

**BUTTE COUNTY STORM WATER MANAGEMENT  
PROGRAM**

***DRAFT***

**Submitted to:  
California Regional Water Quality Control Board  
Central Valley Region**

**Prepared by:  
BUTTE COUNTY DEPARTMENT OF PUBLIC WORKS  
LAND DEVELOPMENT DIVISION  
(530) 538-7266**

February 2003

## TABLE OF CONTENTS

		<u>Page Number</u>
1	INTRODUCTION	
1-1	The Program	1
1-2	Program Organization	1-2
1-3	Program Update Process	2-3
2	PROGRAM OVERVIEW	
2-1	Program Implementation Overview	4
2-2	Regulatory Background	4-5
3	PROGRAM MANAGEMENT	
3-1	Introduction	6
3-2	Program Strategy	6
3-3	Program Priorities and Management Activities	6
3-4	Legal Authority	7
3-5	Program Organization	7-8
3-6	Annual Planning and Reporting Activities	8
3-7	Budget/Staff Resources	8-9
3-8	Implementation and Interaction With Other Agencies	9-10
4	PROGRAM ELEMENT IMPLEMENTATION	
4-1	Introduction	11
4-2	Public Education and Outreach Element	11-16
4-3	Public Participation/Involvement	16-18
4-4	Illicit Discharge Detection and Elimination	18-22
4-5	Construction Site Storm Water Runoff Control / New Development Element	22-27
4-6	Post Construction Storm Water Management	27-30
4-7	Pollution Prevention/Good Housekeeping for Municipal Operations	31-34
5	PROGRAM EVALUATION ACTIVITIES	
5-1	Introduction	35
5-2	Evaluation Strategy	35-36
5-3	Program Performance and Effectiveness Evaluation	36
5-4	Reporting Performance and Effectiveness Evaluations	36
5-5	Continued Program Improvements	36-37
	Appendices:	38
A.	Butte County MS4 NPDES Storm Water Permit Application (N.O.I.)	39
B.	Departmental Responsibility Flow Chart	40
C.	Annual Departmental Reports as submitted to County Storm Water Coordinator	41
D.	Annual Reports by Storm Water Coordinator submitted to the RWQCB	42
E.	County of Butte Storm Water Ordinances	43
F.	Agreements as developed	44
G.	Chico Urbanized area Map (Developed by Bureau of the Census)	45

## ACRONYMS AND TERMS AS USED IN THIS DOCUMENT

The definitions below are intended strictly for clarification purposes, and may not contain the full legal definition as per regulation.

Annual Report	A yearly report to the RWQCB on the Permittee's compliance with the permit requirements, including an accounting of progress made towards each of the Permittee's measurable goals.
BMPs	Best Management Practices – physical, structural, and/or managerial practices that, when used singly or in combination, prevent or reduce pollution of storm water.
CEQA	California Environmental Quality Act.
CWA	Clean Water Act.
EPA	U.S. Environmental Protection Agency.
HHW	Household Hazardous Waste.
Measurable goals	The County's Storm Water Program goals, which are intended to gauge permit compliance and program effectiveness.
MEP	Maximum Extent Practicable – the standard for evaluating permit compliance.
Minimum measures	Storm water management programs that are required under the NPDES MS4 permit. They include public education and outreach, public participation/involvement, illicit discharge detection and elimination, construction site storm water runoff control, post-construction storm water management, and pollution prevention/good housekeeping for municipal operations.
MS4	Municipal Separate Storm Sewer System – a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that are owned or operated by a Municipality or County to dispose of storm water runoff.
Municipality	A city, town, county, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes.
NAWQA	National Water Quality Assessment Program of the U. S. Geological Survey.
N.O.I.	Notice of Intent – Submittal form to comply with the terms of the General Permit for Storm Water Discharges from Small MS4s.
NPDES	National Pollutant Discharge Elimination System – Section 402 of the Federal Clean Water Act.
Permittee	The MS4 operator to whom the NPDES storm water discharge permit is issued.
Phase II	Second stage of the State and Federal storm water permit.
RWQCB	Regional Water Quality Control Board.
SIE	Separate Implementing Entity – an entity, such as a school district, other than the entity in question, that implements parts or all of a storm water program for a Permittee.
SWQCB	State Water Quality Control Board.
SWMP	Storm Water Management Program.
SWPPP	Storm Water Pollution Prevention Plan.

# 1. INTRODUCTION

## 1-1 *THE PROGRAM*

This document presents Butte County's Storm Water Management Program (Program), which provides Butte County's priorities and activities for the years 2003 through 2008. This program was developed as a requirement of Phase II of the National Pollutant Discharge Elimination System (NPDES) Program as ordered by the United States Environmental Protection Agency. The program is being managed at the State level by the State Water Resources Control Board under a General Permit from the Environmental Protection Agency (EPA). Butte County is required to operate as a Permittee under the State's General Permit. The County's Program, developed as part of its permit application, is required by federal law to be in place by March 10, 2003, for the unincorporated portions of the Chico urbanized area as defined by the Bureau of the Census. The designated Chico urbanized area includes the entire area within the city limits of the City of Chico, specific unincorporated areas adjacent to the City of Chico, and parts of Durham. A map of the designated Chico urbanized area is included as Appendix G. Parts of the unincorporated area within the Chico urbanized area were automatically designated by the United States Environmental Protection Agency pursuant to 40 CFR Section 122.32(a)(1) of the Federal Water Pollution Control Act (also referred to as the Clean Water Act) to comply with the Phase II requirements of NPDES. Full implementation of the County's Program within the designated area is required by the end of the first 5-year permit term.

Butte County encompasses 1,640 square miles and has a population of 203,171 as of January 2000, based on U.S. census data. Butte County is the most populated county north of Sacramento. The Feather and Sacramento Rivers receive water from the creeks and streams that flow southerly through Butte County on their way to the Delta and San Francisco Bay. These rivers support extensive recreational use and fisheries, including salmon and steelhead migration. These rivers are also a major source of drinking and agricultural water for the State of California. The County operates and maintains storm drainage systems that consist of hundreds of miles of open drainage ditches, pipe, and several detention basins. The County is committed to improving the quality of urban runoff through the development and implementation of a proactive, comprehensive storm water program that recognizes its unique position in the Sacramento and Feather River watersheds and the need to protect these important resources.

## 1-2 *PROGRAM ORGANIZATION*

The following provides a brief summary of the Program:

- **Chapter 1: INTRODUCTION**

This chapter contains a brief introduction to the Program, information on Program organization, and a description of the process for preparing and updating this Program.

- **Chapter 2: PROGRAM OVERVIEW**

This chapter provides an overview of Program direction, organization, and the regulatory background and history.

- **Chapter 3: PROGRAM MANAGEMENT**

This chapter provides a description of Program strategy, organization, staffing, and funding. It also includes information on the relationship of the County's Program efforts to the activities of other Chico urbanized area permittees, the City of Chico and Chico State University, as well as County agencies and departments.

- **Chapter 4: PROGRAM ELEMENT IMPLEMENTATION**

This chapter is the heart of Butte County's Storm Water Management Program. A complete description of the following six Program Elements, referred to as minimum measures, are provided: Public Education and Outreach, Public Participation/Involvement, Illicit Discharge Detection and Elimination, Construction Site Storm Water Runoff Control / New Development, Post Construction Storm Water Management, and Pollution Prevention/Good Housekeeping for County Operations. Element-specific activities, Best Management Practices, and effectiveness and performance measures are also identified.

- **Chapter 5: PROGRAM EVALUATION ACTIVITIES**

This chapter provides the conceptual approach to the County's Program effectiveness evaluation. Evaluation activities are a required and important aspect of the Program. Conducting assessments and obtaining feedback allows for continued improvement of Program activities, including modification of existing activities and identification of new efforts.

- **APPENDICES**

This section contains seven appendices:

- A. Butte County Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit (Notice of Intent);
- B. Departmental Responsibility Flow Chart;
- C. Annual Departmental Reports to be submitted to County Storm Water Coordinator;
- D. Annual County Reports by County Storm Water Coordinator submitted to the RWQCB;
- E. Butte County's Storm Water Ordinances as developed;
- F. Agreements as developed;
- G. Chico Urbanized Area Map (developed for the Federal EPA by the Bureau of the Census).

### **1-3 PROGRAM UPDATE PROCESS**

This Program contains approaches and guidance for activities, Best Management Practices (BMPs), and effectiveness evaluation for the 5-year permit term. The County's approved Program will be in effect until it is replaced or updated. It is foreseen that the Program will be updated annually based upon the evaluation and input process. Numerous work groups will be formed that include managers and staff from the County, City of Chico, and California State University, Chico to develop and administer the elements of this Program. These groups will additionally evaluate the effectiveness of the Program and attempt to update program aspects in a manner that retains a consistent program within the designated area. The annual departmental reports will provide the specific activities and effectiveness evaluations accomplished for each fiscal year, based on the direction and targets of the Program. In addition, input from regulators and the public is important to the process of developing an effective Program during the initial permit term.

Activities to obtain input include:

- Conducting meetings with the RWQCB, County departments, City officials and other interested parties;
- Announcing availability of the Program;
- Posting relevant information and the Program on the County's web site;
- Conducting public meetings and addressing public comments in the Program.

The intent of the County is to have a current, relevant, and dynamic Program, one in which updates occur as needed to reflect the most recent information, needs, and effectiveness measures. The Program will continue to evolve and improve through evaluations and feedback from various sources and activities, as described above. Input from regulators and the public throughout the permit term will be used to determine specific modifications to the Program. Program effectiveness evaluations and Annual Reports will also be used to facilitate review and modifications to the Program to adjust to future needs. As a living document, revisions may be made directly to the Program, subject to Regional Water Quality Control Board approval.

## **2. PROGRAM OVERVIEW**

### **2-1 PROGRAM IMPLEMENTATION OVERVIEW**

The Butte County Storm Water Management Program (Program) is a comprehensive program comprised of various elements and activities designed to reduce storm water pollution to the maximum extent practicable (MEP) and eliminate prohibited non-storm water discharges in accordance with federal and state laws and regulations. These laws and regulations are implemented through National Pollutant Discharge Elimination System (NPDES) municipal storm water discharge permits.

The core Program elements, also referred to as the six minimum measures, are listed below, and are more specifically described in Chapter 4 of this Program:

- Public Education and Outreach
- Public Participation/Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Storm Water Runoff Control / New Development
- Post Construction Storm Water Management
- Pollution Prevention/Good Housekeeping for County Operations and Facilities

The Program also includes descriptions of:

- Best Management Practices to address specific activities identified in the regulations, such as illicit discharges;
- How implementation of Program activities will be prioritized;
- Staff and equipment available and required to implement a Program activity.

Butte County recognizes the importance of effective storm water management and has utilized resources to develop and implement the Program. It is foreseen that a Storm Water Coordinator will be required to coordinate management and administration of the County's Program. The Department of Public Works and the Development Services Department are responsible for planning, inspection, enforcement, and permit clearances for construction projects within the County. The Department of Public Works is responsible for the County's storm water drainage conveyance system. Drainage facilities include gutters, swales, ditches, culverts, storm drain inlets and outfalls, catch basins, storm drainage pipes, canals, detention basins, and pump stations. Other departments are also involved as reflected in Appendix B, which displays in a flow chart format all the County departments that will have duties within the Program.

### **2-2 REGULATORY BACKGROUND**

The 1972 amendments to the Federal Clean Water Act (CWA) prohibited the discharge of pollutants from point sources to waters of the United States, unless the discharge was authorized by a permit issued under the NPDES permitting program. The 1987 amendments to the CWA added Section 402(p), which defined storm water discharges from certain defined municipal and industrial activities as point sources required to be permitted by a NPDES permit. The amendments directed the U.S. Environmental Protection Agency (EPA) to adopt regulations establishing permitting requirements for municipal and industrial storm water discharges. The Phase I amendments also required storm water discharges from municipal separate storm sewer systems (known as MS4 systems) serving populations greater than 100,000 to obtain coverage under a national surface water permit program. The EPA then developed the Phase II Storm Water Program to include small MS4 systems and operators of small construction sites in urban areas. In California, the Federal NPDES permitting program is

implemented through the Porter-Cologne Act, a part of the California Water Code, by the State Water Resources Control Board and the Regional Water Quality Control Boards.

The EPA promulgated the storm water regulations on November 16, 1990. These regulations, which were to be implemented in two phases, contained permitting application requirements and a schedule for phased implementation and permit issuance for municipalities and industries.

Municipalities to be addressed in Phase I were defined in terms of size: (1) large for urbanized areas with populations greater than 250,000; (2) medium for urbanized areas with populations greater than 100,000; and (3) small for other municipalities with populations less than 100,000 that are designated by the permitting authority.

Municipalities to be addressed in Phase II are defined as any municipal separate storm sewer systems (MS4s) not already covered by the Phase I program and defined by the Bureau of the Census as an "Urbanized Area" or on a case-by-case basis as small MS4s located outside of "Urbanized Areas" that the NPDES permitting authority designates.

### **3. PROGRAM MANAGEMENT**

#### **3-1 INTRODUCTION**

This chapter presents the following components related to management of the Program: Program strategy; Program priorities and management activities; legal authority; Program organization; annual planning and reporting activities; and budget/staff resources. Joint activities in which Butte County will implement portions of the Program through coordination with other programs and agencies is also described.

#### **3-2 PROGRAM STRATEGY**

The 1987 amendments to the Clean Water Act added Section 402(p), which established National Pollutant Discharge Elimination System (NPDES) permit requirements for municipalities to develop and implement comprehensive storm water management plans. The storm water management plans were required to describe the best management practices (BMPs) to reduce the discharge of pollutants in storm water runoff to the maximum extent practicable (MEP). The MEP standard for municipal storm water management programs is also required by U.S. Environmental Protection Agency (EPA) Phase I storm water regulations promulgated on November 16, 1990 and the Phase II regulations.

The County's strategy to meet NPDES regulations is to develop and implement BMPs within the six minimum measures that are aimed at reducing pollutants in storm water runoff. If it is determined that the Program is not adequately meeting the County's strategy, then modifications and additions will be identified through Annual Reports and the agencies/public input process, and the County's Program will be revised or updated based on approval by the Regional Water Quality Control Board (RWQCB).

It is important that the Program reflects current and improved BMPs and includes activities that have been shown to be successful in other storm water programs, such as:

- *Pollutant Reduction:* Will the BMP provide pollution prevention to the maximum extent practicable?
- *Regulatory Compliance:* Is the BMP compatible with environmental regulations?
- *Public Acceptance:* Does the BMP have public support?
- *Implementation:* Is the BMP compatible with land uses, facilities, or the activity in question?
- *Technical Feasibility:* Is the BMP technically feasible considering soils, geography, etc.?
- *Cost Effectiveness:* Is the cost for the BMP commensurate with the environmental benefit?

Modifications to the Program will generally be made in response to effectiveness evaluations and to incorporate new BMPs that more effectively meet the County's strategy to reduce pollutants in storm water runoff.

#### **3-3 PROGRAM PRIORITIES AND MANAGEMENT ACTIVITIES**

Program priorities for the 5-year permit term of 2003 through 2008 include meeting the goals and activities of each minimum measure as set forth in Chapter 4 of this Program, and to achieve regulatory compliance within this initial permit term. Staff will continue to develop and improve Program activities to reduce storm water pollution to the maximum extent practicable and eliminate prohibited non-storm water discharges, while facilitating understanding and involvement in storm water management by various County departments. Other high priority activities will be to keep abreast of the latest technology and approaches to storm water management, to encourage environmental stewardship, and to continue to build partnerships with other agencies and the community for active participation in accomplishing the Program goals.

### **3-4    *LEGAL AUTHORITY***

Legal authority and responsibility to implement a municipal storm water management program is provided in the Federal Clean Water Act (CWA), California Water Code, and associated regulations. The California Environmental Quality Act (CEQA) and Subdivision Map Act also provide municipalities with authority to establish conditions for development projects. This legislation, coupled with the development of County ordinances, provides sufficient legal authority to implement and administer the Program. (The County's ordinances will be incorporated into Appendix E of this Program as they are developed.)

### **3-5    *PROGRAM ORGANIZATION***

The Program is a comprehensive storm water management program that includes the core elements necessary to comply with federal and state regulations. The core elements, as more fully described in Chapter 4, include: Public Education and Outreach; Public Participation/Involvement; Illicit Discharge Detection and Elimination; Construction Site Storm Water Runoff Control/New Development Element; Post Construction Storm Water Management; and Pollution Prevention/Good Housekeeping for County Operations. In addition to the six minimum measures, the County will pursue innovative, proactive activities to incorporate into the County's Program to address any significant local problems as they become known or develop. Public education and resultant changes in behavior are necessary to bring about long-term improvements to urban storm water runoff quality and to protect the environment.

Another important aspect of the Program is that each Program Element includes ongoing evaluation in an interactive feedback process, resulting in a suite of activities tailored to meet Program goals. It is important to strive to measure or assess the effectiveness of Program activities and BMPs so they can meet current conditions and be continually improved to ensure effectiveness.

The County as a whole, including elected officials, department heads, and employees, are responsible for compliance with the Butte County NPDES permit requirements and the Program. The County owns a municipal separate storm drain system, including gutters, ditches, culverts, storm drain inlets and outfalls, catch basins, storm drainage pipes, canals, detention basins, and pump stations. The Department of Public Works is the County agency responsible for construction, maintenance, and operation of the County storm drainage system, as well as the administrative and management functions of the Program through the Storm Water Coordinator. The Department of Public Works and the Development Services Department are involved with development review to ensure that public and private projects include the necessary control measures for erosion and sediment control, as well as permanent features to minimize storm water pollution from development projects. The review process also ensures that construction projects have the necessary permits and that on-site regional control measures are considered for new development projects.

The Storm Water Coordinator, working with Senior Engineers in the Department of Public Works, as well as staff from the Development Services Department and Chief Administrative Office, will oversee the Program's development and implementation. Several other affected County departments will also ensure Program development and implementation. A flow chart of departmental responsibilities is included as Appendix B within this Program.

To carry out Program elements, it will require involvement and cooperation from numerous County departments. The Program will establish several control programs, procedures, and policies aimed at identifying and reducing sources of storm water pollution caused by discharges, in both wet and dry weather, from the storm drain system. Cost effectiveness is obtained by integrating the Program with existing resources, programs, and functions, as well as cost sharing agreements with other agencies, groups and individuals, whenever possible.

The Department of Public Works and the Development Services Department will do the following: provide education, training, and technical assistance to other County departments and the development community; review new development projects; provide inspections; develop guidance; and implement multiple activities and BMPs.

The Program is primarily assigned to the Department of Public Works. However, staff from other departments will also perform functions of the Program, which include maintaining compliance with other regulatory water quality programs, developing and implementing plans for managing sediments and other waste streams generated from routine maintenance of the related County infrastructure, and providing consultation and assistance to the public. Through its various departments, the County will provide a full range of activities.

These activities include projects and programs that require pollution prevention measures, such as construction projects and operation and maintenance of facilities like corporation yards, offices, and roadways. Some County departments have direct responsibilities for pollution prevention programs. For example, the Department of Public Works provides recycling and household hazardous waste collection through its Solid Waste divisional duties. For another example, the County of Butte provides sewage treatment and industrial and hazardous waste investigations through its Environmental Health Department. One of the goals of the Program is for the County's employees to be concerned and knowledgeable about, as well as responsible for, protecting the quality of storm water entering the waterways. Implementation of the Program requires the participation, assistance, training, and knowledge of staff within several County departments.

### **3-6 ANNUAL PLANNING AND REPORTING ACTIVITIES**

Butte County will perform annual planning and report preparation to comply with the NPDES Permit requirements. Tracking systems will be established for use in reporting of Program activities. Annual reports will be required from each affected department, and the County's Storm Water Coordinator will prepare and submit the County's Annual Report to the Regional Water Quality Control Board each year. The annual report process will provide a mechanism for continuous evaluation and planning of Program activities.

### **3-7 BUDGET/STAFF RESOURCES**

Prior to the required deadline of March 10, 2003, the County will submit its Program, Notice of Intent and permit fee of \$2,500 for one-half year of fiscal year 2002-03 to the State Water Resources Control Board. Each year thereafter, the annual permit fee is \$5,000, assuming no increases by the State. In addition to the State's permit fee, Program implementation costs will be incurred to establish a cross-departmental tracking and reporting system, public outreach and education expenses, and staff costs for coordination, training and implementation. Additional efforts in development review and inspection will be required on all new construction projects, and post-construction BMPs will require inspection and enforcement where necessary. It is foreseen that at minimum, a County Storm Water Coordinator position will be required. It is also foreseen that many of the activities contained within the County's Program will be incorporated into development review and inspection processes that will be supported by a County permit fee. This storm water utility fee, and other sources of funds, will be necessary to support the fully implemented Program by the end of the first 5-year permit term. There is currently no federal or state funding available to local entities to help offset the cost impacts of meeting this new federally mandated program.

In addition to a supervising Senior Engineer, the Storm Water Coordinator will work with the various divisions within the Departments of Public Works, Development Services, and Public Health whose staffing resources

include Engineers, Administrative Analysts, Planners, Building and Code Enforcement Officers, and Environmental Health Inspectors. Possible future agreements with school districts will allow the County to provide storm water education in the classrooms to school children in exchange for allowing the school districts access to the County's operations training programs. The Program may also utilize students from the California State University, Chico, and/or Butte College for education and outreach purposes.

### **3-8 IMPLEMENTATION AND INTERACTION WITH OTHER AGENCIES**

In order to be most effective and utilize resources most efficiently, it is important for the Program to implement various activities and efforts through other agencies. This section describes the relationship of the Program to joint activities of the permittees; implementation of certain activities through County agencies; and participation in regional, statewide, and national activities.

#### **Relationship of Program Elements to the Permittees' Efforts**

The County's relationship with the other Butte County area storm water permittees will provide for a cost effective and comprehensive Program that addresses storm water pollution in the Chico urbanized area. It is foreseen the County and the City of Chico will be cost-sharing partners under an agreement to share resources and expenses for joint storm water related measures, such as public education and participation. Agreements and coordination with the Chico and Durham Unified School Districts, as well as with California State University, Chico, will be very important to provide cost effectiveness and regional consistency. Storm water management in the Butte County area is different than most other area-wide efforts in California, since Butte County does not have a lead agency with area-wide jurisdiction like a county flood control district.

The permittees have a long history of information sharing, cost sharing on specific topics, and coordination of other programs in the region for joint projects and cost-sharing opportunities. A committee comprised of representatives from the permittees will continue to meet regularly for these purposes. Meetings will include discussion, planning, and decisions on joint efforts. Common responsibilities and programs, as well as costs, will be identified to provide regional benefits.

This coordinated approach works well for activities that have clear, common goals and benefits from sharing and combining resources (e.g., BMP special studies; development of various guidelines, general program strategies, and pollutant reduction strategies). Incorporation of storm water inspections with other agency inspection programs that have jurisdiction in the County and the City of Chico is a practical way to conduct industry compliance with storm water regulations efficiently in tandem with existing activities.

Anticipated joint efforts for 2003 through 2008 include:

- Identification and strategy development for BMP effectiveness;
- Illicit spill prevention and notification;
- Various regional educational and outreach efforts.

#### **Relationship of Program Elements to Other County Agencies/Departments**

Development and implementation of the Illicit Discharge Elements will include efforts to maintain open avenues of communication with staff from County departments and the City of Chico. For the County, the main purpose of this communication will be to exchange information regarding specific incidents or business activities that are of concern to the County's storm water pollution prevention efforts. There has also been the recognition that

inspection activities of County regulatory agencies can effectively and efficiently be expanded to include storm water facility inspections, reporting, and outreach to business and industries.

County agencies that have been identified to incorporate storm water inspections within their regular field duties include the Department of Public Works, Department of Development Services, Environmental Health Division of Public Health, and the California Department of Forestry/Butte County Fire. To meet the Good Housekeeping requirements within minimum measure six, the Public Works Department and Facilities Services will incorporate BMPs into County construction projects, and the maintenance and operation of County facilities and yards.

### **Participation in Regional, Statewide, and National Activities**

The County's role in state and regional storm water management activities will be to participate in statewide and regional efforts to share information on topics related to storm water quality issues, storm water program implementation, and urban runoff within the context of the watershed as a whole. The purpose of sharing information and coordination is to ensure development of BMPs for the County that will be effective in reducing storm water pollution to the maximum extent practical. Also, some BMPs require partnering with other programs on a state or national level.

## **4. PROGRAM ELEMENT IMPLEMENTATION**

### **4-1 INTRODUCTION**

Implementation of Butte County's Storm Water Management Program (Program) is conducted through the Program management activities and the following six Program Elements, referred to as minimum measures: Public Education and Outreach, Public Participation/Involvement, Illicit Discharge Detection and Elimination, Construction Site Storm Water Runoff Control, Post Construction Storm Water Management, Pollution Prevention/Good Housekeeping for County Operations.

This chapter provides a description of each Program Element activities, best management practices (BMPs), and corresponding implementation actions. Minimum performance standards are also provided for those activities/BMPs that are quantifiable and predictable. These performance standards will be used to demonstrate the County's commitment to the Program and achievement of a reasonable level of implementation. Some activities are not easily quantifiable, and minimum performance standards may not be appropriate. Other activities, such as spill responses and ordinance revisions, are not predictable and therefore will be accomplished on as needed basis.

#### **Program Element (Minimum Measures) Implementation Introduction**

Performance and effectiveness evaluations are key to ensuring that the Program implements activities that are successful in changing behaviors and reducing storm water pollution. Performance measures are intended to describe the level of effort and involve enumeration of activities or the percentage of participation in a Program activity. Examples of performance measures include the number of public events attended, training sessions conducted, or media spots. This information is used by Program staff for purposes of planning and scheduling of resources required to implement the County's Program.

Effectiveness measures provide a tool for assessing the degree to which activities reduce pollutants to the maximum extent practicable or eliminate non-storm water discharges. This information is used to focus and modify activities to maximize environmental benefits. Effectiveness measures include quantifying the effectiveness of a particular effort. For example, the percentage increase in public awareness is measured by public opinion surveys. Specific goals and level of efforts for specific activities and BMPs to provide effectiveness evaluations will be included in the Annual departmental reports. The results of these effectiveness evaluations, including performance and effectiveness measures, will be provided in the Annual Reports to the Regional Water Quality Control Board.

The Annual Reports will quantify the previous fiscal year efforts (where possible), including the performance and effectiveness of activities, BMPs, and specific tasks. This annual evaluation will assess how well the annual departmental goals were achieved and whether the minimum performance standards were accomplished. Activities and specific BMPs may also be modified, added, or deleted as needed to meet Program Element goals. In-depth evaluation of each Program Element will be conducted at least once during this five-year span, or as needed.

### **4-2 PUBLIC EDUCATION AND OUTREACH ELEMENT (Minimum Measure 1)**

The Public Education and Outreach Element is the cornerstone of Butte County's Storm Water Program (Program). Whether dealing with the general public, local industry, developers, or County of Butte officials and departments, the goal of the Public Education and Outreach Element is to: (1) generate awareness of storm water pollution prevention by educating people about the storm drain system and its relationship to the health of local

waterways; and (2) change behavior patterns through education and encouragement of active participation in water pollution prevention.

Outreach activities can be grouped into four categories:

- Outreach to the general public and target sectors;
- Outreach to children and schools;
- Outreach to public officials and agency managers;
- Regional activities.

It has become evident over the years that an important component of a successful outreach program for all categories is a commitment to building lasting relationships and partnerships. In each permit term, the Public Education and Outreach Element will continue to actively seek opportunities to work with other agencies, groups and individuals to promote water quality protection. Since the partnerships will be aggressively targeted, efforts will be directed at educating the media to recognize storm water pollution prevention as an important factor in protecting the resources, environment and quality of life in Butte County. A goal of these partnerships will be to expand the overall awareness and knowledge of the importance of protecting waterways from storm water pollution. Public service announcements and press releases on storm water issues is an importance medium for this awareness.

Since County staff is highly visible in the community, County department activities are another vital target for partnerships. The coordinated efforts of the Public Education and Outreach and County Operations and Facilities Elements will result in knowledgeable County staff that can implement appropriate control measures and serve as role models for water quality protection.

The Public Education and Outreach Element will become an active presence in classrooms through elementary school classroom presentations with development and implementation of water quality curricula. The long-range goal is to work with the local school districts, California State University, Chico, and the City of Chico to become an integral part of the classroom lesson plan developed for each school year. By educating the children about the importance of water quality protection, a new generation will possess the necessary tools to make informed decisions on how best to protect Butte County's natural waterways.

### **Best Management Practices - Public Education and Outreach**

This section provides the County's planned efforts for implementation of best management practices in public education and outreach over the initial 5-year permit period:

#### *Public Education I - General Public and Target Sector Outreach:*

- PE I-A: Stenciling Program

Develop and distribute information on a storm drain stenciling program and solicit volunteers through schools, community neighborhood associations and clubs, environmental groups, the Storm Water Web site and Storm Water Hotline.

- PE I-B: Clean Water Business Partners

Develop a priority list of businesses that may impact water quality as a result of the services they provide. Recognize the businesses that actively promote activities that reduce or eliminate storm water pollution. Make the program concepts available to businesses that are incorporating water

quality protection measures into their operations or have approached the Butte County Area Storm Water permittees to be included in the program. Incorporate these businesses in the promotion of clean water awareness and implementing of BMPs.

- PE I-C: Community Events

Partner with environmental and watershed groups and provide material for storm water pollution prevention informational booths at various public events, such as farmer's markets, the Silver Dollar and Butte County Fairs, and other community activities.

- PE I-D: Storm Water Web Site

Develop and maintain an interactive Storm Water web site. Place annual reports and other storm water information on the site for public access.

- PE I-E: Media Campaigns

Develop multimedia materials, campaigns and partnerships. Look for ways to partner with agencies, businesses and/or industries.

- PE I-F: Water Wise Pest Control Program

Agricultural advisors, under the direction of the Agricultural Commissioner, will form partnerships with nurseries, retailers, landscapers, and pest control operators to encourage less toxic methods of pest control to reduce pesticide toxicity in urban creeks.

- PE I-G: Public Opinion Surveys

Use an initial public opinion survey early in the permit term and then occasional surveys thereafter to measure outreach effectiveness.

*Public Education II - **School Outreach:***

- PE II-A: Storm Water Classroom Presentations

Support School Board-approved Storm Water Pollution presentations suitable for third through sixth grade classrooms. Develop and implement material to tie into science standards by introducing children to water cycle, streamside communities and aquatic food chain concepts and the types and effects of storm water pollution.

*Public Education III - **Public Official Outreach:***

- PE III-A: County Officials

Provide opportunities for County officials to participate in environmental education and the distribution of proclamations for groups, industries, businesses, and individuals who have provided an outstanding contribution to water pollution prevention.

- PE III- B: Annual Agency and Board of Supervisors Update

Provide copies of the County's Annual Reports submitted to the Regional Water Quality Control Board and provide periodic program updates to the Board of Supervisors.

- PE III-C: County Department Partnerships

Nurture and maintain opportunities to work with County departments to promote the storm water message. Incorporate public awareness into County staff training on the Program.

*Public Education IV - Statewide and Regional Outreach Activities:*

- PE IV-A: Storm Water Quality Task Force

Continue to work with other regions to share information, techniques, and successful approaches to public education and outreach.

**Effectiveness Evaluation – Public Education and Outreach**

There are many methods of evaluating the effectiveness of the Public Education and Outreach Element. The success of some BMPs, such as participation in community events and the volunteer storm drain-stenciling program may be evaluated through public response or the amount of information that is distributed. The number of people reached or the frequency of the message may measure media campaigns. However, the best tool for measuring the effectiveness of overall outreach efforts will be the public opinion survey developed as part of the original program strategy. The survey provides information on whether or not the public is receiving and accepting the outreach information in the format in which it has been presented. The information indicates whether or not there is a trend toward behavioral change and stewardship, while providing an updated base for continuing outreach efforts.

**Performance and Effectiveness Measures – Public Education and Outreach**

The following are examples of the types of performance measures (P) and effectiveness measures (E) that may be used to measure the degree of Program Element implementation and activity effectiveness. Performance measures involve enumeration of activities or the number or percentage of participation in a Program activity. This information is used by staff for purposes of planning and scheduling resources required to implement the Program. Effectiveness measures provide assessments of the degree to which activities reduce pollutants to the maximum extent practicable or eliminate non-storm water discharges. This information is used to focus and modify activities to maximize environmental benefits. The specific goals and level of effort for effectiveness evaluation activities, as well as the results of the performance and effectiveness measures will be provided in the Annual Reports.

*Public Education I - General Public and Target Sector Outreach:*

- PE I-A: Stenciling Program
  - Number of requests for information materials (P)
  - Number of drains stenciled (P)

- PE I-B: Clean Water Business Partners
  - Number of industries and businesses contacted with storm water message (P, E)
  - Interest from businesses and industries for initiating effective BMPs (E)
  - Comments from customers (E)
- PE I-C: Community Events
  - Number of events attended (P)
  - Interest of public (E)
- PE I-D: Storm Water Web Site
  - Number of visits to Web site (P)
  - Feedback and interest from visitors (E)
  - New features of Web site (P, E)
- PE I-E: Media Campaigns
  - Number of people reached (P)
  - Frequency of message (P)
  - Feedback from target audience (E)
- PE I-F: Water Wise Pest Control Program
  - Materials developed for distribution (P, E)
  - Increase in numbers of alternative pest control information requested (P, E)
  - Number and types of participants supporting program (P, E)
  - Pesticide Public Opinion Survey (E)
- PE I-G: Public Opinion Surveys
  - Survey process (P, E)
  - Survey results (E)

*Public Education II - **School Outreach:***

- PE II-A: Butte County Storm Water Classroom Presentations
  - Number of classrooms participating (P)
  - Results of pre- and post-preservation program testing (P, E)
  - Number of classroom presentations (P)
  - Response from teachers and students (E)

*Public Education III - **Public Official Outreach:***

- PE III-A: County Officials
  - Pollution Prevention Week activity participation (P)
  - Number of Proclamations awarded (P)

- PE III-B: County Department Partnerships
  - Number of departments using storm water program plan (P)
  - Departments incorporating water quality message in department materials (P, E)

*Public Education IV - Statewide and Regional Outreach Activities:*

- PE IV-A: Storm Water Quality Task Force
  - Participation in statewide outreach efforts (P)
  - Number of information sessions attended (P)
- PE IV-B: Additional Regional Outreach
  - Quality and distribution of materials developed to promote resources for environmental education (P)
  - Number of responses from educators (P)
  - Number of opportunities to expand storm water outreach network (P)
  - Number of invitations to share programs or program materials with other agencies (P, E)

**Goals – Public Education and Outreach**

The following are examples of measurable goals for the Public Education and Outreach program for the initial permit term:

<u>Target Date</u>	<u>Goals and Activities</u>
(end of) Year 1.....	Develop partnerships to make presentations to local watershed groups, water users (i.e., irrigators, environmental groups, fishing clubs, school groups, etc). Develop locally appropriate brochure/program materials.
Year 2.....	Distribute brochure/materials. Create Web site with links based upon information in brochure/materials. Continue partnership programs.
Year 3.....	Implement target audience-based program (school, industry, general population-based). Continue partnership programs.
Year 4.....	Update and redistribute brochure. Continue targeted program(s). Continue partnership programs.
Year 5.....	Continue partnership programs. Continue targeted program(s).

**4-3 PUBLIC PARTICIPATION AND INVOLVEMENT (Minimum Measure 2)**

The Public Participation/Involvement element of Butte County’s Storm Water Program will allow the public to provide valuable input and assistance to the County in its Storm Water Management Program.

**Benefits of a Public Participation and Involvement Program**

Since it is the activities of the public within urban and rural landscapes that produce diffuse pollution, and the public provides funding for the County and municipalities, it is imperative that the public be provided opportunities to actively participate in both the development and implementation of the Storm Water Management

Program. An active and involved community is crucial to the success of a storm water program because it allows for:

- *Broader public support*, since citizens who participate in the development and decision making process are partially responsible for the program and are more likely to take an active role in its implementation;
- *A broader base of expertise and economic benefits*, since the community can provide a valuable intellectual resource; and
- *A conduit to other programs*, as citizens involved in the storm water program development process provide important cross-connections and relationships with other community and government programs. This benefit is particularly valuable when trying to implement a storm water program integrated on a watershed basis.

To satisfy this minimum control measure, Butte County will:

- Comply with applicable State and local public notice requirements using an effective mechanism for reaching the public; and
- Determine the appropriate BMPs and measurable goals for this minimum control measure. Possible implementation approaches, BMPs (i.e., the program actions and activities), and measurable goals are described below.

Guidelines for developing and implementing this measure will include public participation in developing, implementing, and reviewing each minimum measure of the Storm Water Management Program. The public participation process should make every effort to reach out and engage all economic and ethnic groups.

Since traditional methods of soliciting public input, such as advertising in local newspapers to announce public meetings and other opportunities for public involvement are not always successful in generating interest and subsequent involvement in all sectors of the community, alternative advertising methods may be considered, such as radio or television spots, postings at bus stops, announcements in neighborhood newsletters, announcements at civic organization meetings, distribution of flyers, mass mailings, door-to-door visits, telephone notifications, and multilingual announcements. These efforts, of course, are closely tied to the efforts for the Public Education and Outreach minimum control measure.

Watershed groups that encompass all or part of the drainages within the permit areas will be included in this effort. Butte County will coordinate with the other co-permittees and will advertise and solicit help from specific population sectors, including ethnic, minority, and low-income communities; academia and educational institutions; neighborhood and community groups; outdoor recreation groups; and business and industry. The goal is to involve various community groups who can offer a multitude of concerns, ideas, and connections.

### **Best Management Practices - Public Participation and Involvement**

- PP I-A: Public Meetings

Allow citizens to discuss various viewpoints and provide input concerning appropriate storm water management policies and program actions and activities. Watershed groups will be an excellent venue for this type of discussion as well as existing boards and commissions within governmental agencies, such as the Planning Commission, park boards, natural resource committees, etc.

- PP I-B: Community Water Body Cleanups

Allow citizens to participate in the clean up of different water body drainage areas under the direction of County departments, school districts, and watershed groups. This partnering of governmental and citizen groups will help foster good working relationships throughout the community. “Adopt A Storm Drain” programs encourage individuals or groups to keep storm drains free of debris and to monitor what is entering local waterways through storm drains.

**Effectiveness Evaluation - Public Participation and Involvement**

Measurable goals are intended to gauge permit compliance and program effectiveness. At a minimum, the measurable goal for this program would be to provide adequate public notice of all public meetings, published in a community publication or newspaper of general circulation, when implementing the storm water management program required under this permit.

- PP I-A: Public Meetings
  - Number of notices for public meetings (P)
  - Permit and Storm Water Program review comments (E)
- PP I-B: Community Water Body Cleanups
  - Number of cleanups performed (P)
  - Amount of public participation (P, E)

**Goals – Public Participation and Involvement**

The following are examples of measurable goals for the Public Participation and Involvement minimum measure during the initial permit term:

<u>Target Date</u>	<u>Goals and Activities</u>
(end of) 1 year.....	Notice of a public meeting in several different print media. Permit and Storm Water Program made available for review and comment.
2 years.....	Radio spots promoting program and participation.
3 years.....	Community participation in community waterbody clean-ups.
4 years.....	Review of initial program implementation and advising future program actions.

**4-4 *ILLICIT DISCHARGE DETECTION AND ELIMINATION ELEMENT***  
***(Minimum Measure 3)***

The goal of the Illicit Discharge Detection and Elimination Element is to prevent non-storm water sources from entering the drainage systems that discharge into Butte County’s waterways that flow into Sacramento Valley waterways. Achieving the goal of the Illicit Discharge Element requires the coordinated efforts of County departments and other affected agencies.

The public also plays an important role in identifying and reporting incidents of spills or illegal dumping. In addition to County activities currently in practice, such as used oil recycling and household hazardous waste collection, additional planned activities are: (1) development of a structured enforcement policy and guidance

procedures, with appropriate monetary penalties and/or cost recovery for violations of Butte County's Storm Water related ordinances; (2) identification of high priority watersheds or drainage areas for targeted investigation/enforcement/correction efforts; (3) public education of illicit discharge identification and reporting procedures and alternatives for proper disposal methods; and (4) mapping of the storm water conveyance system within the Chico urbanized mapped area.

### **Best Management Practices - Illicit Discharge Detection and Elimination**

#### *Activity Description Objective:*

Illicit Discharge I - Create a Storm Water Ordinance, which provides the legal authority for regulating illegal discharges. Develop an enforcement policy, procedures, and guidance for Program staff and other County departments in accordance with the Storm Water Ordinance and other County codes.

Illicit Discharge II - Develop a plan to detect and address illicit discharges which will include identifying priority areas for evaluation, determining the source if any, and eliminating the illicit discharge.

Illicit Discharge III - Identify measures for Illicit discharge identification and the promotion of correct disposal alternatives and preventative measures for both the public and private sectors, in conjunction with the Public Education and Outreach Element.

Illicit Discharge IV - Develop and continually update the County's storm drain system map within the designated Chico urbanized area. The storm drain map is to indicate the intake and discharge areas of the system. It is also to help determine the possible sources of dry weather flow and the particular water bodies these flows may be affecting.

#### *Illicit Discharge I - Storm Water Ordinance and Enforcement:*

- IDE I-A: Create Ordinance

Create and periodically review and, as necessary, revise the Storm Water Ordinance. Develop and implement enforcement procedures and guidance for violations of the Storm Water Ordinance. Maintain compatibility with related ordinances, as well as federal and state regulations. Non-storm water discharges will be addressed in the County's Storm Water Ordinance.

- IDE I-B: Agency Coordination

Develop a system to share information and assistance to facilitate inclusion of the Storm Water Ordinance with enforcement activities of various agencies, including but not limited to Code Enforcement, Building Inspection, Environmental Health, Hazardous Materials Team, District Attorney, Butte County Fire Department, as well as the California Department of Forestry.

#### *Illicit Discharge II - Program Development:*

- IDE II-A: Identify Priority Areas

Develop and prioritize a list of outfalls based on the likelihood of illicit connections or discharges. Methods of prioritizing areas may include, but are not limited to, visual screening and public complaints. Develop a method for the public to report observed illicit discharge activities.

- IDE II-B: Find the Source

Once an illicit discharge is detected, additional efforts will be used to determine/verify the source. Methods of prioritizing areas may include, but are not limited to, tracing the discharge upstream in the storm drain conveyance system.

- IDE II-C: Remove/Correct Illicit Connection or Discharge

Once the source is identified, the offending discharger will be notified and directed to correct the problem. The Storm Water Ordinance will provide direction for enforcement and punitive measures.

*Illicit Discharge III - Illicit Discharge Prevention and Spill Response:*

- IDE III-A: Strategy

Coordinate with the Public Education and Outreach Element and other agencies to educate the public, academic, and business sectors about proper waste disposal alternatives and elimination of illicit discharges.

Develop guidance and enforcement policy for application of the County's Storm Water Ordinance which will maintain adequate measures for reporting, spill response, investigation, and cleanup.

- IDE III-B: Storm Drain Stenciling

Develop and maintain the volunteer storm drain stenciling program and new development inlet labeling program.

- IDE III-C: Hazardous Waste Collection

In conjunction with the County's Solid Waste Division, continue to promote the availability of the County's small quantity household hazardous waste (HHW) collection facility.

- IDE III-D: Waste Oil Collection

Continue to support the agricultural and used oil recycle programs performed by the County's Solid Waste Division.

*IDE IV - Storm Drain System Map:*

- IDE IV-A: Develop Storm Drain System Map

Develop and update the County's storm drain system map within the designated Chico urbanized area to show the locations of all outfalls, tributary areas, and the names and locations of all waters of the United States that receive discharges from these outfalls. After the map has been developed, it will be continually updated as improvement plans are approved and constructed to show the new outfall in the permitted area. The County will include all new outfall locations in the Annual Reports submitted to the State Water Resources Control Board.

## **Effectiveness Evaluation - Illicit Discharge Detection and Elimination**

The number and types of discharge incidents, as well as the number of enforcement actions taken, measure the effectiveness of the Illicit Discharge Detection and Elimination Element. Assessments will include feedback from drainage maintenance inspectors and other County staff, as well as public comments.

### **Performance and Effectiveness Measures - Illicit Discharge Detection and Elimination**

The following are examples of the types of performance measures and effectiveness measures that may be used to measure the degree of Program Element implementation and activity effectiveness. Performance measures involve enumeration of activities or the percentage of participation in a Program activity. This information is used to focus and modify activities to maximize environmental benefits of the program. The results of the performance and effectiveness measures will be provided in the Annual Reports.

- ***IDE I - Storm Water Ordinance and Enforcement:***
  - Develop, review and revise a Storm Water Ordinance, as necessary (P, E)
  - Develop and implement enforcement procedures and guidance (P, E)
  - Support for enforcement activities (P, E)
  - Number of illegal discharge incidents (P, E)
  - Number of incidents for which penalties were assessed and successfully collected (P, E)
  
- ***IDE II & III - Program Development & Illicit Discharge Prevention and Spill Response:***
  - Number of illegal discharges reported via County Web site (P, E)
  - Number of illegal discharges reported via telephone (P, E)
  - Total number of incidents reported (P)
  - Number of illegal discharges identified (P)
  - Training for field staff, number of workshops, and attendance (P)
  - Feedback from field staff (E)
  - Support for incident response (P, E)
  - Number of incidents responded to, contained, or cleaned up (P, E)
  - Number or percentage of spills in which the responsible party is identified (P, E)
  - Development of database for reported illicit discharges (P)
  - Evaluation of occurrence of common types of illegal discharges and locations (P, E)
  - Number of groups, participants, and storm drains stenciled per year (P, E)
  
- ***IDE IV - Storm Drain System Map:***
  - Number of new development projects and storm drains constructed per year (P, E)
  - Number of additions of new outfalls from new development (P)

### **Goals - Illicit Discharge Detection and Elimination**

The measurable goals, as well as the BMPs, should reflect the needs and characteristics of the MS4 operator and the area served by the MS4. The minimum measurable goals for the permit term may include activities such as the following:

Target Date            Goals and Activities

(end of) Year 1.....	Storm sewer system map completed. Provide recycling program for household hazardous waste.
Year 2.....	Ordinance in place prohibiting illicit discharges. Training for public employees completed.
Year 3.....	Number of inspections performed. Number of illicit discharges detected. Number of illicit discharges eliminated. Number of households participating in household hazardous waste collection program.
Year 4.....	Number of illicit discharges detected. Number of illicit discharges eliminated. Number of households participating in household hazardous waste collection program.

**4-5    *CONSTRUCTION SITE STORM WATER RUNOFF CONTROL/  
NEW DEVELOPMENT ELEMENT (Minimum Measure 4)***

The goal of the Construction Site Storm Water Runoff Control is to reduce the discharge of storm water pollutants to the maximum extent practicable by: (1) requiring construction sites to reduce sediment in site runoff; and (2) requiring construction sites to reduce other pollutants such as litter and concrete wastes through good housekeeping procedures and proper waste management.

Excessive erosion and sediment transport can harm creek habitat through both scour and smothering of spawning areas. The Construction Element conducts outreach activities, development reviews and approvals, and inspections and enforcement at construction sites. This program element also develops and maintains standards for erosion and sediment control. Development reviews and approvals include reviewing California Environmental Quality Act documents, applying standard conditions during the entitlement process, and reviewing and approving improvement plans. Appropriate standards are based on research into best management practice (BMP) effectiveness and maintenance requirements.

**Construction Site Storm Water Runoff Control**

The Construction Element also assists in educating the development community and County project managers about the State General Permit for Discharges of Storm Water Associated with Construction Activities requirements. Applicable projects (those that disturb greater than one acre) must provide proof to Butte County that a Notice of Intent (NOI) has been submitted to the State Water Resources Control Board (SWRCB) and a Storm Water Pollution Prevention Plan (SWPPP) has been prepared. This outreach is conducted as part of a slate of outreach activities that also address the County’s own requirements for construction projects. In the past, the Construction Element has concentrated on developing ordinances and standards, and incorporating these requirements into the development review process and project management procedures.

The development review process will incorporate storm water requirements for private development projects from the planning process to completion of construction. Resources will also be focused on ensuring that all County facility projects have the tools and procedures in place to effectively comply with County and state requirements. This may include items such as the development of activity-specific Best Management Practices (BMPs).

**Best Management Practices - Construction Site Storm Water Runoff Control**

*Construction I - Outreach and Education:*

- CE I-A: Developer Outreach

Educate and provide guidance to the construction and development communities on local, state, and federal requirements and new technology and practices. Outreach may take the form of fact sheets on regulations, workshops, preconstruction meetings, brochures for specific practices (e.g., landscapers), etc.

- CE I-B: County Staff Outreach

Educate and provide guidance to County staff (e.g., inspectors, project managers, development review staff) on local and state requirements and new technology and practices. Outreach may take the form of fact sheets on regulations, training sessions, staff meetings, preconstruction meetings, brochures for specific practices (e.g., landscapers), etc.

*Construction II - Ordinance and Standards:*

- CE II-A: Update Ordinance

Develop an Ordinance incorporating storm water pollutant control components.

- CE II-B: Update Development Standards

Develop and adopt erosion, sediment, and pollution control standards and specifications. These standards will be updated based on the latest technology and practices, as necessary. Alternative and innovative control measures will be identified and evaluated through networking with other programs, product research, literature reviews, and BMP performance studies.

*Construction III - Inspection and Enforcement:*

- CE III-A: Plan Review and Approval

Ensure projects will adequately address County erosion, sediment, and pollution control requirements through the development approval process. During plan review, the developer or builder will submit a written statement to the County as to the total amount of land disturbance their project will cover, thereby certifying if the threshold of disturbing one acre or more has been reached. If one acre or more of land will be disturbed, the County will inform the project owner that they are required to submit of a Notice of Intent (N.O.I.) with appropriate fees and a Storm Water Pollution Prevention Plan (SWPPP) to the State Water Quality Control Board.

- CE III-B: Inspection

Inspection and enforcement staff will ensure that control measures and practices are implemented, properly installed, and maintained during the construction of a project. As applicable, inspectors will verify that SWPPPs are on-site at private development construction sites or being implemented for County project construction sites.

- CE III-C: Record Keeping

Develop and implement record keeping and data management procedures for evaluation of Construction Element Activities and reporting. Data may be maintained in an electronic format.

## **New Development Element**

The goal of the New Development Element is to protect local creeks and rivers by reducing the discharge of storm water pollutants that can result from new developments to the maximum extent practicable (MEP). Generally, new developments may result in: (1) an increase in the total urbanized area, with an attendant increase in the overall load of pollutants discharged into local creeks and rivers; and (2) an increased impervious area, with an attendant increase in the volume of storm water runoff flows. These effects of new development are mitigated with the installation and maintenance of source controls and structural control measures on both a regional scale such as detention basins and on individual properties (termed on-site controls) such as vegetated swales. Control measures, referred to as treatment control measures, are essentially pollutant removal best management practices (BMPs).

The New Development Element establishes review and approval procedures to require regional control measures and on-site source and treatment control measures for new and redevelopment projects. This Program Element also provides outreach to ensure that these procedures are understood and followed, and develops and maintains appropriate standards to guide the selection of possible permanent devices and alternative measures. Regional control measures consist primarily of wet and dry extended detention basins that mitigate excessive sediment transport into local creeks and attenuate peak flows. Detention basins also remove litter and pollutants attached to sediment, including some metals. In addition to particulate removal, wet detention basins may remove some dissolved contaminants. Various on-site controls address different pollutants, depending on their particular objective and design.

Redevelopments are also part of the New Development Element, because they offer opportunities to incorporate on-site controls using the same procedures established for new developments. Appropriate standards and requirements are based, at least in part, on research into BMP effectiveness and maintenance requirements and experience. The emphasis of the New Development Element will be to develop ordinances, design standards, guidance manuals, and maintenance protocols; and incorporate these requirements into the development review process.

## **Best Management Practices - New Development Element**

### *New Development I - Technical Assistance:*

- NDE I-A: Developer Assistance

Conduct outreach to the development community to provide information and serve as a technical resource on policies, requirements, and new technology and practices. This may be accomplished through workshops, presentations at professional organizations, newsletters, or user-friendly fact sheets and websites.

- NDE I-B: County Staff Assistance

Coordinate training and technical assistance for staff, including County project managers and development review staff, on proper design, installation, inspection, and maintenance of both on-site and regional control measures, and on new technology and practices. Training will ensure that agency staffs are aware of their responsibilities. This may be accomplished through workshops, training sessions, staff meetings, user-friendly fact sheets, brochures, county e-mails, and memos.

*New Development II - Design Standards:*

- NDE II-A: Update Standards

Develop and adopt development standards. Development standards include planning practices, site design, regional control measures (e.g., wet and dry detention basins), source control measures, on-site treatment control measures, and maintenance requirements. These standards will be updated based on new technical information, new innovative technologies, and control measure effectiveness.

- NDE II-B: BMP Research

Identify and evaluate alternative and innovative control measures through networking with other programs, product research, literature reviews, and BMP performance studies.

*New Development III - Regional Storm Water Controls:*

- NDE III-A: Development Review Process

Condition projects to incorporate minimum design standards and comply with post-construction requirements during the entitlement process. Utilize the development approval process (i.e., plan check) or County procedures (i.e., County project managers) to ensure projects incorporate regional control measures that meet design standards where appropriate.

- NDE III-B: Maintenance Protocols

Develop and implement maintenance protocols for watershed control measures.

- NDE III-C: Record Keeping

Develop and maintain record keeping and data management procedures for tracking regional control measures and their maintenance.

*New Development IV - On-site Storm Water Control:*

- NDE IV-A: Development Review Process

Condition projects to comply with post-construction requirements during the entitlement process. Utilize the development approval process (i.e., plan check and inspection process) or county procedures (i.e., County project managers) to ensure projects adequately incorporate and construct on-site control measures that meet design standards. Inspection staff will ensure that on-site control measures are properly installed.

- NDE IV-B: Maintenance Protocols

Develop and implement maintenance protocols for on-site control measures; develop an inspection program to ensure control measures are maintained. Maintenance protocols may include requiring maintenance agreements for select on-site control measures installed on private property.

- NDE IV-C: Record Keeping

Develop and implement record keeping and data management procedures for tracking on-site control measures and their maintenance.

### **Effectiveness Evaluation - Construction Site Storm Water Runoff Control / New Development Element**

The effectiveness of the New Construction and Development Elements will be based on whether on-site and regional storm water quality control measures have been designed, constructed, and maintained according to the developed criteria. Maintenance records, inspection records, and visual monitoring will provide verification that the control measures are working.

In addition to collecting and evaluating data on control measures that have been installed, literature reviews and special studies on the effectiveness and maintenance requirements of specific control measures may be conducted as needed. Special studies may be conducted by the Butte County area storm water permittees, other public agencies, manufacturers, and/or property owners. If special studies and literature reviews are conducted, information may be used to develop and revise selection requirements, design criteria, and maintenance protocols.

### **Performance and Effectiveness Measures - Construction Site Storm Water Runoff Control / New Development Element**

The following are examples of the types of performance measures (P) and effectiveness measures (E) that may be used to measure the degree of Program Element implementation and activity effectiveness. Performance measures involve enumeration of activities or the number or percentage of participation in a Program activity. This information is used by staff for purposes of planning and scheduling resources required to conduct the Program. Effectiveness measures provide assessments of the degree to which activities reduce pollutants to the maximum extent practicable or eliminate non-storm water discharges. This information is used to focus and modify activities to maximize environmental benefits. The results of the performance and effectiveness measures will be provided in the Annual Reports.

- *New Construction and Development I - Technical Assistance:*
  - Type and number of outreach materials (P)
  - Number of workshops and workshop attendance (P)
  - Workshop evaluations (E)
  - Feedback from County staff (E)
- *New Construction and Development II - Design Standards:*
  - Number of BMP designs incorporated into new development projects (P)
  - Number of hits to web site (P)
  - Results of BMP performance studies (E)
- *New Construction and Development III - Regional Storm Water Controls:*
  - Number of projects conditioned (P)
  - Number of projects constructed or approved (utilize GIS mapping to inventory control measures) (P)
  - Number of inspections and maintenance activities performed (prepare or collect maintenance and inspection reports) (P)

- *New Construction and Development IV - On-site Storm Water Controls:*
  - Number of projects conditioned (P)
  - Number of projects constructed or approved (utilize GIS mapping to inventory control measures) (P)
  - Number of inspections and maintenance activities performed (prepare or collect maintenance and inspection reports) (P)

**Goals - Construction Site Storm Water Runoff Control / New Development Element**

The measurable goals, as well as the BMPs, will reflect the needs and characteristics of Butte County and the area served by the MS4. Butte County’s approach for this minimum measure will include the following goals:

<u>Target Date</u>	<u>Goals and Activities</u>
(end of) Year 1 .....	Design criteria, standard operating procedures for storm water control site plan review developed. Procedures for information submitted by public in place.
Year 2.....	Ordinances or other regulatory mechanisms in place.
Year 3.....	Number of site plans reviewed and approved. Number of inspections performed. Enforcement Program developed and implemented.
Year 4.....	Increase in number of site plans reviewed and approved. Number of inspections performed.

**4-6 POST CONSTRUCTION STORM WATER MANAGEMENT (Minimum Measure 5)**

Post-construction storm water management in areas undergoing new development or significant redevelopment is necessary because runoff from these areas has been shown to significantly affect receiving water bodies. Many studies indicate that prior planning and design for the minimization of pollutants in post-construction storm water discharges is the most cost-effective approach to storm water quality management.

There are generally two forms of substantial impacts from post-construction runoff. The first is caused by an increase in the type and quantity of pollutants in storm water runoff. As runoff flows over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters, such as lakes, ponds, and streams. Once deposited, these pollutants can enter the food chain through small aquatic life, eventually entering the tissues of fish and humans. The second kind of post-construction runoff impact occurs by increasing the quantity of water delivered to the water body during storms. Increased impervious surfaces interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water. The effects of this process include stream bank scouring and downstream flooding, which often lead to a loss of aquatic life and damage to property.

Butte County will develop and implement strategies which include a combination of structural and/or non-structural BMPs appropriate for the community; use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State or local law; and ensure adequate long-term operation and maintenance of BMPs. The Program calls for the implementation of planning procedures and enforcement controls to reduce the discharge of pollutants after construction is complete from areas of significant new development and redevelopment.

## Best Management Practices – Post Construction Storm Water Management

### *Post Construction I - Benefits of a Post-Construction Storm Water Management Program:*

- PC I-A: Regulatory Mechanism

Butte County will establish an ordinance or other regulatory mechanism requiring the implementation of post-construction runoff controls. New development and significant redevelopment will be required to provide nonstructural and structural BMPs.

- PC I-B: Review and Approval Procedures

The Program requires the post-construction program controls to determine if new development and redevelopment designs incorporate adequate structural and/or nonstructural BMPs. Butte County's Program will include elements required in the regulation and develop a standard operating procedure for new development or redevelopment plan reviews and approval. The standard operating procedure will identify the department(s) to be included in the process, and will summarize minimum nonstructural and structural BMP requirements. A system will be developed to track the status of plans that will be combined with existing tracking systems.

### *Post Construction II - Design Criteria and Standards (BMPs):*

A standard operating procedure will be used for the selection and design of appropriate non-structural and structural BMPs. The design criteria and standards will be provided by reference to criteria manuals. Runoff problems will be addressed effectively with sound procedures.

- PC II-A: Non-Structural BMP Practices

These practices are intended to prevent or control the sources of pollutants. These can include guidelines for the proper disposal of household waste and toxins, proper use of pesticides, herbicides, and fertilizer, good housekeeping and preventative maintenance, and public education and outreach.

- PC II-B: Structural BMP Practices

These practices are intended to reduce the amount of pollutants that enter state waters. They include:

- Storage Practices – Storage or detention BMPs control storm water by gathering runoff in wet ponds, dry basins, or multi-chamber catch basins and slowly releasing it to receiving waters or drainage systems. These practices control storm water volume and settle out particulates for pollutant removal.
- Infiltration Practices – Infiltration BMPs are designed to facilitate the percolation of runoff through the soil to groundwater, thereby reducing both storm water quantity and mobilization of pollutants. Examples are infiltration basins/trenches, and porous pavement.
- Vegetative Practices – Vegetative BMPs are landscaping features that, with optimal design and good soil conditions, enhance pollutant removal, maintain/improve natural site hydrology, promote healthier habitats, and increase aesthetic appeal.

- PC II C: Regional BMP Practices

These practices are usually implemented downstream of a large drainage area. They can be online (located in the state waters), or offline (prior to entering state waters). In general, where regional BMPs such as a detention pond exist, some onsite BMPs will be necessary. If the regional BMPs are being placed prior to discharging into state waters, then the regional BMPs can be used to meet the post-construction requirement, and additional on-site BMPs may only be needed to assist in the function of the regional BMPs. However, if the regional BMPs are placed after storm water runoff has discharged into state waters, including natural drainage ways being utilized by the County as part of their MS4, this may be a violation of the regulation's requirement to protect state waters, and additional on-site BMPs must be considered to protect the state waters.

*Post Construction III - Ensure Adequate Long-Term Operation and Maintenance of BMPs:*

Adequate long-term operation and maintenance of post-construction BMPs must be maintained to operate properly and the responsibility for operation and maintenance of structural controls, such as a storm water detention basin, should remain with the private-property owner. Butte County requires a drainage easement that precludes modification of the BMP and allows legal access to the property for inspection and actions as necessary to maintain the operation of the BMP as originally intended. As part of the approval process for any development, certain conditions must be met prior to receiving its approval to proceed with construction of the development. Usually, the most important of those conditions are contained on the recorded parcel map or final map. In all instances, Butte County will require as part of the map, that it be noted the legal title holder to the property is responsible for maintaining the BMPs, and that the County through development of ordinances obtains the legal right to enforce that obligation, either by legal action to obtain compliance, or by performing the maintenance itself and then collecting those expenses by recording a lien on the property.

*Post Construction IV - Monitoring Compliance During Construction:*

The County will develop procedures to determine if the BMPs required by the Site Plan Review are being installed according to specifications. This will be developed in conjunction with the Construction Program. Ordinances or other mechanisms will allow measures to be taken to ensure the BMPs are installed correctly, such as not allowing release of development bonds until the proper BMPs are in place and operating.

*Post Construction V - Monitoring Long-Term Compliance:*

In order to ensure adequate long-term operation and maintenance of BMPs, inspection and enforcement programs are required. The elements of the programs will include the following:

- The County will develop a database of all new post-construction BMPs in its jurisdiction. In addition to being an important tool for other elements of the post-construction minimum measure, such as inspections and enforcement, the database may be used for annual mailings done prior to the rainy season to remind BMP owners to perform necessary maintenance.
- The Post-Construction Inspection Program is a continuation of the Construction Program and contains the same program elements. A standard will be developed for performing inspections. The program will include the following:
  - *Compliance Inspections* - Compliance inspections are routine inspections conducted to ensure that the BMPs are receiving proper maintenance. The inspector verifies that the

BMPs are functioning according to design and confirms that the required documentation of inspection and BMP maintenance is occurring. This should include an appropriate level of follow-up when deficiencies are discovered.

- *Complaint Response Inspections* - The County will have the ability to respond to third party concerns regarding malfunctioning or poorly maintained BMPs. This will include a point of contact, response protocol (either a telephone call to owner/operator, inspection of site by representative of reviewing authority, or some other means of follow-up with the construction site), or review of the site plan, as appropriate. A suitable level of follow-up will be included when deficiencies are discovered.
- Failure to Maintain BMPs - It is important to ensure that the BMPs implemented are maintained. It is also necessary to determine the cause of any noncompliance. Corrective actions may include the following:
  - Document the need for maintenance on the inspection report. Provide time for the developer/property owner to address the concerns. A follow-up inspection will need to be conducted.
  - If the developer/property owner fails to take the necessary measures, meet with the developer/property owner to discuss the necessary measures and time frames for addressing the problems.
  - If actions are not taken in the specified time frame, begin enforcement procedures.
- Enforcement Program - An enforcement program will be developed and implemented to address failures in BMP maintenance procedures that are not performed within required timeframes. The program will address appropriate responses to common noncompliance issues with developers/property owners. Several options for formal action are available including:
  - Verbal warning to the developer/property owner;
  - Letter of noncompliance;
  - Notice of violation and order;
  - Charge back to owner for work completed by the County.

**Goals – Post Construction Storm Water Management**

The measurable goals reflect the needs and characteristics of the Butte County area. The minimum measurable goals for the permit term include the following measures:

<u>Target Date</u>	<u>Goals and Activities</u>
(end of) Year 1.....	Design Criteria, Standard Operating Procedures for Storm Water Control Site Plan BMP review developed.
Year 2.....	Ordinance or other regulatory mechanism in place.
Year 3.....	Storm Water Control Site BMP maintenance inspection and enforcement plan implemented.
Year 4.....	Increase in number of site plans reviewed and approved. Number of inspections performed.

#### **4-7 POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR (MUNICIPAL) COUNTY OPERATIONS (Minimum Measure 6)**

Butte County conducts numerous operational and maintenance activities, some of which have the potential to result in discharges of pollutants in runoff or be sources of non-storm water discharges. The goal of the Operations and Facilities Element is to reduce these discharges of pollutants in runoff and control non-storm water discharges.

The Operations and Facilities Element evaluates activities to identify those that could be significant sources of pollutants in runoff; develops appropriate measures to reduce the discharge of pollutants from these sources to the maximum extent practicable (MEP); and identifies and controls discharges of non-storm water from facilities owned or operated by the County within the Chico urbanized mapped area. This Program Element also conducts operation and maintenance activities that remove pollutants. County operation and maintenance activities provide for the collection and removal of significant quantities of pollutants from storm water runoff. The County may develop a sweeping program to remove sediment and associated pollutants from roadways, gutters, and County owned parking areas that would otherwise enter the storm drains. Furthermore, planning efforts provide the opportunity to incorporate water quality features in the design of detention basins to provide treatment and removal of pollutants as well as flood and drainage control.

Proposed activities include continued efforts to identify and improve operations that are potentially significant sources of pollutants. Outreach and training are essential to ensure that employees are aware of and able to implement the Operations and Facilities Element. Employee training and facility inspections will be conducted. Areas of focus include: (1) equipment maintenance and washing; (2) pesticide application practices; and (3) waste storage and disposal. Development of fact sheets, performance standards, and procedure manuals for common activities will help ensure that pollutant prevention practices are followed. Sweeping and catch basin cleaning activities will be documented. Proposed activities will help protect and improve the habitat of urban creeks.

#### **Best Management Practices - (Municipal) County Operations and Facilities Element Activities**

##### *(Municipal) County Element I - Technical Assistance:*

- CE I-A: County Facility SWPPPs

Conduct inspections of County facilities within the Chico urbanized mapped area and prepare Storm Water Pollution Prevention Plans (SWPPPs) and best management practices (BMPs) for County facilities that are determined to have storm water pollution potential.

- CE I-B: County Activity Training

Provide training for County departments on activities that may contribute to storm water pollution.

- CE I-C: New Facility BMPs

Review design plans for proposed County facilities and provide guidance on pollutant and non-storm water discharge control measures.

- CE I-D: Non-Storm Water Discharges

Discharges of non-storm water from County facilities will be identified and characterized. Control measures to eliminate or reduce pollutants will be described and implemented. If necessary, obtain Regional Water Quality Control Board approval for authorized discharges.

*County Element II - Pollutant Reduction Activities:*

- CE II-A: Sweeping

Assess the feasibility of implementing a sweeping program, including County parking lots.

- CE II-B: Drainage System Maintenance

Continue maintenance activities that remove accumulated sediment and floatables from storm drain inlets.

- CE II-C: Structural Control Operation and Maintenance

Operate and maintain structural devices such as settling/treatment facilities at detention basins and low-flow control measures to ensure pollutant removal.

- CE II-D: Waste Recycling

Provide and support programs for public waste recycling and household hazardous waste (HHW) collection/disposal.

*County Element III - Employee Training Program:*

- CE III-A: Employee Training Program

Conduct specific training sessions for County employees to provide Butte County's Storm Water Management Program information on appropriate County control measures.

- CE III-B: Employee Feedback Program

Develop a mechanism to gather information on County activities and suggestions for improvement of County Operations and Facilities Element activities.

**Effectiveness Evaluation - (Municipal) County Operations and Facilities Element Activities**

The effectiveness of the County Operations and Facilities Element is dependent on adequate training, resources, and staff to ensure that County operations and facilities are reducing storm water pollution and controlling non-storm water discharges. Assessments will include inspections, review of feedback from County staff, and public comments. Public comments may be useful indicators of the consistency and fairness of storm water requirements being established for businesses and residents.

## **Performance and Effectiveness Measures - (Municipal) County Operations and Facilities Element Activities**

The following are examples of the types of performance measures (P) and effectiveness measures (E) that may be used to measure the degree of Program Element implementation and activity effectiveness. Performance measures involve enumeration of activities or the percentage of participation in a Program activity. This information is used by staff for purposes of planning and scheduling resources required to conduct the Program. The specific goals and level of effort for effectiveness evaluation activities will be included in departmental annual reports. The results of the performance and effectiveness measures will also be provided in the Annual Reports to the Regional Water Quality Control Board.

- County-I: Technical Assistance
  - Number of SWPPPs and BMPs prepared for County facilities (P)
  - Revisions to SWPPPs and BMPs prepared for County facilities (E)
  - Number of County construction projects with NOI and SWPPPs (P)
  - Number of site inspections of County facilities to ensure that appropriate control measures are implemented (P)
  - Number of County facility plans reviewed and designed to incorporate storm water control measures (P)
  - Literature reviews on the effectiveness and maintenance requirements of specific control measures (E)
  - Feedback from County staff on SWPPPs and BMPs (E)
  - Actions taken to correct problems (E)
  
- County-II: Pollutant Reduction Activities
  - Amount of sweeping conducted (P)
  - Number of facilities receiving storm drain maintenance (P)
  - Number of structural devices operated and maintained for settling/treatment (P)
  - Types of recycling programs and amount of materials recycled (P, E)
  
- County-III: Employee Training Program
  - Number of training sessions (P)
  - Feedback from training sessions (E)
  - Number of fact sheets, brochures, procedure manuals, and other outreach material distributed to County employees to describe BMPs for County activities (P, E)
  - Feedback from County staff for improvement to Operations and Facilities Element activities (E)

## **Goals - (Municipal) County Operations and Facilities Element Activities**

Measurable goals are meant to gauge permit compliance and program effectiveness. The measurable goals, as well as the BMPs, should consider the needs and characteristics of the operator and the area served by its MS4. The measurable goals should be chosen using an integrated approach that fully addresses the requirements and intent of the minimum control measure. An integrated approach for this minimum measure could include activities such as the following:

<u>Target Date</u>	<u>Goals and Activities</u>
(end of) Year 1.....	Determine the number of facilities/operations to be covered under a runoff control plan. Employee training materials gathered or developed. Procedures in place for catch basin cleaning and sweeping. Recycling program fully implemented.
Year 2.....	Training for appropriate employees completed. Development of SWPPPs for facilities that have storm water pollution potential.
Year 3.....	Pollution prevention BMPs incorporated into County operations where appropriate. Maintenance schedule for BMPs established. Continued employee training.
Year 4.....	Establish compliance rate with maintenance schedules for BMPs. BMPs in place for all areas of concern. Continued employee training.

## **5. PROGRAM EVALUATION ACTIVITIES**

### **5-1 INTRODUCTION**

Program evaluation is an important part of the interactive process for improvement of Butte County's Storm Water Management Program (Program). Selection of appropriate activities and best management practices (BMPs) to reduce pollutants to the maximum extent practicable includes evaluation of pollutant reduction capabilities, compatibility with environmental regulations, applicability for Butte County, and cost effectiveness. The successes or problems in other California locales, including public acceptance, will also be reviewed. Regular evaluations are required and are critical for a variety of reasons:

- To obtain feedback that will allow the County to continually improve the Program;
- To measure whether Program activities are making progress toward reducing pollution in storm water discharges to the maximum extent practicable and protecting the beneficial uses of local receiving waters;
- To provide information useful to Butte County Area Storm Water Permittees for modifying joint efforts and evaluating the area-wide effectiveness of the County's storm water management activities;
- To ensure compliance with the requirements of the County's MS4 Permit.

Evaluation activities will always be a part of the County's Program. The County will be evaluating Program activities consistently over the years. Evaluations will generally be done as State law defines beneficial uses of California's waters that may be protected against quality degradation to include (and not be limited to) "domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Water Code Section 13050(f)).

### **5-2 EVALUATION STRATEGY**

The County recognizes that the ultimate goals of the Program are to reduce storm water pollution to the maximum extent practicable, eliminate prohibited non-storm water discharges, and protect beneficial uses of local receiving waters. However, evaluating whether the Program is accomplishing these goals presents a difficult task. At this point in time, there are no practicable measurements that can directly correlate Program accomplishments with water quality in the receiving waters. Several factors preclude a simple evaluation of Program effectiveness. These factors include the following:

- Urban runoff pollution comes from a wide array of diffuse sources in the urban environment.
- The solutions or BMPs used to control storm water pollution are diverse in nature; some act to prevent pollution (e.g., education) and others act to remove pollutants that have already entered the runoff (e.g., detention basins).

It generally takes years to see the impacts of BMPs. For example, many years of implementing recycling programs were necessary before the public began to change its behavior.

To meet this challenge, the County has established specific objectives for the overall Program and Program Elements to make progress toward reducing storm water pollution, eliminating prohibited non-storm water discharges, and protecting receiving waters. On a regular basis, the County will evaluate the ability of Program activities to achieve these standards and reach Program goals by using both performance measures and effectiveness measures:

- *Performance measures* are designed to measure level of effort such as the number of staff assigned to the Program, number of public events attended, or number of people reached through media campaigns.
- *Effectiveness measures* are intended to measure the degree to which a particular effort is successful. For example, the percentage increase in public awareness is measured by public opinion surveys. In some cases, effectiveness measures can be used to directly assess an activity's environmental benefit. For example, documenting the maintenance and cleaning of catch basins each year shows a measure of pollutants that would have otherwise been discharged downstream to a local creek.

### **5-3      *PROGRAM PERFORMANCE AND EFFECTIVENESS EVALUATION***

The County plans to evaluate the Program on three levels:

- Overall Program;
- Program Element;
- Activity/BMP.

Overall Program evaluation includes assessments of Program progress and adequacy of resources to conduct the Program. Program Element evaluation provides consideration of the combined effectiveness of the various activities of each Program Element. Activity/BMP evaluation includes reporting and assessments specific to the Program Element activities and BMPs. Special studies may also be conducted on BMPs, generally as joint efforts of the Permittees, to provide information on pollutant reduction capabilities, experience of other storm water management programs, and local applicability in Butte County, cost effectiveness, and maintenance requirements.

### **5-4      *REPORTING PERFORMANCE AND EFFECTIVENESS EVALUATIONS***

The Annual Reports submitted to the Regional Water Quality Control Board by the County as required in the permit will describe the goals, activities, and performance/effectiveness measures proposed for the upcoming permit year. They also will document the County's accomplishments in the previous permit year and evaluate progress toward reaching the goals in completing the proposed activities. To provide information for these reports, records and data from various County departments and divisions will be compiled and analyzed. At the end of each permit year, the compiled data from that year will be reviewed and presented to demonstrate Program performance. It is also anticipated that a more comprehensive evaluation of each Program Element will be performed at least once during the permit term.

### **5-5      *CONTINUED PROGRAM IMPROVEMENTS***

On a regular basis, the County networks with other agencies and groups in an effort to stay current about national and statewide storm water efforts and to obtain ideas for continued improvement of the Program. The Permittees will also meet regularly on various joint efforts and to share information on activities. Refinement of evaluation tools will be accomplished over time using local program experience in addition to that of other agencies and groups including:

- Regulatory agencies, such as the State Water Resources Control Board, Regional Board and U.S. Environmental Protection Agency;
- Other storm water management programs;
- California Storm Water Quality Association;
- National organizations;

- The local community.

The various types of data provided by these groups include results of BMP effectiveness studies, public awareness surveys, and program evaluations. The evaluation process will allow the County to benefit from experience and use that experience to improve the Program by modifying activities that did not work well, enhancing those that have proven to be effective, and selecting activities and BMPs to address new areas.

## APPENDICES

### **Appendix A - Butte County MS4 NPDES Storm Water Permit Application (N.O.I.)**

### **Appendix B - Departmental Responsibility Flow Chart**

### **Appendix C - Annual Departmental Reports as submitted to County Storm Water Coordinator**

Appendix C will provide copies of department annual reports as prepared and submitted to the County's Storm Water Coordinator for use in preparing the County's Annual Report to the Regional Water Quality Control Board.

### **Appendix D - Annual Reports by Storm Water Coordinator submitted to the RWQCB**

Appendix D will provide copies of the County's Annual Reports to the Regional Water Quality Control Board.

### **Appendix E - Butte County Storm Water Ordinances**

Appendix E will provide copies of Butte County's Ordinances that are developed in accordance with this Program

### **Appendix F - Agreements**

Appendix F will include agreements that define and outline the specific responsibilities of each participating agency. Any new or revised agreements will be added to Appendix F upon their completion.

### **Appendix G - Chico Urbanized Area Map**

Copy of map developed by the Bureau of the Census to identify the coverage area for NPDES Phase II coverage.

**APPENDIX A**

**BUTTE COUNTY'S MS4 NPDES STORM WATER PERMIT APPLICATION (N.O.I.)**

The contents of this page are not included in the Draft copy at this time.

**APPENDIX B**

**DEPARTMENTAL RESPONSIBILITY FLOW CHART**

The contents of this page are not included in the Draft copy but can be viewed as a separate document by opening the file named BCSMP\_Appendix\_B.pdf

---

**APPENDIX C**

**ANNUAL DEPARTMENTAL REPORTS**

The Departmental Annual Reports will be inserted here as they are developed and prepared each year.

**APPENDIX D**

**ANNUAL REPORTS BY STORM WATER COORDINATOR  
SUBMITTED TO THE REGIONAL WATER QUALITY CONTROL BOARD**

This section will be added to at the end of each permit year. Yearly program results as submitted to the RWQCB will be included in this section.

**APPENDIX E**

**BUTTE COUNTY STORM WATER ORDINANCES**

County Storm Water Ordinances will be placed here as they are developed and adopted by the Board of Supervisors.

**APPENDIX F**

**AGREEMENTS**

Agreements with the City of Chico and other area permittees will be included here as there are developed and approved by the Board of Supervisors.

**APPENDIX G**

**CHICO URBANIZED AREA MAP**

