pollutants in local stormwater runoff will be controlled and describes BMPs designed to address the six minimum measures. The objectives of the *SWMP* are to:

- ◊ Reduce the discharge of pollutants to stormwater to the "maximum extent practicable" (MEP)
- ◊ Protect water quality; and
- ◊ Satisfy the appropriate water quality requirements of the Clean Water Act.

The foundation of the *SWMP* is based on BMPs and measurable goals designed to address the six minimum measures and existing city programs.

Best Management Practices – or BMPs – are practical ways to initiate the stormwater management program. In some cases, stormwater pollution can be curtailed simply by regular street sweeping or by an outreach program that teaches the public how to

prevent urban runoff pollutants from entering the environment.

Existing City Programs are a critical element of the *SWMP*. Many aspects of municipal activities already incorporate measures protective of stormwater quality. The *SWMP* is designed to identify and build upon these programs.

III. *SWMP* Organization

The *SWMP* is organized into eight Chapters. Chapter 1 provides an overview of the *SWMP*. Chapter 2 provides a description of the program management structure. The remaining six chapters (Chapters three through eight) address the Six Minimum Measures:

◊ *Chapter 3. Public Education And Outreach*: This chapter describes developing and distributing general public education and information materials on the impacts of stormwater pollution, as well as targeting educational efforts to residential neighborhoods, schools, and the local community.

◊ *Chapter 4. Public Involvement and Participation Program:* This chapter presents activities designed to address stormwater pollution through the supportive efforts of the community. The goals of this program are to raise public awareness about urban runoff and foster public participation.

◊ *Chapter 5. Illicit Discharge Detection And Elimination:* This chapter presents activities to control illicit discharges by conducting field surveys of the municipal storm drainage conveyance system and identifying and eliminating the source of non-stormwater discharges. An important part of this program includes detecting and eliminating illegal disposal of wastes to the storm drain system by combining education, alternative disposal options, and enforcement.

◊ *Chapter 6. Construction Site Stormwater Runoff Control Program:* This Chapter discusses pollutants commonly discharged from construction sites and methods for minimizing impacts to stormwater using best management practices.

◊ *Chapter 7. Post-Construction Stormwater Management In New And Redevelopment Program:* This chapter describes good site planning and development review practices to ensure new projects are designed with stormwater protection in mind. This chapter also describes controls to minimize erosion and sedimentation from construction activities. An important element of this chapter is continuing education for municipal staff, contractors, and engineers.

◊ *Chapter 8. Pollution Prevention and Good Housekeeping for Municipal Operations:* This chapter discusses the importance of good housekeeping practices for municipal operations. It presents methods to optimize pollutant removal

during routine maintenance activities and discusses methods to prevent or minimize discharges to storm drains and watercourses from road maintenance, parks, corporation yards and other publicly owned facilities.

Program Description and Management

The *SWMP* is a joint project of the cities of Vacaville and Dixon. Each city pursues its own local stormwater pollution prevention activities and also contributes support to a region-wide effort.

I. Program Goals

1. Comply with the General Permit

- ◊ Effectively prohibit non-stormwater discharges
- ◊ Protect water quality from the impacts of stormwater runoff from small MS4s
- ◊ Reduce, to the maximum extent practicable, pollutants in stormwater runoff
- ◊ Comply with permit submittal requirements

2. Determine Success

- ◊ Evaluate changes in public awareness and behavior
- ◊ Evaluate effectiveness of specific control measures at pollution reduction
- ◊ Utilize what is learned to plan next steps

3. Achieve Acceptance of SWMP Activities

- ◊ Effectively facilitate public input to the Stormwater Management Program
- ◊ Integrate stormwater runoff goals at various intra-agency levels
- ◊ Develop and maintain a proactive relationship with regulatory authorities

II. Program Organizational Structure

Options for public agencies in the area to work together to comply with new stormwater requirements offer opportunities for cost-savings and for providing area-wide consistency in communicating with local residents and businesses. The Cities of Vacaville and Dixon have joined together to prepare and implement this *SWMP*. The City of Vacaville will be the lead agency responsible for overall coordination and implementation of the *SWMP* following adoption of the NPDES permit. Both Cities will designate a coordinator responsible for overall coordination and implementation of the SWMP in their respective agencies following adoption of the NPDES permit. The goal of program coordination is to provide the administrative, financial, and management support to implement the SWMP. Each coordinator will be responsible for providing the support needed to implement the SWMP within their agency, communicating with the other agency coordinator, and preparing and submitting the Annual Report to the RWQCB.

Each agency is responsible for implementing the BMPs described in Chapters three through eight. Some of the

BMPs will be implemented on a region-wide basis, being jointly sponsored by both cities. Examples of region-wide efforts include public education targeted to residents in both municipalities, and coordinating with other countywide, regional, and state agencies. Agency roles and responsibilities for implementing the six minimum measures are presented on Figures 2-1 and 2-2.

Specific administrative and planning functions of the *SWMP* Coordinators will include:

◊ Coordinating with other countywide, regional and state agencies to stay abreast of stormwater technology and the development of stormwater regulations. Examples include the Regional Board, California State Water Resource Control Board (State Board), Bay Area Stormwater Management Agencies Association (BASMAA) and the California Stormwater Quality Task Force (Stormwater Task Force).

◊ Coordinating through the Agency Staff Committee (ASC). The ASC will include representatives from the Cities of Dixon and Vacaville who meet quarterly to discuss common issues and identify solutions. Ad-hoc work groups of the ASC will be formed, as necessary, to address target issues (such as, wet season grading, consistent enforcement, and BMPs). The ASC will also provide agency staff with a forum for peers to share the difficulties, frustrations, and successes encountered in integrating stormwater pollution prevention and watershed protection into the everyday work of municipal departments.

◊ Involving community representation and review through the Citizens Advisory Committee (CAC).

Program Agreement

During the first year of the *SWMP* an agreement between the Cities of Vacaville and Dixon will be developed obligating the City of Vacaville to act as the Lead Agency in permitting and regulatory issues, and to establish funding for the *SWMP*. Several agreement options will be evaluated ranging from a full joint program agreement to a project/program element-specific agreement. Informal cooperative agreements may effectively share staff and financial responsibility for a specific project, such as developing outreach material.

Legal Authority

The Phase II Stormwater Regulations require each municipality to adopt and enforce ordinances and policies to clarify its authority to control what is discharged to the municipally owned storm drain system. In addition, each agency needs to develop adequate legal authority to implement and enforce provisions of the *SWMP*, including right of entry/inspection, and methods to reduce discharge of pollutants to the storm drain.

During the first year of the *SWMP* the agencies will review existing ordinances and general plans and develop legal authority for implementing the *SWMP*. In particular, legal authority for the following will be established:

- ◊ Effectively prohibiting non-stormwater discharges to storm drains and implementing appropriate enforcement procedures and actions.
- ◊ Requiring that persons engaged in activities that are potential sources of pollutants implement BMPs to reduce pollutant discharges to the MEP.
- ◊ Requiring erosion and sediment controls, as well as sanctions or other effective mechanisms, to ensure compliance by construction site activities that result in a land disturbance of greater than or equal to one acre.
- ◊ Addressing post-construction runoff from new development and redevelopment projects that disturb greater than or equal to one acre; including projects less than one acre that are part of a larger common plan of development or sale.

Funding Mechanism and Structure

Meeting these new regulatory requirements will require new or additional public expenditures. The Phase II regulations require that each agency allocate funds for the capital, operation and maintenance, and enforcement expenditures necessary to implement and enforce the *SWMP* within its jurisdiction. During the first year of the *SWMP* the cities will investigate funding mechanisms to support the stormwater program. Possible funding options/mechanisms that the cities may choose to utilize for developing and implementing the *SWMP* include the following:

- ◊ Current revenues (general fund appropriation);
- ◊ New "dedicated" funding sources (fees and taxes); and,
- ◊ Outside funding sources (grants and loans).

Reporting

At the end of each fiscal year, the *SWMP* Coordinator will develop the *Annual Report*. The *Annual Report* will summarize the progress of implementing the *SWMP* and will be submitted to the Regional Board for staff review and comment.

III. Geographic Description

The Cities of Vacaville and Dixon are located in northern Solano County, midway between San Francisco and Sacramento. Both Cities lie within the lower Sacramento watershed. The two primary sub-watersheds are the Ulatis Creek System and the Dixon Drain System.

The Ulatis Creek System is composed of many smaller creeks, including Barker Slough, Alamo, Ulatis, Horse, Gibson Canyon, Sweeney and McCune Creeks. The City of Vacaville drains into a series of natural streams and creeks, ultimately draining into Ulatis Creek. Ulatis Creek joins Cache Slough, and ultimately drains to the Sacramento-San Joaquin River Delta.

The City of Dixon is located on the alluvial fan formed by Putah Creek. The

historical drainage pattern was generally from the northwest to southeast with numerous minor swales and drainage ways that drained into several creeks that traversed the relatively flat farmlands. Southeast of Dixon, these creeks became sinks and marches as they extended beyond the City, and ultimately discharged to sloughs tributary to the Sacramento-San Joaquin Delta during wet years.

Over the last 40 years, natural drainage patterns have been altered in the Dixon area, creeks and small drainage ways have been filled and drainage facilities have been constructed to reclaim poorly drained land and to reduce local flooding. Dixon stormwater drains to the Dickson-Dudley Creek Watershed which contains the Tremont #3 Drain and the Dixon Main Drain.

IV. Pollutants of Concern

None of the waterbodies within the Cities of Dixon or Vacaville are listed on the CWA 303(d) list. Likewise, the watersheds of this area are not discussed in the RWQCB's Basin Plan or WMI. During the first year of the Stormwater Program, further investigation of potential pollutants of concern will be investigated. As part of this effort, watershed groups associated with the Dixon and Ulatis watersheds will be researched and pollutants of concern within the Bay Delta region will be evaluated.

V. Permit Boundaries

The Phase II Final Rule requires operators of small MS4s that are located within the boundaries of a Bureau of Census-defined "urbanized area" to obtain permit coverage. Urbanized areas are land areas comprising one or more places – (central place) – and the adjacent densely settled surrounding area (urban fringe) that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile. Operators of small MS4s located outside of an urbanized area may be designated as a regulated MS4 if the State Board determines that its discharges cause, or have the potential to cause, an adverse impact on water quality.

In the year 2000, the total household population in the City of Vacaville was approximately 92,300 residents. In the year 2000, the total household population in City Dixon, was approximately 16,000 residents. The City of Vacaville is listed as a MS4 serving areas within an urbanized area and is therefore automatically designated for permit coverage. The City of Dixon is not located within an urbanized area. However, the City of Dixon is designated by the State due to potential for high growth and being located near an urban cluster.

Figure 2-3 illustrates the permit boundaries. Although the urbanized areas are limited to portions of the Cities, the Cities have chosen to indicate the City limits as the permit boundaries to simplify jurisdictional issues.

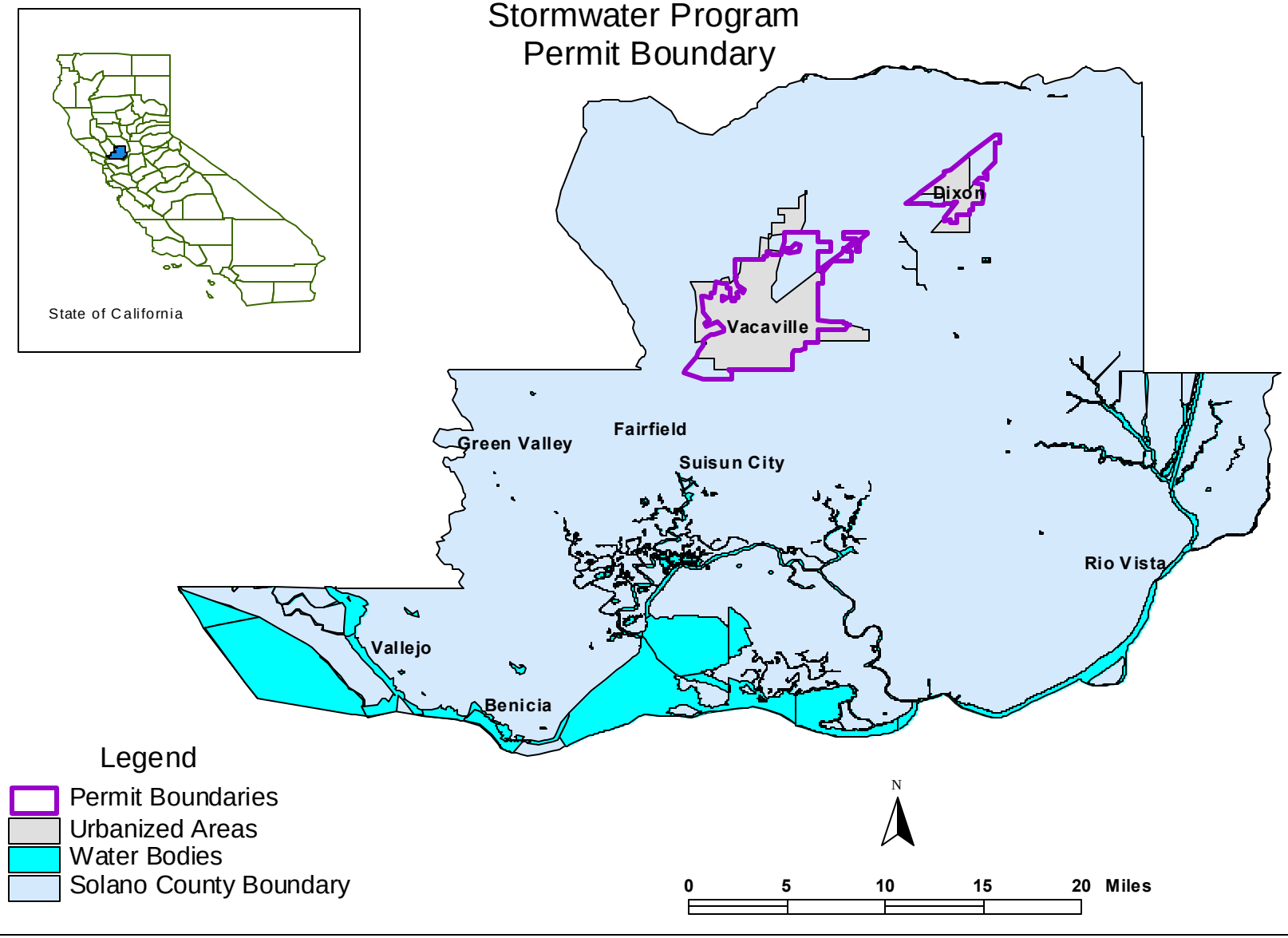
FIGURE 2-1
SWMP RESPONSIBILITIES
CITY OF VACAVILLE

CITY DEPARTMENT	SWMP AREA OF RESPONSIBILITY
Public Works Maintenance	**NPDES Coordinator / Program Manager** Coordinate with City staff, the City of Dixon and other outside agencies to implement the SWMP.
Public Works Maintenance	**NPDES Training and Public Awareness Coordinator (Minimum Measures 1 and 2)** Coordinate the public outreach and education components of the SWMP. Responsibilities include developing and coordinating public awareness and public education activities, and assisting with City staff training programs.
Public Works Maintenance	**NPDES Coordinator (Minimum Measure 3)** Coordinate the illicit discharge component of the SWMP. Responsibilities include managing the outfall and storm drain mapping program, and developing the illicit discharge plan and field-screening program.
Public Works Maintenance	**NPDES Construction Coordinator (Minimum Measure 4)** Coordinate the construction component of the SWMP. Responsibilities include managing information regarding existing practices and new BMPs related to construction.
Community Services Building Division Permits Contact	**NPDES Land Use Coordinator (Minimum Measure 5)** Coordinate the post construction component of the SWMP. Responsibilities include managing information regarding existing practices and new BMPs related to design and planning of new land development projects.
Public Works Maintenance	**NPDES Maintenance Coordinator (Minimum Measure 6)** Coordinate the good housekeeping component of the SWMP. Responsibilities include managing information regarding existing practices and new BMPs related to municipal maintenance and operations.

FIGURE 2-2
SWMP RESPONSIBILITIES
CITY OF DIXON

CITY DEPARTMENT	SWMP AREA OF RESPONSIBILITY
Public Works Senior Management Analyst	NPDES Coordinator / Program Manager Coordinate with City staff, the City of Vacaville and other outside agencies to implement the SWMP.
Public Works Management Aide	Education Coordinator (Minimum Measures 1 and 2) Coordinate the public outreach and education components of the SWMP. Responsibilities include developing and coordinating public awareness and public education activities, and assist in the city staff training program.
Public Works Streets and Storm Drain Supervisor	Ponds, Collection System and City Facilities Coordinator (Minimum Measures 3 and 6) Coordinate the illicit discharge and municipal maintenance components of the SWMP. Responsibilities include contributing information regarding existing practices and new BMPs related to maintenance, operations and construction.
Public Works Assistant Engineer	Construction Site and Mapping Coordinator (Minimum Measures 4 and 5) Coordinating the construction and post construction components of the SWMP. Responsibilities include contributing information regarding existing practices and new BMPs related to design and construction.

Figure 2-3
Cities of Vacaville and Dixon
Stormwater Program
Permit Boundary



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Public Education and Outreach Program

Stormwater pollution results from the small, incremental, and collective activities of the public. The origins of stormwater pollution are often the result of the unintended and unrecognized consequences of thousands of routine, seemingly inconsequential decisions made daily. Routine home and yard projects can contribute pollutants to the storm drain system if preventive measures are not taken. Public education is one key to preventing stormwater pollution. The better the public understands what causes stormwater pollution, and the simple measures that can be taken to prevent stormwater pollution, the cleaner the stormwater and local creeks will become.

I. Program Objectives

The following Public Education and Outreach Program objectives are designed to address stormwater pollution through the cooperative efforts of an informed community:

◊ Increase public awareness about stormwater pollution

◊ Educate the community about specific pollutant sources and on what they can do to reduce them in stormwater

II. Program Tasks and Associated BMPs

The Public Education and Outreach Program is divided into two categories to effectively address stormwater issues. Each category, and associated BMPs, is described below and summarized in Table 3-1.

Conduct Public Education and Outreach to Residents

The purpose of public outreach and educational efforts is to increase community awareness about stormwater pollution and to discourage the amount of non-stormwater discharges into the storm drain system. The agencies currently conduct educational outreach to residents as part of the following agency programs:

◊ Household Hazardous Waste Program

◊ Trash Management Program

◊ Green Waste Program

During the first year of the stormwater program these programs will be evaluated and revised, as appropriate, to include public outreach for stormwater issues. During the second year and fourth years of the Program, the agencies will distribute stormwater education materials to residents based on findings from the evaluations of Program elements and BMPs. Beginning in

Year three, one additional public education and outreach BMP will be developed each year, as needed, based on evaluations of the BMPs implemented in the previous year.

Conduct Targeted Outreach Programs

It is important to implement a public education program that effectively targets public schools, the local government, and the local commercial/business sector. The stormwater program has been developed to target the following groups for education:

◊ Public Schools (K-12)

◊ Local Officials and Agency Staff

◊ Regional Agencies

Providing stormwater education through the public schools conveys the message not only to students but to their parents as well. The children learn about environmental issues early and therefore become interested and perhaps involved at earlier ages. Schoolchildren often tell their parents what they learn in school. Therefore, teaching children about stormwater is an effective way to pass environmental awareness to their parents and throughout the entire community. During the first year of the stormwater program the agencies will coordinate with public school outreach programs to include stormwater education. During the second year, a public school outreach program will be developed.

Presentations are an important element of educating the public about stormwater pollution and the importance of the stormwater program. During the first year of the Program, the agencies will provide presentations to the city councils and agency staff involved in implementing the stormwater program. Also during the first year internal agency communication and training will be initiated, with two training meetings held for agency staff.

Having a regional stormwater program is important for several reasons. Coordinating with other agencies and municipalities means one stormwater message, instead of many different messages, from all the participating groups making the message more memorable and influential. There is also an economy of scale that translates to combining resources for an enhanced program. During the first and second years of the program interested agencies/municipalities will be identified and partnered with to develop a Regional Stormwater Education Program. As part of this effort one BMP designed to protect stormwater through outreach and/or education will be developed per year beginning in year two. Example BMPs include, but are not limited to, radio campaigns, and bus and theater ad campaigns. Outreach to restaurants and businesses aimed at minimizing illicit discharges to the stormdrain will be conducted annually, beginning in year three. (Refer to Chapter 5. Illicit Discharge Detection and Elimination for more discussion on illicit discharges).

III. Program Evaluation, Documentation and Annual Reporting

Measurable goals are used to assess the agencies' efforts to reduce urban runoff pollution and to evaluate the success of the

Program each year. BMPs and measurable goals for the Public Education and Outreach Program are presented in Table 3-1. The agencies will maintain records to document program implementation and annual progress. This information will be included in the annual report submitted to the RWQCB.

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TABLE 3-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Education and Outreach for Stormwater Impacts
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
Public Outreach and Education To Residents						
1. Evaluate public education portion of the Household Hazardous Waste Program and revise, as appropriate, for public outreach elements.	1. Summary document listing existing household hazardous waste education programs and suggested modifications for the Stormwater Program completed.	x				
2. Evaluate public education portion of the Trash Management Program and revise, as appropriate, for public outreach elements.	2. Summary document listing existing trash education programs and suggested modifications for the Stormwater Program completed.	x				
3. Evaluate the Green Waste Program and revise, as appropriate, for public outreach elements.	3. Summary document listing existing green waste education programs (brochures etc) and suggested modifications for the Stormwater Program completed.	x				
4. Distribute Stormwater education materials to Agency residents based on the findings of BMPs 1 through 3.	4. Materials distributed.		x		x	
5. Develop one BMP per year, as needed, based on evaluation of the previous year.	5. BMP developed.			x	x	x

TABLE 3-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Education and Outreach for Stormwater Impacts
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
Targeted Outreach Programs						
1. Coordinate with Public School (K-12) outreach programs to include stormwater education.	1. Summary document of existing public schools outreach programs completed.	x				
2. Conduct outreach to local officials.	2. Presentations given to local officials (city council and management meetings).	x				
3. Initiate Internal Communication and Training regarding the stormwater program.	3. Two training meetings held for public works staff.	x				
4. Based on findings during the first year, Develop outreach program targeting public schools.	4. One outreach piece implemented every other year beginning in year two.		x		x	
5. Partner with local agencies / municipalities to develop Regional Stormwater Education Program.	5. Interested agencies identified and Regional Stormwater Education Program developed.	x	x			
6. BMPs developed for Regional Stormwater Education Program.	6. One BMP developed and implemented per year beginning in year 2. Examples include radio campaigns, and bus and theater ad campaigns.		x	x	x	x
7. Conduct outreach to businesses to minimize illicit discharges to the stormdrain.	7. Educational materials distributed annually beginning in year 3.			x	x	x

Public Involvement and Participation Program

Public involvement and participation are important components of the Stormwater Management Program. The term "public" refers to various sectors of the community including residents, commercial and retail business owners; industry representatives; developers; construction contractors; City staff; elected officials; and governmental agencies. The success of the Stormwater Program depends largely upon acceptance and support from these sectors.

The public can provide valuable input and assistance to the stormwater program. The agencies will implement a public involvement and participation program that not only informs these audiences of the urban runoff concerns within their communities, but also invites participation in implementing the stormwater management program.

I. Program Objectives

The following Public Involvement and Participation Program objectives are designed to address stormwater pollution through the supportive efforts of an informed community:

- ◊ Raise public awareness about urban runoff pollution through involvement in the Stormwater Management Program
- ◊ Raise public awareness about stormwater pollution prevention efforts
- ◊ Foster participation through community-based projects or volunteer activities focused on pollution prevention

II. Program Tasks and Associated BMPs

The public involvement and participation program is divided into two categories to effectively address stormwater issues. Each category, and associated BMPs, is described below and summarized in Table 4-1.

Public Activities and Participation

Storm drain marking involves labeling storm drain inlets with painted messages warning citizens not to dump pollutants into the drain. The signs raise awareness about the connection between storm drains and receiving waters. Agency public works staff or volunteer groups can do the stenciling. Using a volunteer group will increase public awareness of storm water pollutants and their path to water bodies. During the first year of the stormwater program the current stormdrain marking program will be reviewed and updated, as needed. As part of this program, a checklist for annually tracking marked drains will be

developed and each agency will, at a minimum, mark 20% of the storm drains each year. Beginning in the second year, opportunities for using volunteers to mark storm drains will be investigated. In year four, the agencies will qualitatively evaluate changes in debris accumulation at marked drains locations.

A valuable part of public participation is implementing a watershed-based approach to identify and address local water quality issues. During the second year of the stormwater program, the agencies will begin to coordinate with local organizations and develop partnerships, as appropriate, to identity stormwater issues affecting the watershed. Long term goals of these partnerships are to develop approaches for soliciting volunteers to protect, clean, and restore local creeks and watershed.

Also during the second year of the Program, the agencies will evaluate the need for new BMPs annually.

Public Opinion and Involvement

A key goal for the Public Involvement and Participation Program is to involve a diverse cross-section of people who can offer a variety of opinions, concerns, ideas, and connections relating to stormwater pollution prevention. During the first year of the stormwater program the agencies will provide public notice of the *SWMP* and facilitate a Citizen Advisory Committee (CAC). The purpose of the CAC is to allow citizens to discuss viewpoints and provide input on stormwater management policies and BMPs. The following groups will be invited to participate in the CAC:

- ◊ Neighborhood and business associations
- ◊ Commercial property owners
- ◊ Local service clubs
- ◊ Trade organizations
- ◊ Chamber of commerce

In addition to the CAC, a stormwater hotline will be created during the first year of the Stormwater Program. The purpose of the hotline is to provide a means for the public's questions and concerns about water quality to be addressed. During years two and three outreach materials will be created and distributed advertising the hotlines. Links to the hotline via the agencies' webpages will also be established.

Surveys of how the public perceives storm water management can foster better planning and management programs. The results of these attitude surveys can enlighten both the agencies and the public on the sources of pollution, the effects of storm water on the environment, and options for control. Public attitude surveys can bring to light what is important to the stakeholders, and the agencies can use this information to determine how best to incorporate the public's needs into the overall goals of the program. A general public survey will be solicited from citizens in year three of the Program. Beginning in year two, one additional BMP will be developed per year to protect stormwater through means of public involvement and participation.

As important as it is for the public to be involved in local storm water issues, it is

also important for agency employees to participate in regional storm water issues. An agency representative will participate in the Countywide Storm Water Task Force.

III. Program Evaluation, Documentation and Annual Reporting

Measurable goals are used to assess the agencies' efforts to reduce urban runoff pollution and to evaluate the success of the Program each year. BMPs and measurable goals for the Public Involvement and Participation Program are presented in Table 4-1. The agencies will maintain records to document program implementation and annual progress. This information will be included in the annual report submitted to the RWQCB.

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TABLE 4-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Participation and Involvement
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
Public Activities and Participation						
1. Coordinate Storm Drain Marking Program.	1a. Summary / update of current marking program provided.	x				
	1b. Checklist for tracking marked drains developed. Tracked annually.	x	x	x	x	x
	1c. 20% of drains marked each year.	x	x	x	x	x
	1d. The number of marking volunteers reported		x	x	x	x
	1e. Qualitative changes in debris accumulation at marked outfall areas reported.				x	
2. Coordinate with local watershed organizations.	2a. Interested organizations identified.		x			
	2b Develop partnerships with local organizations, as appropriate.			x	x	x
3. Identify additional BMPs for development.	3. Program evaluated annually for new BMPs.		x	x	x	x

TABLE 4-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Participation and Involvement
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
Public Opinion and Involvement						
1. Coordinate Local Community Outreach (Citizen Advisory Panel/public meetings).	1. Conducted two meetings per year.	x	x	x	x	x
2. Provide Public Notice of SWMP.	2. Public noticed provided.	x				
3. Conduct General Public Survey.	3. Citizens solicited completed survey.			x		
4. Create Stormwater Hotline.	4a. Hotline created.	x				
	4b. Distributed advertising of the hotline.		x	x		
	4c. Links to hotline via Agency website completed.		x			
5. Identify additional BMPs for development.	5. Program evaluated annually for new BMPs.		x	x	x	x

Illicit Discharge Detection and Elimination

The public storm drain system begins with streets and gutters, whose drainage flows to ditches and to creeks and wetlands. Pollutants poured, spilled, dumped, washed into, or discharged through illicit connections to storm drains can go undetected without an active illicit discharge detection and elimination program. Illicit discharges, - any discharge to a stormdrain that is not composed entirely of stormwater – enter the system either through direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drain) or through indirect connections (e.g., infiltration into the storm sewer from cracked sanitary systems, spills collected by drain inlets, or wastes dumped directly into a storm drain). The result is untreated discharges that contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients and bacteria to receiving waterbodies.

I. Program Objectives

The objectives of the Illicit Discharge Detection and Elimination Program are to:

- ◊ Control illicit discharges by conducting field surveys of the municipal storm drainage conveyance system and identifying and eliminating the source of non-stormwater discharges.
- ◊ Detect and eliminate illegal disposal of wastes to the storm drain system through a program that combines education, alternative disposal options, and enforcement.
- ◊ Effectively coordinate spill response and clean-up with existing programs.
- ◊ Optimize illicit discharge control activities through planning and prioritization.
- ◊ Partner with other agencies and groups to increase public awareness on how to effectively and efficiently prevent pollutant discharges to the storm drains.

II. Program Tasks and Associated BMPs

The Illicit Discharge Detection and Elimination Program is divided into four categories to effectively address stormwater issues. Each category, and associated BMPs, is described below and summarized in Table 5-1.

Outfall and Storm Drain Mapping

The storm sewer system and outfall map is intended to demonstrate a basic awareness of the intake and discharge areas of the system. It is needed to help determine the extent of discharges during dry weather

flows, the possible sources of the dry weather flows and the particular waterbodies these flows may be affecting.

During the first two years of the Program, the agencies will evaluate existing storm drain maps, collect existing information on storm drain outfalls and develop a list of data gaps. This work includes reviewing city records, drainage maps and storm drain maps, and conducting field surveys to verify drain locations. Based on this information the outfalls and storm drain system will be inventoried and prioritized for future mapping and inspection efforts. The goal of this task is to map the entire storm drain system, identify problem drainage areas and direct inspection programs.

Detect and Eliminate Non-Stormwater Discharges

During the first year of the Stormwater Program an Illicit Discharge and Elimination Program will be developed. As a first step agency departments involved with the program will be identified and staff requirements will be evaluated. The Illicit Discharge and Elimination Program will be based on two elements:

- ◊ The Illicit Discharge Detection Plan
- ◊ Field Screening Inspections

Develop Illicit Discharge Detection Plan. During the first year of the Program an Illicit Discharge Detection Plan will be developed. The purpose of the Plan is to provide procedures for locating problem areas, finding source areas, removing and correcting illicit connections and documenting actions taken. The Plan will include the following:

- ◊ Identifying procedures and staff to conduct screening investigations and follow-up.
- ◊ Developing a database to track illicit discharge reports and follow-up actions.
- ◊ Evaluating existing agency Programs, such as the Hazardous Waste Recycling Program, for illicit discharge issues.
- ◊ Establishing a method for receiving and tracking information received from the public regarding non-stormwater discharges.

In developing the Plan the following categories of non-stormwater discharges or flows will be evaluated and addressed if determined to be significant contributors of pollutants to the MS4:

1. Water line flushing
2. Landscape Irrigation
3. Diverted stream flows
4. Rising groundwaters
5. Uncontaminated ground water infiltration to separate storm sewers
6. Uncontaminated pumped ground water
7. Discharges from potable water sources
8. Foundation drains
9. Air conditioning condensation
10. Irrigation water
11. Springs

12. Water from crawl space pumps
13. Footing drains
14. Lawn watering
15. Individual residential car washing
16. Flows from riparian habitats and wetlands
17. Dechlorinated swimming pool discharges

Conduct Field Screening Investigations. Field screening investigations will begin during the second year of the program. The investigations will be based on the Illicit Discharge Detection Plan developed during the first year of the program. The primary goals of the field screening investigations are to detect and eliminate existing illicit connections (improper plumbing) and eliminate improper disposal of pollutants into the storm drain system. The field screening investigations will rely on an outfall/manhole inspection program and a site inspection program to achieve these goals. The outfall/manhole inspection program will identify and prioritize areas where illicit connections and discharges are most likely to occur by tracking dry-weather flows from the outfalls or manholes to their source. In addition, land use information and the storm drain-mapping program will be used to identify potential areas of illicit connections and discharges.

The site inspection program will involve conducting inspections at or near potential sources such as businesses that are known, from observations in the field, to result in illicit discharges.

Prohibit Non-Stormwater Discharges

During the first year of the Program, policies and procedures to specify the flows or discharges to the stormdrain that are controlled through the illicit connection/discharge program will be established. Existing ordinances will be evaluated and modified to clarify each agency's authority to control discharges to the municipally owned storm drain system. Chapter 2 further discusses development of ordinances for the stormwater program.

During the first year enforcement procedures will also be developed for the illicit discharge detection and elimination program. Education and cooperation will be considered as an initial method for enforcement. Penalties for illicit connections to the storm drain and illicit dumping and discharges will be established and responsibilities coordinated with the RWQCB.

Education

Training is an important component of the illicit discharge detection and elimination program. During the first year of the program agency staff will be trained on the administrative process for the illicit discharge detection and screening program. In addition, a procedural training program will be developed to train illicit discharge inspectors on manhole/outfall and site inspections and record keeping.

In addition, businesses and the general public will be informed about the hazards generally associated with illegal discharges and improper disposal of wastes.

III. Program Evaluation, Documentation and Annual Reporting

Measurable goals are used to assess the agencies' efforts to reduce urban runoff pollution and to evaluate the success of the Program each year. BMPs and measurable goals for the Illicit Discharge Detection and Elimination Program are presented in Table 5-1. The agencies will maintain records to document program implementation and annul progress. This information will be included in the annual report submitted to the RWQCB.

TABLE 5-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
Outfall and Storm Drain Mapping						
1. Evaluate existing agency mapping program.	1. Checklist for drainage system facilities developed.	x				
2. Collect existing information on outfalls and identify data gaps.	2. Data gaps identified.		x			
3. Incorporate storm drain mapping into the agency mapping system.	3. Stormdrain mapping incorporated into agency mapping system.			x		
4. Inventory and prioritize mapping of outfall and stormdrain system. Includes filling data gaps and developing additional mapping layers for problem drainage areas.	4. 25% of inventory each year completed.			x	x	x

TABLE 5-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
Detect and Eliminate Illicit Discharges						
1. Develop Illicit Discharge Detection Plan. Includes identifying staff to conduct screening investigations and follow-up.	1. Structure/ procedures for illicit discharge screening and investigation completed.	x				
2. Develop database to track illicit discharge reports and follow-up actions.	2. Database developed.		x			
3. Evaluate existing Hazardous Waste Recycling Program and revise, as appropriate, to include illicit discharge issues.	3. Household hazardous waste recycling program in place.	x				
4. Evaluate existing spill response program and revise, as appropriate, to include illicit discharge issues.	4. Spill response procedures included in the Illicit Discharge Detection Plan.	x				
5. Establish method for receiving and tracking information from the public about non-stormwater discharges.	5. Contact methods established.	x				

TABLE 5-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
6. Identify illicit connections (conduct Field Screening Investigations)	6a. Inventory conducted and sites prioritized for inspection.		x			
	6b. Initiated field inspections in high-risk areas.		x	x	x	x
	6c. The number of illicit connections found reported annually.		x	x	x	x
	6d. The number of illicit connections repaired / replaced reported annually.		x	x	x	x
Prohibit Non-Stormwater Discharges						
1. Prepare ordinance to prohibit non-stormwater discharges into stormdrain and implement appropriate enforcement procedures and actions.	1. Ordinance completed.	x				
Education						
1. Train agency staff on the administrative process for the illicit discharge and screening program.	1. Agency staff trained	x				
2. Annual training, as appropriate, for new staff and changes in the program.	2. Training provided.		x	x	x	x

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Construction Site Runoff Control

In the absence of proper management, construction sites can release significant amounts of sediment into stormwater and eventually into the storm drain system. Land disturbance leaves soils vulnerable to erosion. Sediment in runoff from construction sites, and wastes generated during construction, can pollute creeks and waterways. Long term, increases in the amount of paved and roofed areas cause increases in the volume and peak flow runoff. Increased runoff mobilizes and transports pollutants into storm drains, creeks and waterways.

Pollutants Commonly Discharged From Construction Sites
Sediment
Solid / Sanitary Wastes
Fertilizers
Pesticides
Oil and grease
Concrete truck wash out
Construction debris
Construction Chemicals

I. Program Objectives

The stormwater Phase II Final Rule requires that construction activities resulting in a land disturbance of greater than or equal to one acre adhere to a site runoff program implemented by the local agency. The following objectives of the Construction Site Runoff Control Program are designed to reduce pollutants generated by construction activities:

- ◊ Effectively prohibit non-stormwater discharges and require controls to reduce the discharge of pollutants during construction
- ◊ Minimize land disturbance at construction sites
- ◊ Protect water quality from pollutants generated by construction activities
- ◊ Require BMPs implementation at construction sites
- ◊ Develop and implement measurable goals to evaluate the success of the BMPs

II. Program Tasks and Associated BMPs

The Construction Site Runoff Control Program is divided into four categories to effectively address stormwater issues. Each category, and associated BMPs, is described below and summarized in Table 6-1.

Regulatory Mechanism

During the first year of the Program, policies and procedures to control runoff from construction sites with a land disturbance of greater than or equal to one

acre will be established. Existing ordinances will be evaluated and modified to clarify each agency's authority to address minimizing soil movement and capturing sediments from construction sites. The following principles will be considered when reviewing existing grading ordinances and policies:

- ◊ Use of good site planning
- ◊ Minimizing soil movement
- ◊ Capturing sediment to the greatest extent possible
- ◊ Good housekeeping practices
- ◊ Minimizing the impact of post construction stormwater discharges

Chapter 2 further discusses development of ordinances for the stormwater program.

Site Plan Review and Inspection

The site plan review and inspection aid in compliance and enforcement efforts by providing a mechanism for tracking new construction activities and a process for verifying the proper use of BMPs. In addition, the tracking mechanism facilitates record keeping and reporting and ensures that construction sites are in compliance with the stormwater program requirements.

Develop Site Review Procedures. During the first year of the Program the agencies will examine existing site review and inspection procedures and revise them, as appropriate, to address stormwater issues. The review will include evaluating current sediment and erosion control programs, revising existing agency permit requirements and developing additional controls into planning documentation and policies, such as the CEQA initial studies checklist and General Plan. The following procedures will be developed:

- ◊ Pre-construction site plan and BMP review. These procedures will incorporate consideration of potential water quality impacts from construction activities including control of waste such as discarded building material, concrete truck washout, chemicals, litter, and sanitary waste at the construction site.
- ◊ Site Inspection and enforcement of control measures. These procedures will incorporate site inspection and enforcement of control measures.
- ◊ Implementation of appropriate erosion and sediment control BMPs by construction site operators.
- ◊ Record keeping and reporting. These procedures will include developing a database of ongoing development projects and tracking the status of construction projects.

Staff training. An integral part to success of the Program is providing education to agency staff. During the first year an agency staff training program will be developed to advise agency staff on Phase II stormwater requirements.

Outreach. To assist the development/construction community with new stormwater requirements, the agencies will prepare informational handouts during the first and second years of the Program to be distributed during the construction site

permit process. These materials will provide practical, cost-effective measures that can be incorporated into the project to reduce the potential for stormwater runoff impacts. Examples of handout materials include the following:

- ◊ Construction site permit process for sites one acres and greater, and for sites less than 1 acre
- ◊ Five guiding principles for controlling runoff from construction sites
- ◊ Good housekeeping practices for construction sites; regardless of size
- ◊ BMPs for construction sites
- ◊ Information on stormdrain protection

Develop BMPs. During the second and third years of the Program BMPs for the following activities will be developed:

- ◊ Runoff control
- ◊ Erosion Control
- ◊ Sediment Control
- ◊ Good housekeeping

Good housekeeping BMPs may include activities associated with concrete and cement operations, handling plaster and construction debris materials, and portable toilet maintenance.

Contractor Training Program

The Program will conduct training workshops to minimize the impact of construction activities on stormwater. During the first year of the Program, training materials for contractors will be developed. Beginning in the second year of the Program two training workshops will be held each year. The workshops will specifically address the regulatory requirements involved with the Phase II stormwater Program, permitting requirements and implementation of construction BMPs.

Information Submitted by the Public

The public can play a crucial role in identifying instances of non-compliance at construction sites. During the second year of the Stormwater Program a Public Inquiry Program will be established and implemented. The program will include a process for receiving and considering pubic inquiries, concerns, and information submitted regarding local construction activities. Although some form of enforcement action or reply will not be required, the agencies will consider information submitted and develop a tracking process for publicly submitted information.

III. Program Evaluation, Documentation and Annual Reporting

Measurable goals are used to assess the agencies' efforts to reduce urban runoff pollution and to evaluate the success of the Program each year. BMPs and measurable goals for the Construction Site Runoff Control Program are presented in Table 6-1. The agencies will maintain records to document program implementation and annual progress. This information will be included in the annual report submitted to the RWQCB.

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TABLE 6-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Construction Site Stormwater Runoff Control
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
Regulatory Mechanism						
1. Develop ordinance to require erosion and sediment controls and mechanisms for enforcement of the stormwater program.	1. Ordinance adopted.	x				
Site Plan Review / Inspections						
1. Review existing Sediment and Erosion Control Programs and revise as appropriate.	1. Summary of existing programs completed.	x				
2. Develop plan review and inspection procedures to address stormwater requirements. Include procedures for notifying applicants about the stormwater requirements.	2a. Procedures developed.	x				
	2b. Handout regarding Phase II stormwater requirements available at permit counter and on Agency web page.	x				
	2c. Checklists for plan reviewers and inspectors developed.	x				
	2d. Construction sites in violation of erosion ordinance being tracked.			x	x	x
3. Train inspectors and permit reviewers.	3a. Inspector and permit reviewer training developed.	x				
	3b. Inspectors and permit reviewers trained.		x	x	x	x

TABLE 6-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Construction Site Stormwater Runoff Control
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
4. Develop BMPs to address the following: • Runoff Control • Erosion Control • Sediment Control • Good housekeeping	4. Two BMPs developed in years 2 and 3.		x	x		
Contractor Training Program						
1. Develop a training program for contractors.	1. Training materials completed.	x				
2. Conduct Training Program.	2. Two training courses per year conducted.		x	x	x	x
Information Submitted by the Public						
1. Develop / Implement Public Inquiry Program.	1. Program for public inquiry being implemented.		x	x	x	x

Post Construction Stormwater Management: New and Re-Developments

Two primary stormwater concerns are associated with new development and redevelopment. As communities are progressively built out, impervious surfaces replace natural topography, increasing stormwater flow, and resulting in changes to stream morphology. Secondly, new urban areas add to urban pollutant loads by creating new sources of pollutants.

Several studies have shown that controlling pollutants once they have entered into the storm drain system is more difficult and expensive than preventing or reducing the pollutants at the source. If areas proposed for new development or redevelopment are planned, designed, and constructed in a manner that is sensitive to issues of urban runoff, then future pollutant loading from these areas will be reduced.

I. Program Objectives

The stormwater Phase II Final Rule requires that new or redevelopment projects resulting in a land disturbance of greater than or equal to one acre adhere to a post construction stormwater management program implemented by the local Agency. The primary objectives of the Post Construction Program are as follows:

- ◊ Reduce the potential for discharge of pollutants into urban runoff from new development and re-development areas
- ◊ Manage site runoff volumes and flow rates such that they are similar to pre-construction levels
- ◊ Treat runoff as appropriate

Design requirements specified in Attachment 4 of the General Permit will be incorporated into the Post Construction Program to achieve these objectives.

II. Program Tasks and Associated BMPs

The Post Construction Program is divided into three categories to effectively address stormwater issues. Each category, and associated BMPs, is described below and summarized in Table 7-1.

Regulatory Mechanism

The Post Construction Program involves adopting policies through General Plan amendments, or adopting ordinances to address urban runoff quantity and quality during project planning and

implementation. During the first year of the Program, policies and procedures to control runoff from new and redevelopment construction sites with a land disturbance of greater than or equal to one acre will be established. Existing ordinances and the General Plan will be evaluated and modified to require a new development or redevelopment project to consider the following:

- ◊ Minimizing impervious area
- ◊ Controlling pollutants by eliminating or reducing potential new sources
- ◊ Installing treatment controls, as appropriate to the site
- ◊ Participating in the funding of regional / municipal level BMPs

Chapter 2 further discusses development of ordinances for the stormwater program.

Post Construction Program Development

To address stormwater runoff concerns from new and re-developments an integrated post construction program will be developed. The purpose of the program is to control flow and water quality from new development / redevelopment projects. Development of the program will include integrating existing land use programs, developing BMPs, and evaluating structural and nonstructural stormwater controls.

Review and Revise Existing Programs. During the first and second years of the Program the agencies will examine existing plan review and permitting procedures and revise, as appropriate, to address stormwater issues. The review will include evaluating current construction inspection programs, revising existing agency permit requirements and updating agency design criteria to include BMPs addressing stormwater runoff. The following procedures will be developed:

- ◊ Mechanism to inform permit applicants of new requirements regarding stormwater runoff.
- ◊ Guidance for applicants on potential design measures.
- ◊ Revise staff permit/design review process to include urban runoff issues and long term maintenance of BMPs.
- ◊ Develop criteria to determine if stormwater controls are needed for a proposed project.

In addition, inspection programs will be reviewed and revised to include the following:

- ◊ A post construction runoff controls checklist to allow inspectors to verify that runoff controls were implemented.
- ◊ A procedure for verifying that improper connections to the storm drains do not exist once construction is completed.
- ◊ A procedure for providing long term maintenance of BMPs.

Prepare Design Critera Workplan. A detailed workplan and schedule for reviewing and revising site design criteria

will prepared during the first year to address requirements of Attachment 4.

Compile BMP Manual. There are numerous BMPs available for post construction runoff control. During the second year of the program existing BMPs available from the EPA website and the SWRCB programs will be compiled into BMP manual. The purpose of the manual is to provide general guidance on the types of and maintenance procedures for BMPs used to control stormwater runoff from new and redevelopment sites.

Evaluate Structural and Nonstructural Stormwater Controls. New development / redevelopment urban runoff issues can be addressed through land-use planning by controlling the amount of impervious surfaces or pollutant sources added to the community. These controls include incorporating a combination of structural and nonstructural BMPs.

Non-structural BMPs are preventative actions that include site-based local controls. These controls can include buffer strip and riparian zone preservation, minimizing land disturbance and imperviousness and maximizing open space.

Structural BMPs are divided into three types of practices:

◊ Storage Practices: Storage or detention BMPs control stormwater by gathering runoff in wet ponds, dry basins or other storage units for slow release into receiving waters or drainage systems. These practices control both stormwater volume and settle out particles for pollutant removal.

◊ Infiltration Practices: Infiltration BMPs are designed to facilitate the percolation of runoff through the soil to groundwater; resulting in reduced stormwater quantity and mobilized pollutants. Examples include infiltration basins/trenches, dry wells and porous pavement.

◊ Vegetative Practices: Vegetative BMPs are landscaping features that enhance pollutant removal. Examples include grassy swales, filter strips and artificial wetlands.

During the second year of the program the agencies will identify existing structural and non-structural controls and develop a maintenance program.

Beginning in the third year of the program a workgroup will be established to evaluate strategies for including structural and non-structural BMPs into future developments. In addition a workgroup will be established to address reducing impervious surfaces in new and re-developments. Lastly, the program will review the need for additional BMPs annually beginning in year three.

Training

Beginning in the second year of the program annual staff training will be provided. Training will include the proper inspection and monitoring of structural controls, BMPs, and record keeping procedures. In addition, staff guidance for evaluating the adequacy of proposed post construction controls will be developed.

III. Program Evaluation, Documentation and Annual Reporting

Measurable goals are used to assess the agencies' efforts to reduce urban runoff pollution and to evaluate the success of the Program each year. BMPs and measurable goals for the Post Construction Program are presented in Table 7-1. The agencies will maintain records to document program implementation and annual progress. This information will be included in the annual report submitted to the RWQCB.

TABLE 7-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
Regulatory Mechanism						
1. Develop an ordinance to address post-construction runoff from new development and redevelopment projects that disturb greater than one acre of land.	1. Ordinance adopted.	x				
Post Construction Program Development						
1. Review existing Plan Review and Permitting Program and revise for stormwater issues.	1. Program reviewed and revised.	x	x			
2. Review existing Construction Inspection Program and revise to include stormwater issues.	2. Program reviewed and revised.	x	x			
3. Prepare detailed workplan and schedule for reviewing and revising site design criteria (to address requirements of Attachment 4).	3. Workplan completed	x				
4. Based on developed workplan update Agency Design Criteria to include BMPs that prevent stormwater pollution from site runoff.	3a. Design criteria required by developers updated. 3b. Design guidelines provided on webpage.		x	 x		
5. Compile BMP manual and make available on Agency webpage.	4. BMP manual completed and available on webpage.		x			

TABLE 7-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
6. Identify existing Structural Stormwater Controls and develop a Maintenance Inspection Program.	5a. Existing structural controls identified. 5b. Maintenance inspection program developed and implemented.		x	x	x	x
7. Develop strategies to include structural and non-structural BMPs into future developments.	6. Workgroup established to evaluate strategies for including structural and non-structural BMPs into future developments.			x	x	x
8. Develop strategies to reduce impervious surfaces in future development projects.	7. Workgroup established to evaluate reducing impervious surfaces.			x	x	x
9. Identify additional BMPs for development.	8. Program evaluated annually for new BMPs.			x	x	x
Training						
1. Train staff in proper inspection and monitoring of structural controls, BMPs and record keeping procedures.	1. Annual training conducted.		x	x	x	x

Municipal Operations Program Pollution Prevention / Good Housekeeping

Significant amounts of urban pollutants are associated with street and road surfaces; these pollutants come from pavement and vehicle wear, atmospheric deposition and littering. Similarly, public sidewalks, plazas, parking lots, parks and corporation yards are sources of urban stormwater runoff pollutants.

Municipal maintenance staff comprise a large group of employees whose everyday work can directly help prevent stormwater pollution. In addition, the maintenance field personnel play an essential role in reporting illicit discharges and pollution problems that need to be fixed.

I. Program Objectives

The following objectives of the Municipal Operations Program are designed to address pollutant sources and to reduce pollutants generated by municipal maintenance activities:

- ◊ Optimize pollutant removal during routine maintenance activities such as street sweeping and maintenance of storm drainage facilities.
- ◊ Prevent or minimize discharges to storm drains and watercourses from road maintenance, parks, corporation yards and other publicly owned facilities.
- ◊ Provide information and education about the Stormwater Program to agency employees.
- ◊ Develop and implement measurable goals to evaluate the success of the BMPs.
- ◊ Facilitate reporting.

II. Program Tasks and Associated BMPs

The municipal operations program is divided into five categories to effectively address stormwater issues. Each category, and associated BMPs, is described below and summarized in Table 8-1.

Update Good Housekeeping Procedures for Municipal Operation Areas

There are several urban runoff concerns associated with corporation yards and other municipal operations areas. These sites typically conduct vehicle and equipment repair, and fueling and washing activities. In addition, these sites typically maintain storage areas for new and waste chemicals such as paints, pesticides, lubricating oils, soaps, solvents and cleansers.

Corporation Yard Activities and Urban Runoff Concerns

Activity/Source	Urban Runoff Concerns
Vehicle washing, equipment cleaning, engine steam cleaning	Discharge of soap, cleansers, heavy metals, and sediments to the storm drain
Changing auto fluids	Spills of fluids, especially in outdoor or uncovered areas
Vehicle fueling	Fuel spills
Parked vehicles and equipment	Fuel leaks and drips outdoors
Outdoor materials/waste storage	Release/spill of stored materials

The agencies currently implement the following good housekeeping programs:

◊ Vehicle Wash Area Maintenance Plan

◊ Hazardous Materials Storage Program

◊ Spill Prevention Program

◊ Storage of Spoiled Material

◊ SWPPP for Corporation Yards

◊ Corporation Yard Training Program

During the first year of the Stormwater Program the agencies will review these plans and programs and revise, as appropriate, to include BMPs designed to protect stormwater. In addition, BMPs for corporation yards will be developed during the first year of the Stormwater Program. Future BMP development will be evaluated annually beginning in Year 2.

Update Storm Drain Facilities Inspection and Cleaning Program

A variety of urban pollutants can flow to and accumulate in the storm drain system. For example, trash and litter from food packaging and paper products lodge in storm drain inlets. Organic matter and sediment can also clog catch basins. Heavy metals and toxic chemicals from the illegal dumping of waste antifreeze and oil, leaking vehicle fluids, and runoff of fertilizers and pesticides are also found in storm drain inlets and catch basins. Many pollutants are also flushed into receiving waters by dry weather flows or storm water in the wet season, particularly the season's first heavy storm.

The agencies currently inspect and clean, as needed, stormwater catch basins and inlets. Drainage ditches and creeks are also cleared of vegetation and debris to facilitate the flow of stormwater. During the first year of the stormwater program existing stormwater inlet practices will be reviewed and a Storm Drains Facilities Cleaning Plan will be developed. This Plan address the following:

◊ Developing storm drain BMPs

◊ Tracking inlet maintenance and identifying areas requiring more frequent cleaning

◊ Record keeping

Review Street Sweeping Program

A variety of urban pollutants are found on city streets and road surfaces. For example, concrete and asphalt particles from pavement abrasion, heavy metals from

leaking vehicle fluids, and litter are deposited on streets and roads. These pollutants ultimately runoff into a drain inlet and enter the storm drain system.

The agencies currently conduct routine street sweeping for aesthetic, safety, and public health reasons. The following practices are utilized by the agencies' street sweeping programs to reduce polluted runoff:

◊ Increased street sweeping frequency in areas most prone to litter and dirt accumulation.

◊ Timed street sweeping prior to the onset of the rainy season.

The agencies will develop a street sweeping BMP, based on existing practices and stormwater concerns during the first year of the stormwater program. The BMP will address the following:

◊ Street Sweeping Frequency

◊ Prioritized Sweeping

◊ Litter Control

◊ Identifying Problem Areas

◊ Record keeping

Update Road Repair and Maintenance Program

These types of activities include repair work, such as asphalt or concrete removal, patching of potholes, resurfacing, and sealing pavement surfaces. Stormwater pollution occurs when broken up asphalt, concrete cuttings, saw cut slurry, sediment, debris, and fuel or oil from construction equipment enters the storm drain system. Both agency personnel and contractors conduct repair activities.

Current operating practices include procedures to keep materials from entering the storm drain system during road repair and maintenance activities. The agencies will develop road repair and maintenance BMPs, based on existing practices and stormwater concerns, during the first year of the stormwater program. The BMPs will address the following:

◊ General Road Repair Practices

◊ Patching and Resurfacing

◊ Equipment Storage and Cleaning

◊ Asphalt and Concrete Removal

◊ Contractor Requirements

Develop Staff Training Program

Staff training is an integral part of a successful stormwater program. Each department will ensure that personnel are trained and familiar with the BMPs applicable to their activities or areas of responsibility. An initial and refresher training program for municipal maintenance employees will be developed during the first year of the Stormwater Program. One half day workshop will be held during the first year; focusing on defining the stormwater program and introducing BMPs. Annual refresher training will be held each subsequent year.

III. Program Evaluation, Documentation and Annual Reporting

Measurable goals are used to assess the agencies' efforts to reduce urban runoff pollution and to evaluate the success of the Program each year. BMPs and measurable goals for the Municipal Maintenance Program are presented in Table 8-1. The agencies will maintain records to document program implementation and annual progress. This information will be included in the annual report submitted to the RWQCB.

TABLE 8-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
Good Housekeeping Procedures for Maintenance Operation Areas						
1. Review Agency Housekeeping Programs	1. Summary document listing existing housekeeping programs and suggested modifications for the Stormwater Program completed.	x				
2. Review SPCC Plan	2. Incorporate Stormwater Issues into SPCC Plan	x				
3. Develop Corporation Yard BMPs	3. Corporation Yard BMPs completed.	x				
4. Evaluate for additional BMPs development	4. List of BMPs for development completed.	x				
5. Implement Corporation Yard BMPs	5. Documentation that Corporation Yard BMPs are being implemented.		x	x	x	x
6. Develop one BMP per year, as appropriate, based on evaluation of the previous year.	6. BMPs for implementation completed.		x	x	x	x

TABLE 8-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
Storm Drain Facilities Inspection And Cleaning						
1. Evaluate and document existing stormdrain inspection and cleaning procedures.	1. Summary document of existing stormdrain inspection and cleaning procedures.	x				
2. Evaluate and document existing ditch and creek cleaning procedures.	2. Summary document of existing ditch and creek cleaning procedures.	x				
3. Evaluate and document existing silt and grease trap maintenance procedures.	3. Grease trap maintenance procedures.	x				
4. Develop Storm Drain Maintenance BMPs.	4. Completed Storm drain Maintenance BMPs.		x			
5. Track inlet maintenance and identify areas requiring frequent cleaning.	5. Annual summary of inlet maintenance reported.		x	x	x	x

TABLE 8-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
Street Sweeping						
1. Review and evaluate existing street sweeping practices.	1. Documented Street Sweeping Practices.	x				
2. Review and evaluate existing leaf collection program	2. Documented leaf collection practices.	x				
3. Review and evaluate existing litter control program.	3. Documented litter control practices.	x				
4. Develop Street Sweeping BMPs (including litter and leaf control).	4. Completed Street Sweeping BMPs.	x				
5. Implement Street Sweeping BMPs	5. Annual Summary of Street Sweeping Practices.		x	x	x	x
Road Repair and Maintenance						
1. Review and evaluate impacts to Stormwater from existing road repair and maintenance practices.	1. Documented Road Repair and Maintenance Practices.	x				
2. Develop Road Repair and Maintenance BMP	2. Completed Road Repair and Maintenance BMP.	x				
3. Develop one BMP every other year based on evaluation of the previous program years.	3. Completed BMPs for implementation.		x		x	

TABLE 8-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
Cities of Vacaville and Dixon

BMPs	Measurable Goals	Implementation Schedule (Fiscal Years)				
		03/04	04/05	05/06	06/07	07/08
Staff Training						
1. Develop initial and refresher training program for municipal maintenance employees.	1. Completed training program.	x				
2. Conduct one half-day training workshop focusing on the stormwater program and BMP implementation.	2. Completed workshop.	x				
3. Conduct Annual refresher training programs for municipal maintenance employees.	3. Documented annual training.		x	x	x	x