

# *Fresno-Clovis Storm Water Quality Management Program*

**December 2013**



Fresno Metropolitan  
Flood Control District





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## Executive Summary

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The Storm Water Quality Management Program (SWQMP or Program) was developed pursuant to Order No. R5-2013-0080. The municipal National Pollutant Discharge Elimination System (NPDES) stormwater permit (MS4 Permit) was issued to the Fresno Metropolitan Flood Control District (District), the cities of Fresno and Clovis, the County of Fresno (County), and the California State University at Fresno (CSUF) (hereinafter referred to as 'Permittees') by the Central Valley Regional Water Quality Control Board (Regional Board) on May 31, 2013. The SWQMP represents the five-year management strategy for controlling the discharge of pollutants in stormwater and urban runoff from the Fresno-Clovis metropolitan area to the during the third Permit term (2013-2018).

The SWQMP provides a comprehensive approach for addressing pollutants in stormwater discharges and is organized into eight sections. These include:

- Section 1: Program Management
- Section 2: Construction
- Section 3: Industrial Commercial
- Section 4: Municipal Operations
- Section 5: Illicit Connections and Discharges
- Section 6: Public Involvement and Education
- Section 7: Planning and Land Development
- Section 8: Monitoring

The SWQMP includes specific pollution prevention and control practices for Fresno-Clovis urban drainage system planning, design, construction, and maintenance. The Program also includes public education to prevent stormwater pollution; specifies construction, industrial/commercial, municipal, and new development control practices; procedures to prevent and respond to illicit discharges and connections; monitoring to assess stormwater impacts on receiving waters; and program effectiveness assessments (PEA) to evaluate the effectiveness of best management practices (BMPs).

To address the core program objectives and targeted stormwater pollutants and to ensure compliance with MS4 Permit requirements, the SWQMP incorporates a series of control measures, performance standards, and implementation schedules that provide for a long-term, comprehensive, and multidisciplinary effort by the Permittees to continue to achieve water quality standards and protect beneficial uses of the San Joaquin River, creeks and canals. The SWQMP is structured to identify the specific activities that must be implemented, as well as the organization responsible for implementing the activities. Implementation schedules are provided to assist the Permittees in the implementation of the SWQMP. The SWQMP also serves as the foundation for program effectiveness assessments, with more detail provided in the Long Term Effectiveness Assessment Strategy (*LTEA Strategy*), which was developed and submitted concurrently.

The SWQMP was developed to describe programs that the Permittees will implement to comply with the MS4 Permit. Compliance will be demonstrated through the submittal of annual reports to the Regional Board, due September 1 of each year. The annual reports will document the status of the SWQMP implementation and the Permittees' activities for the preceding fiscal year. Because the SWQMP documents and describes actions that the Permittees will undertake to implement the requirements of the MS4 Permit, the SWQMP itself is then an enforceable document. To maintain compliance with the MS4 Permit, programs and BMPs described herein will be implemented during the term of the MS4 Permit.

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# Section 1

## Program Management

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### 1.0 OVERVIEW

This document, the Storm Water Quality Management Program (SWQMP or Program), was developed pursuant to Order No. R5-2013-0080. The municipal National Pollutant Discharge Elimination System (NPDES) stormwater permit (MS4 Permit) was issued to the Fresno Metropolitan Flood Control District (District), the cities of Fresno and Clovis, the County of Fresno (County), and the California State University at Fresno (CSUF) (hereinafter referred to as ‘Permittees’) by the Central Valley Regional Water Quality Control Board (Regional Board) on May 31, 2013. The SWQMP represents the five-year management strategy for controlling the discharge of pollutants in stormwater runoff from the Fresno-Clovis metropolitan area to the “maximum extent practicable” (MEP) during the third Permit term (2013-2018). The SWQMP<sup>1</sup> provides the basis for compliance with the NPDES Municipal Storm Water Permit.

The SWQMP includes specific pollution prevention and control practices for Fresno-Clovis urban drainage system planning, design, construction, and maintenance. The Program also includes public education to prevent stormwater pollution; specifies construction, industrial/commercial, municipal, and new development stormwater quality control practices; procedures to prevent and respond to illicit discharges and connections; monitoring to assess municipal stormwater impacts on receiving waters; and program effectiveness assessments (PEA) to evaluate the effectiveness of best management practices (BMPs).

The SWQMP “control measures” refer to activities intended to minimize, reduce, eliminate, or prohibit the discharge of pollutants with the goal of improving water quality. The benefits of these control measures are assessed through evaluation of associated performance standards. The performance standards include schedules and milestones for implementation.

The overall goals of the Program are to:

- Protect the Fresno-Clovis Region’s water resources and associated beneficial uses from degradation by urban runoff; and
- Develop and implement an effective SWQMP that is well-understood and broadly supported by regional stakeholders.

The beneficial uses of surface waters and ground waters within the Fresno-Clovis region are included in **Table 1**.

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<sup>1</sup> The SWQMP is an integral and enforceable component of the Permit (Finding 1), (Provision D.2 and D.3).

**Table 1. Beneficial Uses of Surface and Ground Waters within the Fresno-Clovis Region**

<b>Beneficial Use Designation</b>	<b>San Joaquin River between Friant Dam and Mendota Pool<sup>2</sup></b>	<b>Fresno Slough<sup>3</sup></b>	<b>Dry Creek Canal, Herndon Canal, James Bypass<sup>4</sup></b>	<b>Regional Groundwaters<sup>5</sup></b>
Municipal and Domestic Supply (MUN)	X		X	X
Industrial Process Supply (PRO)	X	X		X
Industrial Service Supply (IND)		X		X
Agricultural Supply (AGR)	X	X	X	X
Water Contact Recreation (REC-1)	X	X	X	
Non-contact Water Recreation (REC-2)	X	X		
Warm Freshwater Habitat (WARM)	X	X	X	
Cold Freshwater Habitat (COLD)	X			
Migration of Aquatic Organisms (MIGR)	X			
Spawning, Reproduction, and/or Early Development (SPWN)	X			
Wildlife Habitat (WILD)	X	X		
Rare, Threatened, or Endangered Species (RARE)		X		
Groundwater Recharge (GWR)		X	X	

To meet the overall goals of the Program, the following objectives were established:

- Identify pollutants in urban runoff that pose a significant threat to the Region’s water resources and beneficial uses;
- Identify and control sources of pollutants which pose the greatest threat to the Region’s water resources and beneficial uses;
- Comply with the federal NPDES mandate to eliminate or control, to the MEP, the discharge of pollutants from urban runoff associated with the metropolitan storm drainage system;
- Develop a cost-effective program that focuses on preventing the pollution of urban stormwater;
- Seek cost-effective alternative solutions where prevention is not a practical solution for a significant problem; and
- Cooperate with other local environmental regulatory programs to ensure a coordinated effort to control pollutants of common concern and to facilitate implementation of control measures.

<sup>2</sup> Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin, Fourth Edition, Revised October 2011.

<sup>3</sup> Fresno Slough is designated as Valley Floor Waters in the Water Quality Control Plan for the Tulare Lake Basin, Second Edition, Revised January 2004.

<sup>4</sup> The Tulare Lake Basin Plan does not establish beneficial uses for these manmade conveyances. The listed beneficial uses are designated in Order R5-2013-0080, Finding 39.

<sup>5</sup> Exceptions to the Beneficial Uses for groundwater may be granted by the Regional Board according to criteria set forth in the Sacramento/San Joaquin River Basin Plan, Page II-2.01 or the Tulare Lake Basin Plan, Page II-2.

To address these objectives, the SWQMP provides for a comprehensive and multidisciplinary effort by the Permittees.

This section addresses the Program Management Program Element of the SWQMP and is organized as follows:

- Regulatory Background (1.1)
- Description of Permitted Area (1.2)
- SWQMP Approach (1.3)
- SWQMP Organization (1.4)
- Program Effectiveness Assessment (1.5)
- Program Implementation (1.6)

## 1.1 REGULATORY BACKGROUND

The stormwater pollution control effort, of which this SWQMP is a part, is the result of over 30 years of legislative effort, beginning with the 1972 Federal Water Pollution Control Act, subsequently known as the Clean Water Act (CWA). The CWA established the NPDES program. The 1987 Federal CWA amendments created section 402(p) mandating, among other things, permits for municipal stormwater dischargers. Section 402(p) required that the municipal NPDES permits include:

- A requirement to effectively prohibit non-stormwater discharges into the municipal separate storm sewer systems (MS4s); and
- Controls to reduce the discharge of pollutants in stormwater discharges to the MEP, including management practices, control techniques, system design, engineering methods and such other provisions as the Administrator of the State determines appropriate for the control of such pollutants.

Subsequent regulations promulgated by the U.S. Environmental Protection Agency (U.S. EPA) on November 16, 1990 (40 Code of Federal Regulations [CFR] 122.26 (d) (2) (iv) required municipal NPDES dischargers to develop and implement a management program to effectively address these requirements. This SWQMP was developed to address the 1990 requirement.

The City of Fresno is defined as a medium municipality (population greater than 100,000) as described within 40 CFR 122.26 (b) (4). As such, the City is required to obtain an NPDES municipal stormwater permit for the area under its jurisdiction. The County contains urbanized areas and areas of potential growth, which are within the limits of the District, the cities of Fresno and Clovis, and CSUF. Due to the proximity of the County’s urbanized areas to the District and cities of Fresno and Clovis, their physical interconnections to the District’s storm drain system, and the locations of their discharges relative to the Districts’ system, the County is designated as a part of the large MS4 in accordance with 40 CFR 122.26 (b)(4)(iii).

The history of the various NPDES municipal stormwater permits for the Permittees is provided in **Table 2**. The Permittees must comply with the current municipal NPDES stormwater permit.

**Table 2. History of NPDES MS4 Permits for the Fresno-Clovis Metropolitan Area**

Permit Term	Order No.	NPDES No.	Adoption Date	Effective Timeframe
First	Order No. 94-244	CA0083500	September 16, 1994	1994 - 2001
Second	Order No. 5-01-048	CA0083500	March 16, 2001	2001 - 2013
Third	Order No. R5-2013-0080	CA0083500	May 31, 2013	2013 – 2018

## First Term

In January 1992, six agencies in the Fresno-Clovis metropolitan area (the District, Fresno, Clovis, the County, CSUF, and Caltrans) joined together to file the application. Parts I and II of the initial application were submitted to the Regional Board in 1992 and 1993, respectively. The permit applications served as the genesis of this SWQMP. The first NPDES MS4 Permit for the Fresno-Clovis Region, Order No. 94-244, was adopted on September 16, 1994. An application to renew the permit was submitted to the Regional Board on March 1, 1999.

## Second Term

The second NPDES MS4 Permit, Order Number 5-01-048, was issued on March 16, 2001. Caltrans was not named as a Permittee since a statewide Caltrans Permit was adopted on July 15, 1999 (Order No. 99-06-DWQ). As part of the permit renewal process, the Permittees submitted a Report of Waste Discharge (ROWD) and a revised SWQMP on September 16, 2005. On October 27, 2008 the Permittees submitted supplemental information supporting the proposed SWQMP, including an anti-degradation analysis, supporting information for the proposed new and redevelopment standards, a water quality monitoring review document, and a description of the ways the Permittees are promoting water quality principles, low-impact development, and smart growth.

## Third Term

The current NPDES MS4 Permit Order No. R5-2013-0080 was adopted on May 31, 2013. This SWQMP identifies how the Permittees will comply with the Order. The SWQMP proposes a wide range of continuing, enhanced, and new BMPs and control measures that will be implemented during the third term permit period. It is the intent of this SWQMP to meet the third term permit requirements through an iterative process. Each year, the Permittees will assess the implementation and outcomes of their program and, if appropriate, modify and/or enhance the control measures and performance standards as needed to ensure that their program is effective.

## 1.2 DESCRIPTION OF PERMITTED AREA

A vicinity map that generally illustrates the size and location of Fresno County, the cities of Fresno and Clovis, the District, and CSUF is shown in **Figure 1**.

The permitted area (the Fresno-Clovis urbanized area) is shown in **Figure 2**. The area subject to the Permit requirements includes all local planned urban drainage areas defined in the Fresno Metropolitan Flood Control District Storm Drainage and Flood Control Master Plan, the community of Easton, and the County area along Friant Road between the San Joaquin River and the Friant-Kern Canal. This area is referred to as the *Fresno-Clovis Urbanized Area*, as illustrated in **Figure 2**, and will expand as development progresses into areas of planned growth.

The stormwater drainage system consists of interconnected surface conveyances, storm drains, detention basins (stormwater basins), pump stations, and outfalls. The stormwater basins discharge to groundwater, irrigation canals, creeks, and the San Joaquin River. The system is designed to detain and infiltrate as much runoff as possible into the underlying groundwater aquifer. At present, the local drainage service area is divided into 158 relatively small drainage areas (approximately one to two square miles each). More than 90% of these areas drain to a stormwater basin, providing for detention of approximately 90% of the urban runoff from the permitted area in the average year.<sup>6</sup> Drainage areas, stormwater basins, and major outfalls to receiving waters are shown in **Figure 3**, Urban Drainage Systems.

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<sup>6</sup> FMFCD Hydrologic Study, 1995.

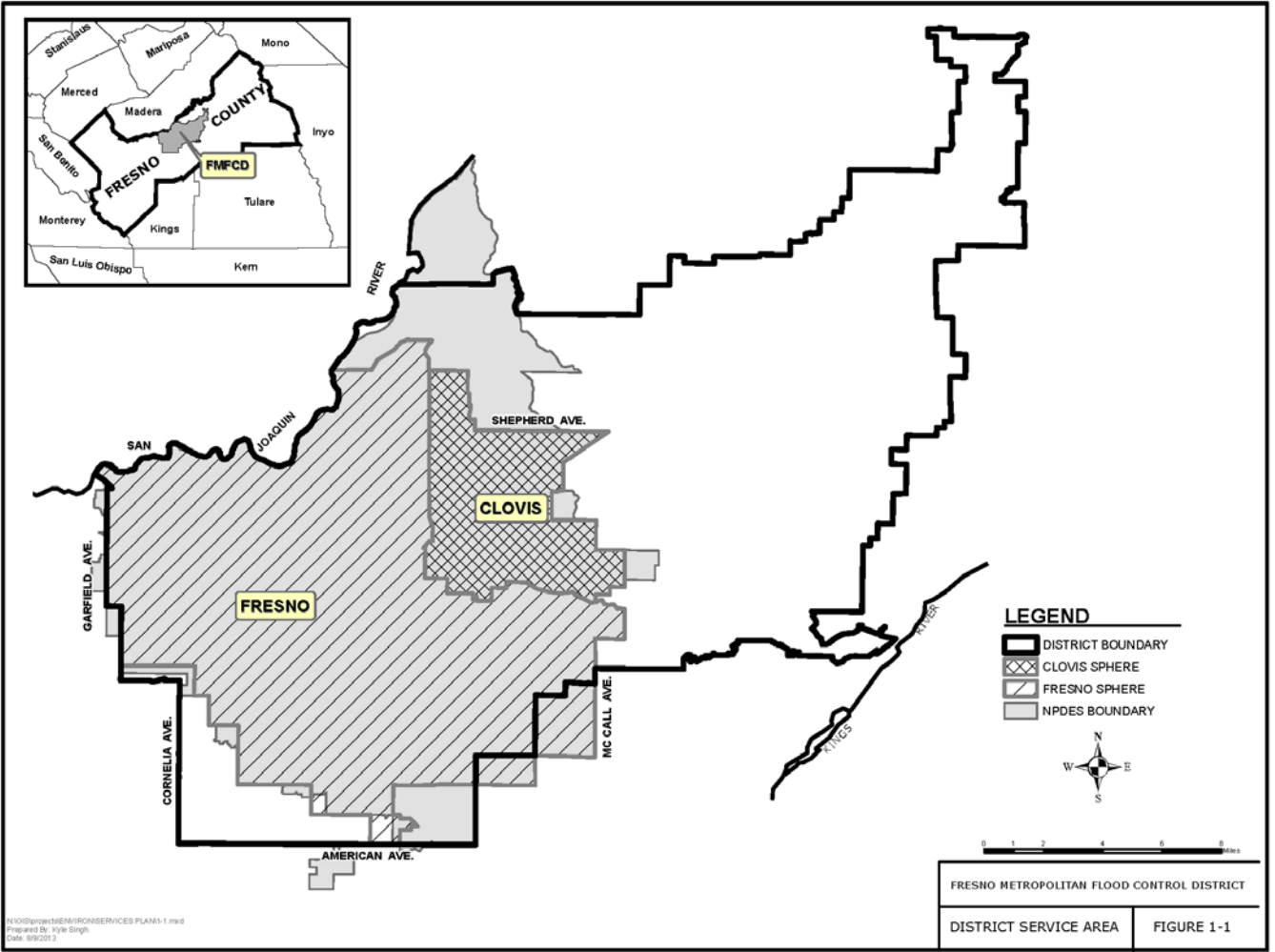


Figure 1. Vicinity Map of Permitted Area

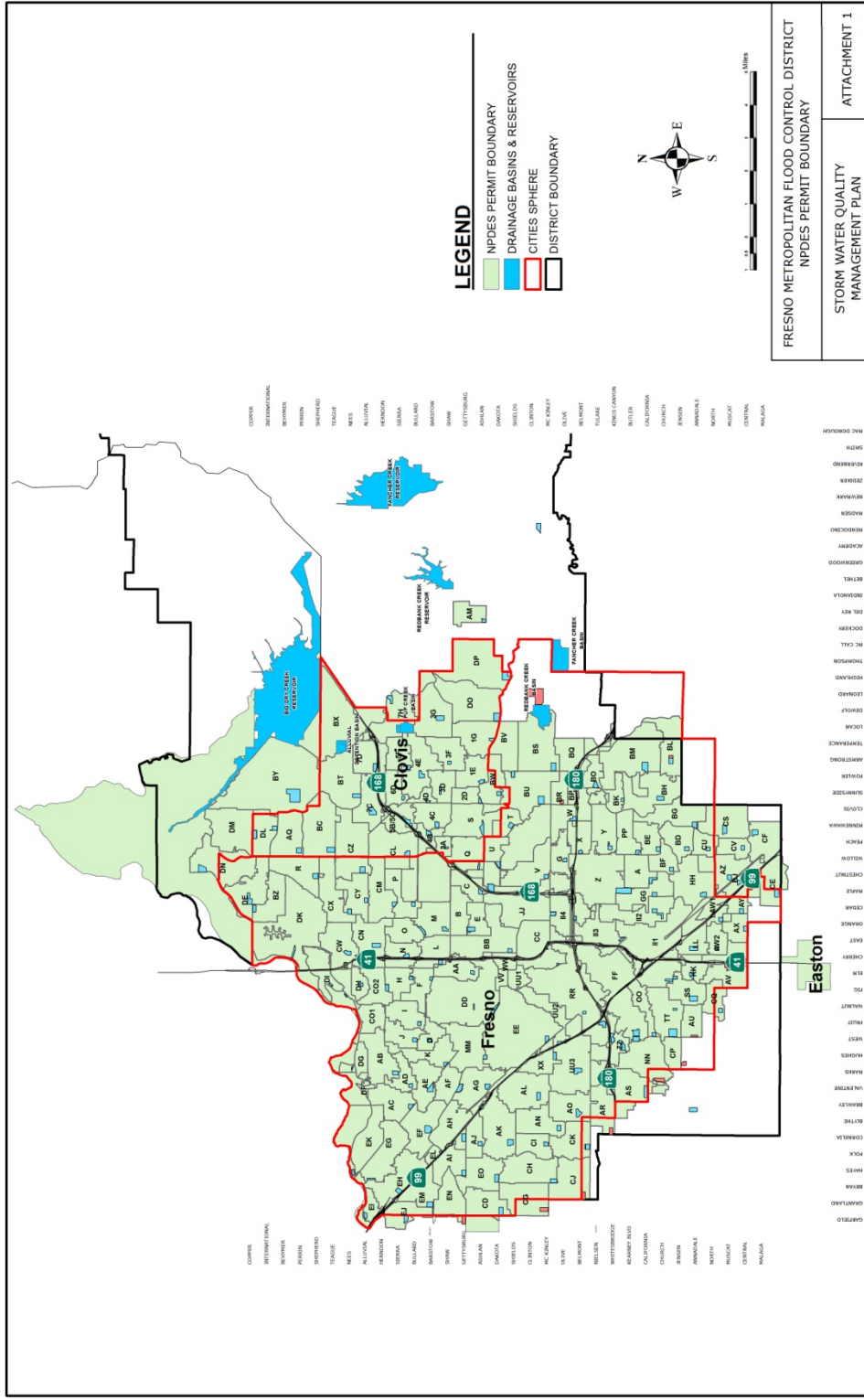


Figure 2. Fresno-Clovis Urbanized Area

Prepared by: Wyle  
 Date: 3/15/2013  
 File: N:\GIS\Projects\SWQMP\NPDESBOUNDARY.mxd

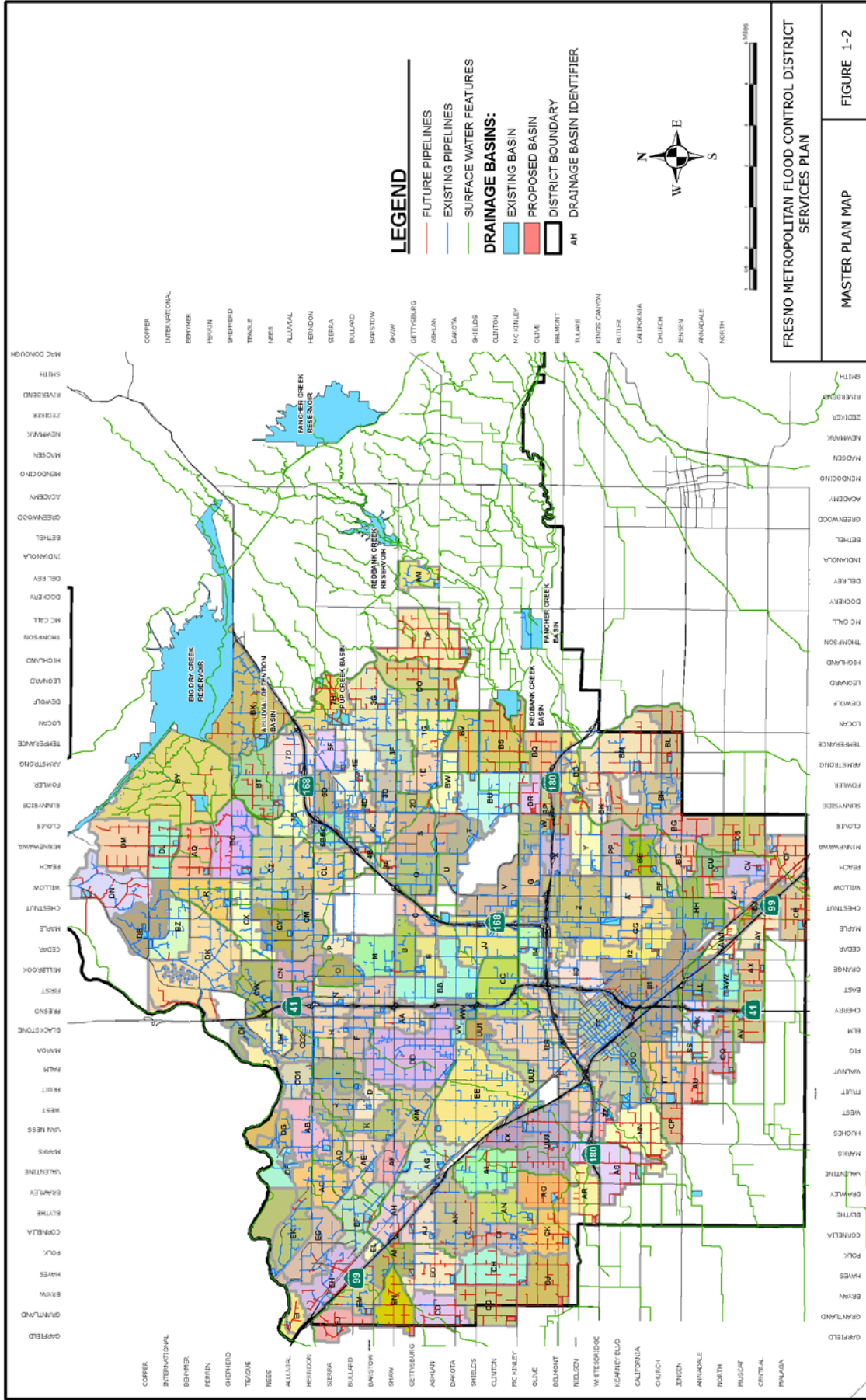


Figure 3. Fresno-Clovis Stormwater Drainage System

### 1.3 SWQMP APPROACH

Over the last two permit terms, the Permittees have, pursuant to their stormwater permits and SWQMPs, developed and implemented a comprehensive stormwater management program that includes similar control measures and performance standards as other municipalities throughout the state. The historical approach for stormwater programs has been to implement a comprehensive program, typically with increased prescriptive implementation measures, then conduct water quality monitoring for a suite of constituents to try to determine if the program is protecting receiving waters and beneficial uses.

The Permittees have developed the regional stormwater basin system that effectively protects receiving waters by minimizing surface water discharge and allowing pollutant removal through settling, infiltration, solids removal, and increased detention times. Surface water quality monitoring confirms the success of this planning and structural control approach.

This regional stormwater basin approach addresses the larger scale issues of reducing volumes of stormwater and removing a wide range of constituents rather than linking performance standards and selected BMPs with a list of program-generated pollutants of concern (POCs). The Permittees will continue this approach, though it remains important to assess receiving water quality for impacts from urban runoff POCs. Also, consideration will be given to typical urban runoff POCs when developing and implementing program elements. If a specific constituent in urban runoff is identified as causing or contributing to a water quality impairment, a more targeted POC strategy would be evaluated and then implemented. Moreover, the POCs are used to develop targeted public outreach programs and potentially track product replacement impacts.

#### 1.3.1 303(d) List

It is important for the stormwater agencies to assess the 303(d) list to understand what TMDLs may be developed in the near future so that they can plan for them as needed. The 303(d) listings for the Fresno-Clovis Region are limited and are identified in **Table 3**. There are no water quality-based impairments in receiving waters caused by urban runoff from the permitted area.

**Table 3. 303(d) Listings within the Fresno-Clovis Region<sup>7</sup>**

Waterbody	Pollutant	Estimated Size Affected	Estimated TMDL Completion	Potential Sources
San Joaquin River (Friant Dam to Mendota Pool)	Invasive Species	70 miles	2019	Unknown

#### 1.3.2 Discharge Characterization and Receiving Water Quality

The Permittees have evaluated previous studies, literature, and the water quality monitoring data to determine if their stormwater discharges were likely to cause or contribute to exceedances of applicable water quality objectives (WQOs). Historically, receiving water investigations were performed on the reach of the San Joaquin River that directly receives urban runoff discharges. These characterization studies support the finding that this reach is of high quality with infrequent exceedances of water quality objectives well below the threshold for finding impairments based on the 303(d) listing policy<sup>8</sup>.

<sup>7</sup> State Water Resources Control Board, Clean Water Act §303(d)/305(b) Integrated Report, 2010.

<sup>8</sup> State Water Resources Control Board, Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List. September 2004.

[http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/docs/ffed\\_303d\\_listingpolicy093004.pdf](http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/ffed_303d_listingpolicy093004.pdf).



During the first permit term, a study was conducted to identify and prioritize stormwater pollutant sources (Source Study). The study focused on commercial and industrial sources, and general categories of pollutants. Stormwater monitoring data and reports from a number of permitted municipalities in California (including Fresno-Clovis data) and around the nation were evaluated to establish a list of pollutants that are prevalent (pollutants that meet or exceed established factors) and common in urban stormwater runoff. This approach placed the focus on surface water. Using this approach, the following pollutants of concern were identified: heavy metals (chromium, copper, lead, zinc and nickel); organics (polycyclic aromatic hydrocarbons (PAHs), diazinon, and chlorinated pesticides); nitrates; total suspended solids; and pathogens. These results were used as factors in selecting and prioritizing tasks identified in the original program.

The issue of pollutants in municipal stormwater discharges and their sources was revisited as part of the most recent ROWD process. A literature search was conducted<sup>9</sup> to identify and quantify pollutants typically found in stormwater runoff. The review focused on other municipal stormwater monitoring programs to determine pollutants and sources commonly associated with stormwater runoff. The review helped to focus BMPs and tasks on addressing specific pollutants and sources prevalent in urban runoff. Additionally, the pollutants of concern listed in the previous program were reviewed with respect to water quality data collected by the District representing stormwater runoff (stormwater basin influent), stormwater basin effluent and San Joaquin River water quality data. The memorandum<sup>10</sup> provides a conservative approach in determining pollutants of concern considering that only 5-8% of the urban runoff from the Fresno-Clovis metropolitan area enters the San Joaquin River and the few exceedances of water quality objectives do not meet the minimum requirements to list water quality impairments. The study identified the following POCs based on their potential to contribute to future possible exceedances of water quality objectives in the San Joaquin River: heavy metals (copper, lead, aluminum); PAHs; diazinon; and pathogens. These common urban runoff constituents of concern are typical of statewide and general issues and are not specific or based on observed water quality impairments in the Fresno-Clovis area. During the review<sup>11</sup>, individual fact sheets were also developed for each pollutant of concern listing sources, environmental fate and transport, and estimated loads. There appear to be significant natural or uncontrollable sources of several of the POCs. The controllability of the sources was taken into account when determining the POCs for the SWQMP.

The District also analyzed its water quality data since 1996. The initial analysis included a comparison of upstream and downstream receiving water data, concluding that discharges from the Permitted area were not negatively affecting the quality of receiving waters in the San Joaquin River<sup>12</sup>. A second analysis examined the frequencies of exceedances in receiving waters for constituents in the monitoring program. It was demonstrated that organochlorine and organophosphate pesticides are rarely detected in the San Joaquin River.<sup>13</sup>

Based on the lack of 303(d) impairment listings caused by urban runoff and the water quality analyses performed to date, it appears that stormwater and urban runoff are not impairing beneficial uses in the Fresno-Clovis urban runoff receiving waters. This is likely due to infiltration of 70-80% of the average

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<sup>9</sup> D. Bodine, "Basin Stormwater Data Summary and Evaluation of Constituents of Concern (COCs)," Aquatus Environmental, Albany, CA, Technical Memorandum, April 8, 2004.

<sup>10</sup> Ibid.

<sup>11</sup> Ibid.

<sup>12</sup> A. Krich-Brinton, "Fresno-Clovis San Joaquin River Comparison of Water Quality Monitoring Results," Larry Walker Associates, Davis, CA, Technical Memorandum, August 12, 2005.

<sup>13</sup> A. Krich-Brinton, "Fresno-Clovis Storm Water Quality Monitoring Program Constituents," Larry Walker Associates, Davis, CA, Technical Memorandum, August 12, 2005.

annual stormwater runoff, the relatively low rainfall totals in the urban area, and the high quality of the San Joaquin River downstream of Millerton Lake and Friant Dam. Therefore, the Permittees intend to focus programs on the following urban runoff POCs for the third term permit, where feasible and practicable:

- Metals Cu, Pb, Zn
- Polycyclic aromatic hydrocarbons

While pesticides and pathogen indicators are also commonly included in other California MS4 POC programs, the regional basin system captures the sediment bound pollutants as well as eliminating dry weather flows such that no impairments of the receiving water have been observed. Future monitoring and evaluations may identify receiving water issues of concern or provide further justification to remove or add urban runoff POCs.

#### 1.4 SWQMP ORGANIZATION

The SWQMP provides a comprehensive approach for addressing pollutants in stormwater discharges and is organized into eight sections. Supporting guidance or implementation tools for each Program Element is provided in corresponding appendices. An overview of each section is provided in **Table 4**.

**Table 4. Overview of SWQMP Program Elements and Goals**

SWQMP Program Element	Description	Program Element Objective
Section 1 Program Management	This section addresses the program overview, regulatory background, management strategy, program coordination, training, legal authority, fiscal analysis, and reporting.	To provide a framework for effective focused management of the stormwater program.
Section 2 Construction Program	This section describes the approach to reduce pollutants from construction sites during all phases of construction.	To control stormwater pollution originating from land development during construction.
Section 3 Industrial and Commercial Program	This section describes the approach to inspect and provide outreach to industrial and commercial businesses.	To educate businesses and industries and monitor their efforts to reduce stormwater pollution in site runoff.
Section 4 Municipal Operations Program	This section describes the approach to address municipal operations so they are performed in a manner that is protective of water quality and minimizes the potential for pollutants to enter the storm drain system.	To evaluate and modify where necessary existing maintenance practices for the District's storm drain system to enhance pollutant removal; and to improve other public maintenance practices to minimize the potential for stormwater pollution.
Section 5 Illicit Connection and Discharge Program	This section describes the approach to detect, respond to, investigate and eliminate illicit discharges and connections.	To eliminate prohibited non-stormwater discharges, including those associated with illicit connections and illegal dumping, to the municipal storm drain system.

SWQMP Program Element	Description	Program Element Objective
Section 6 Public Involvement and Education Program	This section describes the approach for public education and outreach to increase the knowledge of target communities and promote changes in behavior to reduce pollutants affecting water quality.	To educate the public to understand and participate in the control of urban runoff pollution and to solicit support for the program.
Section 7 Planning and Land Development Program	This section describes the approach to address the reduction of pollutants in new development through site planning, design practices, and post-construction controls.	To control sources of stormwater pollution associated with land development (after construction). To ensure that the District's practice of building and utilizing stormwater basins for stormwater management protects receiving waters from impacts related to stormwater quality.
Section 8 Storm Water Quality Monitoring Program	This section describes the water quality monitoring approach to assess the health of the local water bodies, evaluate selected treatment control BMPs (e.g., detention ponds), and characterize stormwater discharges.	To implement effective monitoring strategies to enhance the understanding of MS4 water quality and to refine the SWQMP to reduce pollutant loadings and protect and enhance the beneficial uses of the receiving waters in the Fresno Urbanized Area.

To address the core program objectives and POCs and to ensure compliance with MS4 Permit requirements, the SWQMP incorporates a series of Control Measures, Performance Standards, Implementation Schedules, and Assessment Data<sup>14</sup> that provide for a long-term, comprehensive, and multidisciplinary effort by the Permittees to achieve water quality standards and protect beneficial uses. The SWQMP is structured to identify the specific activities that must be implemented, as well as the organization responsible for implementing the activities. Implementation schedules are provided to assist the Permittees in the implementation of the SWQMP. Some Control Measures and Performance Standards require a series of tasks to be undertaken in order to complete them; therefore, progressive implementation of the Performance Standards throughout the Permit term will be necessary in order to completely implement the Program Elements. The Permittees are actively and adaptively managing the SWQMP through the implementation, assessment, and reporting of the Program Elements and the related Control Measures and Performance Standards.

**Control Measures** – Control Measures are programmatic activities implemented to meet Permit requirements. These activities are intended to minimize, reduce, eliminate, or prohibit the discharge of pollutants with the goal of improving water quality. In developing Control Measures, several key factors were considered:

- Each Control Measure must address one or more of the program objectives.
- Each Control Measure must clearly identify the corresponding performance standards.

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<sup>14</sup> Details of the Assessment Data are included in the *LTEA Strategy*.

- The data and information from the previous permit term and/or reporting period must be analyzed to determine the effectiveness of each Control Measure, and the iterative process must be used to ensure that each Control Measure is effective and has a commensurate benefit for the resources expended.
- Each Control Measure must actively identify enhancements/modifications that would improve the program element and overall effectiveness of the stormwater program.

The Control Measures outlined within each Program Element were designed to adequately address all the applicable Permit provisions. For each Control Measure, there are accompanying Performance Standards which, once accomplished, constitute compliance with Permit requirements.

**Performance Standards** – The Performance Standards included in each Control Measure establish the level of effort required (i.e., the specific tasks or activities which must be completed) to comply with the Permit provision(s) related to the Control Measure.

**Implementation Schedules** – Implementation schedule tables are included with each Control Measure to clearly identify what the performance standards are, when they need to be completed during the five-year permit term, and who has primary and secondary responsibility for completion of these performance standards. In some cases, each jurisdiction has an individual responsibility to implement the control measure. The tables also help identify whether the performance standards constitute a new activity for the Permittees (N), are building upon or are an enhancement of current activities (E), or are an activity that the Permittees are already implementing and will continue (C). The implementation schedule table builds accountability into the program and may evolve as the program is developed, implemented, and assessed over the next five years.

**Assessment Data** - Assessment data have been identified for each Program Element. The assessment data will be collected to document the Permittees’ activities and to aid in assessing the effectiveness of the Control Measures. These data will be compiled and reviewed each year to assess trends, improvements, and/or data gaps. Further description of the assessment data is provided in the *LTEA Strategy*.

## **1.5 PROGRAM EFFECTIVENESS ASSESSMENT (PEA)**

The Permittees’ program effectiveness assessment (PEA) strategy addresses the stormwater program in terms of achieving both programmatic goals (e.g., raising awareness, changing behavior) and environmental goals (e.g., reducing pollutant discharges, improving environmental conditions).

In developing the PEA approach for the third term permit, the Permittees continued to refer to the approach promoted by the California Stormwater Quality Association™ (CASQA) to identify methods for assessing the effectiveness of the stormwater program. Outcome levels help to categorize and describe the desired results of the Program Elements and related Control Measures. Pursuant to the 2007 CASQA guidance, outcomes for stormwater programs have been generally categorized into six levels, including the following:

- Outcome Level 6 – Receiving Water Quality (L6)
- Outcome Level 5 – Runoff Quality (L5)
- Outcome Level 4 – Sources and Loads (L4)
- Outcome Level 3 – Behavior (L3)
- Outcome Level 2 – Awareness (L2)
- Outcome Level 1 – Implementation (L1)

The outcome levels represent ways in which the effectiveness of the program can be determined, even if it is intermediate.<sup>15</sup> Working highest to lowest from Outcome Level 6 to Outcome Level 1, the Permittees can identify key typical urban runoff Pollutants of Concern (POCs), address the contribution from the MS4 outfalls, identify the potential sources and loads of those POCs, outreach to the target audiences who are involved at those sources, and implement the program accordingly. Some important points to remember regarding these effectiveness assessments include the following:

- The ability of a stormwater program to assess an outcome level tends to become progressively more difficult as higher outcome levels (Outcome Levels 4-6) are assessed. This is because the higher outcome levels assess the impact that the SWQMP has on water quality, which requires a much more robust dataset over an extended period of time.
- Outcome Levels 1-3 (and sometimes 4) are typically assessed using program management data, whereas Outcome Levels 4-6 are assessed using physical and/or water quality monitoring data.
- The Permittees regularly evaluate Outcome Level 6 through a receiving water monitoring program that has demonstrated support of beneficial uses. There are currently no receiving waters with known impairments caused by urban runoff. If impairments or potential impairments are identified, Outcome Levels 5 and 4 would be further evaluated. The Permittees have previously evaluated discharge quality from the extensive regional basin system that treats the vast majority of urban runoff from the permitted area. The basins are known to remove significant fractions of constituent loading (Outcome Level 4) and improve urban runoff quality through sediment and pollutant removal (Outcome Level 5).<sup>16,17</sup>
- Each program element may be assessed at one or more outcome levels, depending on the data and information available.

Generally, program evaluations have been conducted by comparing how well the Permittees implemented Program Elements, the completion of which is likely to lead to stormwater quality improvement. The Permittees rely on the success of the regional system of stormwater basins, but continue to implement all other program elements as additional measures to protect water quality. If correlations can be established between the program efforts (e.g., regional stormwater basin performance, conducting a survey, assessing BMP implementation) and water quality, it may allow predictions of changes to water quality resulting from implementation of certain types of programs.

Over time, developing an understanding of how programmatic actions can improve water quality will allow prioritization of activities based on cost and benefit assessments to reduce pollutant loadings to the maximum extent practicable. As a part of the PEA, the Permittees will track the long-term progress of achieving improvements in receiving water quality.

The effectiveness assessment strategy for the 2013-2018 Permit term is discussed below and is described in detail in the Permittees' *LTEA Strategy*.

## **Program Management Questions and Goals**

A comprehensive PEA strategy will provide the Permittees with the ability to determine if the stormwater programs are appropriately targeted, determine whether intended results are being achieved efficiently and cost-effectively, and, ultimately, relate these results to conditions in urban runoff and receiving

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<sup>15</sup> CASQA, *Municipal Program Effectiveness Assessment Guidance*, May 2007.

<sup>16</sup> A. Krich-Brinton, "Evaluation of Basin EK Effectiveness," Larry Walker Associates, Davis, CA, October 5, 2006.

<sup>17</sup> A. Krich-Brinton, "In-System Monitoring Plan Report: Evaluation of Basin "V" Effectiveness," Larry Walker Associates, Davis, CA, August 28, 2001.

waters. The SWQMP and *LTEA Strategy* incorporate the use of management questions to help determine the purpose of the data collection as well as to guide the implementation of the program.

By utilizing an iterative process and conducting effectiveness assessments, the Permittees can use the information gained to modify their programs and ensure that the resources expended are providing a commensurate benefit and are protective of water quality. Based on the program evaluation and experience in the implementation of the various Control Measures, the SWQMP may need to be modified periodically in order to respond to changing conditions or to incorporate more effective approaches. Proposed revisions to the SWQMP will be provided to the Regional Water Board as a part of the Annual Report submittal.

### ***Preliminary Management Questions and Goals***

Preliminary management questions and associated goals have been identified to guide program implementation and assessment. As part of the Annual Report process, the Permittees will evaluate and revise the management questions and goals as needed. The goals are established by the Permittees as a way to gauge the success of their efforts. However, the goals may be increased or decreased as needed by the Permittees based on the implementation of the program. Preliminary program management questions are presented below; associated goals and details are included in the *LTEA Strategy*.

### ***Programmatic Assessment Questions***

*These questions provide valuable feedback for core components of the stormwater program. The Control Measure(s) and Outcome Level(s) associated with each are identified within the brackets.*

1. What are the annual expenditures for the stormwater program for each fiscal year? [PM3][L1]
2. Are the construction sites being managed so that they are in compliance with the local codes and ordinances and preventing sediment and other pollutants from leaving the site? [CON4, CON5][L1,L2,L3]
3. Are the industrial and commercial sites being managed so that they are in compliance with the local codes and ordinances and preventing pollutants from leaving the site? [IC4,IC5][L1, L2, L3]
4. How many stormwater basins are inspected and cleaned each year? How much total material is removed? [MUN2][L1,L4]
5. How many pump stations are inspected and cleaned each year?[MUN2][L1]
6. How much Household Hazardous Waste (HHW) is collected each fiscal year? [MUN4][L1,L4]
7. How many curb miles and parking lots are swept annually? [MUN5][L1]
8. Have the field crews been trained to accurately identify and report illicit discharges (IDs) while conducting routine maintenance activities in the field? [ICD1,ICD4,MUN8][L1,L2,L3]
9. Of the water pollution investigations that occur, what are the primary pollutants of concern that are the focus of the investigations? [ID2][L4]
10. For the public participation opportunities (e.g., storm drain stenciling, cleanup events), how many volunteers assist at how many sites? What are the results of the activities (e.g., how many storm drain inlets are stenciled, how much trash is collected)? [PIE3][L1,L2,L4]
11. Is the general public aware that stormwater runoff drains to stormwater basins untreated and the majority of the runoff infiltrates into the ground water aquifer? [PIE4][L1,L2,L3]
12. Is the general public aware of the water pollution hotlines that have been established by the Permittees? [PIE6][L1,L2]

13. What is the total land area for each Permittee that has undergone new or redevelopment and how many/what types of BMPs have been implemented? What percentage of the new or redevelopment is served by regional stormwater basins? [PLD2][L1,L2,L3]

**Monitoring Supported Assessment Questions**

*These questions provide valuable feedback related to receiving water assessments and follow-up actions. The CASQA Outcome Level is identified within the brackets. Questions No. 2 and 3 are only necessary if receiving water quality impairments are identified.*

1. Are receiving waters (e.g., the San Joaquin River) meeting water quality objectives and supporting beneficial uses? [L6]
2. Do the regional stormwater basins effectively remove the constituent(s) causing or contributing to the impairment? [L5]
3. Are urban stormwater discharges a significant source of constituent loads causing impairments to the San Joaquin River and other direct receiving waters? Are there other sources that are major contributors to the receiving water load? [L4]

**Assessment of Program Elements**

The outcome levels anticipated to be evaluated by each program element are summarized in **Table 5**.

**Table 5. Program Effectiveness Assessment Summary for the Overall Stormwater Program**

Program Element	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Implement Program	Increase Awareness	Behavior Change	Pollutant Loads	Runoff Quality	Receiving Water Quality
<b>Overall Stormwater Program (Monitoring Program)*</b>	N/A	N/A	N/A	N**	N**	A
<b>Program Management</b>	A	N/A	N/A	N/A	N/A	N/A
<b>Construction</b>	A	A	A	N	N/A	N/A
<b>Industrial and Commercial</b>	A	A	A	N	N/A	N/A
<b>Municipal Operations</b>	A	A	N	A	N/A	N/A
<b>Illicit Connection and Discharge</b>	A	A	A	N	N/A	N/A
<b>Public Involvement and Education</b>	A	A	A	A	N/A	N/A
<b>Planning and Land Development</b>	A	A	A	N	N/A	N/A

\* Assessment of the program as a whole is performed using monitoring data to answer the Monitoring Supported Assessment Questions, beginning with Question 1 and progressing to Questions 2 and 3 only where impairments are identified in the receiving waters.

\*\* Further evaluation of receiving water quality may indicate need for follow-up and assessment at Levels 4 and 5.

A – It is anticipated that an effectiveness assessment may be conducted during the 2013-2018 Permit term

N – An effectiveness assessment is not currently anticipated

N/A – This outcome level is not applicable

## 1.6 PROGRAM IMPLEMENTATION

### Objectives

The objectives address the key components of the Program Management Program Element and identify that, in order to be effective, the program must:

- Ensure that all elements of the SWQMP are implemented on schedule and all requirements of the Permit are complied with;
- Ensure that there is effective program coordination to address common issues, promote consistency between the SWQMP and Monitoring Programs, and to plan and coordinate activities required under the Order;
- Ensure Permittees have the legal authority to control pollutant discharges into and from the MS4; and
- Ensure that the resources necessary to meet the requirements of the Order are secured and prepare an annual fiscal analysis.

These objectives will be met through implementation of specific performance standards, as detailed below. Implementation schedules for the performance standards are included at the end of this section in **Table 7**.

Successful implementation of the SWQMP also requires internal training by the Permittees to ensure that their employees understand the Stormwater Program and conduct their activities in a manner to minimize pollutants from stormwater discharges. For this Permit term, internal training will focus on, but not be limited to, municipal areas and activities as well as on new land development requirements. To ensure that the training requirements of the new Permit will be fulfilled, the training requirements pertaining to each of the program elements have been evaluated and modified as necessary. The Permittees proposed training efforts are described within each of the SWQMP Program Elements.

### Control Measures

The Control Measures outlined in **Table 6** and discussed in more depth within this section form the basis of the Program Management Element.

**Table 6. Control Measures for the Program Management Element**

Control Measure	
PM1	Program Coordination
PM2	Legal Authority
PM3	Reporting and Fiscal Analysis

#### ***PM1 – Program Coordination***

This Program was developed and will be implemented by the same five agencies named as Permittees under the last stormwater permit. Each Permittee is responsible for implementing the SWQMP within its geographic jurisdiction. The District and agency responsibilities were determined through a cooperative effort between the District and the agencies during the development of the Program. The responsibilities were incorporated as a part of the performance standards in the SWQMP. To ensure that the various Permittees understand their roles and responsibilities and to facilitate the communication and coordination that is necessary to implement the SWQMP, internal meetings and training sessions are held regularly.



This coordination facilitates the implementation of the requirements in an efficient and cost-effective manner. The participation of each of these agencies in the Program is as follows:

- The District is the primary owner/operator of the MS4 regional stormwater basin system that serves the urbanized portion of the permit area;
- The cities of Fresno and Clovis, and the County of Fresno control land use and development in the metropolitan area that drains to the District's system. Federal stormwater regulations intended for agencies with land use authorities to be named as Permittees to stormwater permits to ensure adequate controls over stormwater runoff can be effectively implemented; and
- CSUF owns and operates storm drainage conveyance systems located within the permit area.

### *Memorandum of Understanding*

A model MOU was developed to identify each agency's responsibilities to carry out the Ordinance and to avoid unnecessary and inefficient duplication of effort among the agencies. During the first permit term, the City of Clovis and the County each independently entered into an MOU with the District. The City of Fresno entered into an MOU with the District during the second permit term.

In accordance with the executed MOUs, the District will have the primary responsibility for enforcing the Ordinance within the District's service area. The County will have sole responsibility for the Copper-Friant Study Area because it is located outside the District's boundary. The participating agencies will be responsible for: 1) identifying problems associated with stormwater during their daily, routine field activities; 2) notifying the parties causing the problem, and noting the problem in an inspection form or report; and 3) referring the case to the District. Upon referral, the District will proceed with the appropriate enforcement action as specified in the Ordinance.

### *Performance Standards*

The Performance Standards listed below establish the level of effort required for PM1, the Program Coordination Control Measure.

1. Permittee Meetings - The Permittees will continue to meet periodically (quarterly) to facilitate ongoing communication and coordination between the agencies.
2. Participate in Internal Stormwater Program Meetings - These periodic meetings will allow for coordination among the internal departments and agencies to facilitate the implementation of the SWQMP in an efficient and cost effective manner.
3. Participate in Statewide Stormwater Activities - The Permittees will continue to participate in statewide stormwater-related meetings, conferences, and stakeholder groups, as needed.
4. Review and Revise MOUs - The Permittees will continue to establish, review, and revise MOUs, as necessary. The MOUs will be reviewed and revised if necessary by May 31, 2014.
5. Departmental Designation - Permittees shall identify with an organization flow chart all departments within their jurisdiction that conduct stormwater pollution control activities listed in this SWQMP and their roles and responsibilities under the Order.
6. Training Evaluation - Permittees shall evaluate existing training for each program element and revise as necessary.

### ***PM2 – Legal Authority***

Legal authority to implement a municipal stormwater management program is provided in the Federal CWA, California Water Code (CWC) 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 Permittees ordinances, provides sufficient legal authority to implement the SWQMP.

To comply with these requirements, a master Storm Water Quality and Discharge Control Ordinance (Ordinance) was developed and adopted with only minor variations by the District, cities of Fresno and Clovis and the County of Fresno. To facilitate implementation of the Ordinance, a model Memorandum of Understanding (MOU) was developed that identified the responsibilities of each participating agency in carrying out the requirements of the Ordinance (see above).

The Ordinance is enforced through the enforcement provisions of the Ordinance and each agency's codes. Each participating agency modified the Ordinance to refer to their specific: 1) enforcement officer, 2) administrative hearing and appeal process, 3) cost-recovery mechanism, and 4) penalties.

In March of 2009, the District completed a Progressive Enforcement Response Plan that summarizes the enforcement procedures included in the District's Urban Storm Water Quality Management and Discharge Control Ordinance. The plan will be used by District staff to resolve illicit discharges and will be distributed to commercial, industrial and construction businesses during regular District trainings, site visits and other community outreach.

### *Performance Standards*

The Performance Standards listed below establish the level of effort required for PM2, the Legal Authority Control Measure.

1. Review Legal Authority – The Permittees will review the legal authority as needed to ensure that Permittees have the authority to implement all Permit requirements.
2. Review and Update Ordinances – The Permittees will review and update the pertinent Ordinances as necessary to ensure they have the legal authority to enforce all Permit requirements.
3. Statement of Legal Authority – The Permittees will provide a Statement of Legal Authority to Regional Board by December 1, 2014

### ***PM3 – Reporting and Fiscal Analysis***

The Permittees will coordinate their efforts in developing standardized formats for all reports that are required pursuant to the Permit. This will include annual reports and fiscal analyses. Pursuant to the federal regulations, all work plans and reports will be signed and certified.

### *Annual Work Plan*

An Annual Work Plan will be submitted to the Regional Board concurrent with the Annual Report. The Annual Work Plan will summarize the proposed activities that the Permittees will undertake during the next fiscal year (July 1 – June 30). While the Annual Work Plan will generally follow the Control Measures and Performance Standards outlined within the SWQMP, it may also include additional activities that the Permittees have identified as being necessary during the previous reporting period.

### *Annual Report*

An annual report will be submitted in both electronic and hard copy to the Regional Board by **September 1** of every year. The purpose of the Annual Report is to document the status of the SWQMP implementation, present results from activities implemented, provide a compilation of deliverables and milestones reached during the previous fiscal year (July 1 – June 30), and report on the overall status and effectiveness of the SWQMP. Updates, improvements, or revisions to the SWQMP may also be proposed in the Annual Report.

### *Report of Waste Discharge*

The municipal stormwater Permit expires on May 31, 2018. As a result, the Permittees are required to submit a Report of Waste Discharge (ROWD) to the Board 180 days prior to its expiration (Nov 30, 2017). The ROWD serves as the application for the re-issuance of the Permit.

### *Fiscal Summary*

The Permittees annually secure the funding necessary to implement the SWQMP. As a part of the Annual Report, the Permittees will assess the current NPDES expenditures as well as the projected expenditures for the next fiscal year and prepare an annual fiscal analysis. The analysis will include the expenditures incurred to implement the SWQMP and written explanations where necessary. The summary will also include a description of the source(s) of the funds including any legal restrictions on the use of the funds.

### *Performance Standards*

The Performance Standards listed below establish the level of effort required for the PM3, the Reporting and Fiscal Analysis Control Measure.

1. Standardized Reporting – The Permittees will jointly develop and/or update the standardized format(s) for all reports required under this Order (e.g., annual reports, monitoring reports, fiscal analysis reports, program effectiveness reports). The standardized reporting format(s) shall be used by all Permittees and include protocols for electronic reporting, specifically data reporting.
2. Annual Work Plan – The Permittees will prepare and submit an annual work plan in conjunction with the Annual Report.
3. Annual Report – The Permittees will prepare and submit an annual report by September 1 each year.
4. Report of Waste Discharge – The Permittees will prepare and submit a Report of Waste Discharge as an application for re-issuance of waste discharge requirements no later than 180 days prior to the expiration of the permit.
5. Fiscal Analysis Reporting – The Permittees will report the fiscal analysis in the Annual Report identifying the expenditures made during the reporting period and planned expenditures for the upcoming FY.

**Table 7. Program Management Implementation Schedule**

Control Measure and Performance Standards	Type of Standard <sup>1</sup>	Implementation Schedule <sup>2</sup>					Responsibilities <sup>3</sup>				
		2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	FMFCD	City of Fresno	City of Clovis	County of Fresno	Cal State University - Fresno
<b>PM1 – Program Coordination</b>											
Co-Permittees meet periodically	C						P	I P	P	P	P
Participate in periodic internal Stormwater Program meetings to provide staff training and to facilitate coordination between departments	C						P	S	S	S I	S
Participate in statewide stormwater related meetings, conferences, and stakeholder groups as needed	C						P	I	I	I	I
Review and revise MOUs as necessary	E	X					P	P	P	P	P
Permittees shall identify all departments within their jurisdiction that conduct stormwater pollution control activities and their roles and responsibilities under the Order	C	X					I	I	I	I	I
Permittees shall evaluate existing training for each program element and revise as necessary	C						P	S I	S	S	S I
<b>PM2 – Legal Authority</b>											
Review legal authority as needed to ensure that Permittees have the authority to implement the Permit	C	X					P	I	I	I	I
Review and update ordinances as necessary	C	X					P	I	I	I	I
Provide statement of legal authority to Regional Board	E		X				I	I	I	I	I
<b>PM3 – Reporting and Fiscal Analysis</b>											
Permittees jointly develop and/or update the standardized format(s) for all reports required under this Order (e.g., annual reports, monitoring reports, fiscal analysis reports, program effectiveness reports)	E						P	S	S	S	S
Prepare and submit annual work plan in conjunction with the Annual Report	E	X	X	X	X	X	P	S	S	S	S
Prepare and submit annual report by September 1 each year	C	X	X	X	X	X	P	S	S	S	S
Prepare and submit a Report of Waste Discharge 180 days prior to the expiration of the Order	C					X	P	S	S	S	S
Report the fiscal analysis in the Annual Report	N	X	X	X	X	X	I	I	I	I	I

1. C = Continue; E = Enhance; N = New

2. X = Performance Standard will be completed during this fiscal year. Gray shaded cells indicate ongoing implementation.

3. P = Primary role and responsibility. S = Secondary role and responsibility. I = Individual role and responsibility

## Section 2

# Construction Program

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### 2.1 OVERVIEW

Active construction and land development activities have the potential to contribute pollutants to stormwater runoff during the construction phase, when sites are being disturbed. Construction phase stormwater pollutants include sediment from grading activities and erosion and a variety of other pollutants associated with vehicles, construction materials, and construction waste including concrete truck washout, masonry products, paints, solvents, litter and trash, and petroleum hydrocarbons associated with leaking construction equipment and vehicles.

Municipalities are required to oversee construction sites that result in a land disturbance of one acre or more. In addition, owners of sites that disturb more than one acre are required to obtain coverage under the State's General Construction Permit<sup>18</sup> adopted by the State Water Resources Control Board. To comply with the General Construction Permit an owner or operator must file a Notice of Intent with the State Board, prepare and implement a detailed Stormwater Pollution Prevention Plan, including conducting visual inspections of the site before and after rain events.

The Construction Program compliments the State construction program by:

- Providing a review of development plans to insure the District's Drainage Master Plan criteria and Permittee ordinances are met;
- Conducting stormwater pollution prevention training for Co-Permittee construction related employees and outreach to the construction community; and
- Providing compliance oversight through construction site inspections, assessments, and compliance tracking.

The District and Co-Permittees coordinate an interagency Construction Program that reduces sediment and other pollutants from construction sites. The Program includes interagency coordination meetings, meetings with trade organizations, coordinating inspection programs, distributing outreach materials, conducting training and reviewing existing legal authority. The Construction Program in this SWQMP was developed to ensure that the discharge standard of reducing pollutants in urban runoff to the Maximum Extent Practicable (MEP) was met through implementing the tasks specified in the control measures included in **Table 8**. The District and its Co-Permittees continue to reduce pollutants in stormwater discharges from construction sites by implementing the Construction Program BMPs, measurable goals, and tasks.

### 2.2 OBJECTIVES

The purpose of the Construction Program is to control stormwater pollution originating from land development activities during construction. This will be accomplished by meeting the following objectives throughout the Permit term.

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<sup>18</sup> California State Water Resources Control Board, National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order 2009-0009-DWQ NPDES No. CAS000002, as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ.

1. The District and Co-Permittees will maintain adequate legal authority at all times to control pollutants to the MS4 from construction sites with land disturbance greater than or equal to one acre in size. **(CON5)**
2. The District and Co-Permittees will perform a review of construction plans for projects within their jurisdictions and issue grading permits to project applicants only where the submittals indicate that the project will be in compliance with all Permittee requirements. **(CON3)**
3. The District and Co-Permittees will establish a set of required minimum BMPs that must be implemented to prevent discharges of sediment and other relevant pollutants from construction sites to the MS4. **(CON3)**
4. The District and Co-Permittees will maintain inventories of construction sites within their jurisdictions. **(CON1)**
5. The District and Co-Permittees will perform inspections of construction sites to ensure proper BMP implementation and compliance with local requirements. Follow-up inspections will be performed where necessary to bring sites into compliance. **(CON4)**
6. Using their legal authority, the District and Co-Permittees will utilize progressive enforcement procedures for sites in violation of local requirements and will advise the Regional Board of potential violations of Construction General Permit requirements, where applicable. **(CON5)**
7. The District and Co-Permittees will provide regular internal and external training on the construction requirements in the SWQMP and related Permits. **(CON6)**
8. The District and Co-Permittees will conduct an assessment as a part of each annual reporting process to determine the effectiveness of the Construction Program element and identify any necessary modifications. **(PEA)**

### 2.3 CONTROL MEASURES

The Control Measures outlined in **Table 8** and discussed in more depth within this section form the basis of the Construction Program Element. The agencies responsible for implementing each control measure are listed in **Table 10** which contains a summary of all control measures and anticipated implementation schedules.

**Table 8. Control Measures for the Construction Program Element**

Control Measure	
CON1	Construction Site Inventory
CON2	Threat to Water Quality Prioritization
CON3	Plan Review
CON4	Inspections and Follow-up
CON5	Enforcement
CON6	Training

### 2.4 EFFECTIVENESS ASSESSMENT

A comprehensive PEA strategy will provide the Permittees with the ability to determine if the stormwater programs are appropriately targeted and to determine whether intended results are being achieved efficiently and cost-effectively and ultimately to relate these results to conditions in urban runoff and receiving waters. The SWQMP incorporates the use of management questions and goals to help

determine the purpose of the data collection as well as to guide the implementation of the program. The management question identified to guide the effectiveness assessment of the Construction Program is:

Are the construction sites being managed so that they are in compliance with the local codes and ordinances and preventing sediment and other pollutants from leaving the site? [**CON4, CON5**]

The management question was developed to address specific control measures implemented as part of the program: CON4, related to inspections and follow-up, and CON5, related to enforcement. For this control measure, several performance standards were identified to allow the Permittees to track their progress in implementation of the control measure and gauge the effectiveness of their program. The performance standards will be used to evaluate Level 1 (implementation), Level 2 (awareness), and Level 3 (behavior) in terms of the Construction Program and provide the foundation for the program effectiveness assessment for the Construction Program. The performance standards, assessment levels, and assessment data are discussed further in the *LTEA Strategy*.

# **CON1 – Construction Site Inventory**

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## **DESCRIPTION**

The MS4 Permit requires the District and Co-Permittees to maintain and update a tracking system of active construction sites within their jurisdictions. The inventories contain pertinent information to serve as the basis for source identification, prioritization, site inspections, outreach, and enforcement.

## **EXISTING BMPS AND RELATED ACTIVITIES**

Drawing from the data provided in the State Water Resources Control Board Storm Water Multiple Application and Report Tracking System (SMARTS) system, the Permittees will develop and update an inventory of Construction General Permitted sites within the MS4 Permit boundary prior to the rainy season. This will provide the basis for controlling pollutants from active construction sites disturbing more than one acre of land. The inventory will contain pertinent information to serve as the basis for source identification, prioritization, site inspections, outreach, and enforcement.

Each jurisdiction will track active construction sites through their land development permitting process, enabling agencies to track, inspect, and provide outreach to construction sites within their jurisdiction from initial ground breaking activities to final occupancy.

## **PERFORMANCE STANDARDS**

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Construction Site Inventory - The District will maintain an inventory of Active NPDES Construction-Permitted sites within the Permitted area via information acquired from the State's SMARTS system.
2. Inventory Updates - The inventories will be updated throughout the wet weather season by the Cities of Clovis and Fresno, the County of Fresno, and by Cal State University at Fresno to confirm the completeness of the inventory and the status of the sites on the inventory (idle, ongoing construction, already completed).



# CON2 – Threat to Water Quality Prioritization

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## DESCRIPTION

The MS4 Permit requires Permittees to prioritize construction sites in the inventory based on threat to water quality. The prioritization will serve as the basis for the minimum BMPs required on the site and for the frequencies of inspection at the site.

## EXISTING BMPs AND RELATED ACTIVITIES

Projects within the MS4 Permit boundary filing for Construction General Permit coverage will be prioritized based on their potential threat to water quality. A construction site's threat to water quality is in large part a function of the drainage area in which the site is located. The location of the site within the District's system determines whether the site has greater, lesser, or no connectivity to receiving waters.

Criteria for a site's potential threat will be based on several factors: the geographic location of each site within the District's stormwater drainage system, the associated degree of hydrologic interconnectedness between the site and receiving waters, whether a site is covered by an Erosivity Waiver under the SWRCB Construction General Permit, and the level of activity on the site (e.g., idle sites that are fully stabilized will be lower priority). The frequency of site inspection will be a function of the site's prioritization.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Site Prioritization Criteria - The District and Co-Permittees have defined threat to water quality criteria to prioritize construction sites based on several factors, the most central of which is the site's proximity and connectivity to receiving waters. Each drainage basin within the MS4 Permit area will be categorized based on the potential for stormwater discharges to reach receiving waters. The site prioritization criteria are described in **Table 9**.
2. Site Mapping - Each year, inventoried sites will be mapped to ascertain their respective drainage areas.
3. Site Prioritization - Construction General Permit sites will then be assigned an inspection priority reflective of their potential to contribute stormwater runoff to receiving waters. Inspection frequencies will be reflective of the site priority, with higher priority sites being inspected more often than low priority sites.

**Table 9. Construction Site Prioritization**

Priority	Description
High	Drainage Area has no stormwater basin and discharges directly to San Joaquin River or to a Canal or has a stormwater basin that discharges directly to San Joaquin River.
Medium	Drainage Area has its own stormwater basin, which discharges to a Canal.
Low	Drainage Area has its own stormwater basin, which discharges to another FMFCD stormwater basin or the Drainage Area's own stormwater basin is, or discharges to, a terminal stormwater basin, or the site is completely idle and stabilized, or the site has been granted an Erosivity Waiver under the SWRCB Construction General Permit.

## **CON3 – Plan Review**

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### **DESCRIPTION**

The plan review process is a critical juncture in the land development process that allows jurisdictions to ensure that all stormwater related requirements are communicated effectively to the applicant, that the applicant is responsive to these requirements, and that all requirements are reflected in the approved plans for the projects. The District continues coordination with the other permitted agencies in the area to ensure that they understand the minimum construction related stormwater requirements and have internal processes in place to require BMPs are implemented on all applicable projects. Each Permittee is responsible for reviewing those construction plans and grading permits under their authority to ensure consistency with their requirements.

### **EXISTING BMPs AND RELATED ACTIVITIES**

The District has developed and distributed tiered requirements for construction site management and erosion and sedimentation control (including dust control). These BMPs include baseline control requirements for typical site conditions (e.g., low relief areas that do not drain to the San Joaquin River) and more stringent controls for sensitive areas (e.g., greater topographic relief or tributary to the San Joaquin River).

For all projects that disturb greater than one acre, the jurisdictions within the MS4 Permit area require submittal of an approved erosion and sediment control plan or SWPPP (which includes erosion/sediment controls plan) prior to issuance of a grading permit. The erosion and sediment control plan or SWPPP is required to contain the following at a minimum:

1. If applicable to the site, a certification that a Notice of Intent to obtain coverage under the Construction General Permit has been submitted to the State Water Board, approved, and a Waste Discharge Identification Number (WDID) has been issued to the project.
2. A vicinity map showing nearby roadways, the construction site perimeter, and the geographic features and general topography surrounding the site;
3. A site map showing the construction project in detail, including the existing and planned paved areas and buildings; general topography both before and after construction; drainage patterns across the project area; and anticipated stormwater discharge locations (e.g., the receiving water, a conduit to receiving water, and/or drain inlets);
4. A description of BMPs to address contractor activities that generate pollutants including, at a minimum, vehicle washing, equipment maintenance, and waste handling. Non-stormwater runoff and construction-related materials shall be retained on the project site and avoid discharge to streets, drainage facilities, receiving waters, or adjacent properties by wind or runoff.
5. A description of the type and location of erosion and sediment control BMPs to be employed at the site. The sediment control BMPs must be adequate to retain all sediments generated on-site. The erosion control BMPs must be designed to control erosion from slopes and channels by implementing an effective combination of BMPs such as limiting grading during the wet season, inspecting graded areas during rain events, planting and maintenance of vegetation on slopes, and covering erosion susceptible slopes.
6. The name and telephone number of the qualified person responsible for implementing the Storm Water Pollution Prevention Plan (SWPPP).

Where applicable, all environmental permits must be obtained from agencies such as Department of Fish and Game, U.S. Army Corp of Engineers, and the Regional Board's 401 Water Quality Certification. Proof of necessary Permits may be required by the reviewing jurisdiction.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Revisions to Checklists - The Construction and Development Stormwater NPDES Assessment Checklist will be updated to reflect the BMPs described above.
2. Committee Meetings - The District will conduct internal training for the Co-Permittees. Initial meetings will be to orient the Committee to the requirements of the new Permit. Subsequent meetings will be held on an as-needed basis.
3. Erosion and Sediment Control Plans - The Permittees will review and update the Erosion Control/Sediment Control plan requirements to ensure the requirements match the Permit and that all Permittees require the same plan elements from their respective development communities. The submittal of a SWPPP for the project may meet the requirements for the erosion and sediment control plan if the SWPPP contains the erosion and control criteria listed in the permit.
4. Plan Check Guidance - The District will provide guidance for Co-Permittees plan check and grading permit processes to ensure that agency review of construction plans and issuance of grading permits is consistent with Permit requirements.
5. Plan Review - All Permittees within the MS4 Permit area will review construction plans and issue grading permits in conformance with BMP requirements of the jurisdiction.

# CON4 – Inspection and Follow-up

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## DESCRIPTION

The MS4 Permit requires the Permittees to perform inspections of construction sites to ensure proper BMP implementation and compliance with local requirements and applicable Provisions of the MS4 Permit. During the inspection, District and Co-Permittee staff will inspect BMPs and identify areas of the construction site that are not adequately addressed. Where sites are found to be in violation of the Permittee requirements, follow-up inspections must be performed as necessary to bring deficient sites into compliance. The Permittees will implement and coordinate an integrated inspection and enforcement program that is consistent with the Permittees stormwater ordinance that builds on existing District and Co-Permittee inspections and enforcement programs.

## EXISTING BMPS AND RELATED ACTIVITIES

The frequency of inspections performed on construction sites is based on their threat to water quality priority. Responsibility for inspection of the sites is divided among the Permittees based on their jurisdiction and the site's specific inspection frequency.

The City of Clovis inspects all construction sites that have coverage under the State's Construction General Permit during the wet weather season. Stormwater runoff problems that are not corrected are referred to the District for follow up inspections and enforcement.

The City of Fresno has integrated stormwater pollution prevention requirements into existing construction inspections. Stormwater runoff problems that are not corrected are referred to the District for follow up inspections and enforcement.

Once per month during the wet weather season the District inspects all construction sites that have coverage under the State's General Construction Permit and are located in drainage basins that flow into the San Joaquin River. The District also responds to complaints and referrals from Co-Permittees and the general public for all construction sites.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Construction Site Guidelines - The Fresno-Clovis Storm Water Quality Management Program Construction Site Storm Water Quality Management Guidelines will be updated to reflect the requirements of the new MS4 Municipal Permit and District Ordinance 96-1.
2. Revisions to Checklists - Permittee checklists for Construction Inspections will be updated to reflect the requirements of the Permit.
3. Site Inspections - Sites covered under the Construction General Permit will be inspected consistent with the prioritization scheme developed per CON 2 – Threat to Water Quality Prioritization, described in **Table 9**.
4. Rainy Season Preparation - Permittees will meet at the beginning of the rainy season to review the inventory, inspection procedures, forms and reporting schedule in preparation for inspections.
5. Inspection Tracking - The District will track inspection activity, compile inspection results and work with the other Permittees to resolve any complications with inspections and site compliance per the Progressive Enforcement Response Plan. Inspection activities will be reported in the Annual Report.

# CON5 – Enforcement

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## DESCRIPTION

The MS4 Permit requires jurisdictions to inspect construction sites to ensure that the required BMPs are implemented. In instances where non-compliance is observed during the initial inspection, the Permittees are required to perform follow-up inspections and implement progressive enforcement measures to ensure that sites come into compliance.

## EXISTING BMPS AND RELATED ACTIVITIES

Where jurisdictions are unable to resolve compliance issues on construction sites, Permittees refer the non-compliant site to the District for follow-up and enforcement. The follow-up and enforcement is performed by the District in accordance with their Progressive Enforcement Response Plan (PERP) for Ordinance 96-1, Chapter 6, Urban Storm Water Quality Management and Control. The PERP summarizes the District's Urban Storm Water Quality Management and Discharge Control ordinance's progressive enforcement response procedures. These procedures outline a series of steps to bring a discharger in continuous non-compliance back into compliance through the implementation of pollution prevention practices by the discharger and timely follow-up inspections by the District.

The PERP provides a stepwise approach to resolving problems with the offsite discharge of sediment or other pollutants from residences, construction projects and industrial facilities. The PERP is employed when District staff discovers sediment/pollutant discharge from a property and the responsible party is unable or unwilling to immediately cease the discharge. The PERP incorporates an escalating series of enforcement steps that lead, in turn, to a Notice of Violation. If the discharger fails to comply with the direction contained in the Notice of Violation and has not requested an administrative hearing with the District General Manager, the incident is referred to RWQCB for State enforcement. Where a significant discharge requires full and immediate clean up and receiving waters are involved, the PERP provides that the incident be referred to the RWQCB and coordinated with the affected municipality (NPDES Co-Permittees).

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Legal Authority - Each Permittee's legal authority to enforce Permit requirements will be reviewed and updated as necessary.
2. Progressive Enforcement - The District will continue implementation of its Progressive Enforcement Response Plan, a stepwise process to bring noncompliant construction sites into accord with the requirements of the Municipal Permit and District Ordinance 96-1.
3. RWQCB Referrals - In cases where potential violations of the Municipal Permit and District Ordinance 96-1 are noted and in instances where the District has been unable to achieve site compliance through the application of the Progressive Enforcement Response Plan, the District will refer the problem site to the Regional Board.

# CON6 – Training

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## DESCRIPTION

Proper training for City staff and developers is critical to ensure that required BMPs are correctly implemented on all applicable construction sites. The MS4 Permit requires Permittees to provide regular internal and external training on applicable components of the SWQMP and related Permits.

## EXISTING BMPS AND RELATED ACTIVITIES

The District and Co-Permittees meet regularly to discuss the development and implementation of the Construction Program.

The District conducts annual construction stormwater pollution prevention refresher trainings for District and Co-Permittee employees who are engaged in construction activities. This training is provided to educate public works staff, planning personnel, and building inspectors about stormwater pollution prevention including techniques to minimize stormwater pollution associated with erosion and sedimentation and construction site operations.

The District developed and distributes educational outreach material including construction guidelines, inspection checklists, action alerts, construction site BMPs and model SWPPP templates to the construction community. The District also developed and distributes Construction Site Storm Water Quality Guidelines addressing stormwater pollution prevention at construction sites. These materials are available on the District's web site. The District may develop or revise outreach materials as emerging issues are identified or when construction requirements change.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Training for Inspections and Plan Check Staff - Permittee construction inspectors and plan check staff will be periodically trained to keep them up to date on the requirements of the Municipal Permit and District Ordinance 96-1.
2. External Outreach to the Development Community - Permittees provide updated outreach materials and training information to developers and construction contractors within the community, including periodic meetings with the development community trade organizations.

**Table 10. Implementation Schedule for the Construction Program Element**

Control Measure and Performance Standards	Type of Standard <sup>1</sup>	Implementation Schedule <sup>2</sup>					Responsibilities <sup>3</sup>				
		2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	FMFCD	City of Fresno	City of Clovis	County of Fresno	Cal State University - Fresno
<b>CON1 – Construction Site Inventory</b>											
Maintain inventory of active sites	C						P	P	P	P	P
<b>CON2 – Threat to Water Quality Prioritization</b>											
Develop threat to water quality criteria	E	X					P				
Prioritize sites for inspection	E						P	S	S	S	S
<b>CON3 – Plan Review</b>											
Update Construction and Development Stormwater NPDES Assessment Checklist	C	X					P	S	S	S	S
Conduct construction and development committee meetings	C						P	S	S	S	S
Review and update EC/SC plan requirements	E	X					P	S	S	S	S
Review construction plans and grading permits to ensure consistency with requirements	C						P	I	I	I	I
<b>CON4 – Inspection and Follow-up</b>											
Review and revise the construction site guidelines, as needed	E	X					P	S	S	S	S
Update Grading Inspection Checklist	C	X					P	S	S	S	S
Inspect sites at designated frequencies and require BMPs	C						P	P	P	P	P
Permittees will meet prior to rainy season in preparation for inspections	C	X	X	X	X	X	P	S	S	S	S
Maintain a tracking system for the construction site inspections and follow up	C						P	I	I	I	I
<b>CON5 – Enforcement</b>											
Review and update legal authority (as needed)	C	X					P	P	P	P	P
Implement progressive enforcement procedures as needed	C						P	S	S	S	S
Advise Regional Board of potential violations of the Construction General Permit	C						P	S	S	S	S
<b>CON6 – Training</b>											
Develop and distribute outreach materials	C						P	S	S	S	S
Conduct training for inspectors and plan check staff	C						P	S	S	S	S
Develop/provide external training information to development and construction communities	C						P	S	S	S	S

Notes:

1. C = Continue; E = Enhance; N = New
2. X = Performance Standard will be completed during this fiscal year. Gray shaded cells indicate ongoing implementation.
3. P = Primary role and responsibility. S = Secondary role and responsibility. I = Individual Responsibility.

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## Section 3

# Industrial and Commercial Program

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### 3.1 OVERVIEW

Stormwater and non-stormwater discharges from commercial businesses or industrial activities have the potential to be significant contributors of pollutants such as petroleum hydrocarbons, trace metals, and organic contaminants to the municipal stormwater system. Material and waste storage, handling, loading and processing areas, along with equipment maintenance, washing, and storage areas are potential sources of pollutants at these facilities. Other discharges can occur through spills, direct dumping into storm drains, and direct connections (e.g., floor drains) to the storm drain system. The MS4 Permit requires Permittees to reduce pollutants in runoff from industrial/commercial sites to the MEP. The control measures discussed in this section are intended to meet the objectives and requirements of the MS4 Permit and meet the MEP standard.

The District, the County of Fresno's Environmental Health Division and the City of Fresno's Wastewater Division are the primary responsible agencies for monitoring industrial facilities in the MS4 Permit area. An industrial and commercial inventory is maintained by the District and will be updated to include targeted industrial and commercial facilities identified in the revised MS4 permit. Stormwater inspections and technical assistance outreach are integrated into existing City and County agency inspection programs to verify stormwater compliance and increase the implementation of stormwater pollution prevention BMPs. Other Co-Permittee agency managers and field staff play a secondary role by referring complaints to the District, attending training and providing technical outreach during their business site visits.

### 3.2 OBJECTIVES

The objectives of the Industrial and Commercial Program are clearly described in the MS4 Permit and form the basis of the Program. These objectives will be accomplished through the implementation of the Control Measures for the Industrial Commercial Program. Each objective references the applicable control measure(s) for implementation.

1. Adequate legal authority must be maintained, or established, to control pollutants from industrial and commercial facilities to the MS4. **(IC5)**
2. The Permittees must develop and maintain an inventory of industrial and commercial facilities within the MS4's Permit boundary. **(IC1)**
3. The facilities on the inventory must be prioritized based on their threat to water quality. **(IC2)**
4. Industrial and commercial facilities on the inventory that pose a significant threat to water quality must be inspected at frequencies established in the prioritization process. **(IC4)**
5. Follow-up inspections must be conducted, as necessary, to bring non-compliant facilities into compliance. **(IC4, IC5)**
6. Implementation of a progressive enforcement policy is required to ensure that adequate enforcement is conducted and coordinated with the Regional Board regarding targeted inspection facility compliance and referrals of potential non-filers. **(IC5)**
7. Internal and external training must be performed to provide information regarding the Industrial and Commercial Program and related Permits to pertinent staff and members of the business community. **(IC6)**

8. An assessment to determine the effectiveness of the Industrial and Commercial Program Element must be performed as part of the annual reporting process and to identify any necessary modifications to the Program. (PEA)

### 3.3 CONTROL MEASURES

The Control Measures outlined in **Table 11** and discussed in more depth within this section form the basis of the Industrial Commercial Program Element. The agencies responsible for implementing each control measure are listed in **Table 13**, which contains a summary of all control measures and anticipated implementation schedules.

**Table 11. Control Measures for the Industrial Commercial Program Element**

Control Measure	
IC1	Industrial Commercial Inventory
IC2	Threat to Water Quality Prioritization
IC3	Minimum Best Management Practices
IC4	Inspections and Follow-up
IC5	Enforcement
IC6	Training (see also PIE7)

### 3.4 EFFECTIVENESS ASSESSMENT

A comprehensive PEA strategy will provide the Permittees with the ability to determine if the stormwater programs are appropriately targeted and to determine whether intended results are being achieved efficiently and cost-effectively and ultimately to relate these results to conditions in urban runoff and receiving waters. The SWQMP incorporates the use of management questions and goals to help determine the purpose of the data collection as well as guide the implementation of the program. The management question identified to guide the effectiveness assessment of the Industrial Commercial Program is:

Are the industrial and commercial sites being managed so that they are in compliance with the local codes and ordinances and preventing pollutants from leaving the site? [IC4, IC5]

The management question was developed to address specific control measures implemented as part of the program: IC4, related to inspections and follow-up, and IC5, related to enforcement. For this control measure, several performance standards were identified to allow the Permittees to track their progress in implementation of the control measure and gauge the effectiveness of their program. The performance standards are used to evaluate Level 1 (implementation), Level 2 (awareness), and Level 3 (behavior) in terms of the Industrial Commercial Program and provide the foundation for program effectiveness assessment for the Industrial Commercial Program. The performance standards, assessment levels, and assessment data are discussed further in the *LTEA Strategy*.

# IC1 – Industrial Commercial Inventory

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## DESCRIPTION

The MS4 Permit requires the Permittees to inventory industrial facilities that are not covered by the General Industrial Permit<sup>19</sup>, restaurants, automotive service facilities, and retail gasoline outlets. Additionally, the Permittees are required to inventory any additional facilities which may pose a threat to water quality.

## EXISTING BMPS AND RELATED ACTIVITIES

During the previous permit term, measurable goals and subtasks were added to focus the program on pollutants of concern and address priority industrial and commercial sources. This involved identifying and monitoring industrial facilities to decrease activities that generate pollutants. The strategy involved maintaining a database of targeted facilities, developing a model industrial SWPPP that served as a stormwater pollution prevention guide, developing and implementing extensive educational and training programs for both inspection personnel and commercial/industrial managers and employees, and finally, establishing an inspection program that incorporated stormwater inspections with existing agency inspection programs.

The District will continue to maintain and update its industrial database to include information gathered from periodic downloads from the SWRCB Industrial General Permit (IGP) NOI permit database, internet searches classified by Standard Identification Codes listed in the IGP as light manufacturing facilities, information gathered during inspections, new business identification, Co-Permittee referrals, and complaint investigations. Industrial facilities that do not require coverage under the General Industrial Permit will also be inventoried during the upcoming MS4 Permit term.

Commercial facilities will be added to the inventory as specified in the Permit. The District will inventory restaurants, automotive service facilities, and retail gasoline outlets in order to facilitate prioritization and inspections of these facilities. No additional facility types have been determined to be a threat to water quality at this time; however, should additional relevant information become available, other business types will be added as appropriate during periodic updates to the inventory.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Facility Inventories - The District will develop inventory procedures to ensure that a complete inventory of required industrial and commercial sites is maintained and updated throughout the MS4 Permit term. The following steps will be necessary to build the inventory as required under the Permit.
  - a. The first step will be defining the appropriate data fields to be included in the inventory. Appropriate data fields may include, but are not limited to: facility name, address, responsible party, contact information, SIC code, spatial location (GIS coordinates), FMFCD drainage area, potential pollutants, threat to water quality prioritization risk, Industrial General Permit coverage status, inspection frequency, inspection agency, inspection dates, follow-up dates, and enforcement actions. Establishment of the data

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<sup>19</sup> State Water Resources Control Board Water Quality Order No. 97-03-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001 (General Permit), Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities excluding Construction Activities.

requirements will drive the selection of the appropriate software to house the database. It is anticipated that the database will be maintained in a Microsoft Access or Excel format.

- b. The second step will be compiling information related to the businesses within the MS4 Permit boundaries. Source of information may include phone lists purchased off of the internet based on SIC code, the County of Fresno CUPA lists, Co-Permittee Business License listings, City of Fresno pretreatment inventories, and other Co-Permittee program inventories such as used motor oil lists, water conservation inventories, and solid waste customers.
2. Inventory Implementation, Industrial - Once the database has been developed, the final step is to populate the database with facilities required by the MS4 Permit. The data will include industrial facilities as required by the MS4 Permit. Once the initial inventory is complete, the District will update the inventory periodically to maintain a current listing of industrial facilities within the MS4 Permit boundaries.
3. Inventory Implementation, Commercial - Once the database has been developed, the final step is to populate the database with facilities required by the MS4 Permit. The data will include commercial facilities as required by the MS4 Permit, including restaurants, automotive facilities, and retail gasoline outlets within the MS4 Permit boundaries. Once the initial inventory is complete, the District will update the inventory annually to maintain a current listing of commercial facilities within the MS4 Permit boundaries.

# IC2 – Threat to Water Quality Prioritization

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## DESCRIPTION

The MS4 Permit requires the Permittees to prioritize facilities into high, medium, and low categories on the basis of the potential for water quality impact. The different priority categories will then be assigned different inspection frequencies, with the highest priority facilities receiving more frequent inspections. This Control Measure describes the process for prioritizing inventoried industrial and commercial sites for inspections. Where geographical areas are targeted for inspections due to high potential for stormwater pollution, these are described below. This Control Measure also explains how the priority assigned to any one facility may be modified based on the site inspection findings and the facility's potential to discharge pollutants.

## EXISTING BMPS AND RELATED ACTIVITIES

During the previous permit term, the program began to focus on pollutants of concern and address priority sources from industrial facilities. This involved identifying and monitoring industrial facilities to decrease activities that generate pollutants. The strategy involved maintaining a database of facilities, developing a model industrial SWPPP that served as a stormwater pollution prevention guide, developing and implementing extensive educational and training programs for both inspection personnel and industrial managers and employees, and finally, establishing an inspection program that incorporated stormwater inspections with existing agency inspection programs. Although facilities were not explicitly prioritized by their threat to water quality, the program accomplishments serve as a foundation for the threat to water quality prioritization required under the new Permit.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Facility Prioritization - The Permittees have developed facility inspection prioritization procedures for facilities covered by the Industrial General Permit and FMFCD targeted sites under the MS4 Permit. These procedures are based on the potential for a facility to impact receiving water quality considering its proximity to receiving waters. The criteria identify targeted drainage areas (geographic areas) where sites pose a higher threat to water quality based on their proximity to the receiving water. The prioritization process will determine whether the site is a high, medium, or low priority. The District will develop and maintain a GIS layer to correlate facility location, drainage area, receiving waters, and priority category. Inspection frequency is based on the threat to water quality prioritization. The site prioritization criteria are described in **Table 12**.

Prioritization efforts during the initial inventory process will be based on proximity to receiving waters. Understanding that the initial prioritization is not based on a site visit, site conditions observed during the initial inspections may warrant changes in priorities. Depending on the results of the initial and future inspections, site priorities may be modified as the inventory is updated. Changes in priority are based on changes in the threat to water quality at the facility. Potential on-site modifications that could affect prioritization include changes in business practices and procedures (e.g. no outdoor activities or storage of materials) and implementation of structural BMPs (e.g. treatment control BMPs that infiltrate runoff and/or effectively treat pollutants of concern).

2. Facility Prioritization - The inventory of industrial and commercial facilities will be prioritized according to the inspection procedures described above.

**Table 12. Industrial/Commercial Facility Prioritization**

Priority	Description
High	Drainage Area has no stormwater basin and discharges directly to <b>SJR</b> ; or has a stormwater basin that discharges directly to <b>SJR</b> ; or has no stormwater basin and discharges directly to <b>Canal</b> .
Medium	Type 2A: Drainage Area has its own stormwater basin, which discharges to a Canal.
	Type 2B: Drainage Area has its own stormwater basin, which discharges to a stormwater basin that discharges to a Canal.
Low	Drainage Area discharges directly to a terminal stormwater basin or discharges to a stormwater basin that eventually discharges to a terminal stormwater basin. These stormwater basins do not discharge to a receiving water.

# IC3 – Minimum Best Management Practices

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## DESCRIPTION

The MS4 Permit specifies that the Permittees must require implementation of pollutant reduction and control measures at high priority industrial and commercial facilities per implementation of the approved model SWPPP or its equivalent. Through proper implementation of a Model SWPPP or a Facility Pollution Prevention Plan (FPPP), high priority industrial and commercial facilities will effectively prohibit non-stormwater runoff and reduce pollutants in stormwater runoff to the maximum extent practicable.

## EXISTING BMPS AND RELATED ACTIVITIES

During the previous permit term, measurable goals and subtasks were added to focus the program on pollutants of concern and address priority sources not addressed during the first permit term. This involved identifying and monitoring industrial facilities to decrease activities that generate pollutants. The strategy involved maintaining a database of targeted facilities, developing a model industrial SWPPP that served as a stormwater pollution prevention guide, developing and implementing extensive educational and training programs for both inspection personnel and commercial/industrial managers and employees, and finally, establishing an inspection program that incorporated stormwater inspections with existing agency inspection programs.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Model Pollution Prevention Plans - Once the Industrial General Permit is reissued by the state, expected during the spring of 2014, the District will update a Model SWPPP for industries covered under the IGP and develop a Model FPPP for other industrial and commercial facilities not covered by the IGP. Revisions to the Model SWPPP and FPPP will include:
  - Updates to reflect changes in Industrial General Permit and MS4 Permit requirements,
  - An updated list of steps or required minimum BMPs for a facility to eliminate non-stormwater discharges and to reduce the discharges of pollutants in stormwater to the MEP.
  - Distribute a Model SWPPP and a Model FPPP template to streamline the SWPPP or FPPP development process for the expected new categories of industrial and commercial businesses.

The District will distribute the Model Pollution Prevention Plans to interested parties via the District's website. The Model Pollution Prevention Plans will be available as templates in a downloadable format.

# IC4 – Inspection and Follow-up

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## DESCRIPTION

The MS4 Permit requires Permittees to inspect all high priority facilities annually. Other facilities will be inspected per their threat to water quality prioritization as described in IC2. This Control Measure describes the inspection and follow-up procedures for the Industrial and Commercial Program.

## EXISTING BMPS AND RELATED ACTIVITIES

It takes a coordinated effort by the District, Co-Permittees and business owners and their employees to reduce and prevent pollutants originating from improper discharges and/or spills and leaks from commercial and industrial facilities. Monitoring industrial facilities covered under the Industrial General Permit will continue to be implemented by incorporating stormwater inspections within existing agency inspection programs using inspectors that are already conducting inspections in the field. Inspection checklists developed during the last permit term have been incorporated into the District and Co-Permittees inspection procedures. Permitted industries not covered by existing Co-Permittee agency inspection programs will be inspected by the District. Inspection information will continue to be recorded in an existing database until the new database is developed as described under IC1.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Outreach Materials - The District and Co-Permittees will develop and distribute outreach materials to industrial and commercial facilities. This will be accomplished through routine inspections, direct mailers, workshops, and through the District's website. The District will develop an outreach strategy for the Permit term to provide for adequate distribution of the materials. Materials for distribution may include resource information that discusses general BMP requirements, supplemented by specific BMP information applicable to specific facility types.
2. Update Inspection Procedures - The District will review and update inspection procedures as needed to ensure that inspectors include the following in the inspection:
  - Evaluate the facility's BMP implementation,
  - Conduct visual inspections for unauthorized discharges, illicit connections and potential discharges, and
  - Where applicable, verify that the facility has obtained coverage under the IGP.

Inspection forms will be updated as necessary to ensure that all required information is collected. This includes, but is not limited to: the inspection date and time; the name(s) and signature(s) of the inspector; weather information and a description of any discharges occurring at the time of the inspection; previously unidentified discharges of pollutants from the site; control measures needing maintenance or repairs, including failed control measures that need replacement; other incidents of noncompliance observed; and additional control measures needed to comply with the Permit requirements or local ordinances. The District will coordinate and review the inspection and enforcement procedures as outlined in the Memorandum of Understanding (MOUs) between the District and the Co-Permittees and update if necessary.

3. Perform Inspections - The District and Co-Permittees will ensure that industrial and commercial sites are inspected as recommended by the Permittees prioritization scheme. The City of Fresno Wastewater Division and the County of Fresno's Environmental Health Division will inspect



industries covered under the IGP and other targeted facilities by integrating stormwater inspections in their existing inspection programs. The District will monitor state permitted facilities not covered by existing Co-Permittee inspection programs. Inspections will include all elements described above and will be performed at the frequencies established in the prioritization process.

4. Follow-up Inspections - Follow-up inspections will be conducted as needed to bring non-compliant sites into compliance with all IGP and stormwater ordinance requirements. Follow-up inspections will focus on facilities found to have significant deficiencies to ensure previous identified corrective actions are implemented.
5. Inspection Tracking - The District will maintain a tracking system for the site inspections and follow up as part of the facility inventory database describe in IC1. This system will track inspection dates to ensure facility inspections are conducted at the required frequencies, document corrective actions, track follow-up inspection dates, and track progressive enforcement actions.

# IC5 – Enforcement

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## DESCRIPTION

The MS4 Permit requires the Permittees to ensure that all necessary follow up and enforcement activities are conducted to require implementation and maintenance of the control measures implemented by industrial/commercial facilities. As described in IC4, the District and Co-Permittees will conduct follow-up inspections as necessary to ensure that all required BMPs are implemented properly. Where needed, the District will follow procedures as set forth in its Progressive Enforcement Response Plan (PERP) to obtain compliance.

## EXISTING BMPS AND RELATED ACTIVITIES

During the first permit term, the District developed a Model Stormwater Ordinance to standardize the enforceability of the MS4 Permit requirements across the Permittees' jurisdictions. The Ordinance was subsequently modified as appropriate and adopted by each Permittee. The District also developed and implemented Memoranda of Understanding with various agencies within the MS4 Permit boundaries to establish consistent inspection and enforcement procedures. To supplement these documents, the District then developed the Progressive Enforcement Response Plan describing the progressive enforcement procedures to be utilized to gain compliance. The Ordinances, MOUs, and procedural documents will be reviewed and updated as necessary during this MS4 Permit term to ensure that the District and Co-Permittees maintain the necessary legal authority to consistently implement the requirements of the MS4 Permit.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Legal Authority - The District will review and update its legal authority as needed to ensure it has the necessary enforcement authority to obtain compliance at industrial and commercial facilities. This may include a review and update of the Model Ordinance utilized by the Co-Permittees. If necessary, the Co-Permittees will also review and update their ordinances to comply with changes to the Model.
2. Progressive Enforcement - The District and Co-Permittees will implement progressive enforcement procedures as needed. They will perform a review of the PERP to ensure it correlates with the Permittees' local stormwater ordinances and enforcement steps. The procedures set forth in the PERP will be followed to help Permittees ensure that the required control measures are being implemented and maintained by targeted high priority facilities.
3. RWQCB Coordination - The District and Co-Permittees will coordinate with the Regional Board regarding targeted inspected facilities and non-filers.

# IC6 – Training

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## DESCRIPTION

The MS4 Permit requires the Permittees to implement internal staff training for those staff whose primary job duties consist of implementing the industrial commercial program. Staff must be properly trained to conduct facility inspections. The training must cover MS4 Permit requirements including stormwater control measures, the requirements of other applicable industrial stormwater general permits, related local requirements, the Permittees' site inspection and documentation protocols, and enforcement procedures. The MS4 Permit requires that training be provided every other year to address changes in procedures, techniques, or staffing. Further, Permittees must document and maintain records of the training provided and the staff trained.

## EXISTING BMPS AND RELATED ACTIVITIES

District and Co-Permittee field staff attends refresher stormwater pollution prevention training and have incorporated stormwater issues and outreach during their inspections and site visits. County inspectors have been trained to look for stormwater problem businesses, offer assistance to correct the problem, and refer significant problems to the District for further action. The City of Fresno Wastewater Division monitors targeted commercial businesses and have been trained to look for stormwater issues and make corrective recommendations and refer significant problems to the District for follow-up investigations.

The District distributes recommended BMPs and guidance materials to reduce the pollutants in stormwater runoff from commercial and industrial facilities, including proper material storage and the elimination of non-stormwater discharges. If existing material is not available, the District will develop guidance material for targeted businesses or pollutant sources. Currently, the District and Co-Permittees have existing stormwater pollution prevention guidance material that is distributed to targeted businesses currently being inspected and/or visited by District and Co-Permittee field staff.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Internal Training - The District and Co-Permittees will coordinate to provide the required training for internal inspections staff. Industrial/commercial stormwater related inspectors will be trained every other year. The training will cover MS4 Permit criteria, stormwater control measures, the State's Industrial General Permit, site inspection and documentation protocols, and enforcement procedures. Permittees will document and maintain records of the training provided and staff trained. Additionally, the District will periodically conduct joint stormwater inspections with the City of Fresno's Wastewater Division inspectors and with County of Fresno's Environmental Health Division inspectors to provide field training and also verify inspection procedures.
2. External Outreach - The District and Co-Permittees will also coordinate to provide external training and information to industrial and commercial businesses. Details of this outreach are provided as part of the Public Involvement and Education Section as PIE7.

**Table 13. Implementation Schedule for Industrial and Commercial Program Element**

Control Measure and Performance Standards	Type of Standard <sup>1</sup>	Implementation Schedule <sup>2</sup>					Responsibilities <sup>3</sup>				
		2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	FMFCD	City of Fresno	City of Clovis	County of Fresno	Cal State University - Fresno
<b>IC1 – Industrial Commercial Inventory</b>											
Develop inventory procedures	C	X					P				
Maintain inventory of industrial sites	C						P	S	S	S	S
Maintain inventory of required commercial facilities (restaurants, automotive service, RGOs)	E						P	S	S	S	S
<b>IC2 – Threat to Water Quality Prioritization</b>											
Develop prioritization procedures according to threat to water quality	E	X					P	S	S	S	S
Prioritize sites for inspection	E						P	S	S	S	S
<b>IC3 – Best Management Practices</b>											
Develop Model Pollution Prevention Plans, as needed	C	X					P				
<b>IC4 – Inspection and Follow-up</b>											
Develop and distribute outreach materials	C						P	S	S	S	S
Update inspection procedures as needed	E	X					P				
Inspect sites as needed	C						P	S	S	S	S
Conduct follow-up inspections as needed	C						P	S	S	S	S
Maintain a tracking system for the site inspections and follow up	E						P	S	S	S	S
<b>IC5 – Enforcement</b>											
Review and update legal authority as needed	C	X					P	P	P	P	P
Implement progressive enforcement procedures as needed	C						P	S	S	S	S
Coordinate with Regional Board regarding potential violations of the Industrial General Permit	C						P				
<b>IC6 – Training</b>											
Conduct training for inspectors	C						P	S	S	S	S
Conduct/provide external training information to targeted industrial and commercial businesses (see PIE7)	C						P	S	S	S	S

Notes:

1. C = Continue; E = Enhance; N = New

2. X = Performance Standard will be completed during this fiscal year. Gray shaded cells indicate ongoing implementation.

3. P = Primary role and responsibility. S = Secondary role and responsibility.

# Section 4

## Municipal Operations Program

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### 4.1 OVERVIEW

The District and Co-Permittees conduct numerous operational and maintenance activities that provide services to the community. These include sewer and potable water service, flood control, street and road repair, street sweeping, communications, emergency services and recreation. Some of these, like street sweeping, remove pollutants before they enter the storm drain conveyance system, while others have the potential to discharge pollutants.

Stormwater regulations require municipalities to develop and implement stormwater pollution control measures to reduce the discharge of pollutants in runoff from municipal operations. Municipal facilities include, but are not limited to, corporation yards, streets, highways, parking lots, parks and open spaces, golf courses, other public facilities, landfills, waste transfer stations and the storm drainage system. Activities at these facilities that could be sources of stormwater pollution include maintenance of vehicles and equipment, street repair, and operating practices; landscape practices; chemical use, application and storage practices; waste management practices; shipping and receiving practices; and material handling and storage practices. Potential pollutants associated with these activities include petroleum hydrocarbons, pesticides, fertilizers, toxic chemicals, trash and debris, sediment, metals, and oxygen-demanding substances.

The SWQMP was developed to effectively prohibit non-storm water discharges associated with municipal operations and activities and to prevent or reduce pollutants in stormwater runoff from all municipal land use areas, facilities, and activities to the MEP. The District and its Co-Permittees will meet these standards during the MS4 Permit term by implementing the Municipal Operations Program BMPs identified herein.

### 4.2 OBJECTIVES

The objectives of the Municipal Operations Program are clearly described in the MS4 Permit and form the basis of the Program. These objectives will be accomplished through the implementation of the Control Measures for the Municipal Operations Program. Each objective references the applicable control measure(s) for implementation.

1. The District and Co-Permittees will prevent sanitary sewer overflows (SSO) or spills from entering the storm drain system. Where an SSO or spill does enter the storm drain system, the Permittees must respond quickly and appropriately. **(MUN6)**
2. The District and Co-Permittees will participate in and implement the regional stormwater basin system. **(MUN2)**
3. Public facilities will develop or update and implement facility pollution prevention plans (FPPPs) to minimize or eliminate pollutant discharges to the storm drain system. **(MUN3)**
4. Standard protocols will be developed and implemented for storage, usage, and disposal of pesticides, herbicides, and fertilizers on Permittee-owned property such as park sites, landscaped medians, and golf courses. **(MUN4)**
5. The District and Co-Permittees will promote the use of integrated pest management (IPM) methods and less toxic alternatives. **(MUN4)**

6. Storm system pump stations and siphons will be prioritized for cleaning based on accumulation of waste. Basin inlets will be cleaned and maintained when necessary to prevent debris accumulation and flooding. (MUN1)
7. Basin inlets will be properly stenciled, permanently imprinted, or have legible curb markers, to discourage illicit discharges into the storm drain system and promote a 24-hour reporting number. (MUN1)
8. Stormwater basins and pump stations will be inspected and maintained. (MUN2)
9. The Co-Permittees will conduct street sweeping activities. (MUN5)
10. Permittee-owned parking facilities will be cleaned and maintained to minimize the build-up and discharge of pollutants to the storm drain system. (MUN5)
11. Regular training will be provided to internal staff on applicable components of the SWQMP. (MUN8)
12. An assessment to determine the effectiveness of the Municipal Operations Program and to identify any necessary modifications will be conducted annually. The results will be included in each annual report. (PEA)

### 4.3 CONTROL MEASURES

The Control Measures outlined in **Table 14** and discussed in more depth within this section form the basis of the Municipal Operations Program Element. The agencies responsible for implementing each control measure are listed in **Table 15**, which contains a summary of all control measures and anticipated implementation schedules.

**Table 14. Control Measures for the Municipal Operations Program Element**

Control Measure	
MUN1	Storm Drain System Maintenance
MUN2	Stormwater Basin Construction and Maintenance
MUN3	Municipal Facilities Pollution Prevention
MUN4	Municipal Activities Pollution Prevention
MUN5	Street and Parking Area Maintenance
MUN6	Spill Response Plan (see also ID3)
MUN7	Municipal Construction
MUN8	Training

### 4.4 EFFECTIVENESS ASSESSMENT

A comprehensive PEA strategy will provide the Permittees with the ability to determine if the stormwater programs are appropriately targeted and to determine whether intended results are being achieved efficiently and cost-effectively and ultimately to relate these results to conditions in urban runoff and receiving waters. The effectiveness of the Municipal Operations program is dependent on adequate training, effective maintenance of the storm drain system, and the implementation of stormwater pollution prevention practices for municipal facilities and activities. The SWQMP incorporates the use of management questions and goals to help evaluate the effectiveness of the program, determine the necessary data to collect, as well as to guide the implementation of the program. The management questions identified to guide the effectiveness assessment of the Municipal Operations Program are:

1. How many stormwater basins are inspected and cleaned each year? How much total material is removed? [MUN2]
2. How many pump stations are inspected and cleaned each year? [MUN2]
3. How much Household Hazardous Waste (HHW) is collected each fiscal year? [MUN4]
4. How many curb miles and parking lots are swept annually? [MUN5]

The management questions were developed to address specific control measures implemented as part of the program. For these control measures, performance standards were identified to allow the Permittees to track their progress in implementation of the control measure and gauge the effectiveness of their program. The performance standards are used to evaluate Level 1 (implementation), Level 2 (awareness), and Level 4 (load reductions) in terms of the Municipal Operations Program and provide the foundation for program effectiveness assessment for the Municipal Operations Program. The performance standards, assessment levels, and assessment data are further discussed in the *LTEA Strategy*.

# MUN1 – Storm Drain System Maintenance

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## DESCRIPTION

The MS4 Permit requires the Permittees to perform storm drain system maintenance activities in order to prevent the discharge of debris accumulated within the MS4 and to prevent flooding. This Control Measure addresses the inspection and maintenance of pump stations, siphons, and basin inlets. Maintenance is performed when necessary to remove accumulated debris and to prevent flooding.

## EXISTING BMPS AND RELATED ACTIVITIES

During the past permit term the District and Co-Permittees' pollution prevention strategy for municipal facilities and activities addressed the implementation of preventative maintenance procedures for the storm drain system to remove blockages, accumulated debris, and sediment. The District performs preventative maintenance to clean debris from the stormwater conveyance system and remove blockages in the system to prevent flooding. Accumulated debris is removed from pump stations, and pumps are serviced prior to each rain season. Drainage areas have been prioritized for pipeline video inspecting and cleaning. Upon discovery of debris accumulations through video inspection and drainage complaints, debris is removed and properly disposed of.

The Cities of Fresno and Clovis clean out their storm drain siphons and cross drains annually. The Cities also maintain temporary ponding basins that were built to capture stormwater runoff from developments that are not yet connected into the District's storm drainage system. These basins are inspected and cleaned as necessary to maintain their functionality.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. MS4 Map - The District will update the GIS based storm sewer conveyance system map when significant changes are made and will include updates in the Permittees Annual Report.
2. Storm Drain Labeling - The District will install storm drain markings consisting of painted stencils or vinyl decals on storm drain inlets. The goal is to complete 20% of the total inlets every year and be completed within the 5 year permit term. During Permittee staff training conducted every two years, the District will include procedures to report storm drain markings that are missing or in need of replacement.

The District and Co-Permittees will continue to partner with high school students and community groups in the marking of the storm drains with the message "No Dumping – Protect Your Water."

3. Prioritization of Pump Stations and Siphons for Cleaning - The District will conduct annual preventative maintenance to clean debris from pump stations, pipeline siphons, outfall structures, and pipelines and remove blockages in the system to prevent flooding and to optimize stormwater basin sediment removal. The District will continue to prioritize stormwater pump stations and siphons for cleaning.
4. Preventative Maintenance - The District will conduct annual preventative maintenance to clean debris from the stormwater conveyance system and remove blockages in the system to prevent flooding and to optimize stormwater basin sediment removal. The Cities of Fresno and Clovis will clean out their storm drain siphons and cross drains annually and inspect the storm drain inlets before and during the wet weather season and maintain if necessary.



# **MUN2 – Stormwater Basin Construction and Maintenance**

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## **DESCRIPTION**

The District's local stormwater drainage system consists of storm drains, stormwater basins, and pump stations, some of which discharge to irrigation canals, creeks, and the San Joaquin River. Relying heavily on the stormwater basins, the system is designed to retain and infiltrate as much runoff as possible. In an average year, the District infiltrates approximately 70-80% of the total annual stormwater runoff, approximately 17,000 acre-feet. In addition to providing groundwater recharge, studies conducted by the District during the past permit term have shown that the stormwater basins remove an estimated 50-88% of the typical stormwater pollutants including sediment, heavy metals, and polycyclic aromatic hydrocarbons (PAHs). Maintaining the storm drain system and stormwater basins keeps the majority of stormwater pollutants from reaching canals, creeks and the San Joaquin River.

The MS4 Permit requires Permittees to implement appropriate maintenance of stormwater basins. BMPs related to stormwater basin construction and maintenance is included under this Control Measure.

## **EXISTING BMPs AND RELATED ACTIVITIES**

The District owns, operates, and maintains the Master Planned storm drainage system serving the permit area. Presently, the District operates and maintains over 153 stormwater basins. The District's current practice is to purchase land where feasible, design, and building stormwater basins in conformance with the District's Storm Drainage and Flood Control Master Plan.

The system is designed to operate by gravity with sufficient energy to self-clean the pipelines and convey debris and sediments to stormwater basins where they are removed as necessary. The District removes sediment deposits in its stormwater basins according to the District's Standard Operating Procedures (SOP) for Monitoring, Maintenance and Disposal of Stormwater Basin Sediments. The purpose of the SOP is to ensure the District's current stormwater basin sediment monitoring, maintenance, and disposal practices: (1) comply with applicable governmental mandates and regulations; (2) protect public health, safety, groundwater quality and the environment; (3) are properly documented; and (4) ensure optimum stormwater basin percolation rates for groundwater recharge.

The objectives of the SOP are to establish standard practices for stormwater basin sediment monitoring, maintenance, and disposal activities. The District's stormwater basin sediment monitoring program addresses: sampling frequency, location, collection and handling practices; chemical analyses; quality assurance and quality control; and documentation. The stormwater basin sediment maintenance program addresses: sediment removal; removal frequency and method; disposal of removed sediments as non-hazardous material; and documentation.

The Stormwater Basin Sediment Monitoring and Management Policy is reviewed and updated as necessary to ensure that the most efficient and effective monitoring, maintenance, and disposal procedures are in place, and to ensure compliance with state and federal standards, laws and regulations.

## **PERFORMANCE STANDARDS**

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Stormwater Basin Maintenance - The District will remove sediment deposits from its stormwater basins and maintain those stormwater basins according to the District's Standard Operating Procedures (SOP) for Monitoring, Maintenance and Disposal of Stormwater Basin Sediments

(April 2013). The District will review and update the SOP as necessary to revise cleaning and monitoring procedures according to sediment buildup and pollutant accumulation.

2. Preventative Maintenance - The District will conduct annual preventative maintenance to clean debris from pump stations, pipeline siphons and outfall structures and pipelines and remove blockages in the system to prevent flooding and to optimize stormwater basin sediment removal.
3. Plan, Design, and Build Regional Stormwater Basins - The District will continue to plan, design, and build regional stormwater basins to store 6 inches of the annual rainfall and to capture and treat 100% of the annual rainfall. The District will maintain reserve capacity for stormwater basins equal to the maximum historic 48 hour rainfall event. This exceeds the storage volume of the 85th percentile storm event by a factor of 4 to 6.

# **MUN3 – Municipal Facilities Pollution Prevention**

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## **DESCRIPTION**

The MS4 Permit requires the Permittees to implement pollution prevention BMPs for public facilities through the development and implementation of Facility Pollution Prevention Plans (FPPPs) with the goal of minimizing or eliminating pollutant discharges to the storm drain system. This Control Measure addresses the development of the FPPPs, which includes pollution prevention measures applicable to the facility, landscape and pest management BMPs as applicable, management of public industrial activities as applicable and emergency procedures related to stormwater protection for the public facilities.

## **EXISTING BMPs AND RELATED ACTIVITIES**

The District's strategy currently includes developing, implementing, and revising as necessary, procedures to reduce and treat potential pollutants from municipal facilities. The District has developed and issued guidelines through internal trainings for a variety of municipal facilities, including corporation yards, parks and open spaces, and other agency facilities.

The City of Fresno Department of Public Works, Facilities Management Division, distributes and implements corporation yard guidelines and conducts stormwater pollution prevention inspections at its facilities. These assessments evaluate the implementation of stormwater BMPs and identify areas requiring corrective measures. Generally, facilities have adequate stormwater controls. The most common areas requiring corrective measures include material storage areas and general housekeeping.

The City of Clovis Public Utilities Department oversees its centralized corporation yard. Because the City's corporation yard includes public transit maintenance, the corporation yard has coverage under the State's General Industrial Permit. Public Utilities has developed and fully implemented a Stormwater Pollution Prevention Plan for the facility that includes BMPs and regular inspections during both dry and wet weather.

## **PERFORMANCE STANDARDS**

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Facility Pollution Prevention Plans - The District and Co-Permittees will develop and implement Facility Pollution Prevention Plans for each Permittee owned corporation yard and other high priority Permittee facilities during the Permit term. The FPPPs will address proper storage, handling and disposal of hazardous wastes, painting activities, waste management, elimination of non-stormwater discharges, on-site fueling, spill prevention and cleanup, preventive maintenance, and overall good housekeeping practices for site management and cleanup. The District will review and update if necessary the Facility Pollution Prevention Plan for corporation's yards. The Permittees will implement Facility Pollution Prevention Plan for each Permittee corporation yard that is not covered under the State's Industrial General Permit, as the sites covered under the IGP have SWPPPs in place. The Permittees will inventory and evaluate other municipal facilities to determine if they need to implement a FPPP.
2. Procedures to Address Emergencies - The District will work with the Co-Permittees to incorporate stormwater information into emergency response procedures to address the protection of water quality in receiving waters during emergency events. The procedures will include a list of Co-Permittee first responders and incorporate procedures into internal training curriculum.

3. Industrial General Permit Coverage Assessment - The District and Co-Permittees will assess all public facilities to determine if they require coverage under the Industrial General Permit. If any facilities are found to require coverage under the IGP that have not filed an NOI, coverage will be obtained and IGP requirements will be met.

# **MUN4 – Municipal Activities Pollution Prevention**

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## **DESCRIPTION**

The MS4 Permit requires Permittees to implement pollution prevention measures related to municipal activities to reduce or eliminate non-stormwater discharges and pollutants in stormwater related to these activities. Specifically, the Permit focuses on three areas: the storage, use, and disposal of pesticides, herbicides, and fertilizers (including promotion of integrated pest management principles); industrial activities related to municipal maintenance; and non-emergency firefighting flows. This Control Measure describes how the District and Co-Permittees will address these municipal activities over the MS4 Permit term.

## **EXISTING BMPS AND RELATED ACTIVITIES**

The District currently reviews and distributes guidance materials to the District's and Co-Permittees' Parks and Landscape managers and maintenance staff that cover the proper storage, handling and disposal of hazardous materials and wastes including pesticides and fertilizers, chemical application, painting activities, waste management, equipment maintenance, water conservation, elimination of non-stormwater discharges, spill prevention and cleanup, and overall good housekeeping practices for site management and cleanup. The District and Co-Permittees implement the guidance at their respective parks and open space areas.

The District continued to partner with the University of California Cooperative Extension (UCCE) Master Gardeners of Fresno County on Integrated Pest Management (IPM) training and public outreach. The relationship between pesticide use and stormwater quality is emphasized. The Master Gardeners currently maintain one informational cart at the UC Master Gardener Demonstration Garden, The Garden of the Sun, and point-of-purchase shelf talkers at five Orchard Supply Hardware stores and one Home Depot store. Master Gardeners hold seminars for the public, conduct weekly workshops at the demonstration garden, staff the Master Gardener Helpline, conduct plant clinics at nurseries and farmers markets and give IPM presentations at regional garden shows, and to community groups.

The UC Master Gardeners continued to service brochure racks filled with UC IPM Quick Tip cards in 13 local nurseries and placed the displays at several large public events including the Spring Home and Garden Show, Spring Garden Tour at Garden of the Sun, and A Taste of the Harvest. Quick Tip cards promote less-toxic pest management and were provided by UC Statewide IPM Program, and supplies were monitored and replenished by Master Gardeners. An interactive IPM educational computer kiosk, provided by the UC Statewide

The District has developed and implemented procedures to reduce and treat pollutants from street, road, and highway maintenance activities and other municipal operations as necessary to reduce pollutants in stormwater runoff. The Co-Permittee Streets and Roads Maintenance divisions implement street and roads maintenance guidelines that includes pre-trip equipment and vehicle inspections, proper management of concrete and other repair materials, use of designated areas for concrete washout, proper disposal of saw cutting wastes, job-site management and cleanup, and, if necessary, acquiring stormwater permits.

The District and Permittees coordinate extensively with household hazardous waste programs. To accomplish this, the District and Co-Permittees distribute stormwater pollution prevention materials, conduct household and small business hazardous waste collection events, promote and partner with used motor oil collection sites, implement a curbside motor oil collection program, implement a point of purchase disposal and proper use program for paints and garden products.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. BMPs for Road Maintenance - The District and Co-Permittees will continue to develop and implement BMPs to address public industrial activities with the potential impact urban runoff and stormwater (e.g., road maintenance, equipment washing, well development). The District will review and distribute guidance materials to Co-Permittees' streets and roads agencies that cover the proper management of concrete and other road maintenance materials, concrete washout, the proper disposal of saw cutting wastes, equipment use, maintenance and washing, sediment and stockpile management, and overall good housekeeping practices for site management and cleanup. The District and Co-Permittees will implement the guidance during their respective streets and road maintenance activities.
2. Storage, Use, and Disposal of Pesticides, Herbicides, and Fertilizers - The District will inventory Permittee Agencies that store, use and dispose of pesticides, herbicides, and fertilizers. The District and Co-Permittees will then adapt and implement existing protocols and BMPs (e.g. those developed for parks and golf courses) applicable to storage, usage, and disposal of pesticides, herbicides, and fertilizers for any applicable Permittee owned properties and rights-of-way.
3. Promote Integrated Pest Management - The District will continue to partner with the University of California Cooperative Extension (UCCE) Master Gardeners Program in a statewide IPM outreach campaign in partnership with Orchard Supply Hardware to promote the use of integrated pest management principles. The District will promote Integrated Pest Management Principles through its internal agency trainings.
4. Non-emergency Fire Fighting Flows - The District will coordinate with the Co-Permittees' Fire Departments to develop BMPs for non-emergency firefighting flows. Co-Permittees with fire departments will implement the BMPs for non-emergency firefighting flows as applicable to their operations. The District and Co-Permittees will incorporate the non-emergency firefighting flows BMPs into the bi-annual Permittees Fire Department trainings.
5. Coordinate with Household Hazardous Waste Programs - The District will support, coordinate, and promote used motor oil collection and household hazardous waste collection programs that promote and/or provide convenient means for people to properly dispose of oil, antifreeze, pesticides, herbicides, paints, solvents, and potentially harmful chemicals, and other waste material. The District will support the permanent household hazardous waste collection site.

# **MUN5 – Street and Parking Area Maintenance**

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## **DESCRIPTION**

The MS4 Permit requires the Permittees to conduct street sweeping activities and to clean and maintain Permittee-owned parking facilities to minimize the build-up and discharge of pollutants to the storm drain system. This Control Measure describes the Permittees' current and planned activities to meet these Permit requirements, including their public street cleaning and parking facility maintenance practices.

## **EXISTING BMPS AND RELATED ACTIVITIES**

The City of Fresno Community Sanitation Division operates a regular street sweeping schedule for residential, commercial, and industrial areas. Residential areas are swept once every month. Arterial streets are swept once per week and at night. The City of Clovis Street Sweeping Section operates a regular street sweeping schedule for residential and commercial areas. Residential areas are swept twice per month, while streets in Old Town Clovis (commercial area) are swept two times a week. The City of Clovis currently has five PM10 efficient street sweepers. The Cities of Clovis and Fresno regularly sweep publicly owned outdoor parking lots to remove debris and trash, and provide litter receptacles at public facilities and large public events. The City of Fresno provides the removal of excess trash and debris for all its residents through its annual Operation Clean Up. The City also manually removes trash and debris in main thoroughfares. The County of Fresno sweeps its urban pockets periodically within the City of Fresno for a total of 21 miles annually. CSUF regularly maintains campus roads, parking lots and open spaces. Litter, leaf control, and trash pickup is performed daily. Street sweeping of roads and parking lots is performed weekly.

## **PERFORMANCE STANDARDS**

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Conduct Street Sweeping Activities - The Cities of Fresno and Clovis will continue to implement street sweeping activities that remove trash and debris from publicly owned streets within their jurisdictions. The waste collected during street sweeping operations will continue to be disposed of properly, following applicable solid waste regulations.
2. Inventory Municipal Parking Facilities - The District and Co-Permittees will inventory municipal parking facilities to ensure that all are maintained as necessary. The inventory will include the size and location of each parking facility.
3. Clean and Maintain Parking Facilities - The Permittees will periodically clean and maintain parking facilities under their jurisdiction and report the activities.

# **MUN6 – Sanitary Sewer Management Plan**

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## **DESCRIPTION**

The MS4 Permit requires the District and Co-Permittees to prevent sanitary sewer overflows (SSO) and spills from entering the storm drain system. Where an SSO or spill does enter the storm drain system, the Permittees must respond quickly and appropriately. These requirements will be met through the implementation of the Permittee's Sewer System Management Plan (SSMP) and through established spill response procedures.

## **EXISTING BMPS AND RELATED ACTIVITIES**

Currently the City of Fresno owns and maintains the wastewater collection system that serves the City and the other participating agencies, the County of Fresno and the City of Clovis. However, the City of Fresno and Clovis are both responsible for implementing individual SSMPs. In response to the State Water Resources Control Board Order No. 2006-003-DWQ, the Cities developed a comprehensive Sewer System Management Plan. The Plan describes SSO response, mitigation, and reporting procedures, as well as preventative programs related to issues that contribute to SSOs (e.g. fats, oils, and grease programs addressing food service establishments). This Plan is the basis for SSO prevention and response measures throughout the MS4 Permitted area.

The District and Co-Permittees are committed to coordination with agencies responsible for spill response to ensure that stormwater quality issues are addressed in their programs, coordination of stormwater quality issues with existing regulatory programs aimed at preventing spills and/or requiring containment and control, and providing regular training for personnel responsible for spill response activities.

Fresno County's Department of Community Health, Environmental Health Division is the primary agency responsible for oversight of remedial actions for accidental and intentional hazardous materials spills in the greater Fresno/Clovis area. Currently the Hazardous Materials Incident Response Plan is the overriding document that outlines how hazardous materials incident are handled within Fresno/Clovis Area and includes responses to illicit discharges into stormwater collection systems. The District coordinates with Fresno County and other responding agencies during the spill incident in regard to the storm drain system. The Department received training from the District regarding stormwater quality issues related to illegal dumping.

## **PERFORMANCE STANDARDS**

The Performance Standard listed below establishes the level of effort required for this Control Measure.

1. Prevent and Respond to Sanitary Sewer Overflows – The Permittees will follow their respective Separate Sewer Management Plans to minimize the discharge of sanitary overflows to the stormwater conveyance system.



# MUN7 – Municipal Construction

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## DESCRIPTION

The MS4 Permit requires the Permittees to address construction requirements for municipal capital improvement projects. Municipal projects are subject to the same construction BMP requirements as private construction projects. This Control Measure describes the processes in place to ensure that all municipal capital improvement projects implement appropriate BMPs during and after construction.

## EXISTING BMPS AND RELATED ACTIVITIES

The District and Co-Permittees acquire coverage under the State's General Construction Permit for all capital improvements projects that disturb greater than one acre of soil. This includes filing an NOI, developing a Stormwater Pollution Prevention Plan for the project or acquiring an erosivity waiver, implementing appropriate construction BMPs, conducting site inspections, submitting required reports, and filing an NOT.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Review of Capital Improvement Plan Specifications - The District and Co-Permittees will review and revise, if necessary, the current specifications included on capital improvement project plans to ensure specifications and notes meet MS4 Permit requirements.
2. CIP Conformance with Land Development Requirements - The District and Co-Permittees will ensure conformance with land development requirements in Section 7 through the implementation of development review processes similar to the processes required of private development. Municipal inspections staff will ensure that the required BMPs are constructed properly.
3. CIP Conformance with Construction Requirements - The District and Co-Permittees will ensure conformance with construction requirements in Section 2, including coverage under the Construction General Permit, where applicable. This will be accomplished through the implementation of a construction review processes similar to the processes required of private development. . Municipal inspections staff will ensure that necessary BMPs are implemented during the construction process.

# MUN8 – Training

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## DESCRIPTION

One of the main strategies to prevent pollution during operations and maintenance activities is to conduct extensive education of District and Permittee employees through training seminars, workshops and annual refresher training. The MS4 Permit requires Permittees to provide regular training to internal staff on applicable components of the SWQMP. This Control Measure describes the internal training programs that will be implemented to ensure that municipal staff are adequately trained with respect to stormwater pollution prevention related to their day to day operations.

## EXISTING BMPS AND RELATED ACTIVITIES

The District conducts a comprehensive training program for municipal operations and maintenance staff. Fresno Metropolitan Flood Control staff and the staff of Co-Permittee agencies undergo periodic refresher training on stormwater pollution prevention including, but not limited to, discussion of spill prevention and clean up, how to identify and respond to illicit discharges, reporting procedures, and management of public facilities to prevent contamination of stormwater. Additionally, the District has provided training for District and Co-Permittee design, engineering, and construction staff on the Construction General Permit. The training is designed to ensure that the staffs of public agencies that are regulated by the MS4 Permit are able to understand, prevent, identify and respond to events and circumstances that impact the quality of stormwater discharges in the region.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Internal Training - The District and Co-Permittees will continue to provide activity-specific training for staff involved in or impacted by the MS4 Permit requirements. At a minimum, this will include public works (or equivalent maintenance related departments), engineering, land development, and firefighting staff across the jurisdictions within the Permit area. The type of training, frequency, and targeted staff will be described in an updated training strategy to be submitted with the first annual report. All staff training will be updated to include new permit requirements specifically affecting the activities performed by Permittee staff.

**Table 15. Implementation Schedule for Municipal Operations Program Element**

Control Measure and Performance Standards	Type of Standard <sup>1</sup>	Implementation Schedule <sup>2</sup>					Responsibilities <sup>3</sup>				
		2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	FMFCD	City of Fresno	City of Clovis	County of Fresno	Cal State University - Fresno
<b>MUN1 – Storm Drain System Maintenance</b>											
Update and maintain GIS based storm drain conveyance inventory	C	X					P				
Install, inspect and maintain basin inlet markings as necessary	C						P	S	S	S	P
Prioritize stormwater pump stations and siphons for cleaning	E						P				
Inspect and maintain basin inlets as necessary	C						P	P	P	S	P
<b>MUN2 – Stormwater Basin Construction and Maintenance</b>											
Inspect and maintain stormwater basins to maximize infiltration rates (see also PLD2)	C						P				
Inspect and maintain stormwater pump stations	C						P				
Plan, design, and build regional stormwater basins	C						P				
<b>MUN3 – Municipal Facilities Pollution Prevention</b>											
Develop template Facility Pollution Prevention Plan	N	X					P	S	S	S	S
Develop and implement Facility Pollution Prevention Plan for each Permittee corporation yard and other high priority facilities	E						P	S	S	S	S
Develop and implement procedures to address emergency events	N						P	S	S	S	S
Assess facilities to determine if they require coverage under the Industrial General Permit	E						P	S	S	S	S
<b>MUN4 – Municipal Activities Pollution Prevention</b>											
Develop and implement BMPs to address public industrial activities with the potential impact urban runoff and stormwater (e.g., road maintenance, equipment washing, well development)	C	X					P	P	P	P	P
Implement protocols and BMPs for storage, usage, and disposal of pesticides, herbicides, and fertilizers for Permittee owned property and right-of-way	C		X				P	P	P	P	P
Promote integrated pest management practices	E						P	S	S	S	S
Develop and implement BMPs for non-emergency firefighting flows	N		X				P	S	S	S	S

Control Measure and Performance Standards	Type of Standard <sup>1</sup>	Implementation Schedule <sup>2</sup>					Responsibilities <sup>3</sup>				
		2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	FMFCD	City of Fresno	City of Clovis	County of Fresno	Cal State University - Fresno
Coordinate with household hazardous waste programs	C						P	S	S	S	S
<b>MUN5 – Street and Parking Area Maintenance</b>											
Conduct street sweeping activities	C						P	I	I	I	I
Inventory municipal parking facilities	C	X					P	I	I	I	I
Clean and maintain parking facilities	C						P	I	I	I	I
<b>MUN6 – Sanitary Sewer Management Plan (SSMP)</b>											
Prevent and respond to sanitary sewer overflows pursuant to the SSMP	C						S	I	I	S	S
<b>MUN7 – Municipal Construction</b>											
Review CIP specifications to ensure all MS4 Permit requirements are included	E						P	S	S	S	S
Ensure conformance with land development requirements in Section 7.	E						P	S	S	S	S
Ensure conformance with construction requirements in Section 2, including coverage under the Construction General Permit, where applicable.	E						P	S	S	S	S
<b>MUN8 – Training</b>											
Conduct training for staff	C						P	S	S	S	S

Notes:

1. C = Continue; E = Enhance; N = New

2. X = Performance Standard will be completed during this fiscal year. Gray shaded cells indicate ongoing implementation.

3. P = Primary role and responsibility. S = Secondary role and responsibility. I = Individual role and responsibility.

## Section 5

# Illicit Connection and Discharge Control Program

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### 5.1 OVERVIEW

Illicit discharges enter the storm drain system through illicit connections and illegal dumping. The MS4 Permit requires municipal programs to effectively prohibit non-stormwater discharges to the storm drain conveyance system. Exceptions include non-stormwater discharges that are authorized by a separate NPDES permit or are specifically not prohibited according to Provisions B.2 and B.4 of the MS4 Permit. The Illicit Discharge Program was developed to comply with these requirements. The District has developed a policy for non-stormwater discharges that are permissible or conditionally allowable. All other non-stormwater discharges are prohibited. The District and - are authorized to control non-stormwater discharges through their stormwater quality control ordinances.

### 5.2 DEFINITIONS

The following definitions are applicable to the Illicit Connection and Discharge Control Program.

**Authorized discharge** means any discharge that is authorized pursuant to a National Pollutant Discharge Elimination System (NPDES) permit or meets the conditions set forth in the MS4 Permit (Provision B).

**Illicit connection** means any man made conveyance that is connected to the storm drain system without a permit, excluding roof drains and other similar type connections. Examples include channels, pipelines, conduits, inlets, or outlets that are connected directly to the storm drain system.

**Illicit discharge** means any discharge to the storm drain system that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term illicit discharge includes all non-storm water discharges except discharges pursuant to an NPDES permit, discharges that are identified in Discharge Prohibitions of the MS4 Permit (Provision B), and discharges authorized by the Regional Board.

**Illegal dumping** means the accidental or intentional dumping of materials into the conveyance system, streets, inlets or catch basins. Illegal dumping can also include improper disposal of material on land that is then discharged to the storm drain system when it rains or carried by a non-stormwater runoff such as excessive irrigation.

### 5.3 OBJECTIVES

The objectives of the Illicit Connection and Discharge Control Program are clearly described in the MS4 Permit and form the basis of the Program. These objectives will be accomplished through the implementation of the Control Measures for the Illicit Connection and Discharge Control Program. Each objective references the applicable control measure(s) for implementation.

1. The District and Co-Permittees must establish and maintain adequate legal authority to control and/or prohibit pollutants from being discharged to the municipal storm drain system. **(ICD3)**
2. The District and Co-Permittees must utilize a variety of mechanisms including, but not limited to, public reporting, dry weather monitoring, and field crew inspections, to proactively detect illicit discharges and connections. **(ICD1)**
3. Upon identification of an illegal connection, the District and Co-Permittees will investigate and eliminate the connection through a variety of mechanisms including, but not limited to, permitting or plugging the connection. **(ICD2)**

4. Upon identification of an illicit discharge, the District and Co-Permittees will investigate the discharge and conduct any necessary follow up actions to mitigate the impacts of the discharge. **(ICD2)**
5. An assessment to determine the effectiveness of the Illicit Connection and Discharge Control Program and to identify any necessary modifications will be conducted annually. The results will be included in each annual report. **(PEA)**

## 5.4 CONTROL MEASURES

The Control Measures outlined in **Table 16** and discussed in more depth within this section form the basis of the Illicit Connection and Discharge Control Program Element. The agencies responsible for implementing each control measure are listed in **Table 17** which contains a summary of all control measures and anticipated implementation schedules.

**Table 16. Control Measures for the Illicit Connection and Discharge Control Program Element**

Control Measure	
ICD1	Detection and Identification of Illicit Discharges and Connections
ICD2	Investigation, Inspection, Follow-up, and Elimination
ICD3	Enforcement
ICD4	Training

## 5.5 EFFECTIVENESS ASSESSMENT

A comprehensive PEA strategy will provide the Permittees with the ability to determine if the stormwater programs are appropriately targeted and to determine whether intended results are being achieved efficiently and cost-effectively and ultimately to relate these results to conditions in urban runoff and receiving waters. The SWQMP incorporates the use of management questions and goals to help determine the purpose of the data collection as well as to guide the implementation of the program. The management questions identified to guide the effectiveness assessment of the Illicit Connection and Discharge Control Program are:

1. Have the field crews been trained to accurately identify and report illicit discharges (IDs) while conducting routine maintenance activities in the field? **[ICD1, ICD4, MUN8]**
2. Of the water pollution investigations that occur, what are the primary pollutants of concern that are the focus of the investigations? **[ICD2]**

The management questions were developed to address specific control measures implemented as part of the program. For these control measures, performance standards were identified to allow the Permittees to track their progress in implementation of the control measure and gauge the effectiveness of their program. The performance standards are used to evaluate Level 1 (implementation), Level 2 (awareness), and Level 3 (behavior) in terms of the Illicit Connection and Discharge Control Program and provide the foundation for program effectiveness assessment for the Illicit Connection and Discharge Control Program. The performance standards, assessment levels, and assessment data are discussed further in the *LTEA Strategy*.

# ICD1 – Detection and Identification of Illicit Discharges and Connections

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## DESCRIPTION

The MS4 Permit requires Permittees to proactively detect illicit discharges and connections through a variety of mechanisms. These may include public reporting and response, dry weather monitoring, and field inspections. This Control Measure has effectively been implemented by the District and Co-Permittees during previous permit terms with the goal of detecting and identifying illicit connections and discharges to the storm drain system and will continue to be implemented as required under the current Order.

## EXISTING BMPS AND RELATED ACTIVITIES

Beginning in 1994, two BMPs were established to identify and eliminate illicit connections and illegal discharges. The first BMP implemented an extensive inspection program to identify illicit connections to the storm drain system. Over the past 11 years, the District and its Co-Permittees reported identifying and eliminating only two illicit connections. The District completed a Program Effectiveness Evaluation Report in 1999 concluding that few environmental benefits were realized by implementing the inspection program. It was concluded that illicit connections are not common in the permitted area and further efforts will focus on on-site inspections integrated into commercial and industrial control activities and resolution of illicit connections upon identification and referral.

The second BMP was implemented to address illegal dumping by implementing public education programs to discourage illegal dumping, establishing a hot line phone number for the public to report incidents of dumping, and responding to complaints with inspections, personal contact and information, and follow-up letters and inspections as necessary. The 1999 Program Effectiveness Evaluation Report assessment concluded that the BMP was effective at reducing stormwater pollutants generated by illicit discharges. During the second permit term, the BMP was revised to include a better record keeping system for illicit discharges and a more in-depth training program.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Implement Field Activities - The District along with the responsible Co-Permittee agencies will investigate and eliminate illicit connections and discharges upon citizen complaint or agency referral. Additionally, inspections and monitoring staff are utilized to detect and report illicit connections and discharges in the course of their day-to-day activities. The District will periodically patrol geographic areas of high priority industrial and commercial facilities to identify and investigate illicit discharges.
2. Advertise and Maintain Hotline - The District's main phone number is the phone number that the public, businesses and other agencies use most often when reporting a complaint. After hours complaints are directed to an on-call District employee who either investigates the complaint or assists first responders in resolving the complaint. If the complaint is not an emergency, the necessary information is collected and the complaint is investigated during normal working hours.
3. Permittee Coordination - The District will coordinate and collaborate with other Co-Permittee agencies on illegal dumping investigations to avoid duplication of effort and to ensure the District's storm drain system is protected. The District will coordinate with Co-Permittees to

ensure that the District is notified when illicit connections and discharges are detected by including the referral process in all internal Co-Permittee stormwater refresher trainings.



# ICD2 – Investigation, Inspection, Follow-up and Elimination

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## DESCRIPTION

When the Permittee becomes aware of an illegal connection, the MS4 Permit requires Permittees to investigate and eliminate the connection. This may be accomplished through a variety of mechanisms including, but not limited to, permitting or plugging the connection. With respect to illicit discharges, which are more frequent, the Permittees must investigate the discharge and conduct any necessary follow up actions to mitigate the impacts of the discharge. The Permittees must have investigation and inspection procedures in place to guide staff in follow-up activities related to illicit connections and discharges.

## EXISTING BMPS AND RELATED ACTIVITIES

The District and Co-Permittees continue to implement, and review and revise as necessary, response and enforcement procedures as outlined in the Memoranda of Understanding between the District and its Co-Permittees and in the District's Progressive Enforcement Response Plan.

As owner and operator of the storm drain system, the District responds to Co-Permittee referrals, public complaints or other evidence of illicit connections to the system within 24 hours of notification. The goal is to resolve all complaints within 30 days of notification. The District and Co-Permittees investigate the illicit discharge complaint and requests assistance from other Co-Permittee agencies when necessary. The District and Co-Permittees enforce their municipal codes and requirements to clean up the incident, eliminate further occurrences. If necessary, the Co-Permittees and District can refer the complaint to the Regional Board for further investigation and enforcement. The District has established a procedure to notify violators that they are illegally connected to the storm drain system and request them to re-plumb their facility. In the event that the violator does not respond in a timely manner, the District has the authority to plug the connection to eliminate discharge to the storm drain system.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Update Investigation Procedures - The District and Co-Permittees will review and update (as needed) the procedures for investigation of illicit connections and discharges, including follow-up protocols to confirm that illicit connections have been corrected and illicit discharges have been mitigated.
2. Implement Investigation Procedures - The District and Co-Permittees will continue to implement procedures for the investigation of illicit connections and discharges, including follow-up protocols to confirm that illicit connections have been corrected and illicit discharges have been mitigated. In general, the District and Co-Permittees rely on the identification of illicit connections and discharges through regular inspections conducted by field staff. Through regular training, field personnel are taught to augment their normal field activities to include identification and reporting of illicit connections and discharges. In accordance with the executed MOUs, the District will have the primary responsibility for enforcing the Ordinance within the District's service area. The County will have sole responsibility for the Copper-Friant Study Area because it is located outside the District's boundary. The participating agencies will be responsible for: 1) identifying problems associated with stormwater during their daily, routine field activities; 2) notifying the parties causing the problem, and noting the problem in an inspection form or report; and 3) referring the case to the District. Upon referral, the District will proceed with the appropriate enforcement action as specified in the Ordinance.

3. Tracking and Reporting of Illicit Connections and Discharges - The District and its Co-Permittees will continue to record and report illicit discharges and illegal connections investigated by each agency into a complaint database.

# ICD3 – Enforcement

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## DESCRIPTION

In order to enforce the prohibition of illicit connections and illicit discharges to the storm drain system, the MS4 Permit requires Permittees to establish and maintain adequate legal authority to control and/or prohibit pollutants from being discharged to the municipal storm drain system. With this legal authority in place, the Permittees must implement a progressive enforcement policy as necessary to prevent and eliminate illicit connections and discharges to the storm drain system.

## EXISTING BMPS AND RELATED ACTIVITIES

To comply with the requirements of the MS4 Permit, a master Storm Water Quality and Discharge Control Ordinance (Ordinance) was developed and adopted with only minor variations by the District, cities of Fresno and Clovis and the County of Fresno. To facilitate implementation of the Ordinance, a Memorandum of Understanding (MOU) was developed that identified the responsibilities of each participating agency in carrying out the requirements of the Ordinance.

The District developed the master Ordinance that was adopted by the participating agencies during the first permit term. It is a uniform ordinance that ensures fair, consistent enforcement of stormwater quality controls throughout the permitted area. Adoption by the County also facilitates District Attorney involvement when absolutely necessary to impose penalties or affect other remedies.

In accordance with MS4 Permit requirements, the Ordinance prohibits:

- *Illicit Discharges* - Any direct or in-direct non-stormwater discharge to the storm drain system, except as specifically exempted by the NPDES stormwater permit.
- *Illicit Connections* - Any drain that conveys illicit discharges and undocumented drains that are connected to the storm drain system. This section of the Ordinance supplements existing legal authorities provided in existing codes.
- *Waste Disposal in Streets, Gutters, Storm Drains and Ponding Basins* - These provisions of the ordinance supplement existing code prohibitions against illegal dumping.
- *Discharges in Violation of the NPDES Municipal Permit* - The ordinance allows enforcement action to be taken against dischargers causing violations of the Municipal NPDES permit.
- *Discharges in Violation of NPDES Industrial Permits* - The ordinance establishes an authority that is no less stringent than the State's General Permit requirements for controlling stormwater discharges from industrial and construction activities.

The Ordinance authorizes each participating agency to:

- Adopt best management practice requirements;
- Require remediation for pollution of stormwater, the storm drain system, or waters of the United States;
- Require monitoring of discharges suspected of violating the ordinance; and
- Require residents or businesses to take reasonable measures to contain and cleanup any spill that threatens to be discharged to the storm drain system, and to notify the District if a spill affects the storm drain system.

The Ordinance is enforced through the enforcement provisions of the Ordinance and each agency's codes. Each participating agency modified the Ordinance to refer to their specific: 1) enforcement officer, 2) administrative hearing and appeal process, 3) cost-recovery mechanism, and 4) penalties.

The Ordinance ensures the following corrective actions are taken when a violation is identified by a participating agency: 1) identify the required corrective action, establish a schedule for compliance on the inspection report, and re-inspect; 2) issue a notice of violation with required corrective action and schedule, and re-inspect; and 3) if progress toward compliance is inadequate, schedule and provide notice of an administrative hearing before the hearing officer. The individual or business being issued a notice of violation may, upon written request, appeal the action to the hearing officer. The appeal is then considered at a noticed administrative hearing.

At the administrative hearing, the hearing officer will determine the required corrective action(s), establish a compliance schedule, and decide if the agency should take corrective action, such as abatement and/or cleanup. The individual or business being issued the notice of violation will be liable for all corrective action costs incurred by the agency.

An individual or business may appeal the hearing officer's decision to the decision-making body that will determine the appropriate remedy. Enforcement remedies available include filing suit, a lien, injunction, or other civil remedy; and referring the case to the Regional Board, District Attorney, or city or County legal counsels. The cities and County may impose penalties. To date, the District has not adopted enforcement penalties.

In March of 2009, the District completed a Progressive Enforcement Response Plan (PERP) that summarizes the enforcement procedures included in the District's Urban Storm Water Quality Management and Discharge Control ordinance. The PERP will be used by District staff to resolve illicit discharges and will be distributed to commercial, industrial and construction businesses during regular District trainings, site visits and other community outreach.

## **MEMORANDUM OF UNDERSTANDING**

Implementing the Ordinance results in some overlap of authorities within the participating agencies' jurisdictions. A MOU was developed to identify each agency's responsibilities to carry out the Ordinance to avoid the potential for unnecessary and inefficient duplication of effort among the agencies. The MOU is not required for an agency to adequately implement the Ordinance. During the first permit term, the City of Clovis and the County each independently entered into an MOU with the District. The City of Fresno entered into an MOU with the District during the second permit term.

In accordance with the executed MOUs, the District will have the primary responsibility for enforcing the Ordinance within the District's service area. The County will have sole responsibility for the Copper-Friant Study Area because it is located outside the District's boundary. The participating agencies will be responsible for: 1) identifying problems associated with stormwater during their daily, routine field activities; 2) notifying the parties causing the problem, and noting the problem in an inspection form or report; and 3) referring the case to the District. Upon referral, the District will proceed with the appropriate enforcement action as specified in the Ordinance.

## **PERFORMANCE STANDARDS**

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Legal Authority - The Permittees will review and update if necessary their legal authorities as needed to provide adequate permit enforcement mechanisms. The District and Co-Permittees will continue to implement, review and revise if necessary, response and enforcement procedures as outlined in the Memoranda of Understanding between the District and its Co-Permittees. The response procedures are emphasized in the annual agency stormwater pollution prevention

refresher trainings. The District and Co-Permittees will continue to enforce regulations and ordinances that provide agencies the legal authority to control illegal dumping into storm drains or to areas where rainfall or stormwater runoff could contact potential pollutants.

2. Progressive Enforcement - The District and Co-Permittees developed the PERP guidelines in 2009. The District will review and update the PERP as needed during the MS4 Permit term. The PERP will be utilized to resolve all illicit discharges and illegal connections.
3. Tracking of Enforcement Actions - The District will track its enforcement actions for illicit discharges and illegal connection.

# ICD4 – Training

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## DESCRIPTION

The MS4 Permit requires the Permittees to provide training for internal staff to identify, investigate, and eliminate illicit connections and discharges to the storm drain system. The Control Measure is focused on internal staff training performed by the District and Permittees. It is necessary for first responders, inspections staff, and relevant field staff to be trained to identify, respond to (where appropriate), investigate, eliminate, and report illicit connections and discharges discovered in their day to day activities in the field.

## EXISTING BMPS AND RELATED ACTIVITIES

The District conducts a comprehensive training program for municipal operations and maintenance staff. Fresno Metropolitan Flood Control staff and the staff of Co-Permittee agencies undergo periodic refresher training on stormwater pollution prevention including, but not limited to, discussion of spill prevention and clean up, how to identify and respond to illicit discharges, reporting procedures, and management of public facilities to prevent contamination of stormwater. The training is designed to ensure that the staffs of public agencies that are regulated by the MS4 Permit are able to understand, prevent, identify and respond to events and circumstances that endanger the quality of stormwater discharges in the region.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Internal Training - The District will continue to incorporate identification, reporting, and elimination of illegal discharges into bi-annual refresher training classes for District and Co-Permittee field staff. The District and Co-Permittees will track and document the date of the bi-annual employee refresher training and the staff that attended the training.

The District and Co-Permittees will conduct training for first responders, inspectors, and relevant field staff to ensure that they have adequate understanding to identify and respond appropriately to illicit discharges or connections encountered in their day to day activities. The District will incorporate identification of, referrals, and eliminating illicit connections into existing bi-annual refresher training classes for District and Co-Permittee field staff. The training will cover conveyance system problems, maintenance procedures, sampling protocols, maintenance tracking, and Co-Permittee referral procedures to alert the District when a storm drain system problem is identified. The type of training, frequency, and targeted staff will be described in an updated training strategy to be submitted with the first annual report.

**Table 17. Implementation Schedule for the Illicit Connections and Discharges Program Element**

Control Measure and Performance Standards	Type of Standard <sup>1</sup>	Implementation Schedule <sup>2</sup>					Responsibilities <sup>3</sup>				
		2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	FMFCD	City of Fresno	City of Clovis	County of Fresno	Cal State University - Fresno
<b>ICD1 – Detection and Identification of Illicit Discharges and Illicit Connections</b>											
Implement field activities to detect illicit discharges and illicit connections	C						P	S	S	S	S
Maintain and advertise stormwater hotline (see also PIE6)	C						P				
Coordinate with Co-Permittees to ensure that the District is notified when illicit connections are detected	C						P	S	S	S	S
<b>ICD2 – Investigation, Inspection, Follow-up, and Elimination</b>											
Update (as needed) procedures for the investigation of illicit connections and discharges, including follow-up protocols	C	X					P				
Implement procedures for the investigation of illicit connections and discharges, including follow-up protocols	C						P	S	S	S	S
Record and report illicit connections and illicit discharges	C						P	P	P	P	P
<b>ICD3 – Enforcement</b>											
Review and update legal authority (as needed)	E	X					P	S	S	S	S
Update and implement progressive enforcement response procedures (as needed)	C						P	S	S	S	S
Track enforcement actions							P	S	S	S	S
<b>ICD4 – Training</b>											
Conduct training of first responders, inspectors and relevant field staff	C	X		X		X	P	S	S	S	S

Notes:

1. C = Continue; E = Enhance; N = New

2. X = Performance Standard will be completed during this fiscal year. Gray shaded cells indicate ongoing implementation.

3. P = Primary role and responsibility. S = Secondary role and responsibility.

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# Section 6

## Public Involvement and Education (PIE)

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### 6.1 OVERVIEW

The approach to managing stormwater pollution taken by the Permittees has a strong focus on source control (i.e., keeping pollutants out of the storm drain system). This approach is widely recognized as the most cost-effective and efficient means to meet the goal of reducing pollutants in stormwater to the maximum extent practicable. Because source control means improving human activity and encouraging behavioral change, educating the public about the effects of stormwater pollution and fostering their participation in pollution control are critical to the success of the Storm Water Quality Management Program.

Periodically the District evaluates the impact of its public outreach efforts through a public awareness survey. These surveys help guide our process and help the District understand how knowledgeable the community is regarding the causes of pollution, and pollution prevention activities. The results have demonstrated that public outreach is positively affecting the community. Additionally, while evaluating the District's outreach efforts to local schools, it was discovered that teachers would like to incorporate locally relevant topics and learning tools that can be coordinated with the State education standards.

The District and Co-Permittees believe that public involvement and education is critical to the success of the stormwater programs and will continue to evaluate and enhance its outreach program through the MS4 Permit term.

### 6.2 OBJECTIVES

The Public Involvement and Education Program is designed to measurably increase the knowledge of target communities regarding MS4s, impacts of urban runoff on receiving waters, potential BMP solutions, and to change the behavior of the target communities, thereby reducing pollutant releases to MS4s and the environment. The objectives of the Public Involvement and Education Program are clearly described in the MS4 Permit and form the basis of the Program. These objectives will be accomplished through the implementation of the Control Measures for the Public Involvement and Education Program. Each objective references the applicable control measure(s) for implementation.

1. The District and Co-Permittees will encourage the public to actively participate in the implementation of the stormwater program as well as the various outreach events. **(PIE3)**
2. The 24-hour public reporting phone number will be promoted by the District and Co-Permittees. **(PIE6)**
3. The District and Co-Permittees will develop and implement a public education strategy for the overall program that includes developing and distributing materials, conducting a mixed media campaign, participating in community outreach events, and conducting public opinion surveys to gauge the level of awareness and behavior change within a community and/or target audience. **(PIE1)**
4. The District and Co-Permittees will evaluate the ability to interface and coordinate with school education programs within the MS4 NPDES Permit boundaries. **(PIE5)**
5. An updated outreach program to local businesses will be developed and implemented. **(PIE7)**
6. An assessment to determine the effectiveness of the Public Involvement and Education Program and to identify any necessary modifications will be conducted annually. The results will be included in each annual report. **(PEA)**

### 6.3 CONTROL MEASURES

The Control Measures outlined in **Table 18** and discussed in more depth within this section form the basis of the Public Involvement and Education Program Element. The agencies responsible for implementing each control measure are listed in **Table 19** which contains a summary of all control measures and anticipated implementation schedules.

**Table 18. Control Measures for the Public Involvement and Education Program Element**

Control Measure	
PIE1	Update PIE Strategic Plan
PIE2	Program Coordination
PIE3	Public Participation
PIE4	Public Outreach
PIE5	Outreach to School-Age Children
PIE6	Hotline
PIE7	Business Outreach (also see IC6, Industrial/Commercial Training)

### 6.4 EFFECTIVENESS ASSESSMENT

A comprehensive PEA strategy will provide the Permittees with the ability to determine if the stormwater programs are appropriately targeted and whether intended results are being achieved efficiently and cost-effectively and ultimately to relate these results to conditions in urban runoff and receiving waters. The SWQMP incorporates the use of management questions and goals to help determine the purpose of the data collection as well as to guide the implementation of the program. The management questions identified to guide the effectiveness assessment of the Public Involvement and Education Program are:

1. For the public participation opportunities (e.g., storm drain stenciling, cleanup events), how many volunteers assist at how many sites? What are the results of the activities (e.g., how many storm drain inlets are stenciled, how much trash is collected)? **[PIE3]**
2. Is the general public aware that stormwater runoff drains to stormwater basins untreated and the majority of the runoff infiltrates into the ground water aquifer? **[PIE4]**
3. Is the general public aware of the water pollution hotlines that have been established by the Permittees? **[PIE6]**

The management questions were developed to address a specific control measures implemented as part of the program. For these control measures, performance standards were identified to allow the Permittees to track their progress in implementation of the control measure and gauge the effectiveness of their program. The performance standards are used to evaluate Level 1 (implementation), Level 2 (awareness), Level 3 (behavior), and Level 4 (load reduction) in terms of the Public Involvement and Education Program and provide the foundation for program effectiveness assessment for the Public Involvement and Education Program. The performance standards, assessment levels, and assessment data are discussed further in the *LTEA Strategy*.

# **PIE1 – Update Public Involvement and Education Strategic Plan**

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## **DESCRIPTION**

The MS4 Permit requires the Permittees to implement a public education strategy for the stormwater program that includes developing and distributing materials, conducting a mixed media campaign, participating in community outreach events, and conducting public opinion surveys to gauge the level of awareness and behavior change within a community and/or target audience.

## **EXISTING BMPS AND RELATED ACTIVITIES**

The Fresno Metropolitan Flood Control District (District) developed a Public Education and Outreach Strategic Plan in FY 2001-02. The District and Co-Permittees have since been implementing this Strategic Plan. The District joined together with the City of Fresno, City of Clovis, County of Fresno, California State University, Fresno and the California Department of Transportation to implement the Strategic Plan with the goal of educating the citizens and workers in the Fresno/Clovis area about pollution prevention. This partnership of agencies has formed the Partners for a Clean Community (Partners). The Partners leverage funds to produce media campaigns with recognizable characters and specific themes.

The District and its partners have created targeted education for:

- Construction practices that can be improved to help reduce stormwater pollution.
- Training and guidance for specific industries that can easily be put into practice. Guidance materials have been developed for automotive repair, carpet cleaners, and pool cleaners.
- Educational materials designed for students that align to the State standards and grants for field trips to the largest local water resource, the San Joaquin River.

The District also supports state and national consumer product changes that reduce the pollutants that enter our storm drain system. By supporting changes nationwide, like changing the materials in brake pads from metal to ceramic, our community could benefit from the change by reduced copper entering our storm drain system.

A Strategic Plan update was delayed in anticipation of NPDES permit renewal, which occurred May 31, 2013. The update is currently underway and will be completed in FY 2013/2014. The updated Strategic Plan is anticipated to guide the District's PIE efforts for the MS4 Permit term.

The 2013 public awareness survey and focus groups are important components of the Strategic Plan update process. Identified gaps in public knowledge and in message delivery will shape outreach efforts over the next five years. Limited staff and budget resources will be allocated to activities and outreach methods that reach the most people the most effectively, and help promote stormwater pollution-preventing behaviors in the widest range of community members. The updated Plan will guide the allocation of budget resources and personnel resources. Considerations for the plan include:

- Presence at public events,
- Involvement in school education programs,
- Business and construction outreach,
- Mixed media campaign content and structure,
- Development of messages used in updated PSAs and other advertisements, printed material, and the District's website,

- Coordination with Co-Permittees and other local agencies and organizations, and
- Community involvement projects.

Consideration will also be given to Co-Permittees' outreach activities and messages with the goal of maximizing time efficiencies and reach, while avoiding duplication of efforts and expenses where possible.

## **PERFORMANCE STANDARDS**

The Performance Standard listed below establishes the level of effort required for this Control Measure.

1. Update the PIE Strategic Plan - The District and Co-Permittees will update the Public Involvement and Education Strategic Plan based on effectiveness assessment evaluations of previous outreach programs and Permit requirements. To accomplish the update of the plan, the District and Co-Permittees will:
  - Inventory existing District Public Outreach Program activities and determine which activities meet permit requirements, which activities need updating to meet permit requirements, and which activities should be discontinued.
  - Incorporate significant findings of the 2013 Public Awareness Survey and Focus Group Report into revised Public Involvement and Education Strategic Plan.
  - Inventory public outreach activities of Co-Permittees to identify duplication, gaps, and additional opportunities for collaboration and information/data sharing.
  - Talk with teachers to find out their preferences in receiving and using information, and whether the District's current offerings of two elementary school activity books, water cycle poster, Storm Drains 101 video, and San Joaquin River field trip and environmental project grants, meet their needs. Determine whether other modes of communication are preferred, e.g., web-based activities and information instead of hard copies of materials.
  - Incorporate Strategic Plan recommendations into the MS4s Stormwater Quality Management Program including revisions to the stormwater messaging and outreach tools.

## **PIE2 – Program Coordination**

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### **DESCRIPTION**

To ensure the outreach programs are developed and implemented efficiently and effectively, program coordination between various stakeholder groups and target audiences is critical to the Public Involvement and Education Program. Program coordination will occur where feasible in order to leverage existing outreach efforts and to ensure consistency in messaging delivered to target audiences.

### **EXISTING BMPS AND RELATED ACTIVITIES**

The District and Co-Permittees recognize that public education is an effective method for reducing pollutants in stormwater. For this reason, the District focuses resources on developing and implementing tools to increase public awareness, such as presentations, public service announcements, fact sheets, and informational websites. The District promotes and participates in coordinated outreach efforts to reach all members of the community by presenting information in a multi-lingual format.

Stormwater pollution prevention strategies employed by the District and Co-Permittees include promoting proper recycling and disposal of household wastes, and coordinating with waste collection and recycling programs within the MS4 Permit area. The District also advocates proper pest management, and provides Integrated Pest Management training throughout the year. The District provides grant money to community organizations to fund public education through environmental projects and field trips and targets businesses through its Partners for Clean Stormwater Program.

The following are examples of existing coordination efforts, programs, and tasks implemented by the District and Co-Permittees.

- The District reviews PIE materials and conducts public surveys and focus groups to judge the effectiveness of past program activities. The District uses these concepts to refine program materials to enhance the public’s knowledge of stormwater issues and public involvement and responsibilities. Based on the above research, the District regularly updates the strategic public education and involvement plan.
- The District contributes \$10,000 yearly to the California Stormwater Quality Association for projects like the development of Stormwater Best Management Practice Handbook, effectiveness measurements white paper and guidance manual, and quarterly state and regional stormwater workshops and trainings.
- District staff participate in nationwide programs, including:
  - Maintaining active membership with the Water Environment Research Foundation (WERF) and provided \$10,000 to WERF for stormwater research initiatives.
  - Participating in the National Association of Flood and Stormwater Managers Association (NAFSMA).
  - Providing comments on policy initiatives to EPA through CASQA.
- The District meets with public information officers from various other programs to develop cooperative efforts that incorporate stormwater quality messages and other water resource messages that have either a direct or indirect association with stormwater issues and messages.

- The District and Co-Permittees produce and air radio and television advertising campaigns to increase the public’s awareness of stormwater problems, recycled used motor oil and oil filters, household hazardous waste. Participate in community and public education events at which household hazardous waste management and used oil recycling information is distributed. Utilize paid advertising, public service announcements, radio programs, and public education events to publicize, promote, and coordinate household hazardous waste drop-off events. Promote and operate Countywide Door-to-Door Residential HHW Collection Program.
- The Central Valley Water Awareness Committee (CVWAC), established in 1987, is made up of public agencies and private companies that work to provide portions of the Central San Joaquin Valley with safe and reliable water for their community while encouraging sound water conservation and pollution prevention practices by everyone. Through CVWAC, the District, City of Fresno, City of Clovis, and California State University Fresno participate in, host, and sponsor local events that educate the public and encourage pollution preventing behavior change.
- The Central Valley Friendly Landscaping is an education and award program initiated in 2009 by the University of California Cooperative Extension in Fresno County. Residential and commercial/institutional landscape pollution prevention, water conservation, and IPM practices are encouraged and recognized by the group through a formal application and award process, as well as through instructional information provided at [www.ucanr.org/sites/cvlandscape/](http://www.ucanr.org/sites/cvlandscape/), hosted by the University of California. The District, City of Clovis, and City of Fresno are among the participants and sponsors, along with the Master Gardeners of Fresno County, and the Clovis Botanical Garden.
- The District continues to partner with the U.C. Cooperative Extension (Cooperative Extension) of Fresno County to incorporate Integrated Pest Management (IPM) training and outreach into its Master Gardeners program, emphasizing the relationship between pesticide use and stormwater quality. This includes the distribution of IPM material and partnering with Orchard Supply Hardware for point of purchase shelf talkers.
- In 2007-08, members of the multi-agency PIE Advisory Committee created a new working committee titled “Partners for a Clean Community”. The group is made up of Co-Permittees and Caltrans environmental program staff, and explores opportunities for collaboration public education and outreach. Such collaboration includes media advertising, print material and staffing at community outreach events. This practice produces more benefit for each taxpayer dollar spent on promoting similar pollution prevention messages and activities.
- The Districts and Co-Permittees give numerous presentations to schools. These presentations include a magic-oriented environmental presentation with watershed models to teach students the fundamentals of water resources with an emphasis in stormwater management.
- The District established its “Clean Stormwater Grant Program” in January 1997. The grant program provides project sponsors with a means to compete for and receive District financial and in-kind support. Grant recipients provide the District cost-effective opportunities to participate in projects that promote District stormwater quality objectives and help meet NPDES permit public information requirements, while taking advantage of established volunteer efforts, interagency networks, and media opportunities.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. PIE Advisory Committee - The District and Co-Permittees coordinate through the PIE advisory committee (Partners for a Clean Community). The committee is comprised of the public, partner agencies, community groups, and other interested parties to facilitate broad implementation of outreach strategies.
  - Continue to organize and host meetings of Partners for a Clean Community to maintain communication among participating agencies and explore opportunities for collaboration.
  - Work with the District's public relations consultant to develop multi-agency stormwater quality messages for new advertising concept and advertising copy for a television and radio public service announcement (PSA) to be aired for the next five years. (Detail found under Objective 4.c. Conduct mixed media campaigns.)
  - Continue to share information on members' outreach activities, data collection methods, and types of data collected.
2. External Coordination - The District and Co-Permittees will continue to coordinate with other water resources public outreach groups including:
  - Continue to participate in Central Valley Water Awareness Committee (CVWAC) to plan collaborative outreach and sponsorship of water-focused efforts. Examples include sponsorship and participation in the annual Water Wise Plant Exchange at California State University, Fresno; sponsorship of the Central Valley Friendly Landscaping Award program; sponsorship of the Clovis Botanical Garden's planned construction of a best-practice landscape area to show low water use plants and information about integrated pest management. All of these align with the District's efforts to reduce urban water overuse and the conveyance of yard and garden chemicals to stormwater basins and receiving waters.
  - Continue to participate in regular Central Valley Friendly Landscaping recognition program planning meetings, program promotion, solicit and review applications, perform site visits and, put on the annual awards event and provide information and photos for website promotions updates.
  - Meeting with public information officers from various other programs to develop cooperative efforts that incorporate stormwater quality messages and other water resource messages that have either a direct or indirect association with stormwater issues and messages.
  - Throughout the Fresno/Clovis metropolitan there are several initiatives that are underway to implement water resource education programs. These include the Fresno Discovery Center, Valley Nature Education Center, San Joaquin River Fish Hatchery Project, and International Center for Water Technology at CSU Fresno. The District and Co-Permittee agencies will advocate where appropriate for stormwater education, pollution prevention practices, and stormwater infrastructure education as a part of these broader projects.
  - Participating in interagency events to build public awareness of regional water resources, water resource management, stormwater quality management practices, pollution prevention, waste collection and recycling programs. During the MS4 Permit term the District will consider education programs at the Big Fresno Fair.

- The City of Clovis implements water conservation measures that include specific residential and commercial schedules, voluntary landscape audits and water patrols that enforce schedules and investigate overwatering, leaks or broken pipes.
- The City of Fresno Water Division's water conservation public information program has many components including multi-media campaigns (paid and public service advertising); customer billing inserts; literature; public outreach activities, speakers bureau and inter-agency partnerships. Hmong and Spanish language are also utilized as is possible. The outreach includes providing information on customers' bills showing use in gallons per day for the last billing period compared to the same period the year before; providing public information to promote water conservation practices; and coordinating with other government agencies, industry groups, public interest groups, and the media.
- The District and Co-Permittees will continue to coordinate with water conservation and other resource conservation programs to reduce discharges of landscape irrigation waters to the storm drain system. The Cities of Fresno and Clovis implement water conservation programs that include public education, commercial business water conservation audits, and enforcing water schedules. The District will continue to support these programs and meet regularly with the program staff to coordinate water conservation public education.

3. Track State and National Stormwater Quality Issues -

- Current information on state and national water quality issues is collected from a number of sources (e.g. CASQA, Water Policy Report, ACWA, CSDA) that routinely track and analyze legislative and regulatory developments. The District will remain up to date on issues that could impact its provision of service, water quality monitoring, staff workload, and NPDES program expenditures.
- The District will also provide feedback in shaping potential legislative or regulatory changes, both to state and national elected representatives, to governmental agencies, and to professional associations' legislative advocacy staff, when necessary to protect the ability of the District to meet its permit responsibilities.



# PIE3 – Public Participation

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## DESCRIPTION

The MS4 Permit requires the Permittees to encourage the public to actively participate in the implementation of the stormwater program. To promote public participation, the Permittees implement a public education strategy for the overall program that includes developing and distributing materials, conducting a mixed media campaign, participating in community outreach events, and conducting public opinion surveys to gauge the level of awareness and behavior change within a community and/or target audience. This strategy provides mechanisms for public participation in the implementation of this SWQMP.

## EXISTING BMPS AND RELATED ACTIVITIES

The District and Co-Permittees currently implement multiple activities promoting public participation in the Clean Stormwater Program. These include storm drain stenciling events, household hazardous waste and used oil Collection events, and administration of the Clean Stormwater Grant Program. Each program provides opportunity for one-on-one outreach and education for the public, as well as opportunities for the public to take action to reduce stormwater pollution within the region.

The storm drain stenciling events continue to be implemented each year. Storm drain inlets lacking informative messages were identified and were stenciled with the message “No Dumping. Protect Your Water.” Hundreds of community volunteers have been recruited to label storm drain inlets. The City and County of Fresno provide multiple waste collection and recycling outreach events each year. Existing Co-Permittees’ programs such as recycling used motor oil, used oil filter exchange events, recycling solid waste, and other waste management activities, prevent these materials from becoming stormwater pollutants.

The District established its “*Clean Stormwater Grant Program*” in January 1997. The grant program provides schools and community groups with a means to compete for and receive District financial and in-kind support. Grant recipients provide the District with cost-effective opportunities to participate in projects that promote District stormwater quality objectives and help meet NPDES permit public involvement and education requirements. The District advertises the availability of the grants through an extensive mailing list developed over the years, as well as posting on the District web site ([www.fresnofloodcontrol.org](http://www.fresnofloodcontrol.org)) and the California Regional Environmental Education Community web site ([www.creec.org/region7](http://www.creec.org/region7)).

The Clean Stormwater Grant program has increased in popularity and funding. Between 2005-2006 and 2007-2008 roughly 12 grants per year were awarded. In 2012-13, 23 grants were awarded: 11 San Joaquin River field trips for classrooms, and 12 local environmental education projects, totaling nearly \$26,000.

A new program was added in September 2009 to provide a packaged educational opportunity for 5<sup>th</sup> grade classrooms by providing them funding for a field trip at the San Joaquin River. The program was developed as part of the 5th grade outreach strategy. This program gets students out to the San Joaquin River to participate in hands-on activities about water resources and water quality. This program has been very successful with over 4,800 fifth graders participating in the grant program since it started in 2009.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Public Participation - The District and Co-Permittees will publicize and recruit volunteers to conduct storm drain stenciling and participate in other events. Activities to support this performance standard include:

- Identification of drainage areas to target and map storm drain inlets to mark.
  - Continuation of Clean Stormwater Grants for storm drain marking volunteer projects.
  - Development and distribution in City of Clovis and City of Fresno utility bill inserts an information sheet explaining the marker program to recruit citizens for storm drain marker program and other community events.
  - Updates to storm drain marker web page highlighting the benefits/incentives of the program.
  - Recruitment of volunteers through Clean Stormwater Grant recipient groups, organizations, and programs that organize and perform river clean up events.
  - The District and Co-Permittees will continue to partner with the high school students and community groups in the stenciling of storm drains with the message “No Dumping – Protect Your Water.”
2. Clean Stormwater Grant Program - The District and Co-Permittees will maintain the Clean Stormwater Grant program to support school, community and neighborhood based improvement programs. Activities to support this performance measure include:
- Focusing the Clean Stormwater Grant Program on fifth grade field trips, general school field trips, low impact development (LID) projects, storm drain stenciling, and river cleanup projects.
  - Exploring new ways to connect to teachers and community groups to provide information about District materials, grants, and presentations.
  - Partnering with other agencies and groups who provide educational outreach to schools as a way to reach more teachers.
  - Conducting a teacher workshop or open house where teachers can get information on grants, help with grant applications, materials, and make presentation appointments.
  - Through planned fifth grade teacher focus group meetings, gain a better understanding of the best ways to recruit and involve fifth grade classes in river field trips under the Clean Stormwater Grant Program.

## **PIE4 – Public Outreach**

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### **DESCRIPTION**

The MS4 Permit requires the Permittees to update the Public Outreach Program component of its SWQMP to educate the public and encourage their participation in the implementation of the SWQMP.

### **EXISTING BMPS AND RELATED ACTIVITIES**

The District and its Co-Permittees conduct stormwater pollution prevention outreach to four main target audiences: general public, construction and development businesses, industrial and commercial businesses, and schools. The overall goal is to educate targeted audiences about the impacts of stormwater runoff and ways to reduce stormwater pollutants.

The District and Co-Permittees produce and air television and radio advertising campaigns to increase the public's awareness of stormwater problems, encourage recycling of used motor oil and oil filters, and household hazardous waste. The District and Co-Permittees also participate in community and public education events at which household hazardous waste management and used oil recycling information is distributed. Various types of paid advertising, public service announcements, radio programs, and public education events are utilized to publicize, promote, and coordinate household hazardous waste drop-off events. The District and Co-Permittees also promote and operate a Countywide Door-to-Door Residential HHW Collection Program. The District has developed and distributes a variety of informational materials to convey stormwater pollution prevention information. Information pieces include fact sheets, brochures on many topics, two elementary school activity books, a classroom poster, and a classroom DVD. The messages conveyed in these materials are updated periodically, and new information pieces are created when needed.

The District continues to partner with the U.C. Cooperative Extension (Cooperative Extension) of Fresno County to incorporate Integrated Pest Management (IPM) training and outreach into its Master Gardeners program, emphasizing the relationship between pesticide use and stormwater quality. This includes the distribution of IPM material and partnering with Orchard Supply Hardware for point of purchase shelf talkers.

The District and Co-Permittees have developed program materials targeting Spanish and Hmong speaking residents within the MS4 Permit boundary. The District allocates approximately 35 to 40% of its media funds in an attempt to reach non-English speaking residents. The District has developed two Hmong informational fact sheets for distribution at Hmong community cultural events. These fact sheets are designed to educate the community on the storm drain system and inform the community regarding prohibited discharges to the storm drain system. The District also developed Hmong language storm drain stencils and a Hmong language video for use in the community. The District distributes these materials yearly at the E-Street fair, a Hmong community street fair, and at other Hmong cultural events.

Periodic public awareness surveys are conducted to assess changes in public perceptions, awareness and behaviors related to stormwater quality management. Survey results are used to modify outreach efforts to address findings of potential significance to stormwater quality. The last survey was completed in February, 2013. It was a telephone survey of a stratified random sample of 400 adult residents of Fresno and Clovis. Participants were chosen to approximate the true population make-up in terms of socioeconomic status, ethnicity, geography and language. This sample size allowed collection of data at a 4.9% confidence interval, at a confidence level of 95%. These are considered reliable survey standards, and generally representative of the larger population.

Results of the survey and subsequent focus groups were analyzed and major findings used to make recommendations for changes in program materials and messages. Gaps in public knowledge of where

stormwater goes, of the connection between human actions and stormwater quality, and that stormwater percolates to groundwater were significant. Program materials and messages will be adjusted to address these and other topics of significance. Stated preferences and expectations of how information is received will also be used to determine how and where information is conveyed.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Outreach Materials - The District and Co-Permittees will develop, update, and distribute materials on stormwater pollution prevention. The following activities will support implementation of this control measure:
  - The District will review the general public brochure, general stormwater pollution, storm drain system, and groundwater recharge/pollution prevention fact sheets for relevance to current NPDES permit requirements and program messages. These outreach materials will be updated, augmented, or discontinued as appropriate.
  - The District will review the Clean Storm Water Activity Book and From the Mountains to the Valley: the Story of Our Water activity books, Storm Drains 101 video, and water cycle poster for relevance to schools' needs, NPDES permit requirements, and program messages. These outreach materials will be updated, augmented, or discontinued as appropriate.
  - The District will review commercial/industrial fact sheets for relevance to NPDES permit requirements and program messages. These outreach materials will be updated, augmented, or discontinued as appropriate.
  - The District will review construction fact sheets for relevance to NPDES permit requirements and program messages. These outreach materials will be updated, augmented, or discontinued as appropriate.
  - The District will review content on District's website, reduce the amount of copy used, post all updated and new informational materials for reading and/or download, and include relevant links to other organizations' information resources.
2. Community Events - The District and Co-Permittees will participate in community outreach events. To support this performance standard, the following activities will be implemented:
  - The District will inventory regularly held community events to discover new opportunities for participating in multi-cultural outreach to Spanish-speakers and Asian audiences at community events.
  - The District will update event displays and promotional items (spinning prize wheel, pencils and bags) to be consistent with the new PSA.
  - The District will enhance interaction with the public through the use of intercept surveys.
  - The District will explore using bilingual staff or outreach contractors to staff Spanish and Hmong events.

3. Multi-cultural Outreach - The District and Co-Permittees will strive to enhance multi-cultural outreach through the following activities:
  - The District will perform culturally accurate translation of updated and new brochures and factsheets into Spanish when applicable.
  - The District will perform culturally accurate translation of updated classroom materials into Spanish, such as the two elementary school activity books.
  - The District will perform culturally accurate translation of updated television and PSAs into Spanish.
  - The District will explore making web content available for one-click conversion to Spanish, and determine how to accomplish search engine optimization that accounts for translation.
  - The District will explore increased participation in Spanish language community events by employing Spanish/English bilingual staff members or consultants.
  - The District will explore increased participation in Hmong public events with hired translators or in partnership with Hmong community groups.
  - As part of mixed media campaign planning (See Objective 4.c. below), the District will explore potential messaging and the cost of advertising in phonebook Yellow Pages to better reach Spanish-speakers, and use Hmong radio as an outreach tool for Hmong-speakers.
4. Mixed Media Outreach - The District and Co-Permittees will conduct mixed media campaigns through implementation of the following activities:
  - Produce two sets of PSAs, one with wet weather messages and one with dry weather messages, in English and in Spanish.
  - Produce English and Spanish print, bus, and billboard advertisements to reinforce the messages of the new PSAs.
  - Produce event displays and promotional items for community events to reinforce the messages of the new PSAs and build public awareness of the campaign.
  - Conduct mixed media campaigns using the PSAs and print media.
  - Select appropriate campaign time frames (typically fall and spring, often six weeks each).
  - Explore operational feasibility of installing educational signage at District stormwater basin sites to take advantage of their visibility in high-traffic areas.
5. Promotion of Integrated Pest Management - The District and Co-Permittees will maintain and enhance the Integrated Pest Management outreach program through implementation of the following activities:

- Continued partnership with Master Gardeners on “Our Water Our World” gardening campaign, implemented at Orchard Supply Hardware by supplying shelf-talker labels, fact sheets, and literature racks.
  - Expand the partnership with Master Gardeners to include outreach to Home Depot stores in Fresno and Clovis by initiating meetings with store managers and staff, with the assistance of Our Water, Our World outreach specialist, and providing literature racks, ‘shelf talker’ product labels, fact sheets, and employee outreach.
  - Evaluate why Spanish fact sheets at Orchard Supply Hardware stores are rarely taken by Spanish speakers, though focus groups revealed that is how they would prefer to receive IPM information.
  - Continue to provide replacement interpretive IPM signage at the Garden of the Sun, as needed.
  - Continue sponsorship and presentations at biannual Master Gardener conferences and annual presentations for new classes of Master Gardeners.
  - Continue distribution of IPM fact sheets at public events, and explore increased distribution at events for Asian and Spanish-speaking audiences.
  - Improve the way IPM information is presented on the District’s website to make it easy to find and use, including one-click Spanish translation and links to Spanish fact sheets.
  - Continue participation in and sponsorship of Central Valley Friendly Landscaping award program, and help maintain website content.
  - Explore how to change public opinion that less-toxic means less effective.
6. Public Awareness Survey – The District will update and implement a public awareness survey to gauge the effectiveness of the public outreach efforts performed by the Permittees.

# **PIE5 – Outreach to School-Age Children**

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## **DESCRIPTION**

The MS4 Permit requires the District and Co-Permittees to evaluate the ability to interface and coordinate with school education programs within the MS4 NPDES Permit boundaries.

## **EXISTING BMPS AND RELATED ACTIVITIES**

The District and Co-Permittees provide multiple outreach programs to local schools. These include targeted education for students that align with the state education standards; school presentations; and funding of numerous field trips and environmental projects through the Clean Stormwater Grant Program.

In FY 2009-10, the District and Co-Permittees completed a 24-page water resources activity book, developed with the help of local fifth grade teachers to align with State of California fifth grade earth sciences standards. Water topics covered include supply, conservation, pollution prevention, wastewater treatment, and wildlife habitat. The booklet was added to previously developed materials and is now offered to fifth grade teachers as part of a complete set.

The Districts and Co-Permittees give numerous presentations to schools. These presentations include a magic-oriented environmental presentation with environmental watershed models to teach students the fundamentals of water resources with an emphasis in stormwater management.

The District continues to offer annual Clean Stormwater Grants to fifth grade classes, providing funding for a field trip to the San Joaquin River. The students participate in hands-on activities about water resources and water quality. Since 2009, nearly 5,000 students from at least 15 local schools have participated in this grant program. The Clean Stormwater Grant program has increased in popularity and funding. Between 2005-2006 and 2007-2008 roughly 12 grants per year were awarded. In 2012-13, 23 grants were awarded: 11 San Joaquin River field trips for classrooms, and 12 local environmental education projects, totaling nearly \$26,000.

## **PERFORMANCE STANDARDS**

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Maintain Outreach to Schools - The District and Co-Permittees will maintain and promote water resources outreach materials, classroom presentations, and river field trips. This will be accomplished through implementation of the following activities:
  - Conduct a focus group with fifth grade teachers to explore new ways to connect to teachers and distribute information about water resources, grants and classroom presentations.
  - Partner with other agencies and groups who provide educational outreach to schools as a way to reach more teachers.
  - Provide a sample presentation on YouTube, Facebook and other social media sites to introduce teachers to our educational materials and presentations.
  - Continue to promote classroom presentation availability on the California Regional Environmental Education Community (CREEC) website for teachers.
2. Coordination with School Curricula - The District and Co-Permittees will evaluate ability to interface and coordinate with school education curriculum.

- Review school curriculum to determine if curriculum matches the District messages and explore additional opportunities to create additional water resources outreach messages and materials.
  - Conduct a focus group of teachers to get ideas for school materials that match State standards.
  - Explore creating a focused school grant to educate students in another grade about stormwater.
  - Work with other agencies to coordinate educational outreach to students.
  - Explore creating a Facebook page or website for teachers to gather information about local resources for teachers to use in their classrooms or grants available to help with supplies or field trips.
3. Classroom Presentations - The District and Co-Permittees will continue to make classroom presentations.
- Incorporate pertinent findings of fifth grade teachers focus group into the materials and messages represented in the classroom presentations.
  - Continue to offer classroom materials on website for download.
  - Create an interactive page for teachers and students on the District's website.
  - Explore developing a pre- and post-presentation test on topics covered.
  - Continue River Camp student presentations each summer.
  - Explore creating a social media presence to interact with teachers and students to promote presentations and reinforce lessons learned.
  - Send out advertisements or e-mails promoting presentations and other resources, including a listing on the CREEC (California Regional Environmental Education Community) website for teachers.
4. Regional Programs - The District and Co-Permittees will support existing regional water education program activities.
- Solicit stormwater grant applications from regional water education programs.
  - Provide educational materials and promotional items to regional water education programs, including classroom presentations.
  - Continue to promote materials and presentations through CREEC (California Regional Environmental Education Community) website for teachers.
  - Explore YouTube presentations and/or Facebook presence.



## **PIE6 – Hotline**

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### **DESCRIPTION**

The MS4 Permit requires the Permittees to promote the use of the 24-hour public reporting phone number.

### **EXISTING BMPS AND RELATED ACTIVITIES**

The District's main phone number is the phone number that the public, businesses and other agencies use most often when reporting a complaint. After hours complaints are directed to an on-call District employee who either investigates the complaint or assists first responders in resolving the complaint. If the complaint is not an emergency, the necessary information is collected and the complaint is investigated during normal working hours.

### **PERFORMANCE STANDARDS**

The Performance Standard listed below establishes the level of effort required for this Control Measure.

1. Stormwater Hotline - The District and Co-Permittees will continue to promote and publicize District's main line as the 24-hour "hotline" number in outreach materials.
  - Continue to print the District's main phone number, (559) 456-3292, on all informational materials produced.
  - Continue to provide after-hours options for callers on the District's outgoing voicemail message.
  - Continue interagency collaboration with Co-Permittees on the response to illegal dumping calls that must be referred by the District as appropriate.

# PIE7 – Business Outreach

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## DESCRIPTION

The MS4 Permit requires each Permittee to implement a Public Outreach Program using all media as appropriate to (1) measurably increase the knowledge of target communities regarding MS4s, impacts of urban runoff on receiving waters, and potential BMP solutions for the target audience; and (2) to change the behavior of target communities and thereby reduce pollutant releases to MS4s and the environment. One of the target audiences for the Public Outreach Program is the local business community.

## EXISTING BMPS AND RELATED ACTIVITIES

The District conducts outreach and provides technical assistance and training to the industrial, commercial, and construction communities. Outreach is developed according to needs identified in industrial and construction committee meetings, feedback during stormwater trainings workshops, Clean Stormwater Partners focus groups, and field inspectors' evaluations and observations.

The District and its partners have created or will create targeted training and materials for specific industries including automotive repair, restaurants, retail gasoline outreach and industrial facilities. The information is designed so it can be easily put into practice by that industry.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Outreach to Businesses via Workshops - Conduct workshops for targeted businesses.
  - Develop an inventory of the region's Industrial General Permittees using the information available on the SMARTS system. (See Industrial Program Element)
  - Develop an inventory of restaurants, automotive service facilities, retail gasoline outlets, and other industrial facilities that are not covered by the General Industrial Permit Description. This inventory will be developed using a search of SIC-specific businesses within the FMFCD NPDES Permit boundary not already on the Industrial General Permit list. (See Industrial Program Element)
  - Develop workshop materials specific to each class of discharger (e.g. PowerPoint presentations and mailing lists and e-mail address lists).
  - Make available issue-specific outreach materials specific for each class of discharger (e.g. brochures, posters, checklists).
  - Conduct one business-specific workshop for targeted commercial and industrial businesses once during the Permit term for each class of discharger.
  - Post all workshop materials on District website.
  - For businesses that have their own training programs or are not able to attend a workshop, make workshop materials/presentations available for businesses to conduct their own training, or conduct site-specific training on request.
  - Track workshop attendance and materials distribution for annual reporting, fiscal reporting and fiscal planning purposes.

2. Business Outreach Materials - Develop and distribute outreach materials

- Inventory existing stormwater pollution prevention materials to determine which products remain useful to implementing the new Municipal Permit and the new Industrial Permit.
- Where existing materials are lacking, develop or refer to stormwater pollution prevention outreach materials specific to each class of targeted businesses.
- Develop or refer to generalized commercial or general stormwater pollution prevention information suitable for all types of sources to ensure this information is available to non-targeted businesses.
- Distribute the materials during inspections of the region's Industrial General Permittees, restaurants, automotive service facilities, retail gasoline outlets, and industrial facilities that are not covered by the General Industrial Permit Description.
- Distribute materials at Industrial/Commercial discharger workshops on the new Municipal Permit/Industrial General Permit to be held in summer of 2014.
- Place all stormwater pollution prevention materials on the District website in formats suitable for printout by normal small-business-scale printers.
- Gather feedback from businesses to improve the design and implementation of outreach materials.

**Table 19. Implementation Schedule for the Public Information and Education Program Element**

Control Measure and Performance Standards	Type Standard <sup>1</sup>	Implementation Schedule <sup>2</sup>					Responsibilities <sup>3</sup>				
		2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	FMFCD	City of Fresno	City of Clovis	County of Fresno	Cal State University - Fresno
<b>PIE1 – Update PIE Strategic Plan</b>											
Update the PIE Strategic Plan	C	X					P	S	S	S	S
<b>PIE2 – Program Coordination</b>											
Coordinate with the PIE advisory committee (Partners for a Clean Community)	C						P	S	S	S	S
Coordinate with other water resources public outreach groups	C						P	S	S	S	S
Track state and national stormwater quality issues	C						P	S	S		
<b>PIE3 – Public Participation</b>											
Publicize and recruit volunteers to conduct storm drain stenciling and participate in other events	C						P	S	S	S	S
Maintain Clean Stormwater Grant Program	C						P				
<b>PIE4 – Public Outreach</b>											
Develop, update and distribute materials on stormwater pollution prevention	C						P	S	S	S	S
Participate in community outreach events	C						P	S	S	S	S
Enhance multi-cultural outreach	C						P				
Conduct mixed media campaigns	C						P				
Maintain and enhance the Integrated Pest Management outreach program	C						P	S	S	S	S
Update and implement public awareness survey	C				X		P	S	S	S	S
<b>PIE5 – Outreach to School Age Children</b>											
Maintain and promote water resources outreach materials, classroom presentations, and river field trips	C						P				
Evaluate ability to interface and coordinate with school education curriculum	N		X				P				
Make classroom presentations	C						P	S	S	S	
Support existing regional water education program activities	C						P				
<b>PIE6 – Hotline</b>											
Promote/publicize the 24-hour hotline number in outreach materials	C						P	S	S	S	S

Control Measure and Performance Standards	Type Standard <sup>1</sup>	Implementation Schedule <sup>2</sup>					Responsibilities <sup>3</sup>				
		2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	FMFCD	City of Fresno	City of Clovis	County of Fresno	Cal State University - Fresno
<b>PIE7 – Business Outreach (also see IC6)</b>											
Conduct workshops for targeted businesses	C		X				P				
Develop and distribute outreach materials	C		X				P	S	S	S	S

Notes:

1. C = Continue; E = Enhance; N = New

2. X = Performance Standard will be completed during this fiscal year. Gray shaded cells indicate ongoing implementation.

3. P = Primary role and responsibility. S = Secondary role and responsibility. I= Individual role and responsibility

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# Section 7

## Planning and Land Development Program

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### 7.1 OVERVIEW

The District owns, operates, and maintains the Master Planned storm drainage system serving the MS4 Permit area. The local stormwater drainage system consists of interconnected surface conveyances, storm drains, detention basins (stormwater basins), pump stations, and outfalls which discharge to the local groundwater aquifer, irrigation canals, creeks, and the San Joaquin River. Forty five stormwater basins do not discharge to receiving waters (i.e., terminal basins). The system is designed to retain and infiltrate as much runoff as possible into the underlying groundwater aquifer. At present, the local drainage service area is divided into 158 relatively small drainage areas (approximately one to two square miles each). One hundred and fifty three of these areas drain to a stormwater basin. The District Master Plan storm drainage pipeline system is designed to accept the peak flow rate of runoff from a two-year intensity storm event (a storm which has a 50% probability of occurring in any given year). Based on modeling completed by the District during the first permit term, approximately 90% of the runoff generated in the District's urban service area is retained in stormwater basins. On average, the District's system of stormwater basins infiltrates approximately 70 - 80% of the average annual stormwater runoff annually.

As described in the Permittees MS4 permit (Fact Sheet), continuation of Fresno-Clovis MS4 Permit Finding of Exceeding SUSMPs for New Development and Redevelopment, submitted on 27 October 2008, the MS4 system covered by this Permit is composed of and will continue to be composed of regional, structural detention facilities, which capture runoff from all urban land uses. A major objective of the Permittees is to percolate as much rainfall as possible into the aquifer that underlies the Fresno Metropolitan Area to replenish the drinking water supply and slow the decline of the groundwater table. As a result of its design, and as described below, the MS4 system provides a substantially broader coverage than that of current LID and SUSMP requirements.

The District updated its stormwater basin capacity criteria and design standards in June 1982. The stormwater basin capacity criteria is a storage volume of not less than 60% of the average annual rainfall. Unless necessary to meet operational criteria for subsequent storms, stormwater is not discharged from detention basins and the majority of the stormwater percolates to groundwater. The District has the option to discharge into the Fresno Irrigation District system so the water can be used for agricultural purposes. Five drainage areas discharge directly, without benefit of any stormwater basin storage, through a pumping station to the river or irrigation canal. Two of these drainage areas that are not heavily developed currently discharge directly to the San Joaquin River, without prior storage. Four drainage areas discharge to the river, upon release from stormwater quality detention facilities. There are another 27 which discharge to canals and other channels after going to a stormwater basin.

Local storm drainage Master Plan engineering is achieved by analyzing the topography, existing and planned land use, climatology, and geology to produce a detailed drainage hydrology for each local drainage area. Following these analyses, drainage area boundaries are identified, runoff flows based on planned land uses are computed, stormwater basin size and location is determined and preliminary pipeline or alternative conveyance system plans are completed. System relief facilities for use in major storm events are also addressed during the planning stage. The coordination of local relief flows with flood control flows, which may be occurring simultaneously in the streams and canals, must be considered. All parcels of land potentially required to build the storm drainage system are assessed to ensure that there is no evidence of hazardous material or waste contamination. Site-specific environmental studies are also conducted in compliance with the California Environmental Quality Act (CEQA).

District staff performs several vital drainage planning activities including:

- Coordinating drainage system plans and designs with local land use planning;
- Establishing street grades necessary to accomplish drainage of the runoff from the point of origin to the nearest public storm drain collection facility;
- Reviewing and evaluating development proposals for conformance with the Storm Drainage and Flood Control Master Plan;
- Preparing, maintaining, and distributing topographical and hydraulic and hydrology data for all planned local drainage areas; and
- Determining and levying development fees to fund the planned local capital drainage facilities.

Planning and implementation of the local drainage program involves continuing coordination with land developers and land use planning authorities. The District evaluates the drainage impacts of all development proposals and establishes conditions of approval to be imposed by the Cities and County through their development entitlement procedures. The land use planning objectives and policies of the Cities of Fresno and Clovis and County of Fresno support the District's activities, and encourage coordination of drainage construction projects with other facility improvements.

The District directs and sets the standards for all construction of Master Plan and other storm drain facilities to be operated and maintained by the District. Such construction occurs through direct District contracts, developer contracts pursuant to local ordinances, and contracts with other municipal agencies in coordination with the District. Upon acquisition, stormwater basin sites remain in their existing land use until the agencies controlling land use (i.e., the Cities or the County) decide property protection, or water conservation needs of the community warrant development of the stormwater basins.

In areas where a regional stormwater basin has not yet been developed to accept stormwater runoff, private developers are required to install on-site stormwater retention as a condition of approval from the agency controlling land use. After a regional stormwater basin has been constructed, the on-site stormwater basins may be abandoned. Maintenance recommendations for private stormwater ponds were developed through the first permit and are routinely disseminated.

The District conducts training and distributes educational material addressing stormwater treatment and post-construction source controls to public agency personnel and the development community. In rural areas, including the Copper-Friant Study Area, the County allows new developments to discharge stormwater runoff to natural stream channels. However, to protect in stream water quality, the County recommends that runoff be collected and treated in grassy swales prior to discharge. The County requires retention of the increase in runoff volume associated with the new development. This is estimated based on the difference in runoff volume between the pre- and post-development 100-year, 48-hour storm (roughly six inches of rainfall on the valley floor).

The District conducts annual construction stormwater pollution prevention refresher trainings for District and Co-Permittee employees who are engaged in master plan update, implementation and post construction BMP design review and tracking. The District developed and distributes to the construction community educational outreach material including post construction BMPs.

## **7.2 OBJECTIVES**

Under the current MS4 Permit, the District and Co-Permittees will be updating their Planning and Land Development Program to meet the objectives of the Permit. This will primarily be accomplished through updates to the Storm Drainage and Flood Control Master Plan and subsequent implementation of the Plan, including the revised development standards. The Planning and Land Development Program shall be implemented to meet the following objectives throughout the MS4 Permit term.



1. The District and Co-Permittees will incorporate water quality and watershed protection principles into the Permittees' policies and planning procedures by continuing to update the Storm Drainage and Flood Control Master Plan that covers the MS4 Permit boundaries to provide water quality and watershed protection through the implementation of a Regional Storm Water Basin System. **(PLD1)**
2. The District and Co-Permittees will ensure that all stormwater basins are maintained properly to maximize infiltration rates. **(PLD2, MUN2)**
3. The District and Co-Permittees will ensure that selected post-construction stormwater controls will remain effective upon project completion by requiring maintenance agreements and by conducting periodic inspections for all priority development projects. **(PLD2)**
4. The District and Co-Permittees will provide comprehensive review of development plans to ensure that all new and existing developments within the MS4 Permit boundaries are connected to the regional stormwater basin system or have implemented equivalent temporary controls until the site is connected to the stormwater basin system to minimize stormwater quality impacts. **(PLD2)**
5. The District and Co-Permittees will provide regular internal training to appropriate staff on applicable components of the SWQMP, specifically related to land development standards and implementation. **(PLD4)**
6. An assessment to determine the effectiveness of the Planning and Land Development Program Element will be performed as part of the annual reporting process and identify any necessary modifications to the Program. **(PEA)**

In addition, the following principles will be encouraged to guide the Planning and Land Development process as related to new and redevelopment.

1. The District and Co-Permittees will encourage the minimization of impervious surfaces and directly connected impervious surfaces in areas of new development and redevelopment and where feasible to maximize on-site infiltration of runoff.
2. Where appropriate, the District and Co-Permittees will encourage pollution prevention methods supplemented by pollutant source controls and treatment, and where practical, use strategies that control the sources of pollutants or constituents to minimize the transport of urban runoff and pollutants offsite and into MS4s.
3. The District and Co-Permittees will encourage preservation, and where possible, creation or restoration of areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones.
4. The District and Co-Permittees will limit disturbances of natural water bodies and natural drainage systems by development including roads, highways, and bridges.
5. Where feasible, the District and Co-Permittees will identify and avoid development in areas that are particularly susceptible to erosion and sediment loss. Alternatively, where development will proceed, the Permittees may establish guidance to protect areas from erosion and sediment loss.

6. Coordination with local traffic management programs will be performed to reduce pollutants associated with vehicles and increased traffic resulting from development.
7. The District and Co-Permittees will encourage implementation of source and structural controls, as necessary and appropriate, to protect downstream receiving water quality from increased pollutant loads and flows from new development and significant redevelopment.
8. The District and Co-Permittees will encourage BMPs to control the post-development peak stormwater run-off discharge rates and velocities to maintain or reduce pre-development downstream erosion, and to protect stream habitat.
9. Where appropriate, the District and Co-Permittees will encourage new development and redevelopment projects to consider integration of Low Impact Development (LID) principles in project design in areas served by the Permittees regional stormwater basin system.

### 7.3 CONTROL MEASURES

The Control Measures outlined in **Table 20** and discussed in more depth within this section form the basis of the Planning and Land Development Program Element. The agencies responsible for implementing each control measure are listed in **Table 21**, which also contains a summary of all control measures and anticipated implementation schedules.

**Table 20. Control Measures for the Planning and Land Development Program Element**

Control Measure	
PLD1	Update of the FMFCD Storm Drainage and Flood Control Master Plan
PLD2	Implementation of the FMFCD Storm Drainage and Flood Control Master Plan
PLD3	Update to CEQA Process
PLD4	Training

### 7.4 EFFECTIVENESS ASSESSMENT

As a part of the annual reporting process, the Permittees will conduct an annual assessment of the Planning and Land Development Program to determine the effectiveness of the program and to identify any necessary modifications. A comprehensive PEA strategy will provide the Permittees with the ability to determine if the stormwater programs are appropriately targeted and to determine whether intended results are being achieved efficiently and cost-effectively and ultimately to relate these results to conditions in urban runoff and receiving waters. The SWQMP incorporates the use of management questions and goals to help determine the purpose of the data collection as well as to guide the implementation of the program. The management question identified to guide the effectiveness assessment of the Planning and Land Development Program is:

What is the total land area for each Permittee that has undergone new or redevelopment and how many/what types of BMPs have been implemented? What percentage of the new or redevelopment is served by regional stormwater basins? **[PLD2]**

The management question was developed to address a specific control measure implemented as part of the program: PLD2, related to implementation of the updated Master Plan and land development standards. For this control measure, several performance standards were identified to allow the Permittees to track their progress in implementation of the control measure and gauge the effectiveness of their

program. The performance standards are used to evaluate Level 1 (implementation) and Level 3 (behavior) in terms of the Planning and Land Development Program and provide a foundation for program effectiveness assessment for the Planning and Land Development Program. The performance standards, assessment levels, and assessment data are further discussed in the *LTEA Strategy*.

# **PLD1 – Update of the FMFCD Storm Drainage and Flood Control Master Plan**

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## **DESCRIPTION**

The MS4 Permit requires the Permittees to incorporate water quality principles into the jurisdictions' policies and planning procedures by continuing to update the Storm Drainage and Flood Control Master Plan (Master Plan) that covers the MS4 Permit boundaries. These updates will continue to provide water quality and watershed protection through the implementation of the Regional Storm Water Basin System. Updates to the Master Plan will also provide the basis for implementation of the Planning and Land Development component of the SWQMP. This program element is designed to minimize the short and long-term impacts on receiving water quality from new development and redevelopment. The Master Plan update process will include updates of relevant hydrology studies and a study of stormwater basin designs that improve stormwater quality. The updates will also ensure that the Master Plan encompasses and delineates all drainage areas within the Fresno-Clovis metropolitan area. For drainage areas within the MS4 NPDES permit boundaries but not adopted in the Storm Drainage and Flood Control Master Plan, specific development standards will apply to Priority Development Project categories listed in the MS4 permit. Updated additions to the Storm Drainage and Flood Control Master Plan will be provided to the Regional Board.

## **EXISTING BMPS AND RELATED ACTIVITIES**

The District's stormwater drainage program provides controlled and safe disposal of stormwater runoff generated by residential and commercial development. The metropolitan portion of the District is divided into local drainage areas of approximately one to two square miles. These drainage areas are identified and established through the on-going revision of the Storm Drainage and Flood Control Master Plan. Within the drainage areas, the District operates and maintains a complex system of surface conveyances, storm drains, pump stations and stormwater basins that capture and recharge stormwater to the groundwater aquifer.

Under the previous MS4 Permit, a Standard Urban Storm Water Mitigation Plan (SUSMP) was not required due to the nature of the MS4 drainage system. The MS4 is composed of regional, structural detention facilities, which capture stormwater runoff, providing a substantially broader coverage than that created by the SUSMPs.

Local storm drainage Master Plan engineering is achieved by analyzing the topography, existing and planned land use, climatology, and geology to produce a detailed drainage hydrology for each local drainage area. Following this analysis, drainage area boundaries are identified, runoff flows are computed, stormwater basin size and location is determined, and preliminary pipeline or alternative conveyance system plans are completed. System relief facilities for use in major storm events are also addressed during the planning stage. The coordination of local relief flows with flood control flows, which may be occurring simultaneously in the streams and canals, must be considered. All parcels of land potentially required to build the storm drainage system are assessed to ensure that there is no evidence of hazardous material or waste contamination. Site-specific environmental studies are also conducted in compliance with the California Environmental Quality Act (CEQA).

District staff performs several vital drainage planning activities including:

- Coordinating drainage system plans and designs with local land use planning and land development;

- Establishing street grades necessary to accomplish drainage of the runoff from the point of origin to the nearest collection facility;
- Reviewing and evaluating development proposals for conformance with the Storm Drainage and Flood Control Master Plan;
- Preparing, maintaining, and distributing topographical and hydraulic and hydrologic data for all planned local drainage areas; and
- Determining and levying development fees to fund the planned local drainage facilities.

Planning and implementation of the local drainage program involves continuing coordination with land developer and land use planning authorities. The District evaluates the drainage impacts of all development proposals and establishes conditions of approval to be imposed by the Cities and County through the development entitlement procedures.

The land use planning objectives and policies of the Cities of Fresno and Clovis and County of Fresno support the District's activities, and encourage coordination of drainage construction projects with other facility improvements.

Drainage service for new development is funded through development fees paid upon approval of the development. Ideally, drainage services are provided concurrent with construction of the development project. However, system construction may occasionally be delayed due to insufficient fee revenue to fund all facilities required by a development project. The provision of service can also be delayed by the lack of street improvements necessary to convey runoff from the development to the collection points. Unless the developer or the District can advance funds to cover the necessary facilities or street improvements, the developer must provide temporary on-site storage of the project's runoff until permanent service is available.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. FMFCD Storm Drainage and Flood Control Master Plan Update - The District will update the FMFCD Master Plan to include additional drainage areas serving new development. The Plan update will also include review and revisions to development standards to incorporate the requirements of Provision 12 of the Permit. These revisions will address: priority development project categories, post development standards, BMP requirements, numeric sizing criteria, equivalent numeric sizing criteria (if applicable), pollutants and activities of concern, infiltration and groundwater protection, and regional stormwater mitigation. Development standards will be updated to cover two overarching development scenarios:
  - Development standards for drainage areas discharging to a retention/detention basin; and
  - Development standards for drainage areas not discharging to a retention/detention basin.

Revisions to the plan will also include drainage updates as necessary to create drainage areas that encompass the Permittees' MS4 Permit boundaries.

2. Provide Master Plan Updates to the RWQCB - The District will provide the Regional Board with the updates to the Storm Drainage and Flood Control Master Plan after approval by the District's Board of Directors.
3. Hydraulic and hydrology Studies - The District will update applicable hydraulic and hydrology studies and incorporate into FMFCD Master Plan.
4. Stormwater Basin Design Studies - The District will perform a stormwater basin design study and incorporate the findings into the FMFCD Master Plan.

# **PLD2 – Implementation of the FMFCD Storm Drainage and Flood Control Master Plan**

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## **DESCRIPTION**

Once revised, the MS4 Permit requires the District and Co-Permittees to implement the Storm Drainage and Flood Control Master Plan. The Master Plan serves as the basis for the continued development and implementation of the Regional Stormwater Basin infrastructure as well as for the implementation of the Permittees' Planning and Land Development Programs.

Through implementation of the Master Plan, the Permittees will ensure that the Planning and Land Development requirements of the MS4 Permit are met including comprehensive plan review, application of appropriate land development standards to development projects, implementation of required post-construction BMPs and associated maintenance and maintenance agreements for post-construction BMPs, periodic inspections of post construction BMPs, and appropriate tracking of projects, BMPs, and program implementation.

## **EXISTING BMPS AND RELATED ACTIVITIES**

Presently, the District operates and maintains over 153 stormwater basins. The District's Storm Drainage and Flood Control Master Plan provides storage equal to the runoff generated by six inches of rainfall plus 10-20% supplemental storage for all newly developing areas located away from the San Joaquin River. Since 1987, all new Master Plan drainage areas adjacent to the river are served by detention facilities designed to provide 90% settling of stormwater-borne sediments and adsorbed pollutants; these facilities also include velocity dissipaters and aerators.

Only five drainage areas discharge directly to receiving waters with no prior retention/detention. Two of these drainage areas discharge to the San Joaquin River and three areas discharge to canals. One drainage area which had discharged directly to the river has been retrofitted with a detention basin. Based on modeling completed by the District during the first permit term, approximately 90% of the runoff generated on an annual average basis in the District's urban service area is retained in stormwater basins. Approximately 8% is discharged to surface receiving waters after some detention in a stormwater basin, and less than 2% is directly discharged with no prior detention.

The District requires development proposals to consider the flow path and potential flooding resulting from major storms. The developer must elevate building pads so that finished floor levels are above the anticipated high water elevation and establish an outlet flow path for the runoff of major storms through the use of street improvements, easements, or other public right-of-ways. These major storm flow paths are to be on the surface whenever possible. All drainage paths and local depressions that are drained by inlets into the storm drainage system must be reviewed to ensure the presence of an outlet for the major storm. The maximum water surface elevation for the major storm and the rate and depth of flow must be determined. Detention is required when the discharge of runoff from one development may cause damage to buildings or other storage.

The District directs and sets the standards for all construction of master plan and other storm drain facilities to be operated and maintained by the District. Such construction occurs through direct District contracts, developer contracts pursuant to local ordinances, and contracts with other municipal agencies in coordination with the District. Upon acquisition, stormwater basin sites remain in their existing land use until the agencies controlling land use (i.e., the Cities or the County) decide property protection, or water conservation needs of the community warrant construction of the stormwater basins. New District stormwater basins are presently designed to contain the runoff from six inches of rainfall plus 20% supplemental capacity.

In areas where a regional stormwater basin has not yet been constructed, private developers are usually required to install on-site stormwater retention as a condition of approval from the agency controlling land use. After a regional stormwater basin has been constructed, the on-site stormwater basins may be abandoned. Maintenance recommendations for private stormwater ponds were developed through the first permit and are routinely disseminated.

## **PERFORMANCE STANDARDS**

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Stormwater Basin Inspection and Maintenance - The District and Co-Permittees will continue to inspect and maintain stormwater basins to maximize infiltration rates. This performance standard is discussed further under Section 4, the Municipal Operations element of the SWQMP. Specifically, stormwater basin inspection and maintenance is addressed under Control Measure MUN2.
2. Updates to Plan Check Process - The District and Co-Permittees will develop plan check procedures and checklists to assist staff in implementing and reviewing projects for compliance with the development standards.
3. Compliance with FMFCD Development Standards - District and Co-Permittee engineering and plan review staff will ensure that all priority development projects comply with development standards in FMFCD Master Plan.
4. Maintenance Agreement for Priority Development Projects - The District will develop a maintenance agreement template for use with all priority development projects that do not discharge to a stormwater basin. The template will incorporate Permit requirements as contained in Provision D.13.
5. Tracking of Post Construction BMPs - The District and Co-Permittees will develop and implement a GIS based or other electronic system to track projects with post construction BMPs. This system will include the following information, at a minimum: the municipal project ID, the State WDID number (where applicable), the project address/location, the project acreage, inspection dates and summaries, and corrective actions taken as a result of the inspections.
6. Inspections of Post Construction BMPs - The District and Co-Permittees will perform post construction inspections for all priority development projects to verify that post construction BMPs have been implemented as required.

# **PLD3 – Update CEQA Process**

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## **DESCRIPTION**

The MS4 Permit requires the Permittees to update their CEQA processes to incorporate procedures for considering potential stormwater quality impacts when preparing and reviewing CEQA documents. The updates to the process must provide for appropriate mitigation measures where there are impacts noted.

## **EXISTING BMPS AND RELATED ACTIVITIES**

The California Environmental Quality Act (CEQA) is regarded as the foundation of environmental law and policy in California. The main objectives of CEQA are to disclose to decision makers and the public, prior to decision making, any significant environmental effects of proposed projects and to require public agencies to avoid or reduce significant adverse environmental effects by implementing feasible alternatives or mitigation measures. Other CEQA objectives are enhancement of public participation in the planning process, fostering of intergovernmental coordination in the review of projects, and public disclosure regarding reasons for agency approval of projects with significant environmental effects.

Public Resources Code section 21082 requires that all public agencies adopt by ordinance, resolution, rule or regulation, the objectives, criteria and procedures for the evaluation of projects and the preparation of environmental impact reports and Negative Declarations. Section 15022(d) of the Guidelines allows public agencies to adopt the CEQA Guidelines through incorporation by reference and to adopt procedures or provisions that are necessary to tailor the general provisions of the CEQA Guidelines to the specific operations of the public agency. (County of Fresno, Regulations and Procedures for the Implementation of the California Environmental Quality Act, Revised October 23, 2007)

The District and Co-Permittees have the necessary regulations and procedures in place to ensure that all applicable projects comply with current CEQA requirements and review processes.

## **PERFORMANCE STANDARDS**

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Stormwater Checklist for CEQA Review - The District and Co-Permittees will develop a checklist to consider potential for stormwater impacts on projects subject to CEQA and ensure that impacts are appropriately mitigated. The checklist will include a review of the following areas:
  - a. Potential impact of project construction on stormwater runoff;
  - b. Potential impact of project post-construction activity on stormwater runoff;
  - c. Potential for discharge of stormwater from areas with material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas;
  - d. Potential for discharge of stormwater to impair the beneficial uses of the receiving waters or areas that provide water quality benefit;
  - e. Potential for the discharge of stormwater to cause significant harm on the biological integrity of the waterways and water bodies;
  - f. Potential for significant changes in the flow velocity or volume of stormwater runoff that can cause environmental harm; and



- g. Potential for significant increases in erosion of the project site or surrounding areas.
2. Checklist Implementation - The District and Co-Permittees will utilize the stormwater checklist during the CEQA review process to ensure that impacts from development projects are mitigated appropriately.

# PLD4 – Training

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## DESCRIPTION

The MS4 Permit requires that each Permittee periodically train its employees in positions whose jobs or activities are engaged in development planning to ensure they can adequately implement the Planning and Land Development Program requirements. Additionally, each Permittee, individually or in collaboration, shall develop and provide information to the development community promoting water quality protection principles and LID designs for new development and redevelopment projects. These components of the SWQMP are critical to ensure that all development projects meet the current standards to protect water quality. This Control Measure describes the current practices in place and those planned for the MS4 Permit term to meet these permit requirements.

## EXISTING BMPS AND RELATED ACTIVITIES

The District currently conducts annual stormwater pollution prevention refresher trainings for District and Co-Permittee employees who are engaged in master plan update, implementation, and post construction BMP design review and tracking. The District also conducts training and distributes educational material addressing stormwater treatment and post-construction source controls to public agency personnel and the development community.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Internal Training - The District and Co-Permittees will conduct periodic internal staff training for those responsible for implementation of the Land Development Program requirements. Training will be enhanced to include post construction BMP design, implementation, and tracking. Targeted positions for training will include planners, engineers, design review staff, plan check staff, field inspections staff, front line counter staff, and others as necessary to ensure proper implementation of the Land Development requirements.
2. External Outreach - The District and Co-Permittees will review their current outreach materials and modify as necessary to ensure consistency with the updated FMFCD Storm Drainage and Flood Control Master Plan. Once these materials have been updated, the District and Co-Permittees will disseminate information to the development community through the land development planning and permitting processes.

**Table 21. Implementation Schedule for Planning and Land Development Program**

Control Measure and Performance Standards	Type of Standard <sup>1</sup>	Implementation Schedule <sup>2</sup>					Responsibilities <sup>3</sup>				
		2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	FMFCD	City of Fresno	City of Clovis	County of Fresno	Cal State University - Fresno
<b>PLD1 – Update of the FMFCD Storm Drainage and Flood Control Master Plan</b>											
Update the FMFCD Master Plan <ul style="list-style-type: none"> <li>Development standards for drainage areas discharging to a retention/detention basin</li> <li>Development standards for drainage areas not discharging to a retention/detention basin</li> <li>Drainage areas</li> </ul>	E						P			P	
FMFCD draft update to Regional Board	E						P			P	
Update Hydraulic and Hydrology Studies and incorporate into FMFCD Master Plan	E			X			P				
Perform Stormwater Basin Design Study and incorporate into FMFCD Master Plan	N				X		P				
<b>PLD2 – Implementation of the FMFCD Storm Drainage and Flood Control Master Plan</b>											
Inspect and Maintain stormwater basins to maximize infiltration rates (see M2)	C						P				
Develop plan check procedures and checklists to assist staff in implementing and reviewing projects for compliance with the development standards	N	X					P	S	S	S	S
Ensure that all priority development projects comply with development standards in FMFCD Master Plan	E						P	P	P	P	P
Develop maintenance agreement template for use with all priority development projects that do not discharge to a stormwater basin	N	X					P	S	S	S	S
Develop and implement a system to track projects with post construction BMPs	N	X					P	S	S	S	S
Perform post construction inspections for all priority development projects	N						P	S	S	S	S
<b>PLD3 – Update to CEQA Process</b>											
Develop a checklist to consider potential for stormwater impacts and provide for appropriate mitigation	E	X					P	S	S	S	S
Utilize checklist during CEQA process	E						P	P	P	P	P
<b>PLD4 – Training</b>											
Conduct internal staff training as needed	E						P	S	S	S	S
Development/dissemination of information for development community	E						P	S	S	S	S

Notes:

1. C = Continue; E = Enhance; N = New
2. X = Performance Standard will be completed during this fiscal year. Gray shaded cells indicate ongoing implementation.
3. P = Primary role and responsibility. S = Secondary role and responsibility.

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## Section 8

# Monitoring Program

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### 8.1 OVERVIEW

As discussed in Section 1, the District and Co-Permittees have evaluated previous studies, literature, and the water quality monitoring data to determine if their stormwater discharges were likely to cause or contribute to exceedances of applicable water quality objectives (WQOs). Historically, receiving water investigations were performed on the reach of the San Joaquin River that directly receives urban runoff discharges. These characterization studies support the finding that this reach is of high quality with infrequent exceedances of water quality objectives well below the threshold for finding impairments based on the 303(d) listing policy.<sup>20</sup>

The MS4 Permit requires the continued implementation of a water quality monitoring program. The specific requirements of the water quality monitoring program are detailed in the Monitoring and Reporting Program (MRP) and are summarized in the sections below. The monitoring elements were designed to characterize trends over long-term periods and to identify receiving water quality impairments. The results of the water quality monitoring analyses in this section and the identification of any receiving water quality impairments assist the District and Co-Permittees in establishing the priorities for the Stormwater Program and in targeting future implementation measures to reduce pollutant loadings and protect and enhance the beneficial uses of local receiving waters.

The second NPDES MS4 Permit required the District and Co-Permittees to implement a receiving water monitoring program, as well as a monitoring program to determine the treatment effectiveness of a ponding basin. The ponding (detention) basin monitoring was completed in 2006-2007. The current MS4 Permit requires the District to continue its river monitoring program and to perform Special Study Monitoring (Canal Monitoring).

The Monitoring Program Element in this SWQMP was developed to ensure that the discharge standard of reducing pollutants in urban runoff to the Maximum Extent Practicable (MEP) was met through implementing the tasks specified in the control measures included in **Table 22**. The District and Co-Permittees continue to monitor pollutants in stormwater discharges from urban runoff by implementing the Monitoring Program Control Measures and Performance Standards.

### 8.2 OBJECTIVES

The purpose of the Monitoring Program is to characterize receiving water quality and determine if the discharge of urban stormwater runoff from the District's storm drainage system affects water quality in the San Joaquin River or the canals—in particular, the larger Herndon Canal that eventually flows to the San Joaquin River. This will be accomplished by meeting the following objectives throughout the Permit term.

1. The District and Co-Permittees will establish monitoring plans consistent with the MS4 Permit and Monitoring and Reporting Program requirements to assess the chemical, physical, and biological impacts on receiving waters resulting from urban runoff. **(MON1)**
2. The District and Co-Permittees will continue to implement receiving water monitoring in accordance with the established monitoring plans. **(MON2)**

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<sup>20</sup> State Water Resources Control Board, Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List. September 2004.  
[http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/docs/ffed\\_303d\\_listingpolicy093004.pdf](http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/ffed_303d_listingpolicy093004.pdf)

3. The District and Co-Permittees will conduct Special Study Monitoring (Canal Monitoring), as required by the Monitoring and Reporting Program. **(MON3)**
4. The District and Co-Permittees will report on the monitoring efforts, identify sources of pollutants, and conduct an assessment of the overall health and evaluation of long-term trends in receiving water quality, as required by the MS4 Permit and Monitoring and Reporting Program. **(MON4)**

### 8.3 ACTIVITIES AND ASSESSMENTS

The Activities and Assessments outlined in **Table 22** and discussed in more depth within this section form the basis of the Monitoring Program Element. The Monitoring Program Element collects data to evaluate overall conditions and provide a basis to detect significant changes in trends or identification of “hot spots”. These Activities and Assessments (rather than Control Measures, as for the other Program Elements) are the actions taken by the District to inform other Program Elements and the overall program, as well as complying with MS4 Permit requirements.

**Table 22. Monitoring Program Element Activities and Assessments**

<b>Activities and Assessments</b>	
MON1	Monitoring Planning
MON2	San Joaquin River Monitoring
MON3	Special Study Monitoring
MON4	Monitoring Reporting

### 8.4 EFFECTIVENESS ASSESSMENT

The Monitoring Program Element effectiveness assessment is based on completion of requirements and planned or requested monitoring assessments. While monitoring data could be used as an overall Program Effectiveness Assessment, the Monitoring Program Element evaluates specific and targeted questions developed by the other Program Elements. The Monitoring Program Element also tracks year-to-year trends in monitoring data. The monitoring-supported management questions<sup>21</sup> identified to guide the effectiveness assessment of the Program as a whole are as follows:

1. Are receiving waters (e.g., the San Joaquin River) meeting water quality objectives and supporting beneficial uses? **[Environmental – L6]**
2. Do the regional stormwater basins effectively remove the constituent(s) causing or contributing to the impairment? **[Environmental – L5]**
3. Are urban stormwater discharges a significant source of constituent loads causing impairments to the San Joaquin River and other direct receiving waters? Are there other sources that are major contributors to the receiving water load? **[Environmental – L4]**

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<sup>21</sup> These questions provide valuable feedback related to receiving water assessments, follow-up actions, and identified pollutants of concern for the Stormwater Program. The CASQA Outcome Level is identified within the brackets. Questions No. 2 and 3 are only necessary if receiving water quality impairments are identified.

# MON1 – Monitoring Planning

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## DESCRIPTION

The MS4 Permit requires submittal of an Annual Work Plan by September 1 of each year to support the development, implementation, and effectiveness of the SWQMP and the MS4 Permit, including efforts related to the Monitoring Program Element.

The MRP requires submittal of an update to the *Fresno-Clovis Metropolitan Stormwater Quality Management Program: Receiving Water Monitoring Plan* (Larry Walker Associates, 1995) and the *Standard Operating Procedures for the Fresno-Clovis Stormwater Quality Monitoring Program: River Monitoring* (Larry Walker Associates, 2011) to reflect changes to the monitoring program requirements outlined in the MS4 Permit and MRP. These documents provide the basis for implementation of the overall monitoring program.

## PROGRAM ACTIVITIES

The District will submit an Annual Work Plan, including a description of efforts to be conducted for the Monitoring Program, by September 1 of each year, as required by the MS4 Permit. The District submitted the *2013-2014 Receiving Water Monitoring Plan and Standard Operating Procedures: River Monitoring and Canal Study (2013-2014 Standard Operating Procedures)* in September 2013. The *Standard Operating Procedures* will be updated annually during the Permit term and will reflect any changes to the monitoring program identified as part of the annual effectiveness assessment.

## PERFORMANCE STANDARDS

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Annual Work Plan - The District will submit an Annual Work Plan, including Monitoring Program-related efforts, by September 1 of each year.
2. Update Monitoring SOPs - The District will update the *Standard Operating Procedures* annually.

# **MON2 – San Joaquin River Monitoring**

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## **DESCRIPTION**

The MRP requires the District to continue the San Joaquin River monitoring program, as described in the *2013-2014 Standard Operating Procedures* (Larry Walker Associates, September 2013). In addition, the MRP requires an update of the current monitoring database.

## **MONITORING ELEMENTS**

The objectives of the receiving water monitoring program are to characterize receiving water quality and determine if the discharge of urban stormwater runoff from the District's storm drainage system affects water quality in the San Joaquin River. This will be evaluated by the collection of samples at three locations in the river during one dry weather event and up to three storm events, weather permitting, each year. Two sampling locations are upstream, and one location is downstream of the Fresno-Clovis Metropolitan area. This monitoring will be conducted in accordance with the MRP and the *Standard Operating Procedures*. The District will also append the existing monitoring database to include additional fields, as specified in the MRP.

## **PERFORMANCE STANDARDS**

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. San Joaquin River Monitoring - The District will perform San Joaquin River Monitoring in accordance with the *Standard Operating Procedures* for one dry weather event and up to three wet weather events during each monitoring year.
2. Update Monitoring Database - The District will update the monitoring database with additional fields specified in the MRP.



## **MON3 – Special Study Monitoring**

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### **DESCRIPTION**

The MRP requires the District to develop a plan for a Special Study for Canal Monitoring to characterize the discharges of pollutants discharge into the San Joaquin River via the Herndon Canal and include this plan in the *Standard Operating Procedures*.

### **MONITORING ELEMENTS**

The *Standard Operating Procedures* includes procedures for Canal Monitoring. The objective of the Canal Special Study is to characterize the water quality conditions in the metropolitan canal system upstream and downstream of the urban area. As proposed, this will include sample collection in the Herndon Canal, which eventually flows to the San Joaquin River. The Canal Special Study monitoring program requires sampling at two canal sites for two storm events annually for the first four years of the MS4 Permit, depending on flow conditions. A sampling event will be triggered by the discharge of the District's stormwater basins into the canals and, simultaneously, a significant flow of water in the upstream canals entering the eastern urban boundary. In accordance with the MRP, one canal site (Mill Ditch at North Temperance Avenue) is upstream of the Fresno-Clovis Metropolitan Area, and the other (Herndon Canal at North Garfield Avenue) is 100 feet downstream of the Fresno-Clovis Metropolitan Area. This monitoring will be conducted in accordance with the MRP and the *Standard Operating Procedures*.

### **PERFORMANCE STANDARDS**

The Performance Standard listed below establishes the level of effort required for this Control Measure.

1. Canal Monitoring Special Study - The District will conduct Special Study (Canal) Monitoring for two wet weather events annually during the first four monitoring years of the MS4 Permit.

# **MON4 – Monitoring Reporting**

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## **DESCRIPTION**

The MRP requires the District to prepare Reports of Water Quality Exceedance (RWQEs) throughout the monitoring year. The MRP also requires that the Annual Report submitted by September 1 each year contain, in addition to an assessment of each component of the MRP, an assessment and summary of the monitoring data, and a summary of any RWQEs completed during the year.

## **REPORTING**

The District will prepare RWQEs if data indicate that discharges are causing or contributing to exceedances of applicable water quality standards or constituent-specific concentrations limits. The RWQEs will include identification of potential sources of the problem(s) and recommendations for future monitoring and BMP implementation measures to identify and address the sources, as needed.

The District will prepare an Annual Report by September 1 of each year. In addition to an assessment of the overall Stormwater Management Program, a Monitoring Data Assessment will be conducted, and the results of the Monitoring Program will be summarized. The Annual Report will include a summary of the monitoring data, including a comparison of receiving water and discharge data with applicable water quality standards, as well as a summary of any RWQEs that have been completed during the year, and a status update for those in progress. Through the Annual Report, the Permittees will also identify water quality improvements in, or degradation of, urban stormwater and provide recommendations to improve the Monitoring Program to address potential receiving water quality exceedances and potential pollutant sources, and to meet the MEP standard.

## **PERFORMANCE STANDARDS**

The Performance Standards listed below establish the level of effort required for this Control Measure.

1. Reports of Water Quality Exceedances - The District will prepare RWQEs as needed.
2. Annual Report - The District will prepare an Annual Report by September 1 of each year that includes a Monitoring Data Assessment and a summary of any RWQEs completed.

**Table 23. Implementation Schedule for Monitoring Reporting Program Element**

Control Measure and Performance Standards	Type of Standard <sup>1</sup>	Implementation Schedule <sup>2</sup>					Responsibilities <sup>3</sup>				
		2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	FMFCD	City of Fresno	City of Clovis	County of Fresno	Cal State University – Fresno
<b>MON1 – Monitoring Planning</b>											
Annual Work Plans: Monitoring Efforts	C	X	X	X	X	X	P				
Update <i>Standard Operating Procedures</i>	E	X	X	X	X	X	P				
<b>MON2 – San Joaquin Monitoring</b>											
San Joaquin River Monitoring – 1 Dry Weather and 3 Wet Weather Events	C	X	X	X	X	X	P				
Update Monitoring Database	E						P				
<b>MON3 – Special Study Monitoring</b>											
Canal Monitoring – 2 Wet Weather Events	N	X	X	X	X		P				
<b>MON4 – Monitoring Reporting</b>											
Report(s) of Water Quality Exceedance	E						P				
Annual Report: Monitoring Data Assessment	E	X	X	X	X	X	P				

Notes:

1. C = Continue; E = Enhance; N = New

2. X = Performance Standard will be completed during this fiscal year. Gray shaded cells indicate ongoing implementation.

3. P = Primary role and responsibility. S = Secondary role and responsibility.