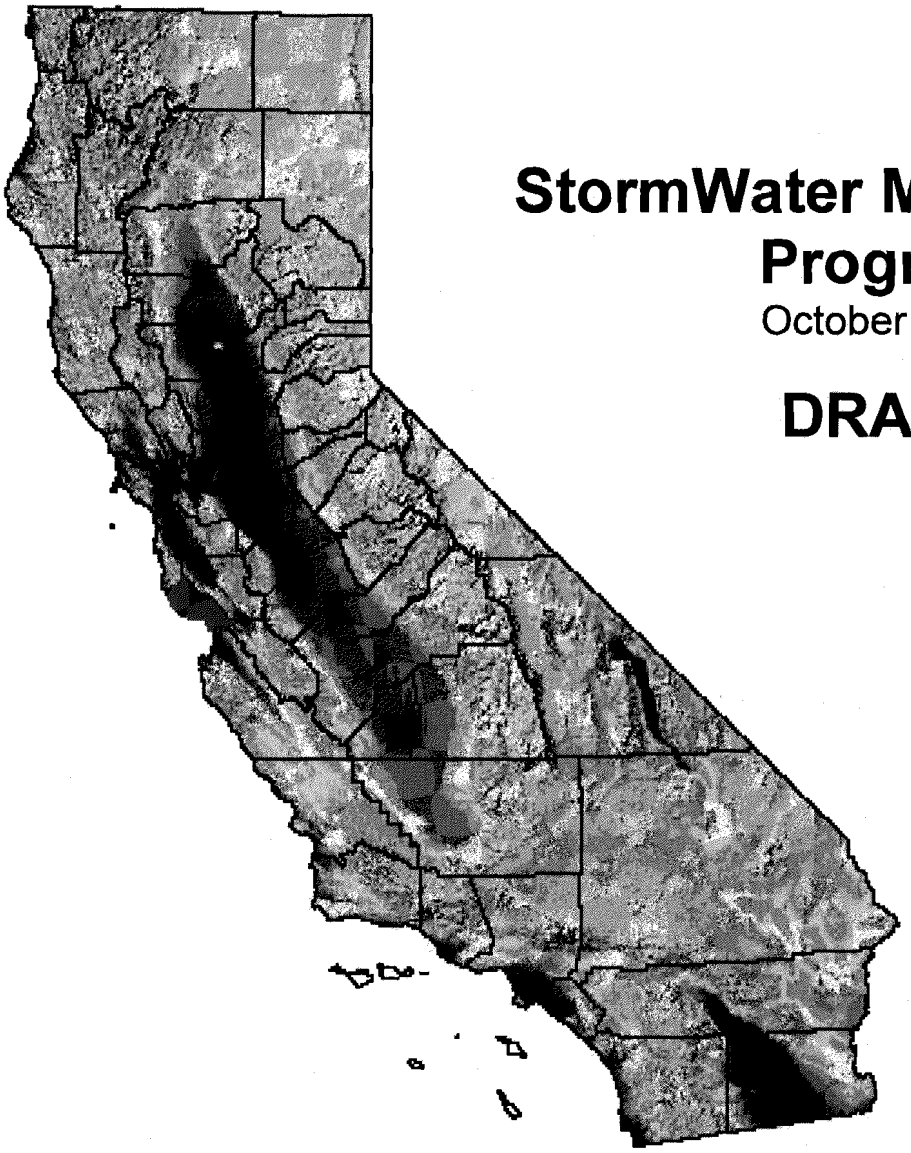

StormWater Management Program

October 2008

DRAFT

Santa Cruz County
City of Capitola

Stormwater Pollution Prevention Program

Item No. 10 Attachment No. 6
March 19-20, 2009 Meeting
County of Santa Cruz/Capitola

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TABLES AND FIGURES

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ACRONYMS AND ABREVIATIONS

SIN	Stormwater Information Exchange
BASMAA	Bay Area Stormwater Management Agencies Association
BMP	Best Management Practices
CAP	Citizens Advisory Panel
CASQA	California State Stormwater Quality Association
CDC	County Design Criteria
CEQA	California Environmental Quality Act
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
NRCS	National Resources Conversation Service
RCD	Resource Conservation District
RWQCB	Central Coast Regional Water Quality Control Board
SWRCB	California State Water Resource Control Board
SUSMP	Standard Urban Stormwater Management Program
SWMP	Stormwater Management Program
SWPPP	Stormwater Pollution Prevention Plan

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.
III.	BMPs	Practices implemented by private industry and public agencies which prevent or reduce water pollution.

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Overview

This Stormwater Management Program (*SWMP*) builds on locally popular efforts to preserve and enhance Santa Cruz County watersheds and is the County of Santa Cruz and the City of Capitola's response to the new statewide National Pollutant Discharge Elimination System (NPDES) General Permit requirements for agencies designated by the State Water Resources Control Board.

The County and City have long recognized the importance of stormwater and watershed management to protect the significant natural resources of the area. These natural resources provide important habitats for aquatic life of all varieties and opportunities for public recreation and enjoyment as well as commercial operations and ventures. All runoff eventually flows to the Monterey Bay National Marine Sanctuary. Maintaining near shore water quality in the Sanctuary is critical for the health of Santa Cruz County residents, visitors, aquatic life, and the local tourist economy.

Urban runoff issues often follow watershed boundaries rather than jurisdictional boundaries. Understanding this, and our limitations on legal authority, it is the County and City's intent that this *SWMP* is complimentary to other local and regional urban runoff efforts (such as other local SWMPs and the Monterey Bay Sanctuary's Water Quality Protection Program). Successful implementation of this Program will include cooperation and coordination with these other efforts.

Under this General Permit, the agencies will implement specific types of urban runoff pollutant control measures and submit reports to the Central Coast 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, the State Water Resources Control Board General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer System (Small MS4) and the Model Urban Runoff Program (MURP).

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).

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 agencies 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 enable the enforcement of this new General Permit.

The General Permit requires that each agency 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 New Development / Redevelopment
- ◊ Pollution Prevention/Good Housekeeping for Municipal Operations

In addition, small MS4s serving a population of 50,000 people or more, or that are subject to high growth, are required to comply with the specific design standards as part of the post-construction program and the water quality standards through implementing better tailored BMPs in an iterative process (as outlined in Attachment 4 of the General Permit). As indicated on Attachment 5 of the General Permit, Santa Cruz County must comply with the specific design requirements of Attachment 4.

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
- ◊ Long term protection of the watershed
- ◊ Satisfy the appropriate water quality requirements of the Clean Water Act
- ◊ Educate residents and businesses about stormwater pollution and efforts being made to improve water quality

As indicated in the SWRCB's Fact Sheet describing the content and requirements of the General Order;

> "It is not anticipated that the SWMP be fully implemented upon submittal with the NOI. It is the intent of this General Permit that SWMPs submitted with the NOI contain sufficient information such that the RWQCB and interested parties understand the BMPs that will be implemented or will be developed and implemented over the course of the General Permit term. It is also expected that SWMPs will protect water quality, contain measurable goals and schedules, and assign responsible parties for each BMP. "

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

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.

Measurable Goals are BMP design objectives that quantify the progress of program implementation and the performance of the BMPs. The Measurable Goals provide milestones for tracking the progress and effectiveness of the BMPs in reducing pollutants to the Maximum Extent Practicable.

Existing Agency 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. During the first year of the Stormwater Program the agencies will create a comprehensive list of existing BMPs as they relate to each minimum control measure. Examples of BMPs that may already exist include:

◊ Employee training for pesticide/fertilizer application

◊ Spill response plans and training (relating to sewage, fuel, refuse, etc.)

◊ Public signs related to litter, pet maintenance, etc.,

◊ Storm drains already stenciled

◊ Streams already adopted for maintenance by volunteer organizations; and/or,

◊ Potential problem areas based on complaints and personnel historical knowledge.

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 address the six minimum measures.

Each chapter contains a Table of BMPs and Measurable Goals for each agency. The selection of BMPs, Measurable Goals and associated implementation schedules took into account pollutants of concern, target audiences associated with those pollutants, past experience in dealing with stormwater pollution issues, and the availability of financial and manpower resources to implement the BMPs and Measurable Goals. The agencies appreciate the importance of prioritizing BMP completion with the Stormwater Management Program and made effort to expedite BMPs essential to the overall Program.

◊ *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. This chapter also describes controls to minimize erosion and sedimentation from construction activities.

◊ *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. 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.

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Program Description and Management

The *SWMP* is a joint project of Santa Cruz County and the City of Capitola. Each Agency 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 County of Santa Cruz and the City of Capitola have joined together to prepare and implement this *SWMP*. Both the County of Santa Cruz and the City of Capitola 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 agencies. Examples of region-wide efforts include public education targeted to residents in both agencies, and coordinating with other countywide, regional, and state agencies. The County roles and responsibilities for implementing major components of the *SWMP* are presented in Figure 2-1.

The Public Works Director will act as the *SWMP* Coordinator for the City of Capitola. In addition to managing the Stormwater Program, the Public Works Director will be responsible for coordinating with the appropriate City departments to implement the *SWMP*.

Table 2-1 lists the Stormwater Management Program contacts for the County of Santa Cruz and the City of Capitola.

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 State Stormwater Quality Association (CASQA).
- Representatives from the agencies will participate in the Stormwater Information Network (SIN) exchange group. This group will meet on a semi-annual basis to share stormwater program information that may be relevant on a region-wide basis. Topics may include BMP effectiveness and partnership opportunities. Ad-hoc work groups will be formed, as necessary, to address target issues (such as wet season grading, consistent enforcement, and BMPs). The SIN 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 stakeholder outreach.

Program Coordination

The County of Santa Cruz and the City of Capitola will work together to coordinate permit requirements,

reporting, and overall program consistency. This informal cooperation will allow the agencies to effectively share resource responsibility for specific projects, such as developing outreach material.

Legal Authority

The Phase II Stormwater Regulations require each agency 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 and 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*. All new or revised ordinances will be reviewed for consistency with the General Plan. 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 persons engaged in activities that are potential sources of pollutants to 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 from 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 agencies will investigate funding mechanisms to support the Stormwater Program. Possible funding options/mechanisms that the agencies may chose to utilize for developing and implementing the *SWMP* include the following:

- ◊ Current revenues (general fund appropriation)
- ◊ New "dedicated" funding sources (fees and taxes)

◊ Outside funding sources (grants and loans)

Reporting

At the end of each fiscal year, each agency will prepare an *Annual Report*. The *Annual Reports* will summarize the progress of implementing the *SWMP* and qualitatively evaluate the effectiveness of the BMPs and measurable goals. The Reports will be submitted to the RWQCB for staff review and comment.

III. Geographic Description

Santa Cruz County is located along the Central Coast of California at the northern end of Monterey Bay. To the northwest the County is bordered by San Mateo County; on the east and northeast by the crest of the Santa Cruz Mountains and Santa Clara County; on the southeast corner by San Benito County; on the south by Monterey County and the Pajaro River; and on the west by the Pacific Ocean. Figure 2-2 illustrates the major roads and water bodies in the County.

The County is dominated by residential land use, including rural and mountain residential zoning, timber harvest preserve, and a mix of commercial and special districts (schools and a harbor). The lower portions of the watersheds, close to Monterey Bay, are more urbanized with residential, commercial and special districts land use. Upper watershed land use consists predominantly of rural residential, timber harvest preserve and/or open space.

The City of Capitola encompasses approximately 2.5 square miles centrally located in the County of Santa Cruz. Active water ways in the City include Soquel Creek and Noble Gulch both of which drain to Monterey Bay; the City's southern boundary. The City of Capitola's geography includes coastal bluffs and plateaus, river valleys, and a beach and lagoon at the mouth of Soquel Creek.

The main watersheds located within Santa Cruz County are the San Lorenzo River and Soquel Creek watersheds. Figures 2-3, 2-4 and 2-5 illustrate the locations of the major watersheds. The lower reaches of the Soquel Creek watershed are located within the City of Capitola. In Santa Cruz County, the San Lorenzo River drains the 88,000 acre San Lorenzo River watershed, the largest watershed that is completely within the County. Santa Cruz County receives some inflow of surface water from Santa Clara, San Benito, and Monterey Counties via the Pajaro River. A small, rural area in northern Santa Cruz County drains into San Mateo County via Pescadero Creek. Otherwise, the County is isolated from all other areas by topographic barriers and fault lines.

IV. Pollutants of Concern

Urban runoff transporting non-point source pollution is widely regarded as the nation's leading threat to water

quality. Pollutants may include toxic metals, hydrocarbons, nutrients, suspended solids, and many other chemicals that are detrimental to aquatic life. Urbanization and increases in population directly affect the type of pollution that enters storm drains. Impervious surfaces such as roads and parking lots prevent storm water from penetrating into the ground. These surfaces become conduits for pollutants. Some common examples include oil that washes off roads, fertilizers and pesticides from lawns, and detergents from car washing and commercial activities.

The following section describes the pollutants of concern for Santa Cruz County and the City of Capitola. In addition, each Chapter of the *SWMP* describes pollutants of concern associated with each minimum measure and the associated target audience.

Pollutants of Concern

The primary pollutants of concern specific to Santa Cruz County and the City Capitola are fecal indicator bacteria, sediment, and nutrients. These pollutants of concerns will be addressed throughout the management area for the stormwater program. In addition, pesticides/toxicity and trash are pollutants of concern for Santa Cruz County in the south county area and a few other localized spots. Several water bodies in the San Lorenzo, Soquel, Aptos, and Pajaro Watersheds are listed as impaired pursuant to Section 303 (d) of the Clean Water Act. Table 2-2 lists the impaired water bodies and associated pollutants of concern.

Potential sources of pollutants include the following:

- ◊ Fecal Indicator Bacteria (FIB): Urban runoff, domesticated animal waste, manure application, septic systems, nonpoint sources, and natural sources.
- ◊ Sediment: Land development, urban runoff, roads, nonpoint sources, and silviculture.
- ◊ Nutrients: landscape maintenance, domesticated animal waste, septic systems, and nonpoint sources.

In developing the various programs of the *SWMP* the agencies have prioritized BMP's potentially impacting waterbodies listed on the Section 303(d) list, to the extent that potential stormwater pollutant sources are within the agencies' jurisdiction. The specific BMP's which will address each pollutant of concern and provide for TMDL implementation are listed in Table 2-3.

V. TMDL's

The Federal Clean Water Act requires the development of TMDL's and implementation plans to bring impaired water bodies back into compliance with water quality objectives. A number of TMDL's have been developed for Santa Cruz County. Pathogen (FIB) TMDL's have been developed for San Lorenzo River and

tributaries; Soquel Lagoon, Aptos Creek and tributaries, and Watsonville Slough System. A Sediment TMDL and Nitrate TMDL have been developed for both the San Lorenzo Watershed and the Pajaro River. Elevated nitrate has also been identified as a cause of lagoon impairment in Aptos and Valencia Creeks.The TMDL's identify the stormwater systems as sources of sediment and FIB. However, it must be kept in mind that there are also other sources including natural sources and uncontrollable sources, particularly for FIB. While the goal of the TMDLs and associated Implementation Plans is to reduce pollutant loading from each source to levels that will allow water quality objectives to be met, research by Santa Cruz County and others suggest that the current water quality objectives for FIB cannot be met in urban areas. Nevertheless, the BMP's in the SWMP have been developed to reduce controllable sources of FIB that are conveyed by the storm drain system to the maximum extent practicable.

The BMP's contained in this SWMP have been developed specifically to implement recommendations and address the sources identified in the TMDL implementation plans and supporting documents, including the Assessment of Sources of Bacterial Contamination at Santa Cruz County Beaches (SCCHSA, 2006) and the San Lorenzo River Watershed Management Plan Update (SCCHSA, 2001). The background material used in the development of the TMDL's included source identification and prioritization; BMP identification and prioritization, monitoring program development and coordination with stakeholders. This work, in combination with the ongoing monitoring and evaluation of implementation success will meet the objectives and serve as the functional equivalent of Wasteload Attainment Allocation Plans. A goal of the SWMP is not to target BMP's to specific TMDL's, or geographic areas, but to implement the BMP's throughout the management area to reduce controllable sources of sediment, FIB, and nutrients associated with the stormdrain system to the maximum extent practicable. The specific BMP's which will address each pollutant of concern and provide for TMDL implementation are listed in Table 2-3.

The effectiveness of these BMP's toward meeting water quality objectives will be assessed on a triennial basis, in conjunction with the Regional Water Board's mandated triennial review of TMDL implementation for all sources. This review may result further refinement of BMP's for greater effectiveness, or refinement of water quality objectives to recognize the effect of uncontrollable sources of pollutants.

San Lorenzo River Sediment TMDL and Implementation Plan

On May 16, 2003, the RWQCB Central Coast Region adopted a sediment TMDL (Total Maximum Daily Load) for the San Lorenzo River, Carbonera Creek, Lompico Creek and

Shingle Mill Creek and incorporated the TMDL and associated Implementation Plan into the Basin Plan.

The Implementation Plan describes trackable implementation actions to address sources of erosion and sedimentation. Sediment load to the San Lorenzo River and associated Creeks is derived from nonpoint sources and point sources. As such, the TMDL Implementation Plan is structured to rely on a three-tiered framework for non-point source control of sediment and existing and anticipated regulatory programs for stormwater discharges.

For agencies identified as "Responsible Dischargers" in the TMDL Implementation Plan, sediment discharges derived from stormwater are regulated under the NPDES Phase II Stormwater general permit. The Implementation Plan identifies Santa Cruz County as a "Responsible Discharger".

The Implementation Plan lists the following three trackable Implementation Actions (Implementation Actions S, T and U) (listed as a,b,c, in the RWQCB comment letter) for agencies identified as "Responsible Dischargers":

a. Develop and implement a *SWMP* and Stormwater Pollution Prevention Plans (SWPPP) consistent with the NPDES Phase II Stormwater Regulations

b. Identify the San Lorenzo River Watershed as a priority for site inspection and enforcement measures in the *SWMP* and SWPPPs. Establish mechanism by which operators and owners of one-acre and greater construction projects are notified of the requirement to prepare SWPPPs.

c. Consider incorporation of sediment control programs/projects into the *SWMP* and SWPPPs.

This *SWMP* has been developed to meet the requirements of Implementation Actions S, T and U. Chapters 6 and 7 identify San Lorenzo River Watershed as a priority for site inspection and enforcement measures. In addition, BMPs and measurable goals for sediment control programs and projects are provided in Chapters 6 and 7.

Pajaro River Sediment TMDL

The sediment TMDL for the Pajaro River was adopted by the Regional Water Board on December 2, 2005, with approval by the Office of Administrative Law on November 27, 2006, and by the USEPA on May 3, 2007. This TMDL indicates that sediment discharge from urban lands will be reduced through implementation of specific measures in the SWMPs.

Pathogen TMDL's for San Lorenzo Watershed, Soquel Lagoon, and Aptos/Valencia Creek

Pathogen TMDL's for the San Lorenzo Watershed, Soquel Lagoon and Aptos/Valencia Creeks were adopted by

the Regional Water Board on March 21, 2008. They are still awaiting final approval by the State Water Board and the Office of Administrative Law. Those TMDL's identified discharges from municipal storm drain systems as primary controllable sources of pathogen contamination. The only controllable sources of greater significance were sanitary sewer system leaks into the San Lorenzo Estuary and septic system failures affecting the upper San Lorenzo River. Other identified sources of elevated pathogen levels included: pet waste, homeless persons, livestock, and natural or uncontrollable sources

Each TMDL was supported by a project report which assessed the sources of contamination. These project reports were supported by work done by the County in completing the Assessment of Sources of Bacterial Contamination at Santa Cruz County Beaches (SCCHSA, 2006) and the San Lorenzo Wastewater Management Plan Status Report, 2002-2007 (SCCHSA, 2008), both of which identified measures for control of pathogens.

With regard to control of pathogen discharge from stormwater systems, the TMDL implementation plans provide for the county and city to develop a management program that identifies pathogen-specific BMP's targeting pathogens from birds, pets, rodents and wildlife, dumpster leachate and humans. The BMP's should include public education, participation and outreach regarding sources of pathogens, health risks, and specific actions the public can take to reduce pathogen loading into surface waters. The implementation plans also call development of a fecal indicator monitoring and reporting plan which will include receiving water and stormwater outfall monitoring. The City and County intend to meet the requirements of the TMDL's though the development, implementation, monitoring, reporting, assessment, and ongoing adaptation of this Stormwater Management Program.

Pathogen TMDL for Watsonville Slough

The Watsonville Slough Pathogen TMDL was adopted by the Regional Water Board on March 24, 2006, approved by the Office of Administrative Law on November 20, 2006 (the effective date), and approved by the USEPA on July 19, 2007. Identified sources of pathogens include natural sources, urban stormwater (including pet waste, homeless encampments, and agricultural field workers), sanitary sewer collection system leaks and spills, livestock, and non-sterile manure applications to irrigated lands. With regard to urban stormwater systems, this TMDL includes similar provisions which call for public education, pet waste control, and monitoring, all of which is to be incorporated into SWMP implementation and reporting. These measures are included in this SWMP

Nitrate TMDL's for San Lorenzo and Pajaro Rivers

Nitrate TMDL's were approved for the San Lorenzo River and Pajaro River on January 14, 2003 and October 13, 2006, respectively. Although neither of these TMDL's identified stormwater systems as significant sources of nitrate, the SWMP includes BMP's which will reduce nitrate discharge to those water bodies.

Pending TMDL's

TMDL's are currently in preparation to address pathogens in Corralitos Creek and the Pajaro River and sediment in Aptos/Valencia Creeks.

VI. 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 Santa Cruz County was 260,200 residents including Santa Cruz City, Scotts Valley, Watsonville, and the city of Capitola. The population of the County covered by this permit is 135,326. In the year 2000, the total household population in the City of Capitola, was 10,150 residents. Both the City of Capitola and the County of Santa Cruz are listed as MS4s serving areas within an urbanized area and are therefore automatically designated for permit coverage.

Figure 2-6 illustrates the permit boundaries. These boundaries include the following areas listed in Attachment 1 of the General Permit: Aptos, Ben Lomond, Boulder Creek, Corralitos, Felton, Live Oak, and Soquel. Although the urbanized areas are limited to small portions of the County, the County has chosen to indicate the entire County as the permit boundaries to simplify jurisdictional issues within the County. However, programs listed in the *SWMP* were developed for, and will focus on, the urbanized areas of the County. The City of Capitola is responsible for implementing the *SWMP* within the City limits.

VII. Program Effectiveness Assessment

Effectiveness assessment is a process used to evaluate whether a stormwater program is meeting the performance standards and if the performance standards are being achieved efficiently and cost-effectively.

The Phase II NPDES General Permit contains requirements for annual review of the SWMP's effectiveness, BMPs effectiveness and improvement opportunities to achieve MEP.

While it is known that effectiveness assessment is a fundamental and necessary component for developing and implementing a successful stormwater program, methods for conducting such assessments are less known. For over 10 years Phase I Stormwater communities have been faced with increasing pressures to demonstrate effectiveness of programs without specific guidance in conducting these assessments. Therefore, these programs have historically relied on regular evaluation of program elements and control measures to ensure progress is being made towards achieving broader program goals.

In May 2007 the California Stormwater Quality Association (CASQA) developed the *Municipal Stormwater Program Effectiveness Assessment Guidance* to assist stormwater program managers in designing and conducting program effectiveness assessment using a range of assessment methods. As described in the CASQA Guidance Document, BMPs, program elements or the overall stormwater program can be categorized has having one or more of six levels of outcomes. Outcomes being defined as the result of implementing a stormwater BMP, program element or overall program implementation.

The Agencies will use the CASQA Guidance Document *Level One Outcomes* (documenting activities) during the first two years of program implementation. This will allow agency staff to become familiar with the basics of the stormwater program, and allow program staff to become fluent in the various BMPs and measurable goals of the stormwater Program.

In Years 3 and 4, the Agencies will develop an effectiveness assessment strategy based on the principles outline in the CASQA Guidance Document. The strategy will be submitted as an update to the SWMP with the Year 4 annual report. The strategy will describe actions that will be taken to assess the effectiveness of the SWMP in meeting regulatory requirements and improving water quality and beneficial use conditions. The strategy will specifically address the following:

- ◊ Identifying a process to be used to conduct effectiveness assessments and improve BMP implementation.
- ◊ Identifying quantifiable BMP and program effectiveness measurements.
- ◊ Assessing BMP implementation in terms of regulatory compliance, changing awareness, changing behavior, pollutant load reductions, and runoff and receiving water quality.

TABLE 2-1
STORMWATER MANAGEMENT PROGRAM
Coordinator Contact Information
Santa Cruz County and City of Capitola

Santa Cruz County Program Coordinator

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TABLE 2-2

STORMWATER MANAGEMENT PROGRAM

Possible Pollutants of Concern and Impaired Water Bodies
Santa Cruz County and City of Capitola

Impaired Water Body	Possible Pollutant of Concern [a]				
	Fecal Indicator Bacteria	Sediment	Nutrients	Pesticide / Toxicity (CCAMP)	Trash (CCAMP)
Santa Cruz County					
Pajaro River	X	X	X	X	X
• Salsipuedes Cr.	X			X	X
• Corralitos Creek	X	X			X
• Rider Creek		X			
Watsonville Slough	X		X	X	
• Harkins Slough			X	X	
Aptos Creek	X	X	A		
• Valencia Creek	X	X	A		
• Trout Gulch	X				
• Rio Del Mar Beach	X				
Soquel Creek	X				
• Noble Gulch	X				
Schwan Lake	X		X		
Arana Gulch		X		X	
San Lorenzo River Tributaries	X	X	X	X	
• Carbonera Creek	X	X	X		
• Lompico Creek	X	X	X		
City of Capitola					
Soquel Creek	X				
• Capitola Creek	X				
• Soquel Lagoon	X	O	O		
• Nobel Gulch	X				

Note: [a] Base on the Water Quality Assessment presented by the Regional Water Board on May 16, 2008
Information comes from the 303d list of impaired water bodies, unless otherwise noted.
O- Indicates that current information does not support the presence of impairment.
A- Indicates that current information indicates impairment even though it is not listed. All tributaries in the San Lorenzo Watershed are considered to contribute to sediment and nutrient impairment.

TABLE 2-3
BMPS WHICH WILL ADDRESS POLLUTANTS OF CONCERN
1-High Effect, 2- Medium Effect, 3-Lower Effect, 0-No Effect
Santa Cruz County

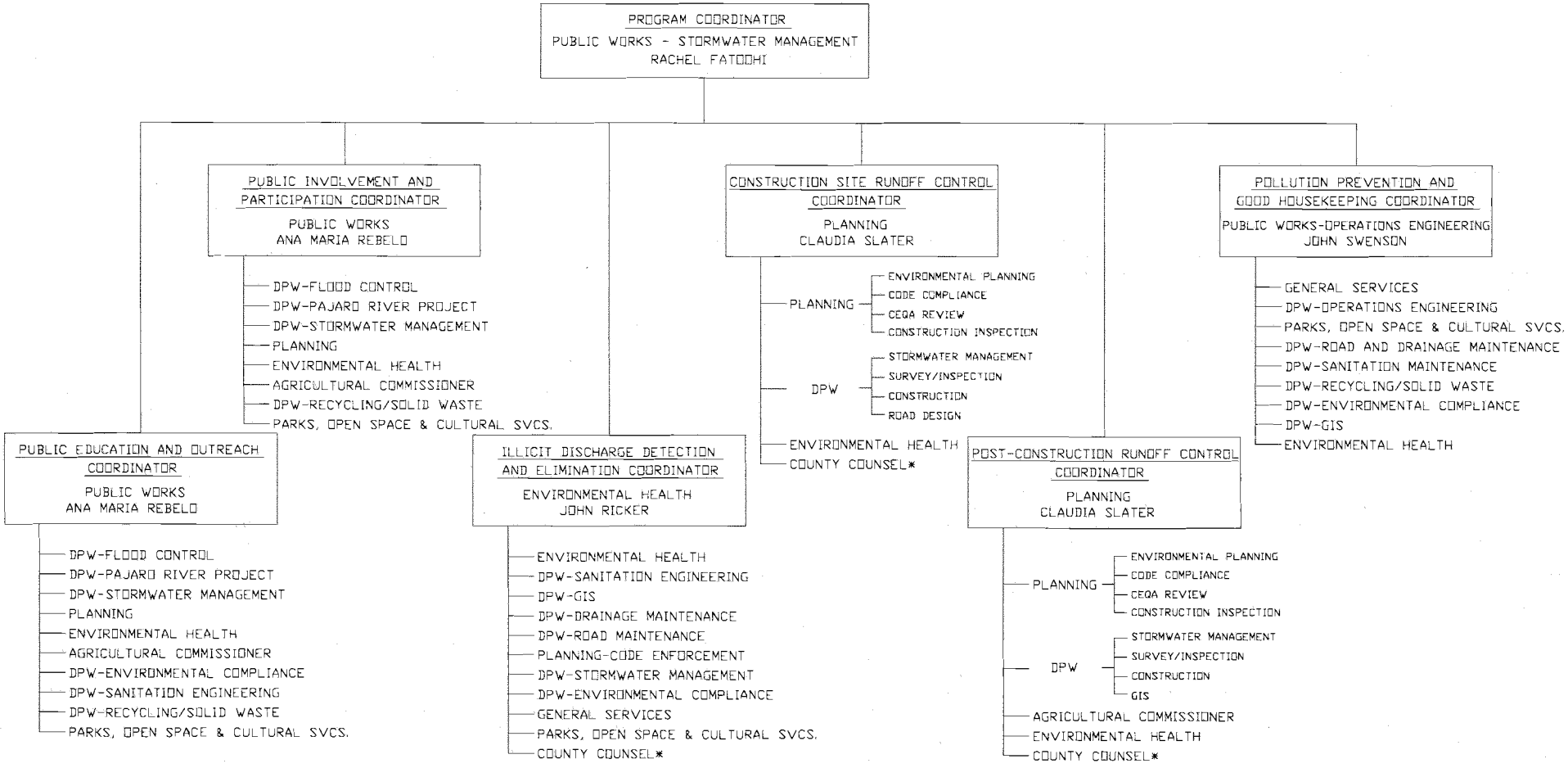
		Pollutant of Concern				
BMP#	BMP	Pathogens	Sediment	Nutrients	Toxicity	Trash
Public Outreach and Education, Chapter 3. Table 3-1						
PE-1,2,3,16	Brochures, website, community events, and media campaign on preventing stormwater pollution.	3	3	3	3	3
PE-4	Dog Waste program at parks	2				
PE-6	Distribute Stream Care guide for Riparian Corridor Protection	3	3	3	3	3
PE-7	Promote Septic System Maintenance	2				
PE-10	Educational programs for school children	3	3	3	3	3
PE-11	Education of industrial operators				3	
PE-13	Monterey Bay Area Green Business Program				3	
PE-14	Green Building Outreach		3	3	3	
PE-15	Business outreach to minimize illicit discharge	3			3	
PE-17	Outreach to Farmers		2	2	2	
Public Involvement and Participation, Chapter 4, Table 4-1						
PI-1	Stormdrain Stenciling	3	3	3	3	3
PI-5	Community Clean-ups					2
PI-6	Clean Beaches Coalition for marine debris clean-up					2
Illicit Discharge Detection and Elimination, Chapter 5, Table 5-1						
ID-1,2	Storm Drain and Sanitary Sewer Mapping	2				
ID-3	Program to identify potentially polluting operations	3			2	3
ID-4	Field investigations of storm drain outfalls and creeks.	1		2	2	
ID-5	MS-4 Maintenance	2			3	
ID-6	Commercial / Industrial Facility Inspections	2		2	2	
ID-7	Respond to reports about non-stormwater discharges	2			2	
ID-8	Correct sewer leaks and cross-connections, including laterals	1		2		
ID-9	Implement pet waste ordinance	2				
ID-10	Septic Systems Maintenance and Management Program	2		3		
ID-11	Implement Ordinance to limit non-stormwater discharges	2		2	2	
Construction Site Stormwater Runoff Control Program, Chapter 6, Table 6-1						
CS-1,2,3	Grading, Erosion Control, and Riparian Corridor Ordinances		1	3	3	3
CS-4,5	Condition Building Permits and Discretionary Permits		2	3	3	3
CS-6	Erosion and sediment control plans		2			
CS-7	Site inspections of construction projects		2			
CS-9	Provide BMP information for construction community.		1			
CS-10	Respond to public complaints		1			
Post-Construction Stormwater Management in New Development and Redevelopment, Chapter 7, Table 7-1						
PC-1	Assess effectiveness of policies for watershed protection		2	2	2	
PC-2	Develop additional stormwater ordinance if needed		2	2	2	
PC-3	Evaluate and revise permit review procedures if necessary		2	2	2	
PC-4	Review and update design standards as needed	2	2	2	2	
PC-5	Review and update hydromodification criteria as needed	2	1	3	3	
PC-7	Provide for ongoing monitoring and maintenance	2	1	2	2	
PC-8,10,11	Provide information and train staff and the development industry on post-construction measures for stormwater mgt.		2	2	2	

TABLE 2-3
BMPS WHICH WILL ADDRESS POLLUTANTS OF CONCERN
1-High Effect, 2- Medium Effect, 3-Lower Effect, 0-No Effect
Santa Cruz County

		Pollutant of Concern				
BMP#	BMP	Pathogens	Sediment	Nutrients	Toxicity	Trash
Pollution Prevention/Good Housekeeping for Municipal Operations, Chapter 8, Table 8-1						
MO-2	Implement improved BMPs for agency facilities	3	2	3	2	3
MO-3	Integrated Pest Management and Vegetation Magt. Programs		3	3	2	
MO-4	Municipal Parking Lot Sweeping				2	2
MO-6,7	Implement storm drain and pump station BMPs	2	3	2	2	2
MO-8	Street sweeping	2	2	2	2	2
MO-9	Road Repair and maintenance BMPs	3	1	3	3	3

FIGURE 2-1

THE COUNTY OF SANTA CRUZ
PHASE II STORMWATER MANAGEMENT PROGRAM
ORGANIZATION CHART

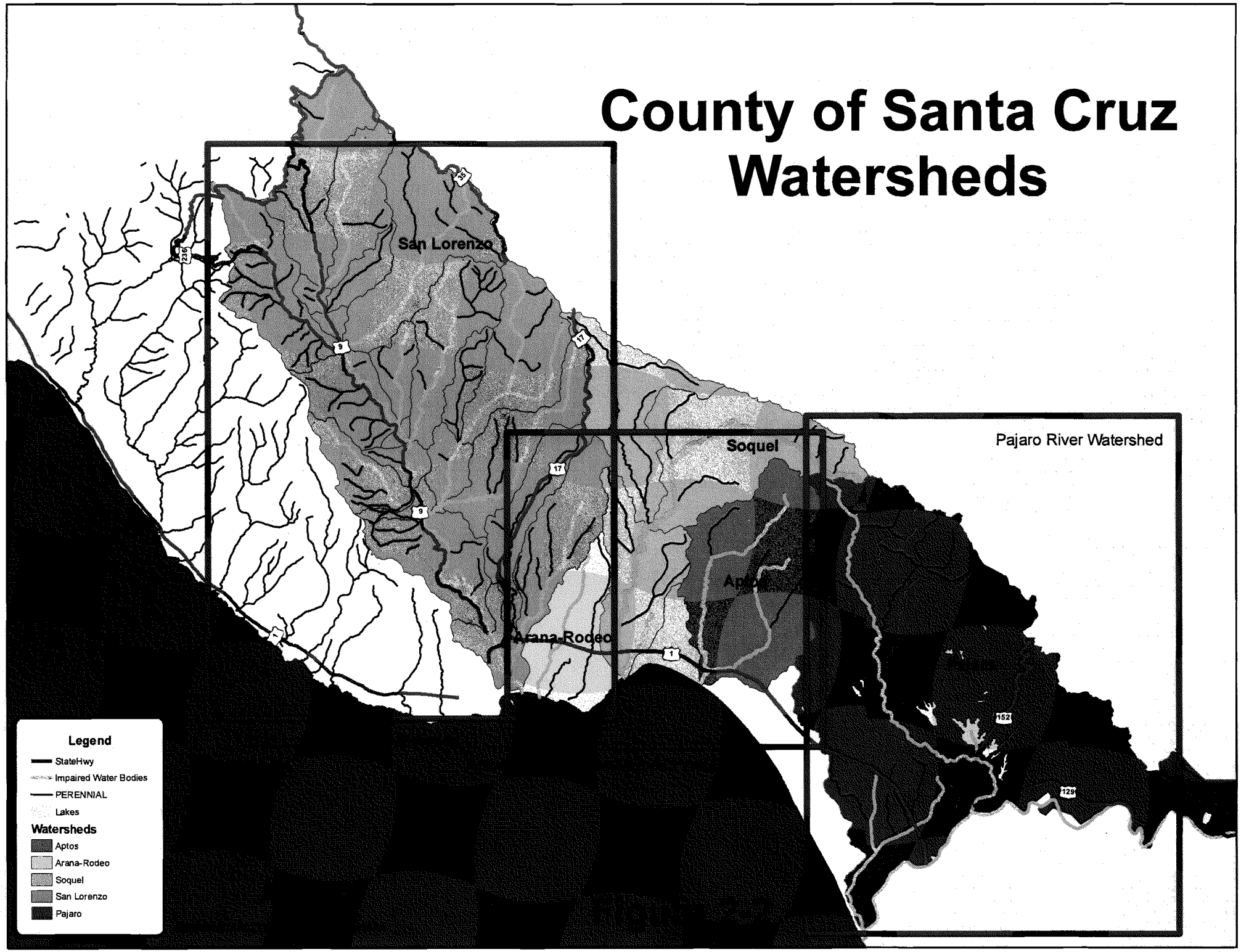


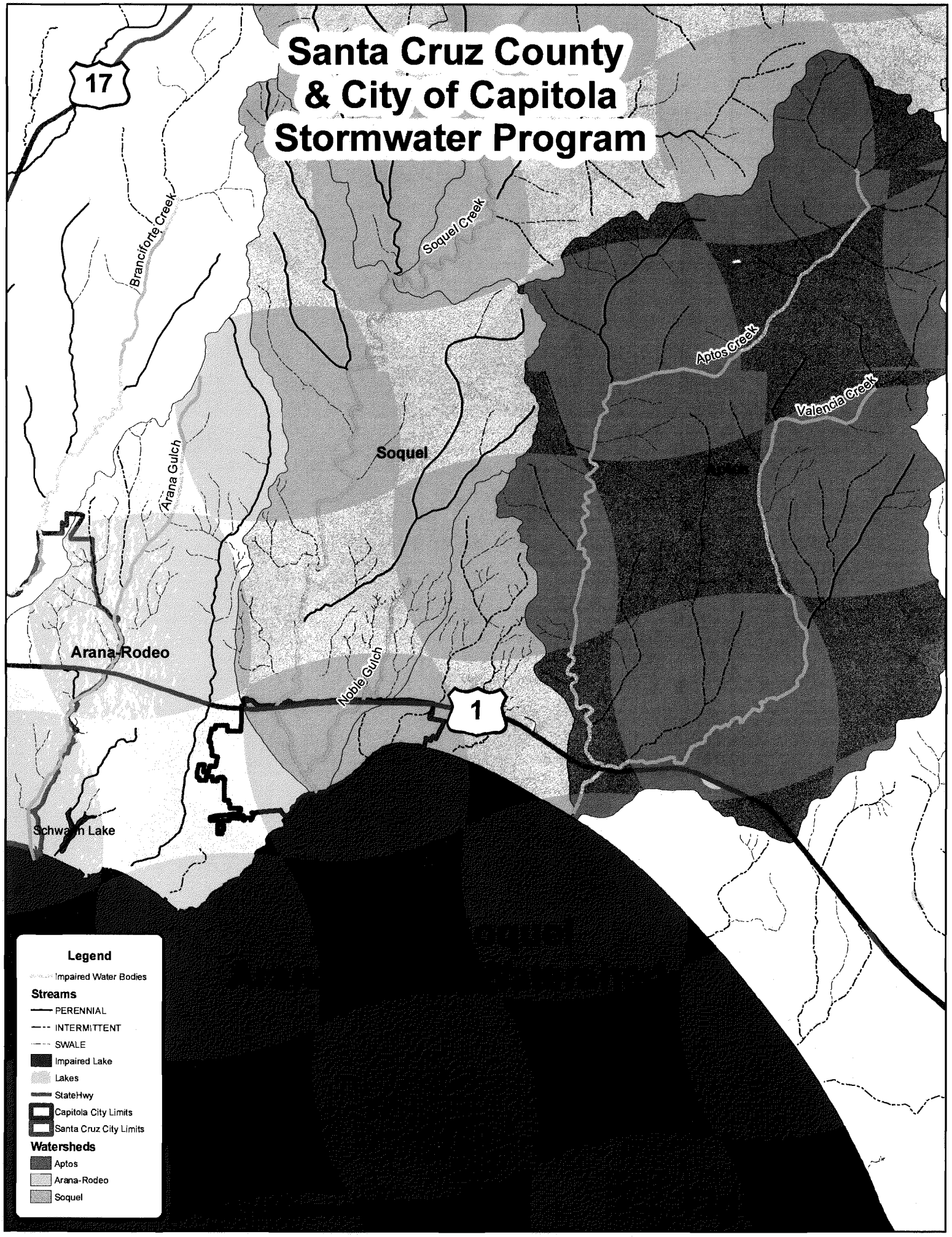
NOTES

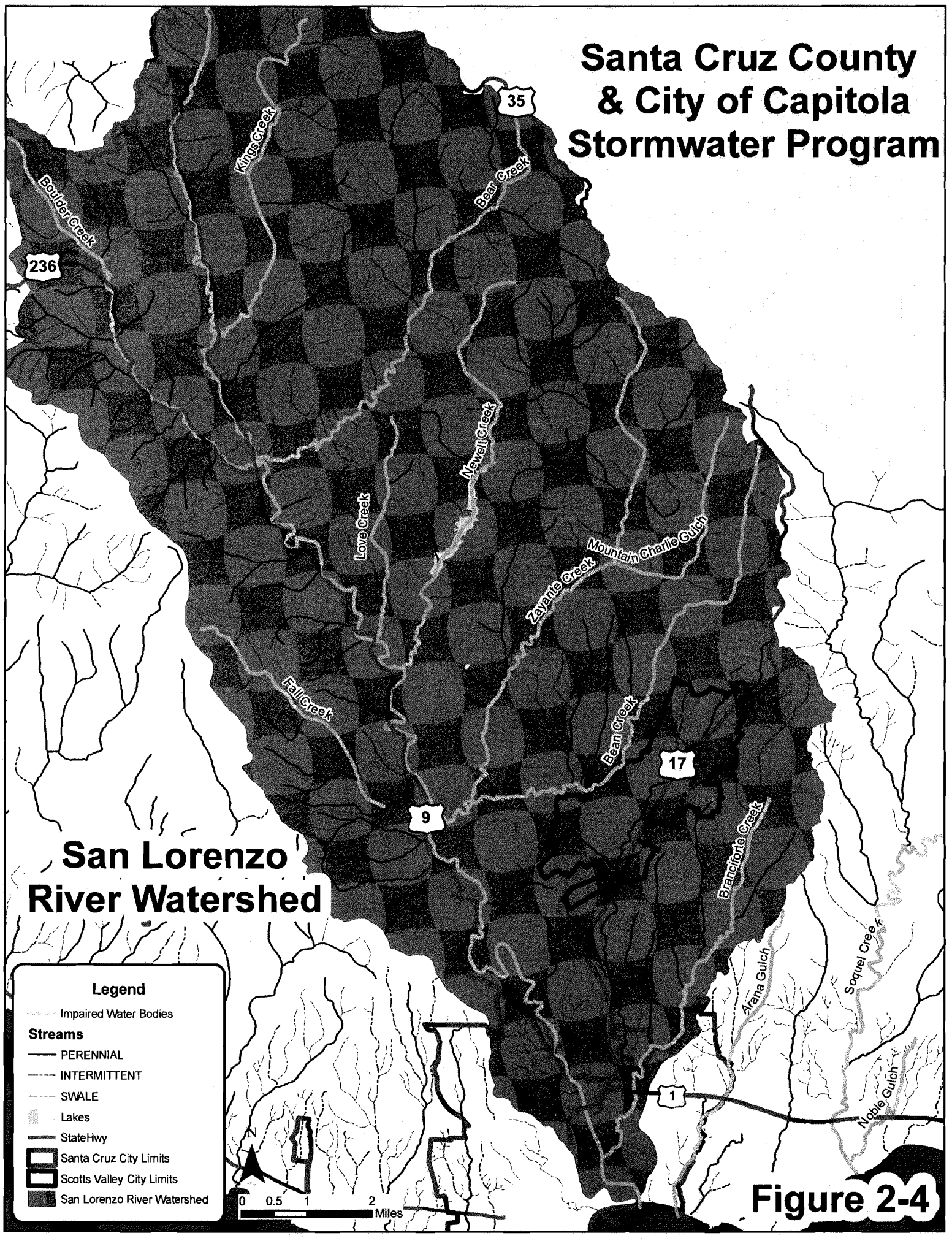
DPW = DEPARTMENT OF PUBLIC WORKS

* COUNSEL'S INPUT/ADVICE ON ORDINANCES AND ENFORCEMENT METHODS

County of Santa Cruz Watersheds




Santa Cruz County
& City of Capitola
Stormwater Program
17
Branciforte Creek
Soquel Creek
Aptos Creek
Valencia Creek
Soquel
Arana Gulch
Arana-Rodeo
Noble Gulch
1
Schwann Lake
Legend
Impaired Water Bodies
Streams
PERENNIAL
INTERMITTENT
SWALE
Impaired Lake
Lakes
StateHwy
Capitola City Limits
Santa Cruz City Limits
Watersheds
Aptos
Arana-Rodeo
Soquel


Santa Cruz County
& City of Capitola
Stormwater Program
35
Kings Creek
Bear Creek
Boulder Creek
236
Newell Creek
Love Creek
Mountain Charlie Gulch
Zayante Creek
Fall Creek
Bean Creek
17
9
Branciforte Creek
San Lorenzo
River Watershed
Soquel Creek
Arana Gulch
Noble Gulch
1
Legend
Impaired Water Bodies
Streams
PERENNIAL
INTERMITTENT
SWALE
Lakes
StateHwy
Santa Cruz City Limits
Scotts Valley City Limits
San Lorenzo River Watershed
N
0 0.5 1 2
Miles
Figure 2-4

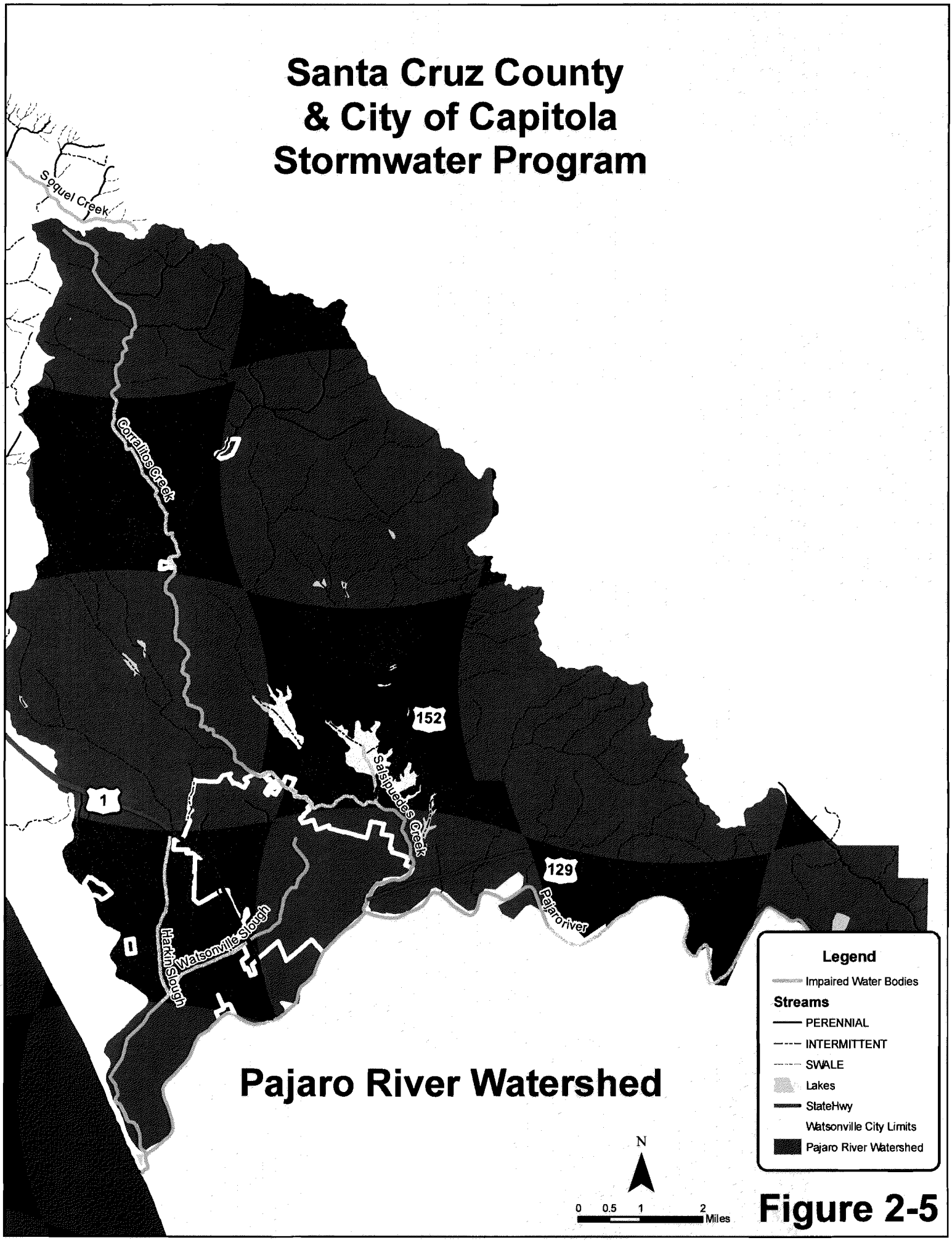
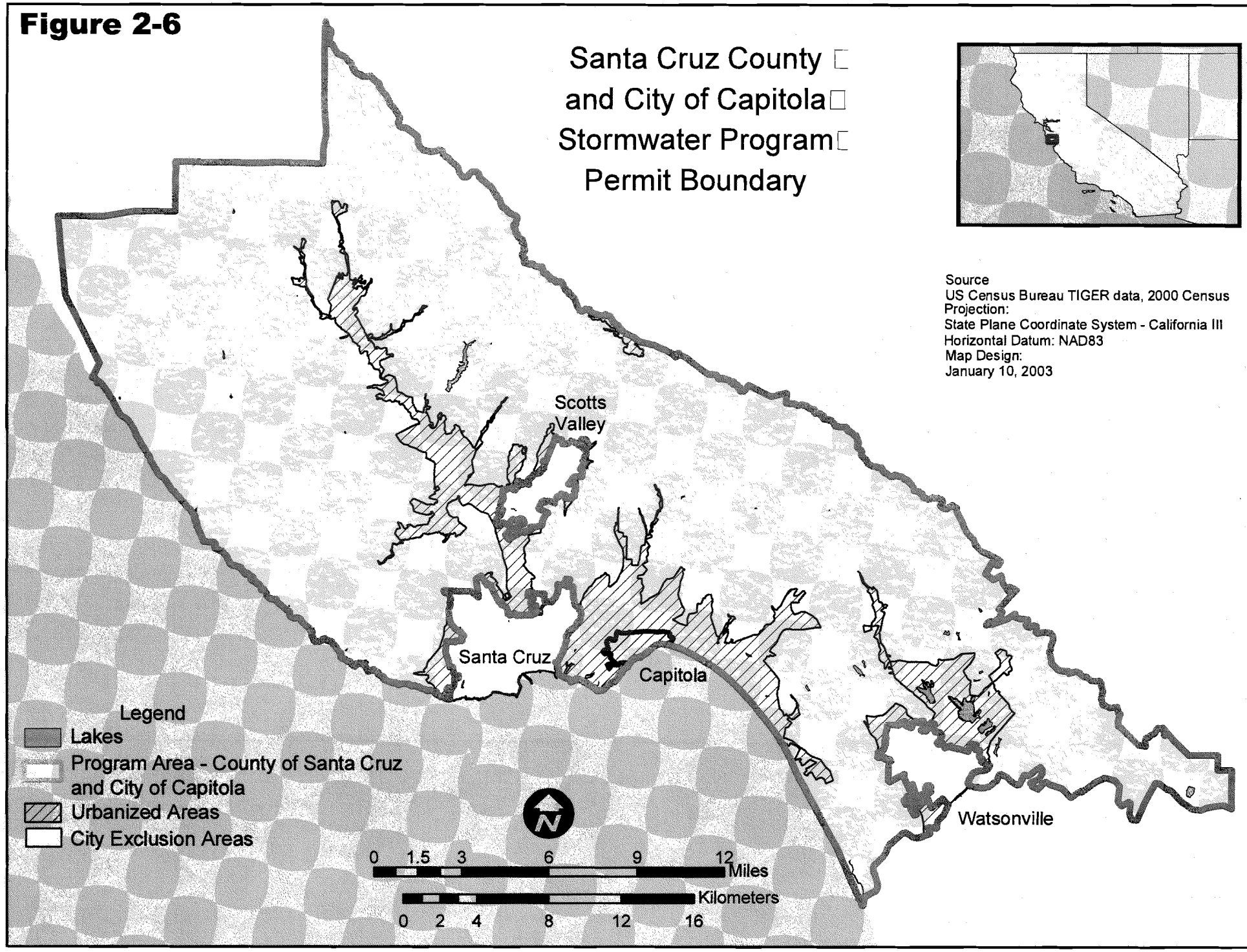

Santa Cruz County
& City of Capitola
Stormwater Program
Soquel Creek
Corralitos Creek
152
Salsipuedes Creek
1
129
Pajaro river
Watsonville Slough
Harkin Slough
Pajaro River Watershed
Legend
Impaired Water Bodies
Streams
PERENNIAL
INTERMITTENT
SWALE
Lakes
StateHwy
Watsonville City Limits
Pajaro River Watershed
N
0 0.5 1 2
Miles

Figure 2-5

Figure 2-6


Santa Cruz County
and City of Capitola
Stormwater Program
Permit Boundary
Source
US Census Bureau TIGER data, 2000 Census
Projection:
State Plane Coordinate System - California III
Horizontal Datum: NAD83
Map Design:
January 10, 2003
Scotts Valley
Santa Cruz
Capitola
Watsonville
Legend
Lakes
Program Area - County of Santa Cruz and City of Capitola
Urbanized Areas
City Exclusion Areas
N
0 1.5 3 6 9 12 Miles
0 2 4 8 12 16 Kilometers

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Public Education and Outreach

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.
- ◊ Increase an understanding of how watersheds, sanitary sewers, and stormwater systems function and their relationships to stormwater pollution.
- ◊ Elicit behavior changes by the public which will result in improved protection of water quality.

II. Program Tasks and Associated BMPs

The Public Education and Outreach Program is divided into two categories to effectively address stormwater issues. Each category, associated BMPs, and target audience is described in the following sections and summarized in Tables 3-1 and 3-2.

Conduct Public Education and Outreach to Households

The purpose of public outreach and educational efforts is to increase community awareness about stormwater pollution and to discourage the release 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
- ◊ Curbside Yard Waste Program
- ◊ Sanitary Sewer Maintenance Program

The Stormwater Public Education and Outreach (PEO) Program incorporates existing agency programs and considers methods to inform households about the steps they can take to reduce stormwater pollution; such as ensuring the proper use and disposal of landscape and garden chemicals including fertilizers and pesticides, protecting and restoring riparian vegetation, and properly disposing of used motor oil and household hazardous wastes.

The PEO Program implements the following BMPs to educate residents about the stormwater program:

- ◊ Brochures. Brochures provide information on how community members can prevent stormwater pollution. Brochures and posters are available in Spanish and English. The County has brochures that cover many different stormwater topics including but not limited to: home and yard maintenance, vehicle maintenance, sewer system maintenance, septic system maintenance, pool and garden maintnenance, recycling and household hazardous waste, etc.
- ◊ Website. The purpose of the website is to provide information to the public on the Stormwater Program and to describe how community members can prevent stormwater pollution. The website will feature general information, copies of reports, studies, and educational materials. The website will be advertised as part of the media campaigns. Information on how to reach agency staff with water quality issues will also be available on the website.
- ◊ Community Events. Public events can reach a wide audience in providing information on how to prevent stormwater pollution. Each year the agencies participate in events such as, Earth Day, Creek and Beach clean ups, the County Fair, etc.
- ◊ Dog Waste Program. The County dog waste program consists of providing pet waste disposal baggies at various County parks for use by the public. The program has been successful in reducing pet waste pollution which may contribute to fecal indicator bacteria in receiving water bodies. The County will evaluate new stations and more visible signage at various County parks as needs are identified.

The City has an ordinance requiring removal of dog droppings from public property. The City will educate the public on pet waste issues.

◊ Watershed and Creek Sign Project. The County will partner with the local Resource Conservation District to provide countywide watershed and creek signage. The goal of this project is to improve public watershed and creek awareness by installing signs on selected, well-traveled roads at their intersections with targeted creek and watershed boundaries.

◊ Riparian Restoration and Protection. Riparian restoration and protection are important aspects of achieving a healthy watershed. The County has a Stream Care Guide that it has developed and distributed for this purpose. The County will continue to distribute this guide and will track this distribution.

The City will coordinate with the County on educating residents about Riparian restoration and protection.

◊ Septic System Maintenance. Poorly maintained septic systems can be a significant source of fecal indicator bacteria which is a primary pollutant of concern in the County. The County has developed educational materials for septic system owners as part of the County's septic system maintenance program. The City has no septic systems and has an ordinance prohibiting septic systems with the City.

◊ Public Survey. The agencies will conduct baseline public opinion surveys to determine the level of public awareness for stormwater issues. The surveys will consider the public's level of knowledge about stormwater issues, level of concern, and willingness to make changes. Results of the survey will be used to further target outreach materials for residents.

◊ Social Marketing Strategies. Agencies will continually assess new public education methods in order to improve the public education and outreach program effectiveness. Community based social marketing strategies will be assessed and incorporated into the educational BMPs where appropriate.

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 PEO Program implements the following BMPs to educate children, regional agencies and local businesses:

◊ Education for Children. The County provides stormwater education in classroom presentations through the Waste Free Schools Program. The City of Capitola will develop a classroom education program during the first year of the stormwater program. Providing stormwater education through the public schools conveys the message not only to students but to their parents as well.

◊ Industrial Education. Agencies will identify industrial operations that could be a significant source of pollutants and update educational and outreach material accordingly.

◊ Disadvantaged Communities. Some communities may not be reached by initial outreach efforts. This BMP will identify potential communities that could benefit from stormwater education and revise this MCM accordingly.

◊ Monterey Bay Area Green Business Program. The County participates in this Program that promotes pollution prevention, waste minimization and implementing BMPs to local commercial businesses. Quarterly meetings are held to coordinate the Program.

◊ Green Building Outreach. The County participates in this Program that promotes stormwater BMPs, water conservation, energy conservation in local construction.

◊ Business Outreach. The County conducts business outreach in an effort to eliminate inappropriate discharges from businesses. Written materials and posters are distributed to businesses to minimize illicit discharges to the storm drain. The Program focuses on restaurants, automotive services, mobile cleaners and construction trades. The City of Capitola will begin similar outreach to businesses in year two of the stormwater program

◊ Media Campaign. The County runs media campaigns around events such as Earth Day, Pollution Prevention Week and Creek Week, and marine debris cleanups and year round campaigns to promote recycling and waste reduction. The County also partners with non-profit organizations to promote pollution prevention in the County.

◊ Outreach to Farmers. Outreach to farmers through NRCS, RCD, and Watsonville area groups is conducted by the County to minimize discharges of pollutants of concern to stormwater.

◊ Water Quality Phone Messages. The agencies will establish protocols for receiving and

replying to phone calls regarding water quality questions or concerns. The water quality phone messages will be promoted through outreach materials and the website.

◊ Interested Party List. The County has an interested party email list that is used to distribute the latest developments and solicit information and comments regarding the stormwater management program. The agencies will coordinate with one another to update this list.

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. Measurable Goals include reaching a percentage of the target audience or increasing outreach activities by a percentage each year. BMPs and Measurable goals for the Public Education and Outreach Program are presented in Tables 3-1 and 3-2.

The agencies will also maintain records to document program implementation and annual progress. This information will be included in the Annual Report.

IV. Program Effectiveness

Effectiveness assessment is a process that used to evaluate whether or not the programs are resulting in desired outcomes and if these outcomes are being achieved efficiently and cost-effectively. During the first two years of the stormwater program the agencies will achieve Outcome Level One – Documented Activities; as defined in *the Municipal Stormwater Program Effectiveness assessment Guidance CASQA May 2007.* Additional effectiveness outcomes will be evaluated for this MCM beginning in Year 3. Chapter 2 further describes effectiveness assessment for the stormwater program.

TABLE 3-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Education and Outreach Program
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Public Outreach and Education *Target Audience: County households*							
1. Brochures	Brochures provide information on how community members can prevent stormwater pollution. Brochures and posters are available in Spanish and English. (Provide the brochures electronically on the website in order to minimize waste.)	• Compile the number of brochures distributed. • Reach 15% of the target audience each year.	X X	X X	X X	X X	X X
2. County of Santa Cruz Website	The website will provide information on how community members can prevent stormwater pollution.	• Compile the number of website hits annually. • Develop improvements to increase utility of website (i.e. improve presentation; add new materials posted on site).	X X	X	X X	X	X X
3. Community Events	Public events can reach a wide audience in providing information on how to prevent stormwater pollution.	• Compile the number of events organized or attended with displays. Include the number of people attending the event. • Participate in at least 2 events each year.	X X	X X	X X	X X	X X

TABLE 3-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Education and Outreach Program
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
4. Dog Waste Program	The Parks Department provides dog boxes at the parks. Communicate with Parks staff to determine if and where additional signage or dog baggie distribution locations are needed.	• Continue to distribute dog baggies	X	X	X	X	X
		• Annually report the number of baggies distributed.	X	X	X	X	X
		• Assess need for additional dog baggie distribution sites and/or signage. Add/replace distribution stations/signage as needed			X		X
5. Watershed and Creek Signage Project	Partner with the Resource Conservation District to provide signage on selected. well traveled county roads at their intersections with targeted creeks and watershed boundaries.	• Install at least 30 watershed signs.	X				
		• Install at least 100 creek signs	X				
6. Riparian Restoration and Protection	Riparian restoration and protection are important aspects of achieving a healthy watershed. The County has a Stream Care Guide that it has developed and distributed for this purpose.	• Distribute the Stream Care Guide.	X	X	X	X	X
		• Track the number of guides distributed.	X	X	X	X	X
7. Septic System Maintenance	Poorly maintained septic systems can be a significant source of fecal indicator bacteria which is a primary pollutant of concern in the County. The County has developed educational materials for septic system owners as part of the County's septic system maintenance program. See http://sccounty01.co.santa-cruz.ca.us/eh/sewage_disposal/ehownergd.htm	• Provide information on the educational aspects of the County's septic system maintenance program in the annual report.	X	X	X	X	X

TABLE 3-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Education and Outreach Program
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
8. Public Opinion Survey	Conduct surveys to determine effectiveness of programs and future program direction. Conduct initial survey to determine baseline and follow up survey to determine effectiveness of programs. Coordinate with other local agencies for this survey.	• Determine target audience and method and distribution for public survey • Citizens solicited and survey completed. • Report outcome of public survey and schedule of follow up activities in the annual report. • Resurvey citizens on previously surveyed topics to assess effectiveness of targeted educational efforts.			X X X		X
9. Social Marketing Strategies	Continually assess new public education methods in order to improve the public education and outreach program effectiveness.	• Assess community based social marketing strategies and incorporate them into the educational BMPs where appropriate.				X	X
Targeted Outreach Programs *Audience: Children, , regional agencies and local businesses*							

TABLE 3-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Education and Outreach Program
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
10. Educational Programs for children. (K-12)	Classroom presentations are provided through the Waste Free Schools Program http://www.wastefreeschools.org/	• Educate 10% of school children every year. Coordinate stormwater education with our Waste Free schools program	X	X	X	X	X
		• Administer pre-and post presentation evaluations.	X	X	X	X	X
11. Industrial Education	Identify industrial operations that could be a significant source of pollutants.	• Identify targed industries	X				X
		• Develop outreach material to educate identified industries.		X			
		• Assess effectiveness of the educational material..				X	
12. Disadvantaged Communities	Some communities may not be reached by initial outreach efforts. This BMP will identify potential communities that could benefit from stormwater education.	• Identify communities not previously targeted by the stormwater education program.		X			
		• Develop outreach targeting the communities identified.			X		
		• Follow up on educational efforts to assess effectiveness.				X	

TABLE 3-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Education and Outreach Program
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
13. Monterey Bay Area Green Business Program	Promotes pollution prevention, waste minimization and implementing BMPs. http://www.montereybaygreenbusiness.org/	• Meet quarterly to coordinate the programs.	X	X	X	X	X
		• Certify 30 businesses each year.	X	X	X	X	X
		• Develop new incentive programs.			X		X
		• Provide program tracking information in the annual reports	X	X	X	X	X
14. Green Building Outreach	Promotes stormwater BMPs, water conservation, energy conservation in local construction. BMP brochures available on the County website. http://www.dpw.co.santa-cruz.ca.us/environment.htm	• Certify 30 professionals per year.	X	X	X	X	X
15. Business Outreach	Written materials and posters distributed to businesses to minimize illicit discharges to the storm drain. Program will focus on restaurants, automotive services, mobile cleaners and construction trades. Provide materials in both English and Spanish when applicable.	• Compile number of materials distributed annually.	X	X	X	X	X
		• Deliver brochures to at least 100 businesses by hand to enable direct communication with business owners.	X	X	X	X	X

TABLE 3-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Education and Outreach Program
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
16. Media Campaign	Media campaigns are run around events such as Earth day, Pollution Prevention Week and Creek Week, and marine debris awareness and year round campaigns to promote recycling and waste reduction. The County of Santa Cruz partners with non-profit organizations to promote pollution prevention in the County. Media information will be provided in both English and Spanish.	• Co-sponsor at least two media campaigns each year.	X	X	X	X	X
		• Advertise County website to increase the number of visitors to the website.	X	X	X	X	X
		• Track and report on the number of visitors to the County website.	X	X	X	X	X
17. Outreach to farmers	Outreach to farmers through NRCS, RCD, and Watsonville area groups to minimize discharges of pollutants of concern to stormwater.	• Compile number of farmers contacted annually.	X	X	X	X	X
18. Water Quality Phone Messages	Establish protocol for receiving and replying to phone calls to the County regarding water quality questions or concerns.	• Develop protocol.	X				
		• Promote use of water quality phone messages through printed materials and website.		X			
		• Respond to 100% of calls to County staff within 2 days.	X	X	X	X	X
		• Track the number of calls received each year.	X	X	X	X	

TABLE 3-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Education and Outreach Program
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
19. Interested Party List	The County has an interested party email list that is used to distribute the latest developments in the stormwater program.	• Coordinate with the City of Capitola to update the list.	X				
		• Update list annually.		X	X	X	X
		• Provide summary of information sent out to list members in the annual report	X	X	X	X	X

TABLE 3-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Public Outreach and Education *Target Audience: City households*							
1. Brochures / Newsletters	Brochures and newsletters provide information on how community members can prevent stormwater pollution.	• Reach 100% of the target audience each year through quarterly newsletter.	X	X	X	X	X
2. City of Capitola Website	Provides information on how community members can prevent stormwater pollution.	• Develop a stormwater information area to the City website. • Compile the number of website hits annually.		X	 X	 X	 X
3. Community Events	Public events can reach a wide audience in providing information on how to prevent stormwater pollution.	• Compile the number of events organized or attended with displays. Include the number of people attending the event. • Attend at least 1 event each year.	X X	X X	X X	X X	X X

TABLE 3-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
4. Public Opinion Survey	Conduct surveys to determine effectiveness of programs and future program direction. Conduct initial survey to determine baseline. Coordinate with other local agencies for this survey.	• Determined target audience and method and distribution for public survey			x		
		• Citizens solicited and survey completed			x		
		• Reported outcome of public survey and schedule of follow-up activities in the annual report			x		
		• Resurvey citizens on previously surveyed topics to assess effectiveness of targeted educational efforts.					x
5. Pet Waste	Pet waste can be a significant source of fecal indicator bacteria, which is a primary pollutant of concern for the City. The City has a pet waste ordinance requiring the removal of dog droppings from public property. The City will educate the public on pet waste issues.	• Notify residents of pet waste ordinance in the City newsletter	x				
		• Follow-up on educational efforts to assess effectiveness.		x			
6. Trash Management	Improper disposal of trash can be a significant source of beneficial use impairment. The City will educate residents on this issue.	• Notify residents of the impacts of trash to stormwater in the City newsletter.		x			
		• Follow-up on educational efforts to assess effectiveness.			x		

TABLE 3-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
7. Fertilizers and Pesticides	Improper use of pesticides and fertilizer can be a significant source of nutrients.	• Notify residents of the impacts of pesticides to stormwater in the City newsletter.			X		
		• Follow-up on educational efforts to assess effectiveness.				X	
8. Riparian Restoration and Protection	Riparian restoration and protection are important aspects of achieving a healthy watershed. The City will educate residents on this issue.	• Notify residents of the importance of riparian restoration and protection in the City newsletter.			X		
		• Follow-up on educational efforts to assess effectiveness.				X	
9. Social Marketing Strategies	Continually assess new public education methods in order to improve the public education ad outreach program effectiveness.	• Assess community based social marketing strategies and incorporate them into the educational BMPs where appropriate				X	X
Targeted Outreach Programs *Audience: Children, , regional agencies and local businesses*							
10. Educational Programs for children. (K-12)	Classroom presentations are provided through the Waste Free Schools Program	• Outreach program for public schools developed.	X				
		• 10% of school children educated each year .		X	X	X	X

TABLE 3-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
11. Business Outreach	Written materials and posters distributed to businesses to minimize illicit discharges to the storm drain. Program will focus on restaurants, automotive services, mobile cleaners and construction trades. Provide materials in both English and Spanish when applicable.	• Compile number of materials distributed annually.		X	X	X	X
		• Report the number of businesses contacted in the annual report.		X	X	X	X
		• Deliver brochures to businesses by hand to enable direct communication with business owners.		X	X	X	X
		• Assess additional effectiveness measure for this BMP			X	X	X
12. Industrial Education	Identify industrial operations that could be a significant source of pollutants.	• Identify target industries	X				
		• Develop outreach material to educate identified industries		X			
		• Assess effectiveness of the educational material				X	
13. Disadvantaged Communities	Some communities may not be reached by traditional outreach efforts. This BMP will identify potential communities that could benefit from stormwater education.	• Identify communities not previously targeted by the stormwater educational program.		X			
		• Develop outreach targeting the communities identified in year 2.			X		
		• Follow-up on educational efforts to assess effectiveness.				X	

TABLE 3-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
14. Water Quality Phone Messages	Establish protocol for receiving and replying to phone calls to the City regarding water quality questions or concerns.	• Develop protocol.	X				
		• Promote use of water quality phone messages through printed materials and website	X	X			
		• Respond to 100% of calls to City staff within 2 days.	X	X	X	X	X
15. Interested Party List	An interest party list will be developed and used to distribute the latest developments in the stormwater program.	• Coordinate with the County to develop an interested party list.	X				
		• Update list annually.		X	X	X	X
		• Provide summary of updates sent out to list members in the annual report		X	X	X	X

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Public Involvement and Participation

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; agency 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 *SWMP*.

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
- ◊ Restoring, protecting, and promoting the quality of stormwater discharges.

II. Program Tasks and Associated BMPs

The Public Involvement and Participation Program is divided into two categories to effectively address stormwater issues. Each category, associated BMPs, and target audience is described in the following sections and summarized in Tables 4-1 and 4-2.

Public Activities and Participation

The Public Activities and Participation Program implements the following BMP to inform the general population about protecting the storm drain:

◊ Storm Drain Stenciling Program. Half of the storm drains in the County are marked in business and residential areas. The markers say "Dump No Waste – Drains to Bay". All storm drains in the City of Capitola are marked. The agencies will continue this effort, to mark all storm drains in the commercial and residential neighborhoods in the permit area, and establish a systematic replacement program.

◊ Coordinate with our local Surfrider Foundation, Save Our Shores and other volunteer organizations for this work.

◊ Continue to coordinate this work with GIS.Capitola Urban Watch Monitoring Program. The Capitola Urban Watch-First Flush storm drain monitoring program is conducted by the Coastal Watershed Council (CWC) on behalf of the City of Capitola, NPDES Phase II Stormwater Water Management Program. The "First-Flush" event first took place in 2000, and in 2007 it included four programs across the Monterey Bay.

The goals of the Urban Watch-First Flush Program are to serve as a tool for education and outreach to the community regarding the impacts that the citizens have on a local water quality through urban off. Secondly, the goal of the program is to collect water quality data to support environmental management decisions at the local and state levels. These goals are achieved through the participation of trained volunteers who monitor storm drafting discharges to selected outflow areas throughout the program area. Annual First Flush event summary reports are available at: www.mbnms.nos.noaa.gov/monirotingnetwork/events.html. Specific sampling information is presented in Chapter 5.

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. The Public Involvement and Participation Program implements the following BMPs to inform the general public and agency staff about stormwater protection:

◊ Participate in Countywide Stormwater Information Exchange (SIN) group. Representatives from the agencies will participate in the Stormwater Information Network (SIN) exchange group. This group will meet on a semi-annual basis to share stormwater program information that may be relevant on a region-wide basis.

Topics may include BMP effectiveness and partnership opportunities.

◊ Coordinate local stakeholder Outreach. The purpose of the stakeholder outreach is to gather viewpoints and allow the public to provide input on stormwater management policies and BMPs. One meeting will be held each year to discuss the direction of public education efforts, targeted information campaigns, funding, and emerging issues. The following groups will be invited to participate in the stakeholder process:

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

◊ Monterey Bay Area Pollution Prevention. The goal of this partnership is to share outreach information and pool resources.

◊ Community Clean-ups. The agencies participate in creek clean-ups during Creek Week. This work is performed in cooperation with Save Our Shores, Surfrider Foundation and other watershed and environmental groups.

◊ Clean Beaches Coalition. The County coordinate marine debris clean ups with local organizations.

◊ Participate in Regional Efforts. The agencies will investigate opportunities to participate in regional, statewide or national groups. City staff will attend one regional effort each year in coordination with the County. County staff participates in the U.S. Green Building Council (USGBC) monthly meetings and the Integrated Pest Management Departmental Advisory Group (IPM DAG) annual meetings. The DAG includes members of County departments, public health professionals, the Agricultural Commissioner, a Caltrans representative and members of the community.

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. Measurable Goals include attending, sponsoring or organizing a minimum number of meetings or events. BMPs and Measurable Goals for the Public

Involvement and Participation Program are presented in Tables 4-1 and 4-2.

The effectiveness and measurability of each BMP and Measurable Goal will be reevaluated each year and provided in the Annual Report. The agencies will also maintain records to document the Stormwater Program implementation and annual progress. This information will be included in the Annual Report.

IV. Program Effectiveness Assessment

Effectiveness assessment is a process that used to evaluate whether or not the programs are resulting in desired outcomes and if these outcomes are being achieved efficiently and cost-effectively. During the first two years of the stormwater program the agencies will achieve Outcome Level One – Documented Activities; as defined in *the Municipal Stormwater Program Effectiveness assessment Guidance CASQA May 2007.* Additional effectiveness outcomes will be evaluated for this MCM beginning in Year 3. Chapter 2 further describes effectiveness assessment for the stormwater program.

TABLE 4-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Involvement and Participation
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Public Activities and Participation ***Target Audience: General population***							
1. Coordinate / Implement Storm Drain Stenciling Program.	Half of storm drains marked in major business and residential areas. Coordinate with our local Surfrider Foundation, Save Our Shores and other volunteer organizations for this work.	• Complete storm drain marking. • Check markers during routine maintenance and replace as needed. Coordinate this work with GIS	X	X X	X	X	X

TABLE 4-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Involvement and Participation
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Public Opinion and Involvement							
Target Audience: Agency staff, general public							
2. Participate in Countywide Stormwater Information Exchange (SIN) group.	Coordinate with local agency staff to create a group for discussing regional stormwater issues.	• Participate in/organize two meetings per year.	X	X	X	X	X
3. Coordinate local stakeholder outreach.	Establish a process for providing information to the public regarding the County's stormwater program and for receiving and incorporating public input into the program.	• Establish stakeholder process.	X				
		• Conduct one meeting per year.	X	X	X	X	X
		• Stakeholder committee reviews SWMP and annual report.	X	X	X	X	X
		• Advertise to increase attendance to stakeholder meetings and promote public participation in SWMP development and implementation in accordance with public notification and hearing requirements as needed.	X	X	X	X	X
		• Report on number of attendees at stakeholder meeting and comments received.	X	X	X	X	X
		• Encourage local agencies and organizations on ongoing mutual issues (e.g. funding, direction of public education efforts, targeted information campaigns, emerging issues).	X	X	X	X	X

TABLE 4-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Involvement and Participation
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
4. Monterey Bay Area Pollution Prevention Partnership	The goal of this partnership is to share outreach information and pool resources	• Meet quarterly.	X	X	X	X	X
		• Document attendance and actions.	X	X	X	X	X
5. Community Clean-ups	The County sponsors creek clean-ups during Creek Week. Work with Save our Shores. Surfrider Foundation and other watershed and environmental groups.	• Sponsor volunteer creek clean-up each fall, affecting a minimum of two watersheds.	X	X	X	X	X
		• Sponsor two beach cleanups each year.	X	X	X	X	X
		• Report on number of volunteers.	X	X	X	X	X
6. Clean Beaches Coalition	The County coordinates marine debris clean ups with local organizations.	• Coordinate quarterly marine debris cleanups	X	X	X	X	X
	http://www.cleanbeachescoalition.org/the-coalition-partners.html	• Report on number of volunteers.	X	X	X	X	X
7. Participate in Regional Efforts	Investigate opportunities to participate in regional, statewide or national groups.	• At a minimum attend annual Integrated Pest Management Departmental Advisory Group meetings and monthly U.S. Green Building Council meetings	X	X	X	X	X
8. Water Quality Messages	See Public Education ad Outreach Section						
9. Public Opinion Survey	See Public Education ad Outreach Section						

TABLE 4-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Involvement and Participation
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Public Activities and Participation							
Target Audience: General population							
1. Coordinate / Implement Storm Drain Stenciling Program.	Storm drains are marked.	• Check markers during routine maintenance and replace as needed.	X	X	X	X	X
2. Coordinate the Urban Watch / First Flush Program.	Continue to contract wit the Coastal Watershed Council to participate in the Urban Watch / First Flush Program.	• Coordination with Urban Watch Program established for monitoring Soquel Creek.	X				
		• Coordinated two years of monitoring efforts with Urban Watch.	X	X			
		• Evaluate and assess the effectiveness of the programs. Report on the progress of the Program in the Annual Report.	X	X			
		• Assess data generated by the Program to prioritize BMP activities and assess effectiveness	X	X			

TABLE 4-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Involvement and Participation
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Public Opinion and Involvement							
Target Audience: Agency staff, general public							
3. Participate in Countywide Stormwater Information Exchange (SIN) group.	Coordinate with local agency staff to create a group for discussing regional stormwater issues.	• Participate in/organize two meetings per year.	X	X	X	X	X
4. Participate with County to provide local stakeholder outreach.	The City will coordinate with county efforts for providing information to the public regarding the stormwater program and for receiving and incorporating public input into the program.	• Establish stakeholder process with the County.	X			X	
		• Attend one meeting per year with the County.	X	X	X		X
		• Stakeholder committee reviews SWMP and annual report.	X	X	X	X	X
		• Advertise to increase attendance to stakeholder meetings and promote public participation in SWMP development and implementation in accordance with public notification and hearing requirements as needed.	X	X	X	X	X
		• .					
		• Encourage local agencies and organizations on ongoing mutual issues (e.g. funding, direction of public education efforts, targeted information campaigns, emerging issues).	X	X	X	X	X

TABLE 4-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Public Involvement and Participation
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
5. Community Clean-ups	The City sponsors the Soquel creek clean-up. Work with Save our Shores. Surfrider Foundation and other watershed and environmental groups.	• Organize volunteer creek clean-up each fall. • Document the number of volunteers attending the event. •	x x	x x	x x	x x	x x
		•					
6, Participate in Regional Efforts	Investigate opportunities to participate in regional, statewide or national groups.	• At a minimum attend one meeting annually	x	x	x	x	x
7. Water Quality Messages	See Public Education ad Outreach Section						
8. Public Opinion Survey	See Public Education ad Outreach Section						

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Illicit Discharge Detection and Elimination

The storm drain system and stormwater pollution begins with streets and gutters, whose drainage flows to pipes and ditches and to creeks and wetlands and the ocean. 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
- ◊ Reduce to the maximum extent practicable the discharge of controllable sources of pollutants of concern passing through the stormdrain system, particularly fecal indicator bacteria, and to a lesser extent nutrients, trash and toxicity.

II. Program Tasks and Associated BMPs

The Illicit Discharge Detection and Elimination (IDDE) Program is divided into four categories to effectively address stormwater issues. Each category, associated BMPs and target audience is described in the following sections and summarized in Tables 5-1 and 5-2.

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.

The agencies will implement the following mapping BMPs:

◊ Storm Sewer Mapping. The County of Santa Cruz's storm drain system and outfalls in urban areas are mapped and will be used to track sources of illicit discharges, identify problem drainage areas and direct inspection programs. During the first year of the program the County will incorporate storm drain mapping into the GIS system. These maps will later be provided on the County website.

City of Capitola will prioritize this effort by starting with identifying and mapping drainage systems near Soquel Creek. A secondary priority will be assigned to commercial areas, with residential areas that don't drain to Soquel Creek as the final priority.

◊ Sanitary Sewer Mapping. During the second year, the agencies will incorporate the sanitary sewers into the mapping program in order to identify possible contributions to the storm drain system through leaks or spills.

Detect and Eliminate Non-Stormwater Discharges

During the first year of the Stormwater Program an Illicit Discharge and Elimination Program will be refined. As a first step agency departments involved with the Program will be identified and staff requirements will be evaluated. The agencies will implement the following Illicit Discharge and Elimination BMPs:

◊ Illicit Discharge Detection Program. The purpose of the Program is to implement procedures for locating problem areas, finding source areas, removing and correcting illicit connections and documenting actions taken. During the first year the Illicit Discharge Detection Program structure and procedures will be refined. The Program will includes the following:

- Refining procedures and training staff to conduct

screening investigations and follow-up.

- Maintaining a database to track illicit discharge reports and follow-up actions.
- Maintaining methods for receiving and tracking information received from the public regarding non-stormwater discharges.

Field Screening Investigations. Field screening investigations are performed to identify illicit discharges from storm drain outfalls. 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.

County Creeks and outfalls are sampled for fecal indicator bacteria, ammonia, and nitrate. Where elevated levels, are found, additional samples are collected upstream to identify the area where pollutants are entering the storm drain system. Additional work including, sampling, smoke testing, dye testing, or video surveillance will be done in the storm drain system or adjacent sanitary sewer to further pin point illicit connections. Field test kits or other methods will be considered for use in the program. Once illicit sources are identified, corrective measures will be required and problems will be tracked until correction is completed

The City of Capitola participates in the Urban Watch-First Flush storm drain monitoring program. Annual First Flush event summary reports are available at: www.mbnms.nos.noaa.gov/monirotingnetwork/events.html.

Field-measured parameters are collected twice weekly and sample collection for lab analyses once monthly. Please see attached list of all parameters measured at this end of this Chapter.

Five storm drain sampling sites were selected based on drainage basin characteristics and safe access for volunteers. The monitoring sites established for this program are referred to as: (1) **Capitola Center**, east bank drain from Bay Ave. and surrounding commercial area; (2) **Stockton Bridge**, west bank drain at base of NW end of bridge at corner of East Cliff Dr. and Wharf Dr.; (3) **Creekside**, east bank drain behind

Creekside plaza parking lot; (4) **Monterey Avenue**, drain from open channel along Monterey Avenue, to the north of the park; and (5) **Pier**, drain directly under the Capitola Pier. Further reporting details can be found at the website: http://www.mbnms.nos.noaa.gov/monitoringnetwork/events.html.

The City will annually assess data generated from this program to prioritize BMP activities.

◊ Commercial / Industrial Facility Inspections. The County inspects and monitors regulated facilities annually for storage practices and spill response through the CUPA Program and the food facility inspection program. These programs include follow-up on complaints and violations, and enforcement. These programs will be expanded and current staff will be trained to provide for full a stormwater compliance inspection at least once a year, at the time of other routine inspections. Compliance, reporting and recordkeeping will continue under the current programs.

◊ Information from the Public. A water quality message line will be established for receiving and tracking information from the public about non-stormwater discharges.

◊ Cross-Contamination in Sewers. The County is working to upgrade substandard sewer mains with the assistance of the Clean Beach Program and other grant funds. The City of Capitola is not responsible for or has the authority to maintain the sanitary sewers. As part of this program the County has conducted video surveillance of all sewer systems in Capitola in the vicinity of Soquel Creek and is replacing or repairing illicit or substandard connections. Once the sewer mains are complete, the County will establish a program for evaluating and upgrading the private sewer laterals. Water quality data will be evaluated to determine the extent and locations where laterals are suspected of contributing pollutants to the stormdrain system and receiving waters. If there is evidicnec of significant contribution from the laterals, the county and city will develop a lateral upgrade program. Private property owners are responsible for the maintenance and satisfactory performance of their lateral. Depending on the severity of the problem, the county may require lateral inspection at the time of property transfer, in the event of a building remodel, in the event of back-up or overflow, and/or within a specified time frame. The property owner will be responsible for demonstrating to the county that the lateral is performing satisfactorily.

◊ Septic Systems Maintenance and Management Program. The County implements a septic system

management program in the San Lorenzo Watershed and other areas of the county. This includes, water quality testing and investigation, response to complaints, follow up inspections of problem systems, tracking of septic system maintenance efforts and requirement for system evaluation and upgrade in conjunction with remodels. The County will continue to implement this program; providing triennial summaries of septic systems pumped, inspected and upgraded. There are no septic systems located in the City of Capitola.

◊ Pet Waste Ordinance. Both the City and County have ordinances that prohibit the deposition of pet waste in public spaces. The ordinances will be amended to require the proper collection and disposal of pet waste on private property to prevent discharge of fecal material to the storm drain system. The ordinances will be implemented through education programs, complaint response, and existing enforcement procedures.

◊ Enforcement. The county currently maintains enforcement programs for correction of illicit discharges, utilizing Health and Safety Code and County Code as the basis to require corrective measures. The new stormwater ordinance will provide additional authority to require correction of non-stormwater discharges. Once a problem is identified, a correction notice is sent to the property owner and the information is entered into database for tracking. Typically the owner contacts the inspector regarding necessary corrective measures and any needed permits are obtained. If there is not a timely response, a follow-up inspection is conducted, a second letter is sent, and a violation reinspection fee may be assessed. If the problem is still not corrected, additional legal action will be pursued which depending on the situation may include nuisance abatement, permit revocation, posting as unfit for occupancy, civil action, or criminal action. Once a problem is corrected, it is typically flagged for a follow up inspection in the following year to ensure the problem does not reoccur.

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. The agencies will implement the following BMPs to prohibit non-stormwater discharges:

◊ Stormwater Ordinance. Existing ordinances will be evaluated and modified, with the addition of a county and City Stormwater Ordinance to clarify each agency's authority to control non-

stormwater discharges to roadways, creeks, and the municipally-owned storm drain system.

The ordinance will include enforcement procedures and penalties for illicit connections to the storm drain. It will also provide for an exemption of non-stormwater discharges that do not pose a significant threat to water quality provided they are in compliance with the Regional Water Board General Waivers for Low Threat Discharges, Highly Treated Groundwater and Specific Discharges.

The effectiveness of the ordinance will be evaluated based on enforcement activities and abatement results.

Education

Training is an important component of the Illicit Discharge Detection and Elimination Program. The following training BMP will be implemented:

◊ Agency Staff Training. Agency staff will be trained on the administrative process for the Illicit Discharge Detection Program. In addition, a procedural Training Program will be developed to train illicit discharge inspectors on manhole/outfall and site inspections and record keeping. This procedural training will be conducted annually and, as appropriate, for new staff and when changes to the program occur.

To assist the businesses and the general public with new stormwater requirements, the agencies will develop educational materials. These materials will be developed as part of the PEO Program described in Chapter three and will address hazards associates with illegal discharges and improper disposal of wastes. Examples of educational materials include informative brochures and guidance developed for specific audiences.

Address Authorized Non-stormwater Discharges

The General Permit lists 17 categories of authorized non-stormwater discharges or flows which need to be addressed if an agency determines the discharge to be a significant contributor to the storm drain system. Based on creek walks and the nature of complaints received from the public, the agencies have not identified any of these discharges to be significant contributors of pollution to the storm drain system. However, where such discharges are identified by complaints or discoveries as significant contributors of pollution, the agencies will under take action to abate the pollution source under existing enforcement authority, an/or future ordinance enforcement policies.

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. Measurable Goals for the Illicit Discharge Detection and Elimination Program include identifying sources of dry weather flows, abating illicit discharges or connections, and reporting the number of calls received from the public and subsequent follow-up actions. A complete listing of measurable goals is presented in Tables 5-1 and 5-2

The agencies will also maintain records to document Program implementation and annual progress. This information will be included in the Annual Report. Effectiveness in attainment of water quality objectives will be assessed on a triennial basis by the County. It is unreasonable to attempt to do this every year, given the wide fluctuations in receiving water quality and the effort required to interpret data. The timing of this review will be designed to coincide with the timing of the Regional Board's triennial review of TMDL effectiveness.

IV. Program Effectiveness Assessment

Effectiveness assessment is a process that used to evaluate whether or not the programs are resulting in desired outcomes and if these outcomes are being achieved efficiently and cost-effectively. During the first two years of the stormwater program the agencies will achieve Outcome Level One – Documented Activities; as defined in *the Municipal Stormwater Program Effectiveness assessment Guidance CASQA May 2007.* Additional effectiveness outcomes will be evaluated for this MCM beginning in Year 3. Chapter 2 further describes effectiveness assessment for the stormwater program.

Water Quality Parameters for the Urban Watch Monitoring Program.
City of Capitola

Parameter	Possible Sources	Associated Problems	Method/Accuracy
Temperature: Air & Water	Illegal discharges	Affects rates of chemical and biochemical reactions in water; may adversely affect fish	Method – Digital thermometer Accuracy ± 1% full scale Or Bulb Thermometer (Spirit) -5.0 – 55 oC
pH	Aerosols and dust in air, mineral substances, sewer overflows, animal wastes, pesticides & fertilizers, photosynthesis, respiration	Affects chemical and biochemical reactions in water. May interfere with fish and other aquatic life	Method – MacHerey-Nagel pH-Fix 4.5-10.0 color-fixed indicator strips Accuracy ± 0.25 units Min detection: 4.5
Detergent surfactants	Illegal or unintended discharges, car washing, cleaning of screens and grills, leaking sanitary sewers	Can be toxic to many aquatic insects, plants, and fish; can indirectly lower dissolved oxygen available to aquatic life	Method – solvent extraction/ bromphenal blue indicator Accuracy ± 0.1 ppm Min detection: >0.1 ppm
Copper	Illegal discharges into the storm drain system; also can occur naturally in surface waters.	Concentrations over 0.025 parts per million are toxic to most freshwater fish.	Method – Diethyldithiocarbamate Octa-Slide Comparator against color standard. Accuracy ± 10% Min detection: >0.25 ppm
Chlorine	Illegal or unintended connection or draining of a swimming pool to a storm drain; potable water line leaks	Toxic to aquatic life, can create a "sterile" environment.	Method – DPD Octa-Slide Comparator against color standard. Accuracy ± 10% Min detection: >0.2 ppm
Orthophosphate	Illegal or unintended discharges, car washing, cleaning of screens and grills, leaking sanitary sewers, fertilizers.	Can be toxic to many aquatic insects, plants, and fish; can lower dissolved oxygen available to aquatic life	Hannah portable meter Accuracy ± 10% Min detection:0.0 mg/L
Conductivity	Discharges high in salts and minerals or metals, water moving through local geology.	Possible agricultural, industrial or municipal wastewater runoff.	Method – Electrode probe module. Accuracy ±1% Min detection: 10 mS or 10 µS
E. coli bacteria	Wildlife, illegal connections to stormdrain systems, poorly functioning septic systems, wildlife	Detrimental to human health and marine organisms.	IDEXX Standard Method[1] 9223 b Duplicates within 95% confidence limits
Turbidity	Microorganisms, sediment, erosion, other particulates.	Interferes with fish and other aquatic life.	Method – Visual Octa-Slide Viewer Compare to a 5 step "Low/Med/High" turbidity standard slide bar
Color	Dyes or chemicals	Interferes with aquatic Insects	Method – Visual Borger Color System
Odor	Illegal discharges or product of decomposition; "clean" drainage water should have no distinctive odor	Can indicate presence of contaminants.	Method – Scent
Oil sheen	Hydrocarbons such as oil, gasoline, and grease; leaking underground petroleum storage tanks	Toxic to aquatic organisms.	Method – Visual
Trash, sewage, scum	Illegal discharges or illegal dumping	Interferes with fish and other aquatic life.	Method - Visual
Units: ppm – parts per million; mg/L – milli grams per liter; mS – milli Siemens; µS – micro Siemens			

TABLE 5-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Outfall and Storm Drain Mapping							
Target Audience: Agency staff							
1. Storm Sewer Mapping	Storm drain sewer system and outfalls are mapped in the urban areas of the County. The maps will be utilized to track sources of illicit discharges.	• Provide ongoing database maintenance and updated maps in annual report. • Incorporate storm drain mapping into GIS system. • Provide updated maps on County GIS website.	x x x	x	x	x	x
2. Sanitary Sewer Mapping	Incorporate sanitary sewer maps to identify possible leaks or spills to the storm drain.	• Incorporate sanitary sewer with storm sewer map.		x			

TABLE 5-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Detect and Eliminate Non-Stormwater Discharges ***Target Audience: Agency staff, residents, homeowners, businesses.***							
3. Illicit Discharge Program	Develop program to identify potentially polluting businesses and operations not otherwise regulated or inspected routinely.	• Structure/ procedures for illicit discharge screening and investigation completed. • Procedures and staff identified to conduct screening investigations and follow-up. • Database to track illicit discharge reports and follow-up actions developed.	X X	 X			

TABLE 5-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
4. Illicit Discharge Field Screening Investigations	Perform field investigations to identify illicit discharges from storm drain outfalls. Creeks and outfalls will be sampled for FIB, ammonia, nitrate, and human-specific bacterioides. Use of field test kits for other parameters will be considered	• Inspect and sample major creeks and outfalls annually for dry weather flows. Conduct upstream sampling and inspection where problems are found at outfalls. Approximately 6 creek locations and 8 major outfalls will be sampled on at least an annual basis.	X	X	X	X	X
		• Identify sources of dry weather flows annually.	X	X	X	X	X
		• Abate illicit discharges or connections identified.		X	X	X	X
		• Utilize current procedures to track illicit discharges and ensure completion of corrective work		X	X	X	X
		• Identify recurring illicit discharges.		X	X	X	X
		• Report the number of illicit connections found / repaired / replaced annually.					
5. MS4 Maintenance	MS4 inspection and maintenance is an important opportunity for identifying illicit connections and discharges.	• MS4 maintenance staff inspect for illicit discharges and connections during routine maintenance.	X	X	X	X	X
		• Results of inspections reported annually.	X	X	X	X	X

TABLE 5-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
6. Commercial / Industrial Facility Inspections	County Environmental Health Inspectors inspect and monitor regulated facilities annually for storage practices and spill response. Food facilities are inspected three times a year for good house-keeping practices, and proper disposal of garbage and wastewater. Additional elements will be added to the inspection procedures to ensure full compliance with stormwater BMP's at least once per year.	• Reporting, recordkeeping, and referrals will continue under the CUPA program and the food facility program. All facilities will be inspected. Records will be maintained of identified impacts on the storm system and correction made. • Inspection programs swill be expanded and inspectors will be trained to provide for full stormwater inspections to ensure all BMP's are in compliance	X X	X	X	X	X
7. Information from the Public	County currently receives and responds to reports from public of nonstormwater discharges.	• Use current water quality message protocol to receive and respond to calls from the public. • Report number of calls received and follow-up actions taken, including number of illicit discharges identified and corrected..	X	X X	X X	X X	X X

TABLE 5-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
8. Locate and correct cross-contamination sewers in the City of Capitola.	The County has conducted video surveillance of all sewer systems in Capitola in the vicinity of Soquel Creek and is upgrading substandard sewer mains in that area with the assistance of the Clean Beach Program and other grant funds. The County will consider establishing a program for the evaluation and upgrade of private sewer laterals, if such a program is justified by evidence of significant contamination from laterals.	• Monitoring and testing of sanitary sewer lines initiated within 100 yards of Soquel Creek. • Priority replacement / repair list completed. • Replacement / repair of illicit or substandard connections initiated. • Report on progress and follow-up activities in annually, documentation of linear feet of sewers upgraded and number and percentage of laterals inspected and upgraded.	X	X	X X X X	X	X
9. Implement pet waste ordinance	The City and County have ordinances that prohibit the deposition of pet waste in public spaces. The ordinances will be amended to require the proper collection and disposal of pet waste on private property to prevent discharge of fecal material to the storm drain system. The ordinances will be implemented through education programs, complaint response, and existing enforcement procedures.	• Amendment of pet waste ordiancnes • Education programs for pet waste • Placement and use of pet waste collection kiosks • Number of complaints and other enforcment activities documented annually		X X X X	X X X X	X X X X	X X X X

TABLE 5-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
10. Implement Septic Systems Maintenance and Management Program to reduce septic failures.	The County implements a septic system management program in the San Lorenzo Watershed and other areas of the county. This includes, water quality testing and investigation, tracking of septic system maintenance efforts and requirement for system evaluation and upgrade in conjunction with remodels. Brochures for this program are available at http://sccounty01.co.santa-cruz.ca.us/eh/sewage_disposal/ehownergd.html	• County will provide a triennial report of the number of septic systems pumped, inspected and upgraded in the primary watersheds of the county. The Basin Plan calls for triennial reporting of onsite system maintenance efforts	X	X	X	X	X

TABLE 5-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Prohibit Non-Stormwater Discharges							
Target Audience: Agency staff							
11. Storm water Ordinance	Prepare Ordinance to prohibit non-stormwater discharges into storm drain and implement appropriate enforcement procedures and actions. Provide for an exemption of non-stormwater discharges that do not pose a significant threat to water quality provided they are in compliance with the Regional Water Board General Waivers for Low Threat Discharges, Highly Treated Groundwater and Specific Discharges.	• Adopt and enforce ordinance. • Evaluate effectiveness of ordinance based on enforcement activities and abatement results. • Make recommendations for improvement where shortcomings are identified. • Provide schedule to implement improvements; as needed.	X	X X X	X X X	X X X	X X X
Education							
Target Audience: Agency staff							
12. Train Agency staff	Provide training to Agency staff on the administrative process for the Illicit Discharge Program.	• Agency staff will be trained, including 5 food facility inspectors, 4 CUPA inspectors, x industrial waste inspectors, x storm drain and sewer maintenance workers, and 4 water quality investigators. • Report outcome of training and follow-up activities. • Annual training, as appropriate, for new staff and when changes to the program occur.	X X	X X	X X	X X	X X

TABLE 5-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Outfall and Storm Drain Mapping ***Target Audience: Agency staff***							
1. Storm Sewer Mapping	Mapping of storm drain sewer system and outfalls will be utilized to track sources of illicit discharges.	• Evaluate existing storm drain maps • Develop list of data gaps • Provide ongoing database maintenance and updated maps in annual report.	X X	X X X	 X X	 X	 X
2. Sanitary Sewer Mapping	Coordinate with County staff to incorporate sanitary sewer maps to identify possible leaks or spills to the storm drain.	• Incorporate sanitary sewer with storm sewer map.		X			

TABLE 5-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Detect and Eliminate Non-Stormwater Discharges							
Target Audience: Agency staff, residents, homeowners, businesses.							
3. Illicit Discharge Program	Develop program to identify potentially polluting businesses and operations not otherwise regulated or inspected routinely.	• Structure/ procedures for illicit discharge screening and investigation completed. • Procedures and staff identified to conduct screening investigations and follow-up. • Database to track illicit discharge reports and follow-up actions developed.	x x	x			

TABLE 5-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
4. Illicit Discharge Field Screening Investigations	Perform field investigations to identify illicit discharges from storm drain outfalls.	• Inspect and sample creeks and outfalls within the City of Capitola annually for dry weather flows. Conduct upstream sampling and inspection where problems are found at outfalls. A minimum of 4 outfalls located on 2 creeks will be inspected and sampled annually.	X	X	X	X	X
		• Identify sources of dry weather flows annually.	X	X	X	X	X
		• Abate illicit discharges or connections identified.		X	X	X	X
		• Identify and track recurring illicit discharges.		X	X	X	X
		• Report the number of illicit connections found / repaired / replaced annually.		X	X	X	X
		• Develop additional effectiveness measures for field screening.			X		X
5. MS4 Maintenance	MS4 inspection and maintenance is an important opportunity for identifying illicit connections and discharges.	• MS4 maintenance staff inspect for illicit discharges and connections during routine maintenance.	X	X	X	X	X
		• Results of inspections reported annually.	X	X	X	X	X
6. Commercial / Industrial Facility Inspections	The County inspects and monitors regulated facilities within the City of Capitola annually for storage practices and spill response.	• Reporting, recordkeeping, and referrals will continue under the CUPA program	X	X	X	X	X

TABLE 5-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
7. Information from the Public	Establish method for receiving and tracking information from the public about non-stormwater discharges.	• Use hotline to receive calls from the public. • Report number of calls received and follow-up actions taken.		x	x x	x x	x x
8.		• • •					

TABLE 5-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Illicit Discharge Detection and Elimination
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Prohibit Non-Stormwater Discharges ***Target Audience: Agency staff***							
9. Storm water Ordinance	Prepare Ordinance to prohibit non-stormwater discharges into storm drain and implement appropriate enforcement procedures and actions. Provide for an exemption of non-stormwater discharges that do not pose a significant threat to water quality provided they are in compliance with the Regional Water Board General Waivers for Low Threat Discharges, Highly Treated Groundwater and Specific Discharges.	• Adopt and enforce ordinance. • Evaluate effectiveness of ordinance based on enforcement activities and abatement results. • Make recommendations for improvement where shortcomings are identified. • Provide schedule to implement improvements; as needed.	X	X X X	X X X	X X X	X X X
Education ***Target Audience: Agency staff***							
10. Train Agency staff	Provide training to Agency staff on the administrative process for the Illicit Discharge Program.	• All public works and building department employees associated with stormwater issues are trained. • Report outcome of training and follow-up activities. • Annual training, as appropriate, for new staff and when changes to the program occur.	X X	X X	X X	X X	X X

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Construction Site Stormwater 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.

I. Program Objectives

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

- 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 BMP implementation at construction sites
- Develop and implement Measurable Goals to evaluate the success of the BMPs
- In accordance with the RWQCB Sediment TMDL Implementation Plan the San Lorenzo River Watershed will be a priority for site inspection and enforcement control measures and for sediment control programs and projects.

II. Program Tasks and Associated BMPs

◊ The Construction Site Runoff Control Program is divided into four categories to effectively address stormwater issues. Each category, associated BMPs and target audience is described in the following sections and summarized in Tables 6-1 and 6-2.

Regulatory Mechanism and Land Use

◊ The County relies on the following ordinances to control runoff from construction sites:

◊ Grading Ordinance (Chapter 16.20). The existing Grading Ordinance requires all grading permit applications to include an erosion control plan for all surfaces to be exposed during construction. The ordinance also requires the plan to include revegetation measures for all surfaces exposed during grading activities.

◊ Riparian Corridor and Wetland Protection Ordinance (Chapter 16.30). The existing Riparian Corridor and Wetlands Protection Ordinance sets forth rules and regulations to limit development activities in order to protect water quality, open space, and prevent erosion. The Riparian Ordinance currently requires the following development setbacks:

- 50' from each side of a perennial stream
- 30'(minimum) from each side of an intermittent or ephemeral stream
- 100' from the high water mark of a lake, wetland, estuary, lagoon or natural body of standing water

◊ Erosion Control Ordinance (Chapter 16.22). The existing Erosion Control Ordinance requires erosion and sediment controls and mechanisms for enforcement. The ordinance also requires projects to limit disturbance of existing vegetation and also to control runoff to prevent erosion.

In addition to ordinances, the County relies on land use permits to impose construction BMPs.

The City relies on the following ordinances to control runoff from construction sites:

◊ Excavation and Grading (Chapter 15.28). The existing ordinance sets guidelines, rules, regulations and minimum standards to control excavation, grading, clearing, erosion control, and maintenance. It requires control of all existing and potential conditions of accelerated erosion, establishes administrative procedures for issuing permits, and provides for approval of plans and inspections during construction and maintenance.

◊ Environmentally Sensitive Habitats (Chapter 17.95). The existing ordinance sets regulations to apply to the

environmentally sensitive habitat district as shown on habitat maps and in all other areas identified by qualified professionals as sensitive habitat. Land classifies EHS also has a basic classification within this Title. The existing ordinance currently requires the following:

◊ 35' set back from the outer edge of riparian vegetation for soquel Creek and Noble Gulch.

◊ 50' set back from the outer edge of riparian and oak woodland vegetation for Tannery Gulch

◊ The agencies will implement the following regulatory mechanism BMPs:

◊ Update Grading, Riparian Corridor and Wetland Protection and Erosion Control Ordinances (BMPs 1-3 on Tables 6-1 and 6-2). During the first year of the Program, the existing ordinances will be compared with the requirements of the Construction Site MCM and modified if necessary. The following principles will be considered when reviewing existing ordinances and policies:

- Use of good site planning
- Minimizing soil movement
- Capturing sediment to the greatest extent possible
- Good housekeeping practices (e.g. control other wastes such as discarded building materials, concrete, truck wash out, chemicals, litter and sanitation waste)
- Minimizing the impact of post construction stormwater discharges
- Sanctions or other effective measures to ensure compliance

◊ Update Building Permit and Discretionary Projects Land Use Permits (BMPs 4-5 in Tables 6-1 and 6-2). During the first year of the Program, the building permit program and discretionary land use permits will be compared with the requirements of the Construction Site MCM and modified if necessary. In addition, special conditions for discretionary land use permits will be developed, as appropriate.

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.

◊ The agencies will implement the following site and plan review and inspection BMPs:

◊ Plan Review. Currently erosion and sediment control plans are submitted and approved prior to construction. These plans incorporate consideration of potential water quality impacts from construction activities and require implementation of appropriate erosion and sediment control BMPs by construction site operators.

◊ The erosion and sediment control plans are currently required to include BMP's for perimeter sediment control, control of drainage during construction, protection of inlets, winter seeding, stabilized construction entrances, erosion control on bare soils during inclement weather, as well as notes stating that grading is not allowed between October 15 and April 15 without an approved winter grading permit.

◊ Applicants for projects that disturb over one acre in Santa Cruz County will be advised that they are responsible for receiving coverage under the SWRCB's General Permit for Stormwater Discharges Associated with Construction Activity.

◊ The City of Capitola will notify project applicants of the SWRCB's General Permit for Stormwater Discharges Associated with Construction Activity requirements and place it as a project condition.

◊ Site Inspections. The Grading and Erosion Control ordinances currently require site inspection and enforcement at permitted construction sites. Inspections focus on sediment and erosion control BMPs.

◊ When sites are inspected and are determined not to be in compliance with sediment and erosion control measures, County staff issues a verbal warning, written warning or a "Stop Work" notice, depending on the extent of non-compliance. Generally verbal warnings are issued if it's a first offense and if the issue is minor. If the violation is a second offense or is more substantial, a written correction notice is issued with a required timeframe to bring the project into compliance. If it's a 3rd offense or of the violation is egregious, a "Stop Work" is placed on the permit, which does not allow any work on the project until the violation is corrected. A final enforcement action available is referral of the violation to County Counsel for enforcement.

◊ Specific enforcement actions taken by City staff for stormwater violations will be determined during the first year of the Stormwater Program.

◊ As part of this BMP an inventory of sites with grading permits under construction will be established. The inventory will also track the number, type and status of construction site violations.

Training

◊ An integral part to success of the Program is providing education to agency staff and the community.

◊ The agencies will implement the following training BMPs:

◊ Agency Staff. Inspector and permit reviewers will be trained on implementing construction stormwater BMPs.

◊ A BMP inspection checklist will also be developed to aid field staff during inspection of sites for erosion and sediment control.

◊ Construction Workshops. BMP workshops for the construction community will be provided annually. Information provided in the workshop will be augmented by website information.

To assist the development/construction community with the stormwater requirements, the agencies will prepare informational handouts 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
- EPA's guiding principles for controlling runoff from construction sites
- Good housekeeping practices for construction sites; regardless of size
- BMPs for construction sites
- Information on storm drain protection

Information Submitted by the Public

◊ The public can play a crucial role in identifying instances of non-compliance at construction sites. The agencies will implement the following BMP for public inquiry:

◊ Program a Public Inquiry Program. The agencies will develop a process for responding to public questions and concerns regarding the stormwater program. The Program will include a process for receiving and considering public inquiries, concerns, and information submitted regarding local construction activities. The agencies will consider information submitted and develop a tracking process for publicly submitted information. The public inquiry program may be incorporated with the water quality message protocol if appropriate.

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. Measurable Goals include inspecting and contacting

100% of active grading projects and training 100% of agency staff. BMPs and Measurable Goals for the Construction Site Runoff Control Program are presented in Tables 6-1 and 6-2.

◊ The effectiveness and measurability of each BMP and Measurable Goal will be reevaluated each year and provided in the Annual Report.

◊ The agencies will also maintain records to document program implementation and annual progress. This information will be included in the Annual Report.

IV. Program Effectiveness Assessment

Effectiveness assessment is a process that used to evaluate whether or not the programs are resulting in desired outcomes and if these outcomes are being achieved efficiently and cost-effectively. During the first two years of the stormwater program the agencies will achieve Outcome Level One – Documented Activities; as defined in the Municipal Stormwater Program Effectiveness assessment Guidance CASQA May 2007. Additional effectiveness outcomes will be evaluated for this MCM beginning in Year 3. Chapter 2 further describes effectiveness assessment for the stormwater program.

TABLE 6-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Construction Site Stormwater Runoff Control Program
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Regulatory Mechanism/ Land Use							
Target Audience: Agency staff							
1. Grading Ordinance (Chapter 16.20) http://ordlink.com/codes/santacruzco/index.htm	The existing Grading Ordinance requires all grading permit applications to include an erosion control plan for all surfaces to be exposed during construction. The ordinance also requires the plan to include revegetation measures for all surfaces exposed during grading activities.	• Compare Grading Ordinance to construction MCM and evaluate effectiveness.		X	X	X	X
		• Evaluate effectiveness of existing grading ordinance and modify if necessary (see 7.1.1).			X	X	X
2. Riparian Corridor and Wetlands Protection Ordinance (Chapter 16.30) http://ordlink.com/codes/santacruzco/index.htm	The existing Riparian Corridor and Wetlands Protection Ordinance sets forth rules and regulations to limit development activities in order to ~~protect~~ achieve long-term watershed protection, to protect water quality, maintain open space, and prevent erosion. The Riparian Ordinance currently requires the following development setbacks: • 50' from each side of a perennial stream • 30'(minimum) from each side of an intermittent or ephemeral stream • 100' from the high water mark of a lake, wetland, estuary, lagoon or natural body of standing water	• Inspect sites twice yearly during construction to verify compliance with riparian setbacks.	X	X	X	X	X
		• Issue non-compliance letters to applicants if violations occur. Track the number issued per year.	X	X	X	X	X
		• Evaluate effectiveness of Riparian Ordinance and update / modify ordinance if necessary (see 7.1.1)			X	X	X
		• Evaluate effectiveness of erosion and sediment control measures indicated on the plans and commonly used on construction sites (see 7.1.1). Modify as necessary.	X	X	X	X	X

TABLE 6-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Construction Site Stormwater Runoff Control Program
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
3. Erosion Control Ordinance (Chapter 16.22) http://ordlink.com/codes/santacruzco/index.htm	The existing Erosion Control Ordinance, a product of the San Lorenzo River Watershed Management Plan and subsequent General Plan adoptions (see 7.1.1), applies to all projects with a potential to cause accelerated erosion. All grading projects, new single-family dwellings and commercial projects are required to have an erosion control plan. Smaller projects (such as additions) are reviewed on a case by case basis to determine whether an erosion control plan is required. The ordinance requires erosion and sediment controls during construction and mechanisms for enforcement. The ordinance also requires projects to limit disturbance of existing vegetation and also to control runoff to prevent erosion on a long-term basis.	• Update Erosion Control Ordinance to require BMP's to cover containment of construction waste on site (such as concrete washouts, building materials, sanitary waste and litter).	x	x			
		• Compare requirements of the construction MCM and report effectiveness (see 7.1.1). • Revise, as necessary, to meet requirements of this MCM.		x	x		
4. Evaluate Building Permit Program Efficacy	Evaluate the Building Permit program for construction BMPs.	• Condition projects, as appropriate, for BMPs.			x	x	x
5. Discretionary Projects – Land Use Permits.	Additional BMPs may be required for discretionary projects (e.g. restricted fueling areas, equipment maintenance).	• Condition projects, as appropriate, for BMPs.			x	x	x
Site Plan Review and Inspections ***Target Audience: Agency staff, design firms and construction contractors***							

TABLE 6-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Construction Site Stormwater Runoff Control Program
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
6. Plan Review	Erosion and sediment control plans must be submitted and approved prior to construction.	• Approval of erosion and sediment control plan (or SWPPP) on 100% of projects.	X	X	X	X	X
		• Track how many erosion control plans were not accepted on the 1st review and what the problems were. Also track the types of designers who prepared the plans that were not approved on the 1st review (i.e. homeowners, building designers, architects, civil engineers)	X	X	X	X	X
7. Site Inspections	Grading and Erosion Control ordinances require site inspection and enforcement at permitted construction sites. Inspections focus on sediment and erosion control BMPs.	• Inspect 100% active grading permits at start of rainy season and again in middle of rainy season (more if necessary based on non-compliance). Note: If the grading for a project has been completed, but the permit has not yet received a final inspection (for instance the house is still under construction), the site is considered active and will continue to be inspected during the rainy season. Inspections will focus on the presence of required BMP's as well as proper installation and anticipated effectiveness.	X	X	X	X	X

TABLE 6-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Construction Site Stormwater Runoff Control Program
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
		• Conduct inspections of grading projects, new single family dwellings and commercial projects for stormwater construction BMPs during non-rainy season. Inspections will be made during rough grade inspections, final grading inspections, and during building inspections.	X	X	X	X	X
		• Create a construction site BMP inspection checklist to be used by field staff.		X			
		• Inspect for control of waste at construction sites.			X	X	X

TABLE 6-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Construction Site Stormwater Runoff Control Program
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
		• Enforcement actions taken where BMPs found to fail. Enforcement action sequence is as follows: 1st offense (if not egregious) – Verbal Warning 2nd offense – Written Correction Notice with date required for compliance. 3rd Offense – "Stop Work" placed on the permit until all violations have been corrected. Notes: If the violation is egregious, a "Stop Work" may be placed without a verbal or written notice. If any of the above enforcement actions are not effective, the project may be referred to County Counsel for further enforcement action	X	X	X	X	X
		• Establish inventory of sites with grading permits under active construction. Send letters to all applicants with active grading permits by October 1 reminding them of erosion control requirements.	X	X	X	X	X

TABLE 6-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Construction Site Stormwater Runoff Control Program
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
		• Track the number of reminder letters mailed; the number and percentage of projects inspected; number, type and status of violations, and report annually.		X	X	X	X
Training ***Target Audience: Agency staff, design firms and construction contractors***							
8. Train Agency staff.	Inspector and permit reviewers trained on implementing construction stormwater BMPs.	• 100% annual training of grading and building inspectors	X	X	X	X	X
		• 100% annual training of permit and planning review staff.		X	X	X	X
		• Track results of pre and post training quizzes		X	X	X	X
9. Construction Workshops	Provide BMP workshops for construction community. Augment website information. Brochures available at the County Website. http://www.sccoplanning.com/html/misc/all_brochures.htm#Environment	• Provide construction related requirements on County website.	X				
		• Develop workshop material for construction community.		X	X	X	X
		• Provide one public workshop annually.		X	X	X	X
Information Submitted by the Public ***Target Audience: Agency Staff and General Public***							

TABLE 6-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Construction Site Stormwater Runoff Control Program
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
10. Public Inquiry Program	Develop a process for responding to public questions and concerns regarding the stormwater program. Coordinate with the water quality message protocol as applicable.	• Process for receiving and considering for public inquiries regarding construction activities implemented.		X	X	X	X
		• Method for tracking publicly submitted information established.		X	X	X	X
		• Track the number of public inquiries and complaints received about stormwater issues on projects		X	X	X	X

TABLE 6-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Construction Site Stormwater Runoff Control Program
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Regulatory Mechanism/ Land Use							
Target Audience: Agency staff							
1. Ordinance	Develop or revise ordinance(s) to require erosion and sediment controls and mechanisms for enforcement of the Stormwater Program. Ordinance will also address riparian corridors and protection of wetlands.	• Compare existing ordinances and codes to construction MCM and evaluate effectiveness. Title 15 Building and Construction, Municipal Code Chapter 15.28. Title 17 Zoning: Chapter 17.95 Environmentally Sensitive Habitats		X	X	X	X
		• Evaluate effectiveness of existing grading ordinance and modify if necessary.			X	X	X
2. Evaluate Building Permit Program Efficacy	Evaluate the Building Permit program for construction BMPs.	• Condition projects, as appropriate, for BMPs.			X	X	X
3. Discretionary Projects – Land Use Permits.	Additional BMPs may be required for discretionary projects (e.g. restricted fueling areas, equipment maintenance).	• Condition projects, as appropriate, for BMPs.			X	X	X
Site Plan Review and Inspections							
Target Audience: Agency staff, design firms and construction contractors							
4. Plan Review	Erosion and sediment control plans must be submitted and approved prior to construction.	• Approval of erosion and sediment control plan (or SWPPP) on 100% of projects.		X	X	X	X

TABLE 6-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Construction Site Stormwater Runoff Control Program
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
5. Site Inspections	Review existing site inspection and enforcement at permitted construction sites. Inspections focus on sediment and erosion control BMPs.	• Develop construction inspection plan to address the frequency and types of projects inspected during the dry season. Identify and evaluate BMPs that are currently required to be implemented at construction sites and determine if additional BMPs at construction sites should be required. Report results in annual report.	X X	X			
		• Develop construction site inspection checklist.		X	X	X	X
		• Begin using construction site inspection checklist and track findings annually			X	X	X
		• Inspect 100% active projects at start of rainy season and again in middle of rainy season (more if necessary based on non-compliance).		X	X	X	X
		• Conduct inspections of stormwater construction BMPs during non-rainy season.		X	X	X	X

TABLE 6-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Construction Site Stormwater Runoff Control Program
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
		• Inspect for control of waste at construction sites.			X	X	X
		• Enforcement actions taken where BMPs found to fail or are inadequately controlling sediment or other pollutants.		X	X	X	X
		• Establish inventory of sites with grading permits under active construction. Send letters to all applicants with active grading permits by October 1 reminding them of erosion control requirements.		X	X	X	X
		• Track the number, type and status of violations and report annually.		X	X	X	X
6. Measure Effectiveness	Effectiveness assessment conducted to determine the appropriateness of the inspection BMPs	• Evaluate site construction BMP for possible effectiveness measures.		X			
		• Incorporate effectiveness measures into the Construction Site runoff program			X	X	X
Training ***Target Audience: Agency staff, design firms and construction contractors***							

TABLE 6-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Construction Site Stormwater Runoff Control Program
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
7. Train Agency staff.	Inspector and permit reviewers trained on implementing construction stormwater BMPs.	• 100% annual training of grading and building inspectors • 100% annual training of permit and planning review staff.	X	X X	X X	X X	X X
Information Submitted by the Public ***Target Audience: Agency Staff and General Public***							
8. Public Inquiry Program	Develop a process for responding to public questions and concerns regarding the stormwater program.	• Process for receiving and considering for public inquiries regarding construction activities implemented. • Method for tracking publicly submitted information established.		X X	X X	X X	X X

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Post Construction Stormwater Management in 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.

In accordance with the RWQCB Sediment TMDL Implementation Plan the San Lorenzo River Watershed will continue to be a priority for sediment control programs and projects.

II. Program Tasks and Associated BMPs

The Post Construction Program is divided into three categories to effectively address stormwater issues. Each category, associated BMPs and target audience, is described in the following sections and summarized in Tables 7-1 and 7-2.

Regulatory Mechanism and Post Construction Program Development

The Post Construction Program involves implementing policies, ordinances and procedures to address urban runoff quantity and quality during project planning and construction. Since 1980, existing County General Plan policies and County land use ordinances have provided significant long-term watershed protection (these policies and ordinances were revised and strengthened in 1983 with the adoption of the Local Coastal Program Land Use Plan and IP, and in 1994 with the General Plan update). These policies and ordinances were originally identified in the San Lorenzo River Watershed Management Plan as necessary implementation measures to improve the water quality of the San Lorenzo River Watershed. The 1980 and 1994 County General Plans and the 1983 Local Coastal Program Land Use Plan incorporated these policies and ordinance provisions for County-wide application.

These policies and ordinances include, but are not limited to, the protection of riparian corridors, wetlands and other sensitive habitats, implementation of FEMA floodplain/floodway protection measures, application of grading and erosion control requirements to all development activities, and protection of Monterey Bay and Coastal Water Quality through development controls on storm water runoff.

The agencies will implement the following regulatory mechanism BMPs:

◊ Land Use Policies and Ordinances. During the first two years, the County will review the effectiveness of the existing General Plan/Local Coastal Program Land Use Plan policies, ordinances and procedures to determine if these policies, ordinances and procedures adequately protect the health and functioning of watersheds in the County. If the review program indicates that additional policies, ordinances and procedures are necessary to protect watershed health and functioning, the County will adopt and implement the necessary amendments, including the development of a post-construction runoff ordinance if that is determined to be an appropriate tool to accomplish the goals.

- Post Construction Stormwater Ordinance. Policies and ordinances will be amended to implement the requirements of Attachment 4. Evaluate and update or create new ordinances as necessary over time.

- Evaluate Existing Program Efficacy. Based on the review of existing procedures the County will update and revise development review procedures as necessary.

- Design Standards. Following the results of the review program of the existing regulatory framework, the County agencies will update existing design criteria to include additional BMPs, as necessary.

- CEQA Checklist. Review and revise the CEQA Initial Study checklist to ensure that the stormwater runoff quality and quantity are considered.

- Ongoing Post Construction Monitoring. The County will require, per recorded maintenance agreements, as a condition of approval, that structural water quality or quantity control facilities are maintained. Annual reports documenting maintenance actions made each year will be required to be submitted to the County prior to the rainy season. Ordinances will be reviewed and amended, if necessary, to strengthen requirements to provide for ongoing maintenance by property owners.

- BMP Manual. There are numerous BMPs available for post construction runoff control. Existing BMPs available from sources such as CASQA and the SWRCB programs will be compiled into a BMP reference list and manual. The purpose of the list is to provide general guidance on the types of BMPs used to control stormwater runoff from new and redevelopment sites. The manual will be made available to agency staff and project applicants.

- Incentive Program. During the third year of the Program the agencies will develop an incentive program to encourage site design that exceeds the requirements of the interim hydromodification criteria.

Training

An integral part to success of the Program is providing education to agency staff and to members of the public who are involved in the design and construction of development projects.

The agencies will implement the following training BMPs:

◊ Staff Training. Beginning in the second year of the Program, agency staff will be trained annually. 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.

◊ An annual training session will be conducted for engineers, architects, contractors, designers, etc. on the purpose, design, construction and monitoring of LIDs and hydromodification techniques.

B. City of Capitola Program

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.

The City will implement the following regulatory mechanism BMPs:

◊ Land Use Policies. During the first year the City will review existing General Plan/Local Coastal Program Land Use Plan policies to determine if these policies provide an implementation framework for compliance with the Post Construction MCM. The following principles will be considered when reviewing existing policies for new development or redevelopment projects:

- 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

◊ Post-Construction runoff Ordinance. Existing ordinances will also be reviewed and modified to include sanctions or other effective measures to ensure compliance.

◊ Long-Term Watershed Management. The City's master plan is a comprehensive document addressing future growth, including infrastructure and redevelopment in the context of long-term watershed protection. The master plan will be reviewed to verify that long-term watershed management efforts are being addressed. Based on results of this review, the master plan will be revised, as appropriate.

Post Construction Program Development

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

The City will implement the following post construction program development BMPs:

◊ Program Efficacy. During the first year of the Program, the City will examine existing plan review and permitting procedures and revise them, as appropriate, to address stormwater issues. Information the City uses to review current procedures and standard conditions, specific issues the standards address, and the components comprising the procedures and conditions will be coordinated with the County who perform much of the City's plan review and permitting. The City will insure to apply these conditions to new and re developments until alternative criteria are in place.

Existing procedures and standard conditions used to protect water quality will be compared to the requirements of the General Phase II stormwater permit. Existing procedures will be modified to meet or exceed the requirements of the Phase II general Permit including Attachment 4 (B). The following procedures will be considered:

- Mechanism to inform permit applicants of requirements regarding stormwater runoff.
- Revised staff permit/design review process to include urban runoff issues.
- Criteria to determine if stormwater controls are needed for a proposed project

◊ Design Standards. The City will update existing design criteria to include BMPs that, reduces runoff, promotes recharge and prevents stormwater pollution from site runoff. During the first two years the City will compare existing design standards with Permit requirements (Attachment 4) and Low Impact Development standards. A summary of current standards applied by the City to new and redevelopments will be provided at the end of year 1.

The City of Capitola will begin conditioning projects for structural and nonstructural

stormwater control BMPs in year three. The City will implement LID techniques, to the extent practical, beginning in year three. The City will assess existing design criteria in terms of long-term watershed protection and healthy functioning watershed in year four.

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 are implemented

- A procedure for verifying that improper connections to the storm drains do not exist once construction is completed

◊ Discretionary Permit Review. Discretionary projects will be monitored for compliance with Stormwater requirements. The City will establish mechanisms to require on-going monitoring and maintenance of stormwater BMPs in new and recently approved developments.

All commercial and multi-family dwelling project with the City of Capitola are reviewed and conditioned for drainage control by the County of Santa Cruz. For projects solely within the City's review the City will identify the types of mechanisms to consider for on-going maintenance and monitoring of stormwater BMPs beginning in year 2. The City will identify conditions under which the mechanisms will apply and appropriate frequencies of inspection and maintenance during year 2.

◊ BMP Manual. There are numerous BMPs available for post construction runoff control. Existing BMPs available from sources such as CASQA and the SWRCB programs will be compiled into a BMP reference list and manual. The purpose of the list is to provide general guidance on the types of BMPs used to control stormwater runoff from new and redevelopment sites. The manual will be made available to agency staff and project applicants.

◊ Existing Structural Stormwater Controls. During the second year of the Program, the City will identify existing structural and non-structural controls and develop a maintenance program. During years 3 and 4, the City will maintain 50% of the controls annually.

◊

Training

An integral part to success of the Program is providing education to agency staff.

The agencies will implement the following training BMPs:

◊ Training. Beginning in the first year of the Program, City planning staff will be trained annually. 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. Beginning in year three the City will coordinate with the County to train developers and contractors in proper inspection and monitoring of structural controls, BMPs and record keeping procedures.

C. Combined County and City of Capitola Programs

Hydromodification Criteria

In response to the February 15, 2008 letter from the Central Coast Regional Water Quality Control Board (Water Board) regarding hydromodification control requirements, the County of Santa Cruz and City of Capitola established a strategy to develop alternative hydromodification criteria. The goal of the criteria is to determine an economically viable and practicable hydromodification management strategy that will provide protection of water resources to the maximum extent practicable. The strategy was submitted to the Water Board in May 2008 and included the following elements:

- Evaluating existing Hydromodification Criteria
- Evaluating Protection of Beneficial Uses
- Meeting with Water Board Staff
- Developing Alternative Hydromodification Criteria for Santa Cruz agencies
- Plan milestones

The agencies will determine hydromodification BMPs and measurable goals based on the alternative hydromodification criteria developed.

Hydromodification Management Plan

The agencies are working in coordination with regional agencies to develop hydromodification criteria that will be specific to the watersheds of Santa Cruz County. A considerable effort will be put forth in developing criteria that are protective of the watersheds and address increases in peak flow and runoff volume where such increased flow and/or volume is likely to cause increased erosion of creek beds and banks, silt pollutant generation, or other impacts to beneficial uses.

The criteria are scheduled to be completed one year after permit adoption. During year two of the

program BMPs and measure goals to assess the criteria will be developed. Beginning in year 4 the criteria will be assessed for effectiveness and BMPs will be revised, as necessary to protect watershed health. Methods used to assess effectiveness will be determined in year 4. During year 5 the agencies will determine if further watershed data is needed to refine the existing alternative hydromodification criteria.

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 Tables 7-1 and 7-2.

The agencies will maintain records to document Program implementation and annual progress. This information will be included in the Annual Report.

IV. Program Effectiveness Assessment

Effectiveness assessment is a process that used to evaluate whether or not the programs are resulting in desired outcomes and if these outcomes are being achieved efficiently and cost-effectively. During the first two years of the stormwater program the agencies will achieve Outcome Level One – Documented Activities; as defined in the Municipal Stormwater Program Effectiveness assessment Guidance CASQA May 2007. Additional effectiveness outcomes will be evaluated for this MCM beginning in Year 3. Chapter 2 further describes effectiveness assessment for the stormwater program.

TABLE 7-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Regulatory Mechanism *Target Audience: Agency staff*							
1. Land Use Policies and Ordinances	Since 1980, existing General Plan policies and County land use ordinances have provided an implementation framework for compliance with this MCM and provide significant long-term watershed protection (these policies and ordinances were revised and strengthened in 1983 with the adoption of the Local Coastal Program Land Use Plan and IP). These policies and ordinances were originally identified in the **San Lorenzo River Watershed Management Plan** as necessary implementation measures to improve the water quality of the San Lorenzo River Watershed. The 1980 and 1994 County General Plans and the 1983 Local Coastal Program Land Use Plan incorporated these policies and ordinance provisions for County-wide application. These policies and ordinances include, but are not limited to, the protection of riparian corridors, wetlands and other sensitive habitats.	• Develop and implement a review program to measure the effectiveness of the policies and ordinances in providing long-term watershed protection and healthy functioning watersheds.	X	X	X	X	X

TABLE 7-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
	implementation of FEMA floodplain/floodway protection measures, application of grading and erosion control requirements to all development activities, and protection of Monterey Bay and Coastal Water Quality through development controls on storm water runoff. [Existing General Plan/LCP policies and ordinances are found on the County Website: *http://www.sccoplanning.com/html* see Sections 5.1, 5.2, 5.4, 5.5, 5.7, 6.3 of the General Plan/LCP and Chapters 16.10, 16.20, 16.22, 16.30 and 16.32] These policies are implemented as a part of the review for all development activities conducted in the unincorporated area of the County, regardless of size or location. Because of our long-standing implementation of watershed protection measures and low impact development (LID), the BMP proposed is to assess the effectiveness of the implementation of the existing policies in maintaining and enhancing long-term watershed protection. To accomplish this, a program to measure the effectiveness of these controls shall be instituted. The program will assess habitat degradation and pollutant loading in the context of contributing land use types. This should be accomplished in conjunction with other jurisdictions where watersheds are shared. Intermediate results of this program will be used to determine what policies and/or ordinances need to be revised to strengthen watershed protection. (see 7.1.2)	• Modify policies/ordinances if necessary • Continue to measure the effectiveness of the policies/ordinances and modify in the future as necessary • Amend current ordinances to incorporate the specific BMPs associated with the land uses identified in Attachment 4. Include the implementation of these amended ordinances in the proposed monitoring program.	X	X	X	X	X

TABLE 7-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
2. Post-construction Stormwater Control Ordinance	The County has routinely reviewed all development permits (discretionary and building) to reduce the impacts of stormwater runoff based on existing policies and ordinances. As discussed in 7.1.1, a program will be instituted to measure the effectiveness of the policies and ordinances. If, as a result of the monitoring, there is a need to revise the policies and ordinances to provide long-term watershed protection, a stormwater control ordinance shall be created if changes to the existing ordinances are inadequate.	• Create new stormwater control ordinance if necessary (see footnote 1). • Evaluate new ordinance effectiveness and further modify as necessary (see 7.1.1).			X	X	X
Post Construction Program Development ***Target Audience: Agency staff, design firms, project owners***							

TABLE 7-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
3. Evaluate Existing Program Efficacy	Prior to the issuance of any discretionary permit for a development activity that will create more impervious surface, a preliminary drainage and erosion control plan is required to be submitted for review and approval. These preliminary plans must demonstrate that stormwater from the impervious surfaces will not contribute to flooding and water quality degradation and that all sediment will be contained on-site. For those projects where there will be no building permit or map filing, final plans are reviewed and approved based on the requirements of the ordinances and policies prior to authorization to commence work. Periodic inspections are required (see Chapter 6). Prior to issuance of all building permits and prior to the recording of all Final and Parcel Maps, a final drainage and erosion control plan must be submitted for review and approval by Public Works and the Planning Department. After issuance of building permits or recordation of maps and Subdivision Agreements, periodic inspections occur (see Chapter 6 for Construction BMP implementation). Conditions of approval for all drainage and erosion control plans require the implementation of construction and post construction measures to protect water quality, riparian habitats and prevent flooding.	• If it is determined that changes need to be made based on the program discussed in 7.1.1, revise procedures as necessary			X		

TABLE 7-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
4. Design Standards	The County Code Chapters cited in 7.1.1 and the County Design Criteria contain specific standards and conditions for the design of drainage and erosion control measures for all development and redevelopment within the County's jurisdiction. As stated in 7.1.1, the County's ordinances already provide and will continue to provide a high level of long-term watershed protection and promote LID. The requirements include stormwater retention where feasible, bio-filtration of stormwater, and reduction of post-development flow rates to pre-development rates (through detention and other means). Planning policies promote retention of vegetation, protection of riparian corridors and site planning to minimize grading and site disturbance. Should the monitoring program identify ordinance or Design Criteria measures that are inadequate to protect watershed health or functioning, these ordinances and/or criteria will be amended to provide the level of protection necessary to protect the watersheds, including maximization of LIDs. The ordinances or Design Criteria will be revised to incorporate any subsequently approved hydromodification measures attached to this permit.	• Modify Design Criteria and standards/conditions contained within County Ordinances if identified as needed by the program cited in 7.1.1. • Revise Design criteria and ordinances, as necessary, to incorporate hydromodification criteria and implement.		X X	X X	X X	X

TABLE 7-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
5. Alternative Interim Hydromodification Criteria	Development of alternative interim hydromodification criteria to provide for the minimization of stormwater impacts on watersheds.	• Develop and implement alternative interim hydromodification criteria for application to development and redevelopment projects as applicable. • The on-going review program specified in 7.1.1 will continue in order to assess effectiveness of the hydromodification criteria and to identify further refinements.		X		x	x

TABLE 7-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
6. CEQA Checklist	Review and revise, if necessary, the CEQA Initial Study checklist to ensure that stormwater runoff quality and quantity are considered.	• Review and revise CEQA Initial Study checklist as required.	X	x			

TABLE 7-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
7. On-going Project Post-Construction Monitoring	Following final inspection and acceptance of erosion control and drainage facilities associated with development or redevelopment, review of annually submitted reports will be conducted to insure that facilities are maintained.	• Require, as a condition of approval of all building permits, discretionary permits and subdivisions, that annual reports be submitted prior to the winter season from property owners with constructed facilities. The report will document current condition of the facility and actions taken in the past year to maintain the facility.	X	X	X	X	X
		• Issue enforcement action for non-compliant conditioned projects.		X	X	X	X
		• Track enforcement actions taken (e.g. Notices of Violation)		X	X	X	X
		• Prepare ordinance amendments, if necessary, to strengthen requirements to provide for ongoing monitoring and maintenance by property owners, with oversight by the County.		X	X	X	X
8. Compile BMP manual	Post construction BMPs will be compiled from sources such as CASQA and made available for Agency staff and project applicants.	• BMP manual completed and available on webpages.		X			
		• BMP manual advertised to 100% of project applicants.			X	X	X

TABLE 7-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
Santa Cruz County

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
9. Incentive Program	Develop an incentive program to encourage site design that exceeds the requirements of the interim hydromodification criteria.	• Incentive program developed and implemented.		X	X	X	X
Training ***Target Audience: Agency staff***							
10. Train staff	Train designated staff in plan review, proper inspection and monitoring of structural controls, BMPs and record keeping procedures. Particular emphasis will be placed on evaluating the adequacy of post-construction controls, low impact development and hydromodification.	• Existing plan review and inspection staff attends annual training. 100% of these staff members trained each year. • Train new staff, as they are hired.	X	X X	X X	X X	X X
11. Train members of the development and construction industries.	Conduct training sessions with County planners and public sector engineers, architects, developers, consultants, etc. These training sessions will include specific attention to low impact development and hydromodification.	• Conduct one all-day training session each year.		X	X	X	X

TABLE 7-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Regulatory Mechanism							
Target Audience: Agency staff							
1. Land Use Policies	Review existing General Plan/Local Land Use Plan policies to determine if these policies provide implementation framework for compliance with this MCM.	• Compare existing policies to post construction MCM and evaluate for necessary changes	X				
		• Modify policies if necessary[1]		X			
		• Evaluate new policy effectiveness and further modify as necessary			X	X	X
2. Long-Term Watershed Management	Coordinate with regional agencies to develop a comprehensive plan to define future growth, including infrastructure and redevelopment in the context of long-term watershed protection	• Review and summarize general and master plans for existing long-term watershed management efforts.			X		
		• Work with other agencies to pool resources and define scope of long-term watershed management plan			X		
		• Develop Goals and Schedule for regional, long-term watershed management				X	
		• Begin developing Long-Term Watershed Management					X

TABLE 7-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
3. Post-construction runoff Ordinance	Review existing ordinances to address post-construction runoff from new development and redevelopment projects.	• Compare existing ordinances to post construction MCM and evaluate for necessary changes. • Modify ordinances or create new stormwater ordinance if necessary. • Evaluate new ordinance effectiveness and further modify as necessary	x	x	x	x	x
Post Construction Program Development ***Target Audience: Agency staff, design firms, project owners***							

TABLE 7-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
4. Evaluate Program Efficacy	Existing policies, procedures and standard conditions used to protect water quality will be compared to the requirements of the General Phase II stormwater permit.	• Provide summary of current standards applied to new and re-developments	X				
		• Compare existing policies, procedures and standard conditions with Permit requirements (Attachment 4).	X				
		• Identify information the City uses to review current procedures and standard conditions. Identify specific issues the standards address. Identify components comprising the procedures and conditions.	X				
		• If it is determined that changes need to be made to better comply with those requirements, then the relevant policy, procedures, or standard conditions will be developed or modified so that they meet or exceed all of the requirements in the General Permit including Attachment 4(B).		X			
		• Assess the existing procedures and conditions in terms of long-term watershed protection and healthy functioning watersheds.				X	X

TABLE 7-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
5. Design Standards	Update Agency design criteria to include BMPs that, reduces runoff, promotes recharge and prevent stormwater pollution from site runoff.	• Provide summary of current standards applied to new and redevelopments	X		X		
		• Compare existing design standards with Permit requirements (Attachment 4) and Low Impact Development standards.	X	X	X		
		• Modify existing design and LID standards to meet Attachment 4 requirements; as appropriate.				X	X
		• Structural and nonstructural stormwater control BMPs are conditioned.				X	X
		• Apply treatment standards to 100% of applicable projects.					X
		• Review inspection program and revised as needed to include a post construction runoff controls checklist to verify that runoff controls are implemented.					
		• Assess existing design criteria in terms of long-term watershed protection and healthy functioning watershed.					

TABLE 7-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
6. Discretionary Permit Review Process	Discretionary projects will be monitored for compliance with Stormwater requirements.	• Annually evaluate discretionary projects for compliance with stormwater requirements.	X	X	X	X	X
		• Issue enforcement action for non-compliant conditioned projects.		X	X	X	X
		• Track enforcement actions taken (e.g. Notices of Violation)		X	X	X	X
	Mechanisms will be established to require on-going monitoring and maintenance of Stormwater BMPs in new and recently approved developments.	• Identify the types of mechanisms the City will consider for on-going maintenance and monitoring of stormwater BMPs		X X			
		• Identify conditions under which the City will apply the mechanisms and appropriate frequencies of inspection and maintenance.					
		• Prepare ordinance requirements to provide for ongoing monitoring and maintenance by property owners, with oversight by the County			X	X	X
7. Compile BMP manual	Post construction BMPs will be compiled from sources such as CASQA and made available for Agency staff and project applicants.	• BMP manual completed and available on webpages.		X			
		• BMP manual advertised to 100% of project applicants.			X	X	X
8. Existing structural	Identify existing structural stormwater	• Existing structural controls identified.		X			

TABLE 7-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
stormwater controls	controls and develop a maintenance program.	• Maintenance Program developed and implemented.			X	X	X
		• 50% of structural controls will be maintained annually.				X	X
		•					
9. Alternative Hydromodification Criteria	Develop Alternative Hydromodification Criteria that will be reasonably equivalent at protecting beneficial uses as the criteria included in the Water Board February 15.	• Review Water Board data supporting criteria set forth in the February 15, 2008. Incorporate findings into development of alternative criteria.	X				
		• Alternative Hydromodification Criteria developed	X				
		• Develop BMPs and measurable goals to support the Alternative Hydromodification Criteria		X			
		• Assess criteria for effectiveness and revise BMPs, as necessary to protect watershed health.			X	X	X
		• Determine if further watershed data is needed to refine the existing alternative hydromodification criteria					X
Training ***Target Audience: Agency staff, Developers, Contractors, Construction Industry***							

TABLE 7-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Post-Construction Stormwater Management in New Development and Redevelopment
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
9. Train staff	Train staff in proper inspection and monitoring of structural controls, BMPs and record keeping procedures.	• Train 100% of planners annually. Train new staff.	X	X X	X X	X X	X X
10. Train Developers and Contractors	Train developers and contractors in proper inspection and monitoring of structural controls, BMPs and record keeping procedures.	• The City will coordinate with County staff to provide training to developers and contractors			X	X	X

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Pollution Prevention / Good Housekeeping for Municipal Operations

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, associated BMPs, and target audience is described in the following sections and summarized in Tables 8-1 and 8-2.

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.

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

Where applicable, the agencies currently implement the following good housekeeping programs:

- Vehicle Wash Area Maintenance Plan
- Hazardous Materials Storage Program
- Spill Prevention Program
- Fuel Storage Facilities Maintenance Plan
- SWPPP for Corporation Yards
- Landfill Inspection Plan
- Park and Open Space Maintenance

The following good housekeeping BMPs will be implemented:

◊ Agency Housekeeping Practices. The agencies perform good housekeeping practices. Existing housekeeping practices will be compared with the requirements of the Municipal Maintenance MCM and modified if necessary to address stormwater runoff concerns. CASQAs Municipal Handbook will be used as guidance for program evaluation and development.

◊ Facility BMPs. Based on the comparison, the agencies will develop BMPs for facilities such as corporation and construction yards to address vehicle maintenance, material storage and fueling operations. A facilities inspection checklist and schedule will also be developed and implemented.

◊ Integrated Pest Management (IPM) and Integrated Vegetation Management Program (IVMP). The County Board of Supervisors adopted an IPM Policy that has the long term goal of eliminating pesticide use on County property. The County has also adopted an IVMP that limits herbicide use on County roads.

◊ Municipal Parking Lot Sweeping. The agencies maintain parking lots. The agencies will review current parking lot maintenance practices, develop a sweeping schedule and

implement maintenance based on the developed schedule.

◊ Chlorinated and Brominated Water Discharges. Municipal operations may result in the discharge of chlorinated and/or brominated water discharges. Operations will be reviewed to determine the potential for discharge of chlorinated and/or brominated waters and BMPs will be developed accordingly to minimize these discharges.

Storm Drain Facilities Inspection and Cleaning

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 routinely inspect and clean, as needed, stormwater catch basins and inlets. Drainage ditches and creeks are also cleared of vegetation and debris, as needed, to facilitate the flow of stormwater. The following storm drain BMP will be implemented:

◊ Storm Drain BMPs. The agencies currently have procedures for maintenance of the storm drain system. Existing storm drain maintenance procedures will be compared with the requirements of the Municipal Maintenance MCM and modified if necessary to address stormwater runoff concerns. Based on the comparison, the agencies will develop storm drain maintenance BMPs. The BMPs will include a cleaning schedule and a method for tracking the frequency of cleaning. When reviewing storm drain practices the following will be considered:

- Existing ditch and creek cleaning procedures.
- Existing silt and grease trap maintenance procedures
- Tracking inlet maintenance and identifying areas requiring more frequent cleaning
- Record keeping

Stormwater Pump Station Operation and Maintenance

Urban pollutants such as debris, silt, trash and sediment can accumulate in debris racks at pump stations. If left to accumulate, these pollutants could wash into streams or channels, or eventually runoff into a drain inlet and into the storm drain system. The following

pump station BMP will be implemented:

◊ Stormwater Pump Station BMPs. The agencies currently have operating procedures for the maintenance of the stormwater pump stations. Existing pump station practices will be compared with the requirements of the Municipal Maintenance MCM and modified if necessary to address stormwater runoff concerns. Based on the comparison, the agencies will develop stormwater pump station operation and maintenance BMPs. When reviewing pump station operation and maintenance practices the following will be considered:

- Tracking inlet maintenance and identifying areas requiring more frequent cleaning
- Record keeping

Street Sweeping

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 run off 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 County sweeps 225 miles of commercial and arterial streets. Street sweeping is performed bi-weekly. The City of Capitola sweeps every street biweekly and daily, depending on the location. 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 following street sweeping BMP will be implemented:

◊ Street Sweeping BMPs. Existing street sweeping practices will be compared with the requirements of the Municipal Maintenance MCM and modified if necessary. The agencies will develop street sweeping BMPs, based on existing practices (including green waste collection and litter control) and stormwater concerns (including lagoon water quality concerns detailed in section 5.7(h) of the County's General Plan for the County's implementation). The following procedures will be considered:

- Street Sweeping Frequency
- Prioritized Sweeping
- Litter Control
- Identifying Problem Areas
- Record keeping

Road Repair and Maintenance

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.

County Public Works road maintenance crews routinely inspect, clean and replace storm drain culverts (cross culverts) located within the public road right of way. Road crews also clean and grade roadside drainage ditches. County Public Works staff follow the *Guidelines for Protecting Aquatic Habitat and Salmon Fisheries for County Road Maintenance Manual* available at: http://www.fishnet4c.org/projects_roads_manual.html. Current operating practices include procedures to keep materials from entering the storm drain system during road repair and maintenance activities. The following road repair BMP will be implemented:

◊ Road Repair and Maintenance BMPs. Existing road repair and maintenance procedures will be compared with the requirements of the Municipal Maintenance MCM and modified if necessary. The following procedures will be considered:

- General road repair practices
- Patching and resurfacing
- Equipment storage and cleaning
- Asphalt and concrete removal
- Contractor requirements

Staff Training

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. Training topics will include, but are not limited to, proper vehicle washing, park and open space maintenance, and fleet and building maintenance.

The following training BMP will be implemented:

◊ Agency Staff Training. Initial and refresher training will be provided for municipal maintenance employees. The training will be conducted annually and, as appropriate, for new staff and when changes to the program occur.

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. Measurable goals for municipal maintenance include tracking the frequency of cleaning and waste

removed during maintenance operations. BMPs and Measurable Goals for the Municipal Maintenance Program are presented in Tables 8-1 and 8-2.

The agencies will maintain records to document Program implementation and annual progress. This includes evaluating the municipal maintenance BMPs for effectiveness and measurability. This information will be included in the Annual Report.

IV. Program Effectiveness Assessment

Effectiveness assessment is a process that used to evaluate whether or not the programs are resulting in desired outcomes and if these outcomes are being achieved efficiently and cost-effectively. During the first two years of the stormwater program the agencies will achieve Outcome Level One – Documented Activities; as defined in *the Municipal Stormwater Program Effectiveness assessment Guidance CASQA May 2007.* Additional effectiveness outcomes will be evaluated for this MCM beginning in Year 3. Chapter - 2 further describes effectiveness assessment for the stormwater program.

TABLE 8-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
County of Santa Cruz

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Good Housekeeping Procedures for Maintenance Operation Areas ***Target Audience: Agency staff***							
1. Review Agency Housekeeping Programs	Survey facilities to determine nature of existing housekeeping activities. Process will follow Section 2 of the Municipal Handbook developed by CASQA. Suggested modifications for housekeeping will be implemented under BMP 8-1-2 as facility BMPs.	• Document existing housekeeping programs and suggested modifications for the Stormwater Program. • Review and document Spill Response Protocols at County facilities.	x x				
2. Facility BMPs	Develop BMPs for agency facilities such as corporation and construction yards to address vehicle maintenance, material storage and fueling operations. Use the Municipal Handbook from CASQA as a guidance document.	• Facility BMPs completed. • Annually document that facility BMPs are being implemented. Track percentage of facilities implementing adequate housekeeping BMPs. • Develop an inspection checklist and schedule for agency facilities where storage, maintenance, and cleaning occur. • Complete facility inspections per schedule developed in year 1.	x x 	 x x	 x x	 x x	 x x
3. Integrated Pest Management (IPM) and Integrated Vegetation Management Program (IVMP)	The County Board of Supervisors adopted an IPM Policy that has the long term goal of eliminating pesticide use on County property. The County has also adopted an IVMP that limits herbicide use on County roads. The policies are located at the following websites:	• Document annual updates of IPM strategy and report on BMPs implemented. • Report reduction of County pesticide use.	x 	x x	x x	x x	x x

TABLE 8-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
County of Santa Cruz

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
	http://sccounty01.co.santa-cruz.ca.us/Bds/Govstream/Bdsvdata/non_legacy/agendas/2008/20080610/pdf/015.pdf http://www.dpw.co.santa-cruz.ca.us/Operations/IVMP_Feb08.pdf						
4. Municipal Parking Lot Sweeping	The County owns and maintains parking lots. Parking lots can be a source of pollutants and should be swept regularly.	• Review current municipal parking lot maintenance practices and develop sweeping schedule. • Implement and document maintenance per the sweeping schedule developed in year 1.	X	X	X	X	X
5. Chlorinated and Brominated Water Discharges	Municipal operations may result in the discharge of chlorinated and/or brominated water discharges.	• Review current municipal operations to determine if there is a potential for discharge of chlorinated and/or brominated water. • Establish BMPs to minimize chlorinated and/or brominated water discharges via municipal operations. • Implement and document BMPs established in year 1.	X X	X	X	X	X
Storm Drain Facilities Inspection And Cleaning ***Target Audience: Agency staff***							

TABLE 8-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
County of Santa Cruz

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
6. Storm drain facility BMPs	The County owns and maintains a storm drain system. The system includes ditches and creeks and silt and grease traps. Maintenance consists of regular inspections and removal of wastes.	• Document existing practices	x				
		• Establish and implement BMPs for County-own and operated storm drainage facilities. BMPs to include a cleaning schedule. Utilize CASQAs Municipal Handbook to select BMPs.	x				
		• Track the frequency of cleaning and the amount of waste removed annually.		x	x	x	x
		• Prioritize maintenance efforts based on the amount of waste removed.		x	x	x	x
		• Develop/update quantifiable measurable goals in terms of frequency of cleaning and annual amount of waste to be removed after initial tracking.				x	x

TABLE 8-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
County of Santa Cruz

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Stormwater Pump Station Operation and Maintenance ***Target Audience: Agency staff***							
7. Stormwater pump station BMPs	The County owns and maintains pump stations as part of the storm drain system. Maintenance and operation of the pump stations consists of regular inspections and removal of wastes.	• Document stormwater pump stations operation and maintenance practices. • Develop operation and maintenance BMPs utilizing CASQAs Municipal Handbook.. • Track the frequency of cleaning and the amount of waste removed annually. • Prioritize maintenance efforts based on the amount of waste removed. • Develop quantifiable measurable goals in terms of frequency of cleaning and annual amount of waste to be removed after initial tracking	X X	X	X	X X X	X X X
Street Sweeping ***Target Audience: Agency staff***							
8. Street Sweeping BMPs	The County sweeps 225 miles of commercial and arterial streets. Street sweeping is performed bi-weekly.	• Document street sweeping practices. • Develop street sweeping utilizing CASQAs Municipal Handbook. • Report the number of miles swept and the amount of waste removed annually. • Prioritize sweeping efforts based on patterns	X X	X	X	X	X

TABLE 8-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
County of Santa Cruz

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
		of waste removal and field observation.		X	X	X	X

TABLE 8-1
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
County of Santa Cruz

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Road Repair and Maintenance ***Target Audience: Agency staff***							
9. Road Repair and Maintenance BMPs	Public Works road maintenance crews currently inspect, clean and replace storm drain culverts (cross culverts) located within the public road right of way. Road crews also clean and grade roadside drainage ditches. Public Works has a road maintenance manual available at: *http://www.fishnet4c.org/projects_roads_manual.html*	• Document road repair and maintenance practices. • Provide road maintenance manual on the County website. • Summarize road repair and maintenance BMPs implementation annually. • Develop quantifiable measurable goals for in terms of frequency or type of repair and maintenance.	X X	 X	 X	 X X	 X X
Staff Training ***Target Audience: Agency staff***							
10. Municipal Maintenance Employee Training	Develop initial and refresher Training Program for municipal maintenance employees. The Department of Public Works has several Erosion Control and BMP Training videos that are used for training and available on DPW's website at: *www.dpw.co.santacruz.ca.us* EROSIONCONTROL.htm	• Develop Training Program. • Conduct annual training. • Document training and outcomes annually. • Train at least 20% of maintenance staff annually with the goal of all staff being trained at least once every 5 years.	X X X X	 X X X	 X X X	 X X X	 X X X

TABLE 8-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Good Housekeeping Procedures for Maintenance Operation Areas							
Target Audience: Agency staff							
1. Review Agency Housekeeping Programs	Survey facilities to determine nature of existing housekeeping activities. Process will follow Section 2 of the Municipal Handbook developed by CASQA. Suggested modifications for housekeeping will be implemented under BMP 8-2-2 as facility BMPs.	• Document existing housekeeping programs and suggested modifications for the Stormwater Program. • Review and document Spill Response Protocols at City facilities.	X X				
2. Facility BMPs	Develop BMPs for agency facilities such as corporation and construction yards to address vehicle maintenance, material storage and fueling operations. Use the Municipal Handbook form CASQA as a guidance document.	• Facility BMPs completed. • Annually document that facility BMPs are being implemented. Track percentage of facilities implementing adequate housekeeping BMPs • Develop an inspection checklist and schedule for agency facilities where storage, maintenance and cleaning occur. • Complete facility inspections per schedule developed in Year 1.	X X X	 X X	 X X	 X X	 X X
3. Municipal Parking Lot Sweeping	The City owns and maintains parking lots. Parking lots can be a source of pollutants and should be swept regularly.	• Review current municipal parking lot maintenance practices and develop sweeping schedule. • Implement and document maintenance per the sweeping schedule developed in year 1.	X 	 X	 X	 X	 X

TABLE 8-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
4. Chlorinated and Brominated Water Discharges	Municipal operations may result in the discharge of chlorinated and/or brominated water discharges.	• Review current municipal operations to determine if there is a potential for discharge of chlorinated and/or brominated water.	X				
		• Establish BMPs to minimize chlorinated and/or brominated water discharges via municipal operations.	X				
		• Implement and document BMPs established in year 1.		X	X	X	X
Storm Drain Facilities Inspection And Cleaning ***Target Audience: Agency staff***							
5. Storm drain facility BMPs	The City owns and maintains a storm drain system. The system includes ditches and creeks and silt and grease traps. Maintenance consists of regular inspections and removal of wastes.	• Document existing practices	X				
		• Establish and implement BMPs for City-own and operated storm drainage facilities. BMPs to include a cleaning schedule. Utilize CASQA Municipal Handbook to select BMPs.	X				
		• Track the frequency of cleaning and the amount of waste removed annually.		X	X	X	X
		• Prioritize maintenance efforts based on the amount of waste removed.		X	X	X	X
		• Develop/update quantifiable measurable goals in terms of frequency of cleaning and				X	X

TABLE 8-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
		annual amount of waste to be removed after initial tracking.					

TABLE 8-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Stormwater Pump Station Operation and Maintenance ***Target Audience: Agency staff***							
6. Stormwater pump station BMPs	The City owns and maintains pump stations as part of the storm drain system. Maintenance and operation of the pump stations consists of regular inspections and removal of wastes.	• Document stormwater pump stations operation and maintenance practices. • Develop operation and maintenance BMPs utilizing CASQAs Municipal Handbook. • Track the frequency of cleaning and the amount of waste removed annually. • Prioritize maintenance efforts based on the amount of waste removed. • Develop quantifiable measurable goals in terms of frequency of cleaning and annual amount of waste to be removed after initial tracking	X X	X	X	X X	X X
Street Sweeping ***Target Audience: Agency staff***							
7. Street Sweeping BMPs	The City sweeps every street once every two weeks at a minimum. Some streets are swept daily.	• Document street sweeping practices. • Develop street sweeping BMPs (including litter and leaf control) utilizing CASQAs	X X				

TABLE 8-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
		Municipal Handbook..		X	X	X	X
		• Report the number of miles swept and the amount of waste removed annually.		X	X	X	X
		• Prioritize maintenance efforts based on the amount of waste removed.					

TABLE 8-2
BMPS, MEASURABLE GOALS, AND IMPLEMENTATION SCHEDULE
Pollution Prevention/Good Housekeeping for Municipal Operations
City of Capitola

BMPs	Implementation Details	Measurable Goals	Implementation Schedule (Years)				
			1	2	3	4	5
Road Repair and Maintenance ***Target Audience: Agency staff***							
8. Road Repair and Maintenance BMPs	The City currently inspects, cleans and replaces storm drain culverts (cross culverts) located within the public road right of way. Road crews also clean and grade roadside drainage ditches.	• Document road repair and maintenance practices.	X				
		• Provide road maintenance manual on the County website.	X				
		• Summarize road repair and maintenance BMPs implementation annually		X	X	X	X
		• Develop quantifiable measurable goals for in terms of frequency or type of repair and maintenance.				X	X
Staff Training ***Target Audience: Agency staff***							
9. Municipal Maintenance Employee Training	Develop initial and refresher Training Program for municipal maintenance employees.	• Develop Training Program.	X				
		• Conduct annual training.	X	X	X	X	X
		• Documented training and outcomes annually.	X	X	X	X	X
		• Train at least 20% of maintenance staff annually with the goal of all staff being trained at least once every 5 years.	X	X	X	X	X