



CITY OF STOCKTON

DEPARTMENT OF MUNICIPAL UTILITIES

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August 25, 2016

Pamela Creedon, Executive Officer
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CITY OF STOCKTON STORMWATER MANAGEMENT PROGRAM 2015-2016 ANNUAL REPORT, ORDER NO. R5-2015-0024, NPDES PERMIT NO. CAS083470

Please find attached copy of the 2015-2016 Annual Report for the City of Stockton Stormwater Management Program. The report reflects all stormwater activities conducted during the Fiscal Year 2015-2016, as required by the City's Stormwater National Pollutant Discharge Elimination System (NPDES) Permit.

If you have any questions regarding the report, please contact Christina Walter, Stormwater Program Manager, at (209) 937-8155.

JOHN ABREW
ACTING DIRECTOR OF MUNICIPAL UTILITIES

JA:BT:ml

Attachment: (1) 2015-2016 Annual Report with Appendices

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Christina Walter, City of Stockton
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CERTIFICATION

I certify under penalty of the law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Executed on the 25 day of August, 2016, at the City of Stockton.



JOHN ABREW
ACTING DIRECTOR OF MUNICIPAL UTILITIES

SEPTEMBER 1, 2016

CITY OF STOCKTON

National Pollutant Discharge Elimination System Municipal Stormwater Program *2015-2016 Annual Report*

prepared by

LARRY WALKER ASSOCIATES



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STORMWATER MANAGEMENT PROGRAM
2015-2016 ANNUAL REPORT
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List of Acronyms

AMP	Alternative Monitoring Program
BMP	Best management practice
BPA	Basin Plan Amendment
CASQA	California Stormwater Quality Association
CDFG	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CIP	Capital Improvement Project
COC	Constituents of Concern
CTR	California Toxics Rule
CWA	Clean Water Act
DO	Dissolved oxygen
DRC	Development Review Committee
DW	Dry Weather
EA	Effectiveness Assessment
EC	Electrical Conductivity
ECG	Enforcement Consistency Guide
EPA	Environmental Protection Agency
FPPP	Facility Pollution Prevention Plan
GIS	Geographic Information System
HAZMAT	Hazardous Materials
HHW	Household Hazardous Waste
IGP	Industrial General Permit
IPM	Integrated Pest Management
LA	Load Allocation
LID	Low Impact Development
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
MEP	Maximum Extent Practicable
MERP	Mercury Exposure Reduction Program
MFST	Media Filter Stormwater Treatment
MOU	Memorandum of Understanding

MRP	Monitoring and Reporting Program
MS/MSD	Matrix Spike/Matrix Spike Duplicates
MS4	Municipal Separate Storm Sewer System
MUD	Municipal Utilities Department
NA	Not Applicable
NE	Northeast
NOA	Notice of Applicability
NOI	Notice of Intent
NOT	Notice of Termination
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NW	Northwest
ODS	Owner/developer/successor-in-interest
OP	Organophosphate
OWOW	Our Water – Our World
PCOs	Pest Control Operators
PEA	Program Effectiveness Assessment
POC	Pollutant of Concern
PSA	Public Service Announcement
QA/QC	Quality Assurance/Quality Control
RL	Reporting Limit
RMP	Regional Monitoring Program
ROWD	Report of Waste Discharge
RPD	Relative Percent Difference
RW	Receiving Water
RWFC	Regional Wastewater Control Facility
RWQCB	Regional Water Quality Control Board (also “Regional Water Board”)
RWQE	Report of Water Quality Exceedance
SAWS	Stockton Area Water Suppliers
SJR	San Joaquin River
SJVSQWP	San Joaquin Valley Stormwater Quality Partnership
SOP	Standard Operating Procedure
SSMP	Sewer System Management Plan

SSO	Sanitary sewer overflow
SSOERP	Sanitary Sewer Overflow Emergency Response Plan
SSORP	Sanitary Sewer Overflow Response Plan
SUA	Stockton Urbanized Area
SWAMP	Surface Water Ambient Monitoring Program
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan
SWQCCP	Stormwater Quality Control Criteria Plan
SWQCP	(Project) Stormwater Quality Control Plan
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids
TIE	Toxicity Identification Evaluation
TKN	Total Kjeldahl nitrogen
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TSS	Total Suspended Solids
UC	University of California
UD	Urban Discharge
USEPA	United States Environmental Protection Agency
VRR	Volume Reduction Requirement
WDID	Waste Discharge Identification number
WEF	Water Education Federation
WQO	Water Quality Objective

Section 1

Program Management

1.1 OVERVIEW

A Stormwater Management Plan (SWMP) has been developed for and is being implemented within the jurisdictional limits of the City of Stockton (City) and the urbanized areas of San Joaquin County (County) within the Phase I National Pollutant Discharge Elimination System (NPDES) permit area.¹ The SWMP, which includes existing and enhanced program control measures, represents the strategy for controlling the discharge of pollutants from the municipal storm drain system to the maximum extent practicable (MEP).

As a result of the third term municipal stormwater permit requirements,² the SWMP was revised in June 2008 and submitted to the Central Valley Regional Water Quality Control Board (RWQCB or Regional Water Board). The June 2008 SWMP was subsequently revised, re-submitted to the RWQCB on April 15, 2009, and approved by the RWQCB on October 8, 2009.³ The revised 2009 SWMP includes a wide range of continuing, enhanced, and new Best Management Practices (BMPs) and control measures that have been implemented since 2007.

The Permittees submitted a Report of Waste Discharge (ROWD) and Proposed SWMP to the RWQCB 180 days prior to the Permit's expiration (June 6, 2012). The third term permit expired on December 6, 2012 and was renewed by Order R5-2015-0024 (Permit) on April 17, 2015. The fourth term Permit period will extend from April 17, 2015 to October 17, 2016. The 2015-2016 Annual Report is being submitted in accordance with the Permit.

Implementation of the Stormwater Management Program continues as described in the 2009 SWMP. It is the intent of the 2009 SWMP to meet all Permit requirements through an iterative process. These BMPs and control measures will assist the City in improving the overall effectiveness of the stormwater program and focusing on the specific activities. Where possible, the BMPs and control measures were developed to address specific pollutants of concern or sources to enhance pollution reduction and provide increased environmental benefit.

The City has developed a comprehensive approach for managing the development and implementation of the stormwater program within the Stockton Urbanized Area (SUA). As a part of this effort, the City coordinates the program management activities internally as well as with the County (Section 1 of the 2009 SWMP). Additional information is included within each of the Program Control Measures.

¹ The City and the County are collectively referred to as "Permittees"

² Order No. R5-2007-0173

³ Resolution No. R5-2009-0105

1.2 CONTROL MEASURES

The City has developed several Control Measures to ensure that the program management requirements are effectively implemented. The Program Management Control Measures consist of the following:

Control Measure
Program Coordination
Fiscal Analysis
Legal Authority

The next section of the Annual Report provides information on the specific tasks that have been initiated and/or completed during the 2015-2016 reporting period pursuant to the Program Management Performance Standards and implementation schedules.

1.3 PROGRAM COORDINATION

The implementation of the 2009 SWMP requires a coordinated management effort by the City and County. While named as co-permittees in one permit, in accordance with 40 C.F.R. §122.26(b)(4)(iii), the City and County need only comply with permit conditions relating to discharges from the municipal separate storm sewer system for which each operates, pursuant to 40 C.F.R. §122.26(a)(3)(vi). For this reason, the City and County have separate programs and submit documents and reports separately to the Regional Water Board. However, the programs are very similar, and the Permittees actively collaborate to address common issues, plan and coordinate common activities, and ensure consistency in program development, implementation, and evaluation.

The performance standards for this control measure and the activities that have been initiated and/or completed during the 2015-2016 reporting period are summarized below.

1.3.1 Review and Revise the SWMP

The City reviewed and revised the proposed, draft SWMP (submitted to the Regional Water Board April 1, 2007 as a part of the Report of Waste Discharge) to ensure consistency with the third term Permit that was adopted December 7, 2007. The SWMP was submitted to the Regional Water Board for approval on June 6, 2008. Based on the comments received on the 2008 SWMP in November 2008, the SWMP was revised and was re-submitted for Regional Water Board approval on April 15, 2009. The 2009 SWMP was approved by the RWQCB on October 8, 2009. The fourth term Permit, adopted April 17, 2015, requires the 2009 SWMP to be implemented for the duration of the Permit. A new Phase I and II region-wide MS4 General Permit (General Permit) was adopted June 23, 2016, and the Regional Water Board intends all Phase I permittees to file a notice of intent (NOI) to be covered by the this permit. Upon a Notice of Approval (NOA) and in accordance with Provision V.F.2 of the General Permit, the County will follow the timeline for development of a revised SWMP that meets the new requirements.

1.3.2 Permittees Meet Quarterly

To facilitate ongoing communication and coordination between the two agencies, Permittee meetings were held at least once per quarter to address common issues and to ensure consistency in program development and implementation. The coordination meetings focused on policy-related issues (with the Municipal Utilities Deputy Director of Maintenance and Collections present) or implementation of program elements, such as monitoring, planning and land development, and public education. All meetings included representatives from the City's Municipal Utilities Department (MUD) and the County's Department of Public Works.

A summary of the meetings held during the 2015-2016 reporting period is provided below.

Type/Focus of Meeting	Meeting Date
2015 Quarter 3	
Monthly Monitoring Conference Call	7/7/2015
Monthly Monitoring Conference Call	8/4/2015
Discussion with CVRWQCB staff - Alternative Monitoring Program and Participation in Delta RMP	8/17/2015
Alternative Monitoring Program and Participation in Delta RMP	8/18/2015
2015 Quarter 4	
Stockton/SJ County meeting with CVRWQCB staff - Delta RMP	10/6/2015
Monthly Monitoring Conference Call	10/13/2015
Monthly Monitoring Conference Call	11/3/2015
Monthly Monitoring Conference Call	12/1/2015
Coalition Litigation - Settlement Agreement	12/14/2015
Coalition Litigation - Settlement Agreement	12/22/2015
2016 Quarter 1	
Monthly Monitoring Conference Call	1/5/2016
Monthly Monitoring Conference Call	2/10/2016
Monthly Monitoring Conference Call	3/3/2016
2016 Quarter 2	
Monthly Monitoring Conference Call	4/5/2016
Monthly Monitoring Conference Call	5/3/2016
Monthly Monitoring Conference Call	6/7/2016
Coalition Litigation - Boating Brochure Development	6/7/2016

1.3.3 Internal Stormwater Program Meetings (City Divisions and Departments)

The City's MUD Stormwater Management Division has primary responsibility for the development, implementation, and evaluation of the SWMP. The City's designated stormwater program manager oversees the implementation of the SWMP and the day-to-day operations.

The stormwater program manager contact information is provided below.

Primary Stormwater Program Contact	
Name	Christina Walter
Title	City of Stockton Stormwater Program Manager
Department/Division	Municipal Utilities Department
Address	2500 Navy Drive, Stockton, CA 95206
Phone Number	(209) 937-8155
E-mail Address	Christina.Walter@stocktonca.gov

Although administered and principally staffed by MUD, the implementation of the SWMP requires the assistance of and close coordination with several other City departments. MUD coordinates with the other City departments as needed in order to ensure that the program requirements are understood and effectively implemented. Although the structure and focus of the subcommittees may be modified over time, this internal coordination provides a solid foundation for the program and will be continued throughout the permit term. During the 2015-2016 reporting period, staff from MUD (Engineering, Stormwater, Water Conservation, and Environmental Control) continued to meet as necessary to discuss the program. Meetings with staff of other City Departments were also held on an as-needed basis to address specific issues.

A summary of the internal Stormwater Program Meetings is provided below.

Type/Focus of Meeting	Meeting Date	City Department(s) Participating
Fire Department Dispatch/Response to Illicit Discharge Calls	7/1/2015	Administrative Services, Fire, MUD - Stormwater
Collaborative Public Outreach Activities with Water Conservation	7/9/2015	MUD - Stormwater and Water Resources
Large Scale Clean-Up of Homeless Encampments	8/18/2015	Fire, Public Works, MUD - Wastewater Collections & Stormwater
Collaborative Fall/Winter Public Outreach Activities with Water Conservation	8/27/2015	MUD - Stormwater and Water Resources
CalWater Main Lines Projections - SWPPP	9/9/2015	MUD - Stormwater, Engineering, Water Resources, Environmental Control, Administration
Proposition 218 Vote Planning	9/14/2015	MUD - Stormwater, Engineering, Water Resources, and Administration
High Performance Teams	9/22/2015	MUD - Stormwater, Wastewater Collections and Environmental Control

Type/Focus of Meeting	Meeting Date	City Department(s) Participating
Stockton Airport Business Center Storm Drainage Basin Siding Failure/Blow-out	11/10/2015	MUD - Stormwater, Wastewater Collections, Engineering
CalWater Discharges to Stormwater System	12/30/2015	MUD - Stormwater, Water Resources, Environmental Control and Administration
CalWater Discharges to Stormwater System	1/5/2016	MUD - Stormwater, Water Resources, and Administration
Storm Drainage Maintenance Districts - Engineering Services	1/11/2016	MUD - Stormwater and Administration
Fiscal Year 2016-17 CIP Project Prioritization	1/13/2016	MUD - Stormwater, Engineering, Wastewater Collections
Waste Haulers Contract - Storm Catch Basin Cleaning	1/14/2016	MUD - Stormwater and Public Works
Fiscal Year 2015-16 CIP Projects	1/29/2016	MUD - Stormwater, Engineering and Wastewater Collections
Victory Park Stormwater Ponds Improvements	2/9/2016	MUD - Stormwater and Public Works
Site Visits - CIP Work on Storm Drainage Basins	2/16/2016	MUD - Stormwater and Engineering
Fiscal Year 2015-16 CIP Projects	2/26/2016	MUD - Stormwater, Engineering, and Wastewater Collections
Collaborative Public Outreach Activities with Water Conservation	3/3/2016	MUD - Stormwater and Water Resources
Arch Road Storm Drainage Basin - Possible Annexation to Assessment District	4/21/2016	MUD - Stormwater, Engineering, Pump Station Maintenance, Administration Services
Storm Drainage Basin Maintenance Contract Bid	4/25/2016	MUD - Stormwater and Administration/Purchasing
Arch Road Storm Drainage Basin - Possible New Assessment District	5/4/2016	MUD - Stormwater, Engineering, Administration; Administrative Services
Arch Road Storm Drainage Basin - Possible New Assessment District Conference Call with Outside Legal Counsel	5/10/2016	MUD - Stormwater; Administrative Services
General Plan Update Meeting	5/19/2016	MUD - Stormwater, Engineering, Wastewater Collections, Pump Station Maintenance
Fiscal Year 2015-16 CIP Projects	6/17/2016	MUD - Stormwater, Engineering, and Wastewater Collections
Collaborative Public Outreach Activities with Water Conservation	6/30/2016	MUD - Stormwater and Water Resources

Each of the key Departments has a responsibility for the day-to-day implementation of the SWMP. A general overview of the Program Elements and responsible City Departments is presented in **Table 1-1**. For specific information regarding each Control Measure and Performance Standard, the appropriate SWMP section should be consulted.

Table 1-1. City Departments Responsible for Implementing the Stormwater Program¹

Department	Program Management & Reporting	Illicit Discharges	Public Education	Municipal Operations ¹	Industrial/Commercial	Construction	Planning & Land Development	Monitoring	Water Quality Based Programs
MUD – Stormwater Management	P	S	P	P	P	P	S	P	P
MUD – Engineering	S			P		S	P		
MUD – Environmental Control	S	P	S		S			P	
MUD – O & M	S	S		P					
Community Development	S	S	S		S	S	P		
Fire				S			S		
Library									
Police							S		
PW – Engineering	S			P		S	P		
PW – Operations & Maintenance				P		S			
PW – Solid Waste & Recycling	S			P					
Parks and Recreation	S		S	P					
City Attorney	S	S			S	S	S		

Notes:

1. Multiple departments are listed as having primary responsibility due to differing responsibilities for various control measures.

P – Primary responsibility

S – Provides support to primary department

MUD – Municipal Utilities Department

PW – Public Works

1.3.4 Statewide Stormwater-Related Meetings, Conferences, and Stakeholder Groups

Participation in statewide stormwater-related meetings, conferences, and stakeholder groups serves as training and information-sharing sessions for the participants. As of 2013-2014, due to additional staffing and availability, staff re-engaged with the San Joaquin Valley Stormwater Quality Partnership on a routine basis. During the 2014-2015 and 2015-2016 reporting periods, the City continued to participate in the County's Environmental Crimes Task Force. The City will resume attendance at Partnership meetings during 2016-2017.

A summary of the statewide stormwater-related meetings, conferences, and stakeholder groups in which the City participated during the 2015-2016 reporting period is provided below.

Type/Focus of Meeting	Sponsoring Agency/Group	Meeting Date	City Department(s) Participating
San Joaquin County Environmental Crimes Task Force Monthly Meeting	San Joaquin County District Attorney's Office	7/13/2015	MUD - Stormwater and Environmental Control
San Joaquin County Environmental Crimes Task Force Monthly Meeting	San Joaquin County District Attorney's Office	9/8/2015	MUD - Stormwater and Environmental Control
San Joaquin County Environmental Crimes Task Force Monthly Meeting	San Joaquin County District Attorney's Office	10/5/2015	MUD - Stormwater and Environmental Control
Pre-Season Flood Control Meeting	San Joaquin County - Emergency Operations Center	10/13/2015	MUD - Stormwater, Wastewater Collections; Fire
California Stormwater Quality Association Annual Conference	California Stormwater Quality Association	10/19-10/21/15	MUD - Stormwater and Administration
Regionwide Permit Working Group Meeting and Trash Policy Discussion (stakeholder meeting)	Central Valley RWQCB staff	10/26/2015	MUD - Stormwater
San Joaquin County Environmental Crimes Task Force Monthly Meeting	San Joaquin County District Attorney's Office	12/7/2015	MUD - Stormwater and Environmental Control
Water Utility Management Supervision and Leadership Training/Workshop	American Water College and Public Utilities and Water Works Management Institute	12/9-12/10/15	MUD - Stormwater, Water Resources, Engineering, and Wastewater Collections
Permit Stakeholder Working Group Workshop - Reasonable Assurance Analysis and Trash Amendments	Larry Walker Associates	12/22/2015	MUD - Stormwater
Flood Evacuation Map Training	San Joaquin County - Emergency Operations Center	2/3/2016	MUD- Stormwater, Wastewater Collections; Fire

Type/Focus of Meeting	Sponsoring Agency/Group	Meeting Date	City Department(s) Participating
Regional General Order - Stakeholder Workshop	Central Valley RWQCB staff	4/6/2016	MUD - Stormwater
Funding Fair	CA Financing Coordination Committee	4/13/2016	MUD - Stormwater and Wastewater Collections
Review of Central Valley Regional Permit Phase I and II Stakeholder Working Group Conference Call	Larry Walker Associates	5/2/2016	MUD - Stormwater
Stakeholder Working Group - Conference Call: Follow up on CVRWQCB staff comments to Permit Comments	Larry Walker Associates	5/11/2016	MUD - Stormwater
NOI/NEC Coverage Under Industrial Permit Workshop	State Water Resources Control Board—Stormwater Section	5/24/2016	MUD – Stormwater and Maintenance and Collections Systems
Stakeholder Working Group - Conference Call: Preparation of Comments for Permit Adoption Public Hearing	Larry Walker Associates	6/3/2016	MUD - Stormwater
Public Hearing - Adoption of New Regional Permit	Central Valley RWQCB	6/23/2016	MUD - Stormwater
San Joaquin County Environmental Crimes Task Force Monthly Meeting	San Joaquin County District Attorney's Office	7/13/2015	MUD - Stormwater and Environmental Control

1.3.5 Review and Revise MOUs as Necessary

In 1995, the City and County entered into a Memorandum of Understanding (MOU) for filing as co-permittees under one NPDES permit as well as the development of a receiving waters monitoring program. The MOU provided a mechanism for the City and County to continue to work cooperatively on the development and implementation of additional stormwater programs.

The Permittees have reviewed and revised their existing MOU to ensure that it provides for designation of joint responsibilities, decision making, information management of data and reports, cost sharing objectives, and any other collaborative arrangements that are necessary for compliance with the Permit. The MOU was approved by the County Board of Supervisors and the City Council on September 16, 2008. The updated, final MOU was included as Appendix A-1 to the 2009 SWMP and as Appendix A-1 of the 2008-2009 *Annual Report*.

1.3.6 Establish, Review, and Revise Cooperative Agreements

To help control the contribution of pollutants from one portion of the stormwater system to another, the City may participate in cooperative agreements with other agencies as the need or opportunity arises.

The Stormwater Program participates with numerous community groups, various state agencies, and local Phase II cities on outreach events, regional advertising, and training. Details regarding meetings, dates, and types of events sponsored are provided in Section 3, Public Outreach.

1.4 FISCAL ANALYSIS

The Fiscal Analysis includes the following:

- The expenditures for the previous fiscal year(s);
- The budget for the current fiscal year; and
- A description of the source of funds.

The performance standards for this control measure and the activities that have been initiated and/or completed during the 2015-2016 reporting period are summarized below.

1.4.1 Complete a Stormwater Rate Study

In June 2010, the City completed a Stormwater Rate Study to review the current rate structure and make recommendations to increase the monthly stormwater user fees in order to assist in funding the Program. The final Stormwater Rate Study was included as Appendix A-1 of the *2009-2010 Annual Report*. A community vote on the proposed new Clean Water Fee occurred in the fall of 2010; however, the Clean Water Fee increase failed.

1.4.2 Review and Revise the Fiscal Analysis Reporting Format

Pursuant to the Permit, the Permittees reviewed the fiscal analysis reporting format so that expenditures are consistently assessed by SWMP Program Element from year to year. The Fiscal Analysis reporting format was revised during the 2011-2012 and 2012-2013 reporting periods to more accurately reflect expenditures for staff salaries.

The Fiscal Analysis is provided below.

1.4.3 Report the Fiscal Analysis within the Annual Report

The City assessed the current NPDES expenditures as well as the projected expenditures for the next fiscal year. The budget summary includes the expenditures incurred to implement the SWMP and written explanations where necessary. The summary below also includes a description of the source(s) of the funds, including any legal restrictions on the use of the funds.

Program Element	Expenditures During Fiscal Year 2015-2016	Estimated Budget for Fiscal Year 2016-2017 ^a
Program Management: Staff salaries, utility billing, phone charges, computer software/rentals, memberships, permit fees, indirect cost allocations, training, consultant contracts	\$ 1,841,804	\$ 2,062,180
Public Outreach: Includes industrial, commercial, residential programs including media and community events	\$56,334	\$33,000
Municipal Operations: Includes CIPs and Storm Drain System Cleaning and Maintenance (includes Illicit Discharges , illegal connections mitigation, and clean-up) ^b	\$ 2,009,163	\$ 2,445,386
Industrial and Commercial: Includes inspections and follow-up inspections.	\$11,000 ^{c,d,e}	\$5,000 ^{c,d,e}
Construction: Staff salaries, outreach	\$11,000 ^{d,e,f}	\$5,000 ^{d,e,f}
Planning and Land Development: Staff salaries	-- ^d	-- ^d
Water Quality Monitoring Programs: Includes Baseline Monitoring Program, Bioassessment Analysis, Dry Weather Field Screening, Smith Canal Bathymetry Study, Detention Basin Monitoring, BMP Effectiveness Study, Sediment Toxicity, Smith Canal/Mosher Slough Low DO13267 Letter Monitoring	\$253,959	\$254,944
Water Quality Based Programs: Includes Pesticide, Pathogen, Mercury, and DO Work Plans and Implementation	\$63,092	\$71,463
TOTAL	\$ 4,246,352	\$ 4,876,973

Notes:

- [a] Annually, the City breaks the overall budget down into individual Program Element expenditures. However, the methodology used to create a per-Program Element budgetary breakdown from year to year has varied. Thus, year-to-year budget comparisons may not result in "an apples-to-apples" comparison. The City is working on implementing a consistent methodology.
- [b] Facility Pollution Prevention Plans (FPPPs) are paid for out of Public Works budget and are not a Stormwater Expense.
- [c] The Industrial and Commercial Inspection Program is conducted in-house by Stormwater and Environmental Control Staff.
- [d] Staff salaries are included in the Program Management budget.
- [e] The cost to develop a Websoft Inspection Tracking Database in 2015-2016 and the annual subscription costs for software projected for 2016-2017 are divided evenly between the Industrial/Commercial and Construction program elements.
- [f] Business and Construction outreach expenditures are included under the Public Outreach budget.

The City's Stormwater Program annual expenditures for each fiscal year from 2002 through 2016, as well as the projected expenditures for the 2016-2017 Fiscal Year, are depicted in **Figure 1**.

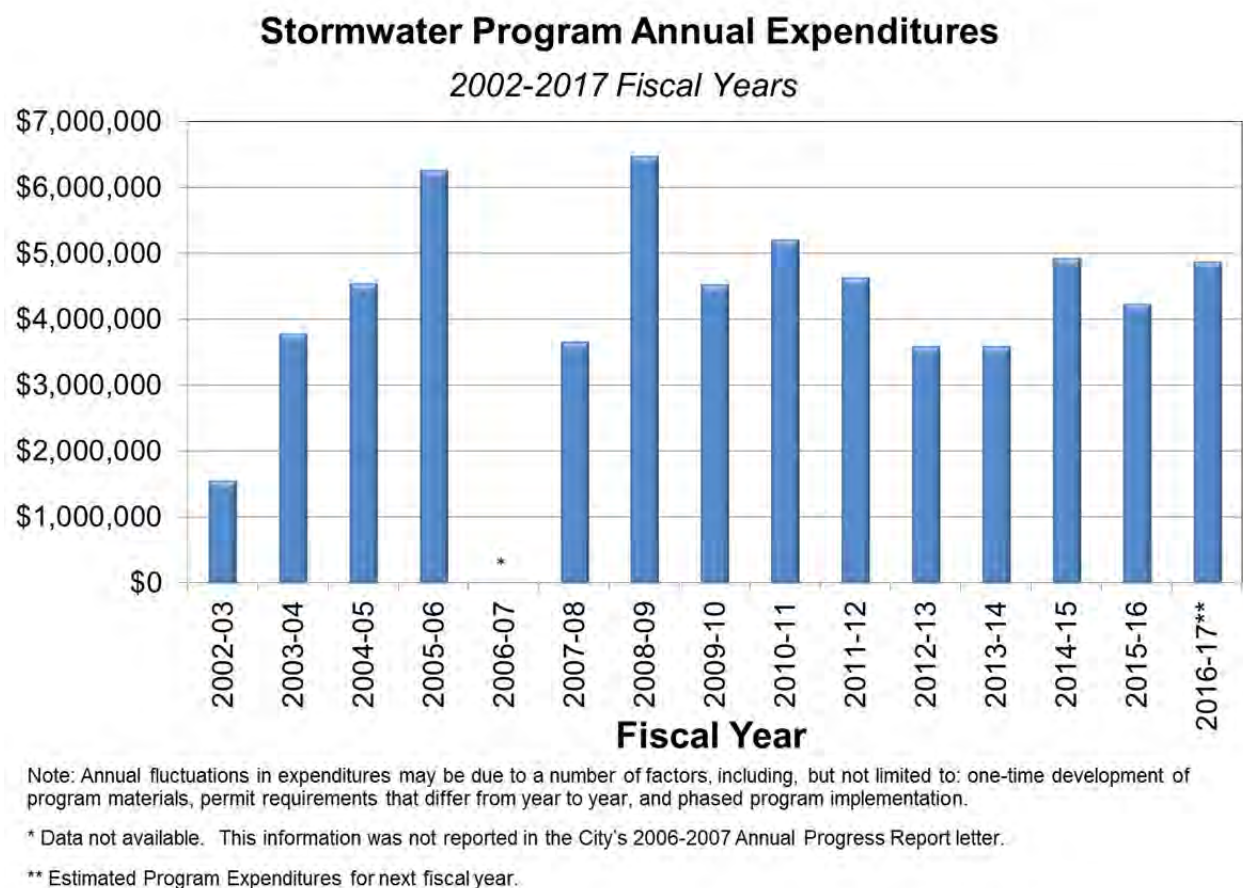


Figure 1. Stormwater Program Annual Expenditures; 2002-2017 Fiscal Years

The City's stormwater program is funded primarily by a storm drain maintenance or user fee. As of June 30, 2015, the fee/equivalent residential unit is \$2.10/month per Equivalent Residential Unit.

On July 26, 2005, the City Council adopted Resolution Number 05-0392 to establish an assessment district, designated as the "Stockton Consolidated Storm Drainage Maintenance Assessment District No. 2005-1," and the creation and annexation of Zone 1, to be known as "Riverbend Zone 1." The formation of this District was based on the provisions of the Municipal Improvement Act of 1913 (Act) and the Stockton Improvement Procedure Code, Part V. Since then, 12 additional Zones have been formed and annexed to the District. The Act and Stockton Municipal Code contain provisions for the City to form an assessment district and annex zone to the district's boundary for the maintenance and operation of improvements that impart a special benefit to an area. The purpose of the Stockton Consolidated Storm Drainage Maintenance District No. 2005-1 is to provide funding for the operation, maintenance, and replacement of stormwater quality improvement devices that are required by the Permit and have been turned over to the City to maintain. The District sets the annual assessments for each Zone that are then placed on the San Joaquin County tax roll for collection with the County real property taxes. These assessments provide funding for the operation, maintenance, inspection, repair, and replacement of the improvements in each Zone as well as other associated administrative costs, including preparing the Annual Engineer's Report and Assessment Roll. Property owners are responsible for funding only those

improvements in their Zone. Each assessed parcel is assigned a dwelling unit equivalent factor or a per assessable acre factor. A single-family residential lot is equivalent to one dwelling unit equivalent factor.

The City makes no financial contributions to the maintenance and operation of the stormwater quality improvement devices maintained by the District. All fees, costs and expenses incurred by the District are paid from the proceeds of the annual assessments to be levied and collected on the San Joaquin County tax roll. The use of the funds collected within the various Zones of the District are restricted by Proposition 218 and pay only the expenses related to the maintenance and operation of the specific stormwater quality improvement device(s) detailed in the Engineer's Report for each Zone. The funds collected from the property owners of a Zone can only be used for work on the device(s) in that specific Zone as it imparts special benefit restricted to the properties of that area. Expenditures and revenue reported above include the costs to maintain and operate the stormwater water quality devices operated by the District.

1.5 LEGAL AUTHORITY

The Permit requires that the Permittees implement a stormwater management program to reduce the pollutants in stormwater discharges to the MEP. Central to this program is the establishment and/or verification that the Permittees have adequate legal authority to regulate the discharge of pollutants to the storm drain system.

The City enacted a Stormwater Management and Discharge Control Ordinance (Chapter 13.16 of the recodified Stockton Municipal Code⁴) in 1995 to specifically control stormwater runoff quality. This ordinance both complements and supplements the existing ordinances and establishes uniform requirements for protecting and enhancing the water quality of the City's watercourses, water bodies, and wetlands in a manner consistent with the Clean Water Act.

The performance standards for this control measure and the activities that have been initiated and/or completed during the 2015-2016 reporting period are summarized below.

1.5.1 Review the Legal Authority

The City Attorney has reviewed the existing legal authority to ensure that the City has adequate legal authority to implement and enforce each of the requirements within the Permit. The legal authority will continue to be reviewed and modified as needed.

⁴ Available online at: <http://qcode.us/codes/stockton/>

1.6 PROGRAM EFFECTIVENESS ASSESSMENT

The County has adopted a method for assessing program effectiveness based on an approach and guidance document developed by the California Stormwater Quality Association (CASQA), *A Strategic Approach to Planning for and Assessing the Effectiveness of Stormwater Programs* (February 2015).⁵ The effectiveness assessment (EA) is comprehensive and addresses the major stormwater program areas and activities.

Outcome levels help to categorize and describe the desired results of the Program Elements and related Control Measures. The CASQA EA approach⁶ utilizes a general model that aggregates three primary components from the six outcome levels and associated, general outcome types (**Figure 2**). The three primary components are:

- Sources and Impacts (Outcome Levels 4-6) – This component addresses the generation, transport, and fate of urban runoff pollutants. It includes sources (sites, facilities, areas, etc.), stormwater conveyance systems, and the water bodies that ultimately receive the source discharges (receiving waters). This component is typically assessed on a long-term basis.
- Target Audiences (Outcome Levels 2-3) – This component focuses on understanding the behaviors of the people responsible for source contributions. It explores the factors that determine existing behavioral patterns and looks for ways to replace polluting behaviors with non-polluting behaviors. This component is typically assessed on a short- and/or long-term basis.
- Stormwater Programs (Outcome Level 1) – Stormwater programs are the road map for the improvements that managers wish to attain in receiving waters. Their immediate purpose is to describe programs that will facilitate changes in the behaviors of key target audiences. This component is typically assessed on a short-term basis.

The six categories of outcome levels establish a logical and consistent organizational scheme for assessing and relating individual outcomes.

This Annual Report will focus primarily on assessment of the Target Audiences (Outcome Levels 2 and 3) and the Sources and Impacts (Outcome Level 4). Assessment at Outcome Levels 5 and 6 may be undertaken once program implementation has progressed to a point that improvements in outfall and receiving water quality are statistically significant. The timeframe for this level of change to be realized will vary based on a variety of factors.

Within each individual section (starting with Section 2), the effectiveness assessment identifies the outcome level(s) achieved. In future annual reports, the effectiveness assessment will be expanded and/or modified as necessary in order to report out on key items.

⁵ Available at: <https://www.casqa.org/resources/stormwater-effectiveness-assessment/guidance-document>

⁶ See 2015 CASQA Guidance Document, Section 2.0: Stormwater Management Approach

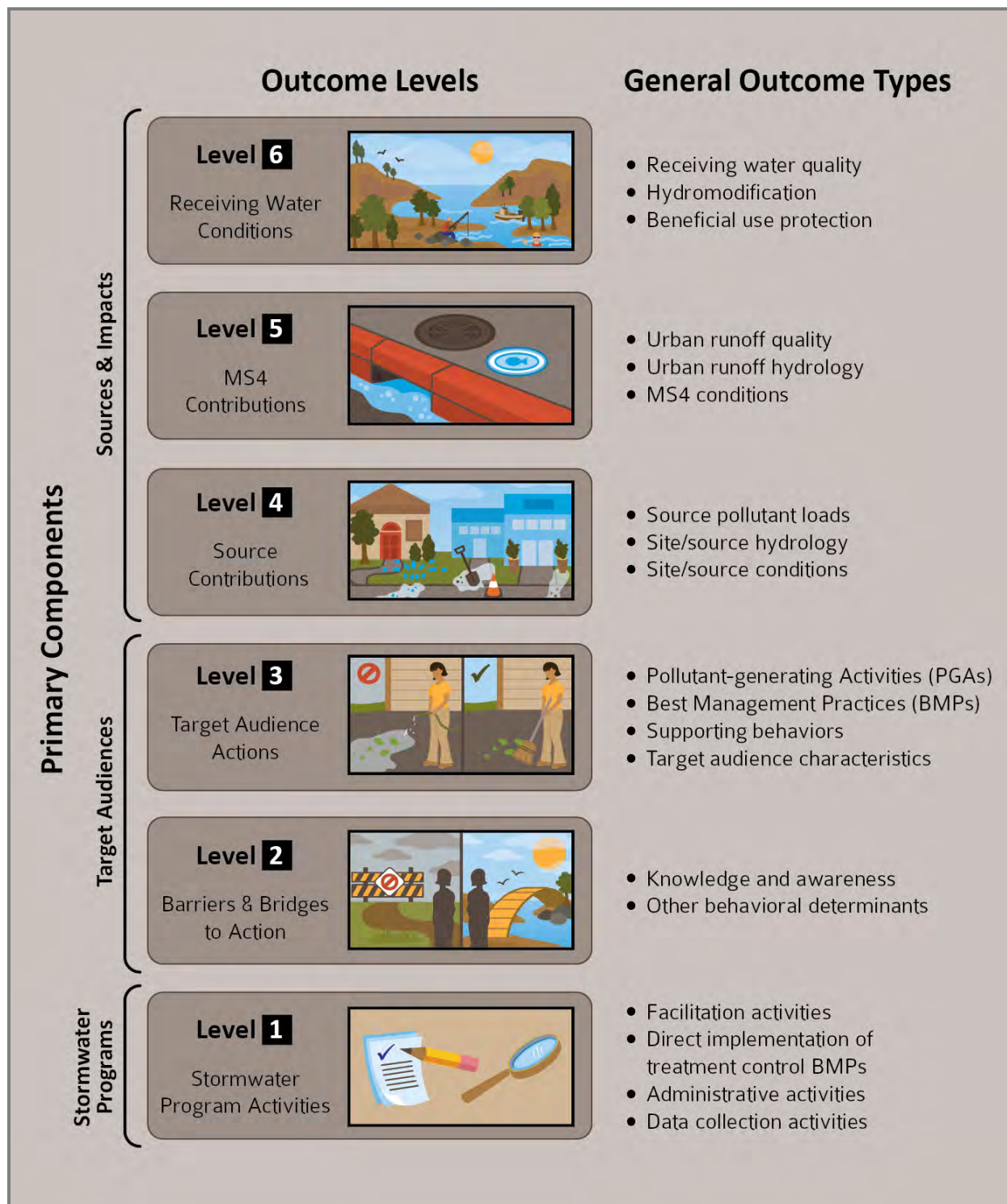


Figure 2. General Stormwater Management Model (CASQA, 2015)

1.7 STORMWATER MANAGEMENT PROGRAM MODIFICATIONS

As part of the 2012 ROWD process, the City evaluated the effectiveness of program implementation during the previous permit term, as well as the experience that staff has had in implementing the program, to identify the performance standards for the Control Measures under all Program Elements for the next permit term. The General Permit was adopted on June 23, 2016 and will become effective on October 1, 2016 and available for permit holders to transition from individual NPDES permits. In accordance with Provision V.F.2 of the General Permit, the City will develop and submit a SWMP. The existing 2009 SWMP will be updated for consistency with the General Permit's requirements, and, as part of this process, the City will determine if any program modifications are necessary in order to ensure that the stormwater management program is compliant and effective. The terms and requirements of the existing 2009 SWMP remain in effect until updated for consistency with the General Permit and approved by the Regional Water Board.

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Section 2

Illicit Discharges (ID)

2.1 OVERVIEW

An illicit discharge is defined as any discharge to the storm drain system that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. Illicit discharges include the disposal of materials such as paint, spa water, swimming pool water, or waste oil into the storm drain or the discharge of waste streams containing pollutants to the storm drain. Illegal connections are a subset of illicit discharges. Illegal connections are defined as undocumented and/or unpermitted physical connections from a facility to the storm drain system or receiving water (e.g., a sanitary sewer connection to the storm drain).

Because illicit discharges and illegal connections can be a significant source of pollutants to the storm drain system and receiving waters, the purpose of this Program Element is to ensure implementation of a comprehensive program for detecting, responding to, investigating, and eliminating these types of discharges and connections in an efficient and effective manner.

2.2 CONTROL MEASURES

The City has developed several Control Measures and accompanying performance standards to ensure that the illicit discharge-related Permit requirements are effectively developed and implemented. Each Control Measure includes accompanying performance standards, which, once accomplished, constitute compliance with the SWMP/Permit.

The Illicit Discharges Program Control Measures consist of the following:

ID	Control Measure
ID1	Detection of Illicit Discharges and Illegal Connections <ul style="list-style-type: none">• Spill Response Procedures• Public Reporting (Hotline)• Dry Weather Field Screening• Field Crew Inspections
ID2	Illegal Connection Identification and Elimination <ul style="list-style-type: none">• Investigation and Elimination
ID3	Investigation/Inspection and Follow Up <ul style="list-style-type: none">• Response and Investigation• Cleanup• Recordkeeping and Tracking
ID4	Enforcement
ID5	Training
ID6	Effectiveness Assessment

The next section of the Annual Report provides information on the specific tasks initiated and/or completed during the reporting period pursuant to the Illicit Discharges Performance Standards and implementation schedules.

2.3 ID1 – DETECTION OF ILLICIT DISCHARGES AND ILLEGAL CONNECTIONS

Detection of illicit discharges through the availability of a public hotline, conducting dry weather field screening, and utilizing field crews ensures that the Illicit Discharges program is proactive in identifying and eliminating problematic discharges. This Control Measure reflects the City's efforts to detect and eliminate illicit discharges and illegal connections and provides several mechanisms for receiving information.

2.3.1 Spill Response Procedures

The City addresses three types of spills: sewage, non-hazardous, and hazardous spills. Procedurally, the sewage and non-hazardous spills are addressed in the same manner: MUD Collection System crew respond, inspect and clean up all sewage SSOs, whereas the hazardous spills are responded to and addressed by a licensed contractor.

Develop Spill Response Procedures

During 2009-2010, the City developed a document, *Spill Response Procedures for Non-Hazardous Materials and Wastes*, which includes a responsibility flow chart and outlines a timeline and response steps to address emergency and non-emergency spills of non-hazardous materials and wastes. The *Spill Response Procedures for Non-Hazardous Materials and Wastes* was included as Appendix B-1 to the *2009-2010 Annual Report*.

2.3.2 Public Reporting

Maintain and Advertise Hotline/Ask Stockton

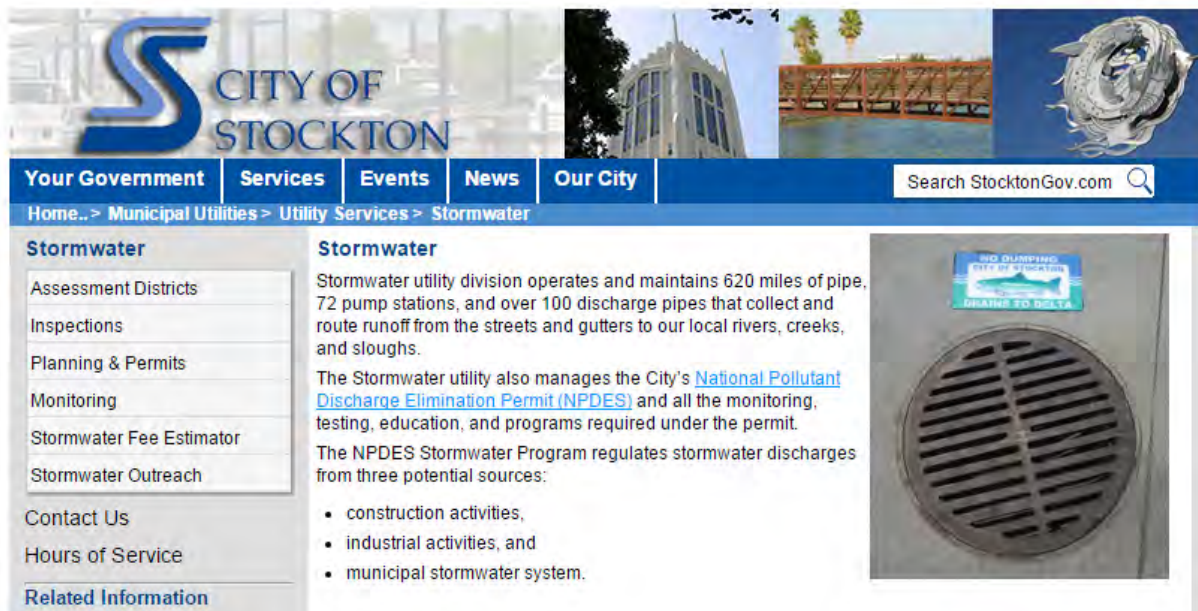
The City has established and maintains a 24-hour Hotline (**209-937-8341**) to encourage the public to report water pollution problems. The reporting program is based on a published directory that lists the telephone numbers of all City staff and departments. The directory is designed to facilitate the public's access to the City government by giving every City employee the ability to direct initial inquiries to the appropriate department or person.

- Business Hours – During normal business hours, City personnel are available to answer and direct calls to the appropriate department.
- Evenings and Weekends – After hours, calls are automatically deferred to 911 and the Fire Department dispatcher.

Each complaint or spill is investigated within two business days and tracked to ensure that information is not lost. Internal communication between departments has been established through a series of notification flowcharts for particular types of incidents to ensure response, adequate tracking, and corrective actions. Each incident is documented using the incident response form included in the City's Emergency Spill Response Plan.

In addition, the City has established and maintains a web-based public reporting system called Ask Stockton. The Stormwater Program uses Ask Stockton to address various stormwater related issues, questions, and concerns. Ask Stockton is advertised through the City of Stockton's Web site and television channel.¹ Residents can link directly to the Ask Stockton portal via the City's Web site.

¹ Channel 97 is a Stockton government access cable television channel devoted to the Stockton City Government



City of Stockton Stormwater Web Site

For return visitors, sign in here:

User name: Password: ☐ Remember me [Sign-in](#) [Password assistance?](#)

Or tell us how we may assist you by entering your request below:

Request type:

* Select a Topic:

Possible answer to your issue: [\(See All FAQs\)](#)

If you find an error on the site or have a question about stocktonca.gov, please let us know:

- Use the service request form below,
- Contact the Public Information Officer Connie Cochran at connie.cochran@stocktonca.gov, or
- Call (209) 937-8827.

Your input helps improve the City's website.

* Please describe your problem or question in detail:

So we may best serve you, please tell us how you can be contacted.

Entering your name and email address allows us to communicate with you and allows you to track this request.

If you wish to remain anonymous but want to know the outcome of the case, please include your email address only.

First Name: * Last Name:

Phone number: * Email address:

Alt. Phone: Address:

City: State: Zip code:

* These fields are required

Ask Stockton Portal

The City facilitated the reporting of illicit discharges by maintaining the Hotline/Ask Stockton and advertising them:

- In MUD outreach materials (Hotline only)
- On the City Web site
- On the City television channel

The number of water pollution complaints received and verified and the source of the complaints are listed below.

	Source	Total Number of Calls/ Forms Submitted	Total Number of Water Pollution Complaints Received	Total Number of Water Pollution Complaints Verified
Last Year 2014-2015	Hotline	3	3	3
	Ask Stockton	3	3	3
This Year 2015-2016	Hotline	4 ^a	0	0
	Ask Stockton	2	2	2

Note:

[a] Calls received from the hotline number were not regarding water pollution complaints. Three calls regarding water pollution complaints were received by the dispatch after-hours number and four were received by field crew.

Coordinate with Other Departments and Agencies

The City coordinated with other departments and agencies to ensure that all reports of water pollution problems are appropriately received, routed, tracked, and investigated.

The City continued to coordinate throughout the year by:

- Advertising the hotline number internally;
- Conducting internal meetings/training; and
- Printing the hotline number on MUD outreach materials.

Review Complaint Documentation Form

During 2009-2010, the City reviewed and revised the Stormwater Program Illicit Discharge Complaint Form that is used to document the complaints received. The revised Stormwater Program Illicit Discharge Complaint Form was included as Appendix B-2 to the *2009-2010 Annual Report*.

2.3.3 Field Crew Inspections

Field staff are trained to recognize illicit discharges so that, during their normal maintenance activities, they can identify signs of previous, current, or potential non-stormwater discharges/connections or illegal dumping into the storm drain system. Once they are discovered, the field staff notifies the MUD – Stormwater Management Program for follow-up investigation. The City's primary spill response investigator conducts follow-up inspections and accompanies field crews during cleanup to ensure that reported spills are properly cleaned up and identified illicit connections are corrected.

The number of water pollution issues identified by field staff is listed below.

	Source	Total Number of Illicit Discharges Observed ^a	Total Number of Discharges Verified ^b
Last Year 2014-2015	Field Staff	69 ^c	67 ^d
This Year 2015-2016	Field Staff	93	80

Notes:

- [a] The number of illicit discharges observed is the number reported by field staff (or as field observations).
- [b] The number of discharges verified is the number with evidence of discharge that is not exempt or in compliance (i.e., those with Discharge Status of "1. Source Identified" or "6. Illegal Connection" in **Appendix B-1**).
- [c] The number of illicit discharges observed by field staff and verified in 2014-2015 has been updated to include the number identified as Field Observations, which are equivalent to identification by field staff. There were 30 additional discharges identified as Field Observations, two of which were in compliance (not illicit).
- [d] In 2014-2015, two illicit discharges investigated by field staff had "No Evidence of Discharge," and cleanup was not required. However, enforcement actions were taken in one case because a cap was missing from the sewer lateral clean-out. In the other case, water was observed on a property due to a water leak, the repair of which was required within 24 hours.

For illicit discharges identified by field staff, information from the Illicit Discharges Database (i.e., the types of pollutants involved; whether the discharge was verified; whether the source was identified; enforcement actions taken; contractor cleanup status; source of complaint; and whether the complaint was investigated within two business days) is provided in **Appendix B-1**. In 2014-2015, the City began transitioning to an electronic inspection format. A consultant, Websoft Developers, Inc., was contracted to convert all inspection forms to electronic documents with drop-down codes that can be accessed via an electronic tablet in the field. It is anticipated that all inspection results and photographs will be instantly uploaded to the database. This is expected to improve data consistency and completeness and reduce the likelihood of data loss.

2.4 ID2 – ILLEGAL CONNECTION IDENTIFICATION AND ELIMINATION

In parallel with the efforts to detect and eliminate illicit discharges (see ID1), the City proactively detects illegal connections to the storm drain system. Upon identification of an illegal connection, the City investigates and eliminates the connections through a variety of mechanisms including, but not limited to, permitting or plugging the connection.

The performance standards for this control measure and the activities initiated and/or completed during the 2015-2016 reporting period are summarized below.

2.4.1 Investigate/Eliminate Illegal Connections

As a part of their normal maintenance activities, City field staff identifies signs of illegal connections to the storm drain system. Once discovered, the illegal connections are addressed and corrected/eliminated.

- Did the City field staff continue to identify illegal connections?

Yes, illegal connections identified ☒

Yes, but no illegal connections identified ☐

No ☐

- Did the responsible MUD staff investigate the potential illegal connections within 21 calendar days to determine the source of the connection, the nature and volume of discharge through the connection, and the responsible party for the connection?

Yes ☒

No, no illegal connections identified ☐

- Did the responsible MUD staff eliminate identified illegal connections?

Yes ☒

No, no illegal connections identified ☐

The table below summarizes the illegal connections investigation/elimination efforts.

	Source	Total Number of Illegal Connections Reported	Total Number of Illegal Connections Verified	Total Number of Illegal Connections Eliminated
Last Year 2014-2015	Hotline	0	0	0
	Ask Stockton	0	0	0
	Field Staff	0	0	0
This Year 2015-2016	Hotline	0	0	0
	Ask Stockton	0	0	0
	Field Staff	1	1	1

2.4.2 Coordinate with Planning and Land Development Program

The City requires that tentative parcel maps be reviewed to ensure consistency with the City standards, including the storm drain standards. Plan reviews ensure that no illegal connections are proposed. All plan reviews are tracked in a database and construction inspections are conducted upon project completion to ensure that the project was built correctly.

The number of illegal connections identified through Planning and Land Development Plan reviews is listed below.

	Source	Total Number of Plans Reviewed	Total Number of Illegal Connections Identified
Last Year 2014-2015	Planning/Land Development Plan Review	12	0
This Year 2015-2016	Planning/Land Development Plan Review	15	0

2.4.3 Coordinate with Construction Program

The Planning and Collection (Conveyance) Systems Division identifies illegal connections during the plan review stage, as well as during routine inspections and maintenance/repair. The Municipal Utilities Department Stormwater Inspector is notified of active constructions sites in a variety of ways, including monitoring of the SMARTS system for construction projects that have been reviewed and approved. Once an active construction site greater than one acre has been logged on the database, the Stormwater Inspector performs monthly inspections of those construction sites greater than one acre to ensure that any stormwater drainage issues which arise are resolved while the project is active.

During the 2015-2016 reporting period, no illegal connections were identified through Construction project inspections.

2.5 ID3 – INVESTIGATION/INSPECTION AND FOLLOW UP

The investigation and inspection of potential illicit discharges and illegal connections to the storm drain system, as well as appropriate follow-up actions, are essential in order to eliminate illicit discharges and illegal connections. The response and follow-up actions may include cleanup and/or other necessary actions to mitigate the impacts of the discharge.

The performance standards for this control measure and the activities initiated and/or completed during the 2015-2016 reporting period are summarized below.

2.5.1 Response and Investigation

When a notification or complaint is received, the Municipal Utilities Department (MUD) provides an on-site assessment to determine the conditions of the discharge within two (2) business days (during or immediately following containment and cleanup). The investigation process includes determining whether the discharge is occurring on private or public property, whether the discharge is an authorized non-stormwater discharge, and whether the discharge is hazardous.

The City developed *Spill Response Procedures for Non-Hazardous Materials and Wastes* that include a responsibility flow chart and outline timeline and response steps to address emergency and non-emergency spills of non-hazardous materials and waste. The *Spill Response Procedures for Non-Hazardous Materials and Wastes* was attached as Appendix B-1 of the *2009-2010 Annual Report*.

The City completes a detailed description of each incident, action taken, and final resolution. A *Stormwater Program Illicit Discharge Complaint Form* was developed to ensure all pertinent information is gathered, and this form was revised during the 2009-2010 reporting period (Appendix B-2 of the *2009-2010 Annual Report*).

Respond to Illicit Discharges

A table summarizing the responses is provided below. For illicit discharges identified via the Hotline, Ask Stockton, and MUD Environmental Control Staff, information from the Illicit Discharges Database (i.e., facility type; activity type; types of pollutants involved; whether the discharge was verified; whether the source was identified; enforcement actions taken; contractor cleanup status; source of complaint; and whether the complaint was investigated within two business days) is provided in **Appendix B-1**.

	Total Number of Complaints/Notifications Reported (All Sources)^a	Total Number of Illicit Discharges Verified (All Sources)¹	Total Number of Complaints/Notifications Investigated within Two (2) Business Days
Last Year 2014-2015	87	79	85
This Year 2015-2016	121	102	120 ^b

Notes:

- [a] Sources include the Hotline, Ask Stockton, Field Staff, and Other. These data include incident referrals via direct calls to staff, observations made in the field by field personnel, and internal staff referrals.
- [b] In 2015-2016, one incident involving trash and debris from a restaurant was not investigated within two business days. It was investigated within seven business days.

A table summarizing the types of materials involved in the verified incidents, categorized by Waste Category and Waste Subcategory, is provided below. These data reflect the types of constituents involved in incidents, not the total number of incidents (i.e., a given incident may include multiple constituents (Waste Categories)). Thus, the total types of Waste Categories and Subcategories identified will not necessarily be the same as the total number of incidents reported within **Section 2**.

Type of Materials, by Waste Category and Subcategory ^a	Total Number of Illicit Discharges Verified	
	2014-2015	2015-2016
Nutrients	0	0
Pesticides	0	0
Sediment	10	29
Hydrocarbons	21	10
Gasoline / Diesel	4	2
Fats, Oils, and Grease	3 ^b	0
Hydraulic Oil	2	1
Motor Oil	6	5
Paint (Oil Based)	4	1
Solvent	1	0
Other	1	1 (auto repair shop drain)
Wastewater	38	46
Concrete Slurry	1	7
Pool/Spa Discharge	3	2
Sewage	2	2
Wash Water	20	31
Other	12	4 (industrial cooling tower water, residential graywater, industrial high pH water)
Trash and Debris	9	14
Food Waste	2	5
Green Waste	2	1
Trash	3	4
Other	2	4 (dust)
Paint	4	0
Miscellaneous	1	2
Antifreeze	1	0
Other	0	2 (dead animals)
Unidentified	0	1
Liquid	0	0
Odor	0	0
Residue	0	0
Solid	0	1

Notes:

[a] These data reflect the types of constituents involved in incidents, not the total number of incidents (i.e., a given incident may include multiple constituents (Waste Categories)). Thus, the total types of Waste Categories and Subcategories identified will not necessarily be the same as the total number of incidents reported within Section 2.

[b] The Hydrocarbons Subcategory of Fats, Oils, and Grease was not provided as an option by the database; however, it was tracked in the detailed notes of the "Other" Subcategory during 2014-2015.

Develop an Investigative Guidance Manual

During 2009-2010, the City developed an Investigative Guidance Manual to ensure that inspections of ID/IC are conducted in a uniform manner (Appendix B-4 in the *2009-2010 Annual Report*). The Investigative Guidance Manual establishes general guidelines that may be utilized to ensure that the procedures followed and information obtained during an investigation are defensible. The Investigative Guidance Manual covers protocols for obtaining permission to inspect, proper collection of evidence, and appropriate enforcement actions. This document has been distributed to, and will continue to be used by, MUD Environmental Control and MUD Stormwater staff.

2.5.2 Cleanup

The main objective of the cleanup effort is to restore the impacted area back to its original state and prevent environmental degradation in the area surrounding the incident. Depending on the incident, the City may serve the owner or occupant of the property with an invoice for the cleanup cost.

Maintain Contractual Services for Incident Cleanup

The City maintained contractual services for the cleanup and removal of hazardous materials. The number of illicit discharges requiring clean-up is listed below.

	Total Number of Illicit Discharges Requiring Clean-Up^a
Last Year 2014-2015	45
This Year 2015-2016	75 ^b

Note:

[a] Includes clean-up by a contractor, resident, commercial business or industry, or city crew/collection.

[b] Seven of these illicit discharge incidents had "no evidence of discharge;" however, clean-up activities were necessary to prevent the risk of discharge during the next rainfall event.

2.5.3 Recordkeeping and Tracking

The City developed an Illicit Discharge Database and utilizes the information to identify and respond to areas that require focused attention. The City also maps the locations of the illicit discharges and illegal connections on a GIS-based map and uses the information to evaluate patterns and trends with the objectives of identifying priority areas and tracking repeat offenders.

Maintain Illicit Discharges Database

During the 2015-2016 reporting period, the City maintained the Illicit Discharges Database. Information related to the illicit discharges, including the types of pollutants involved, whether the discharge was verified, whether the source was identified, enforcement actions taken, contractor cleanup status, source of complaint, and whether the complaint was investigated within two business days is provided as **Appendix B-1**. The database will continue to be used and updated as needed.

Evaluate, Optimize, and Incorporate Waste Categories

During 2009-2010, the City evaluated and optimized the waste categories it uses to categorize illicit discharges in order to minimize the number of illicit discharges described as miscellaneous or unidentified and more accurately characterize the pollutants and activities involved (see the Waste Categories Memorandum, Appendix B-5 of the *2009-2010 Annual Report*). This will allow the City to

effectively focus resources on the more prevalent types of incidents. By targeting pollutants and associated activities for additional outreach efforts, the City may be able to eliminate a large portion of the incidents that occur, thereby resulting in a more effective Illicit Discharges program.

Under the new system, each illicit discharge is tracked by facility type, activity causing the illicit discharge, and updated waste categories that are a hybrid of categories previously used by the City and categories recommended by CASQA. These waste categories have been incorporated into the Illicit Discharge Database and are used to track illicit discharges. The primary waste categories were used starting in the 2010-2011 reporting period, and use of the waste subcategories was implemented in 2013-2014 and continued in 2014-2015 and 2015-2016.

During the 2015-2016 reporting period, three new Activity Types (Waste Handling and Disposal, Powerwashing, and Pool Discharge) were added to the database. These did not affect the waste categories.

Identify Reported Illicit Discharges on a Map

The City mapped the identified illicit discharges. An Illicit Discharges Location Map is provided as **Appendix B-2**. In addition, the City evaluated the information for patterns and trends of illicit discharges, with the objectives of identifying priority areas and tracking repeat offenders for elimination of illicit discharges.

As in the past, the City has observed that clusters of sanitary sewer overflow (SSO) incidents tend to occur in areas of the City where the sewage infrastructure is older. The City will continue to monitor for clusters of illicit discharges, concentrate cleaning crews in these areas, and provide appropriate outreach that targets these areas.

2.6 ID4 – ENFORCEMENT

The Enforcement Control Measure establishes policies and procedures and outlines the progressive levels of enforcement applied to responsible parties not complying with City ordinances. By adopting and implementing a progressive enforcement policy, the City will ensure that the program is effective at reducing illicit discharges and illegal connections.

The performance standards for this control measure and the activities initiated and/or completed during the 2015-2016 reporting period are summarized below.

2.6.1 Implement Progressive Enforcement Policy

The City has a progressive enforcement and referral policy so that the enforcement actions match the severity of the violation and include distinct, progressive steps. Enforcement actions are taken in accordance with the *Municipal Utilities Department Directive Prohibiting Non-Stormwater Discharges to the Storm Drainage System* (MUD Directive, Appendix B-8 of the *2009-2010 Annual Report*). Options are available for progressive, corrective actions for repeat offenders. In general, the progressively severe corrective actions involve verbal warnings followed by written warnings and legal action, if necessary. Illicit discharges by businesses are addressed in a more formal manner through the issuance of administrative citations, notices of non-compliance, cease and desist orders, and criminal enforcement, depending upon the compliance history of the facility. Corrective actions are taken in every instance where a responsible party is identified.

2.6.2 Review/Revise Illicit Discharges Database to Incorporate Enforcement-Related Information

The Illicit Discharges Database has been updated to incorporate enforcement-related information (**Appendix B-1**). All enforcement actions associated with an incident are tracked. The database is supported by records kept by MUD Environmental Control and MUD Stormwater for all citations written and enforcement actions taken.

2.6.3 Track Enforcement Actions in the Illicit Discharges Database

The City used the Illicit Discharges Database to track enforcement actions. The number and types of enforcement actions taken for illicit discharges and illegal connections by the Stormwater Division are summarized below.

Stormwater Division Enforcement Actions	2014-2015 ^a	2015-2016 ^a
None – No Action Taken ^b	8	19
Not Available ^c	0	0
Administrative		
Verbal Warning	53	74
Cease and Desist Order ^d	4	7
Violation Warning Notice ^d	15	25
Notice to Clean ^d	16	34
Stop Work Order ^d	0	4
Administrative Citation (Fine) ^d	11	11
Correction Order ^d	25	29
Criminal Enforcement^e		
Misdemeanor	0	0
Infraction	0	0

Notes:

- [a] The total number of enforcement actions taken may be greater than the number of verified incidents due to multiple enforcement actions. These enforcement actions may have occurred on the same day for a single incident.
- [b] **None – No Action Taken:** This enforcement action type denotes that no action was taken. The responsible party may have taken corrective measures before agency personnel arrived and/or a responsible party was not identifiable.
- [c] **Not Available:** Data for a given reported incident were not available.
- [d] The "Notice of Violation - Administrative Citation form used by MUD - Stormwater includes the following enforcement options: Cease and Desist Order; Violation Warning Notice; Notice to Clean; Stop Work Order; Fine; and Correction Order.
- [e] **Criminal Enforcement:** This category presumes that an action turned over to the District Attorney resulted in a criminal prosecution within the year of the incident. However, data for this category can only be updated in subsequent years (i.e., after criminal prosecution has been successful).

The number and types of enforcement actions taken for illicit discharges and illegal connections by the Environmental Control Division are summarized below.

Environmental Control Division Enforcement Actions	2014-2015 ^a	2015-2016 ^a
None – No Action Taken ^b	5	1
Not Available ^c	0	0
Administrative		
Verbal Warning	2	0
Notice of Violation	5	0
Notice to Clean	5	1
Correction Order	4	1
Criminal Enforcement^d		
Misdemeanor	0	0
Infraction	0	0

Notes:

- [a] The total number of enforcement actions taken may be greater than the number of verified incidents due to multiple enforcement actions. These enforcement actions may have occurred on the same day for a single incident.
- [b] **None – No Action Taken:** This enforcement action type denotes that no action was taken. The responsible party may have taken corrective measures before agency personnel arrived and/or a responsible party was not identifiable.
- [c] **Not Available:** Data for a given reported incident were not available.
- [d] **Criminal Enforcement:** This category presumes that an action turned over to the District Attorney resulted in a criminal prosecution within the year of the incident. However, data for this category can only be updated in subsequent years (i.e., after criminal prosecution has been successful).

Total number of incidents with Administrative enforcement (Stormwater Division): 184

Total number of incidents with Administrative enforcement (Environmental Control Division): 2

Total number of enforcement actions taken during the reporting period (Stormwater and Environmental Control Divisions): 186

Number of repeat offenders² identified during the reporting period: 12

Total number of complaints/problems referred to the Regional Board: 1

² Repeat offenders were identified by tracking responsible parties for multiple incidents at the same address on different dates.

2.7 ID5 – TRAINING

Training is important for the implementation of the Illicit Discharges Program Element. An effective training program is one of the best pollution prevention BMPs that can be implemented because it prompts behavioral changes that are fundamentally necessary to protect water quality.

Areas of Focus for the Illicit Discharge Detection and Elimination Program Training

Target Audience	Format	Subject Material	Comments
<ul style="list-style-type: none"> Hotline staff Public Works maintenance crews Industrial/Commercial inspectors Building and construction inspectors Police Dept. Fire Dept. Environmental Control Officers 	<ul style="list-style-type: none"> Classroom Field Demos 	<ul style="list-style-type: none"> Overview of stormwater management program Stormwater ordinance and enforcement policy Identification and elimination Conducting field inspections Response and notification Database tracking 	<ul style="list-style-type: none"> Training seminars or workshops related to ID/ICs may be made available by other organizations

2.7.1 Conduct Training

Staff attended training sessions related to illicit discharges during the 2015-2016 reporting period. A summary of the training sessions held during the 2015-2016 reporting period is provided below. A total of 37 staff also attended the *Stormwater Pollution Prevention and Good Housekeeping for Municipal Operations and Maintenance* training given April 15, 2016, which is reported in Section 4. Sign-in sheets for the four in-house trainings shown below are included in **Appendix B-3**.

Date of Training	Title of Training Module	Number of Attendees	Staff Positions Trained	Trainee City Departments or Divisions
7/1/2015	Hydro/Vac Truck Safety Training (in-house)	34	Collections/ Collection System Operator	MUD
9/8/2015	Vacuum Training class (external)	6	Collections/ Collection System Operator	MUD
9/16/2015	Nozzle Training / Safety (in-house)	33	Collections/ Collection System Operator	MUD
10/6/2015	SSOERP, SSO Volume Estimations, SSO Backup Restoration (CWEA)	6	Collections/ Collection System Operator	MUD
10/14/2015	Storm Patrol (Yearly, in-house)	31	Collections/ Collection System Operator	MUD
10/26/2015	Environmental Crimes Symposium (Office of the District Attorney, County of Tulare)	1	Stormwater Inspector	SW
1/20/2016	SSOERP (in-house)	36	Collections/ Collection System Operator	MUD

2.8 ID6 – EFFECTIVENESS ASSESSMENT

To determine the effectiveness of the Illicit Discharges Program, a comprehensive assessment of the program data is conducted as a part of the annual report. The results of this assessment are used to identify modifications needed for the program. Each year, the effectiveness assessment is reviewed and revised as needed.

By conducting these assessments and modifying the program as needed, the City ensures that the iterative process is used as an effective management tool. Due to the types of data collected for the Illicit Discharges Program, the assessment primarily focused on Outcome Levels 1 through 3.

- Outcome Level 1 (L1) answers the question: Did the City implement the components of the Permit and the 2009 SWMP?
- Outcome Level 2 (L2) answers the question: Can the City demonstrate that the control measure/performance standard significantly increased the awareness of a target audience?
- Outcome Level 3 (L3) answers the question: Can the City demonstrate that the control measure/performance standard significantly modified the behavior of a target audience?

The table below summarizes the effectiveness assessment conducted for the Illicit Discharges Program Element. Additional detail for each component of the assessment is provided on the following pages.

Program Effectiveness Assessment Summary for Illicit Discharges

Illicit Discharges	Level 1	Level 2	Level 3	Level 4
	Stormwater Program Activities	Barriers and Bridges to Action (Knowledge/Awareness)	Target Audience Actions	Source Contributions
ID1 - Detection of Illicit Discharges and Illegal Connections	C – Maintained and Advertised Hotline C – Coordination with Other Departments and Agencies C – Coordination with Field Crews C – Reports of Verified Illicit Discharges	C – Identification of Illicit Discharges by Field Crews	C – Identification of Illicit Discharges by Field Crews	N/A
ID2 - Illegal Connections Identification and Elimination	C – Identification and Elimination	N/A	N/A	N/A
ID3 - Investigation/Inspection and Follow Up	C – Maintain Database C – Response Activities C – Characterize Illicit Discharges	C – Characterization of Illicit Discharges by Field Crews	C – Characterization of Illicit Discharges by Field Crews	N/A
ID4 - Enforcement	C – Enforcement Action	N/A	N/A	N/A
ID5 - Training	C – Training	A	N/A	N/A

C – An effectiveness assessment was conducted during the reporting periods

A – It is anticipated that an effectiveness assessment may be conducted in future annual reports

N/A – This outcome level is not applicable for this control measure

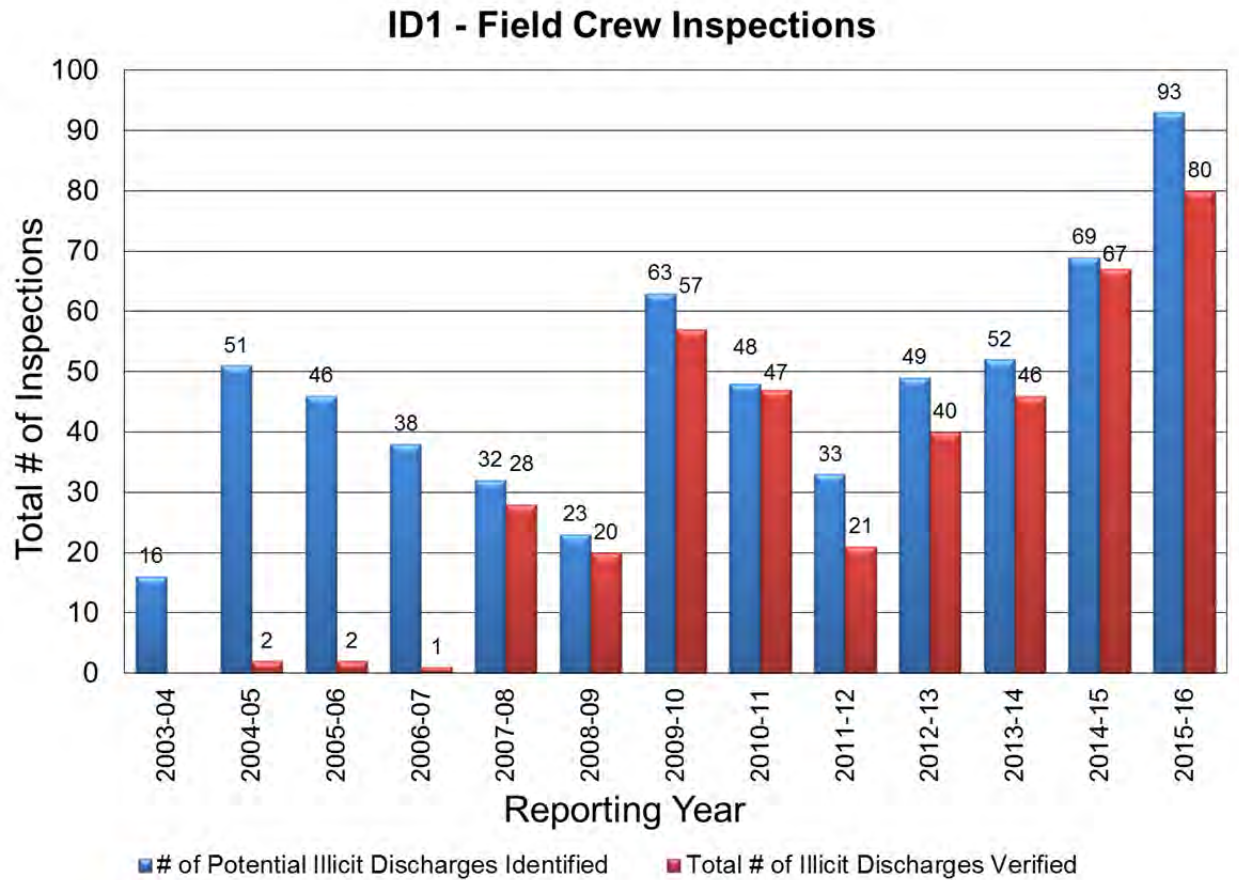
Following is an assessment regarding the effectiveness of the Illicit Discharges Program.

ID1 - Detection of Illicit Discharges and Illegal Connections

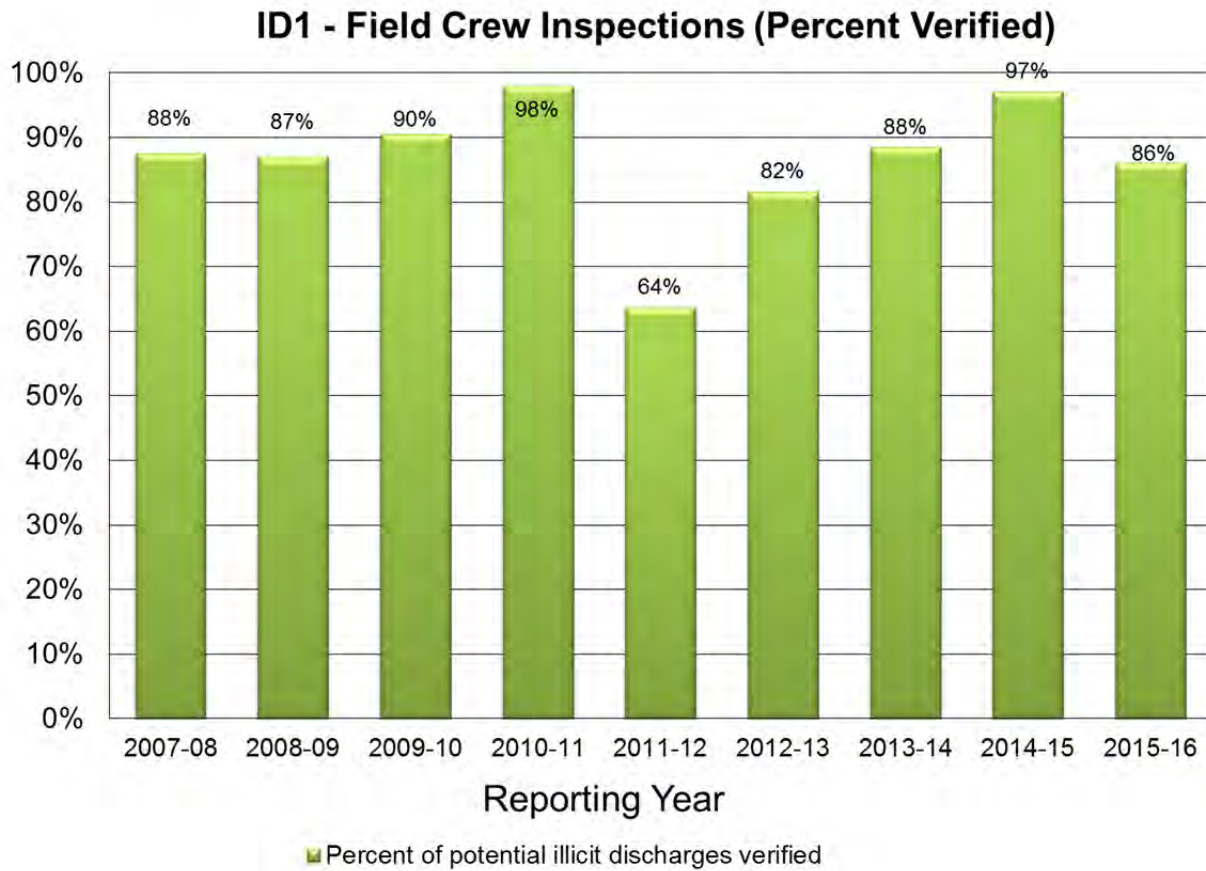
The City has facilitated the reporting of illicit discharges by establishing and maintaining a hotline number, a general stormwater information number, and a web-based public reporting system (Ask Stockton), and widely advertising them as part of the public outreach program. This has been accomplished by including the hotline number and/or Web site in public education materials, on the City's Web site, and in the local telephone book. **(L1)**

The City has further facilitated the reporting of illicit discharges by coordinating with other departments and agencies. This has been accomplished by advertising the hotline number internally and conducting internal meetings. **(L1)**

City field crews are critical to the Illicit Discharges program since they are the eyes and the ears of the City and are in the field every day. As such, they have been trained to identify potential illicit discharges while conducting routine maintenance activities. Since 2003-2004, 613 potential illicit discharges have been identified by field crews. Of the 93 potential illicit discharges identified by field staff in 2015-2016, 80 were verified as illicit discharges and appropriately addressed. (L1)



With the exception of 2011-2012, the success rate of the field inspectors in reporting illicit discharges that have been verified in the field and followed up on in an appropriate manner has remained high since 2007-2008. Since 2011-2012, the success rate has improved; indicating increased awareness of field inspectors regarding what constitutes a problematic water pollution incident. (L2, L3)



ID2 - Illegal Connection Identification and Elimination

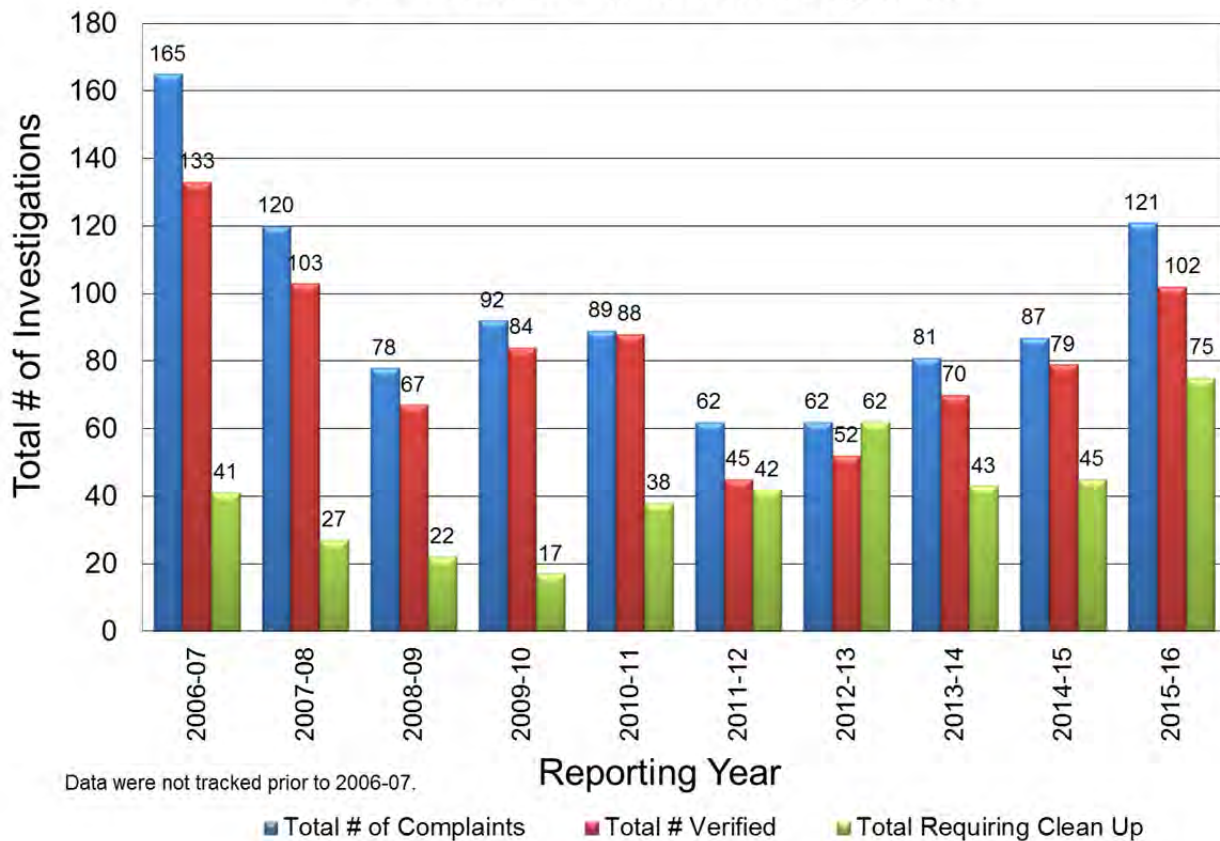
The City has a number of provisions that effectively prevent illicit discharges and illegal connections. First, all new development plans are reviewed for possible illegal connections, and it is also verified that no such connections exist during the construction phase (see Section 6). Second, City staff have been trained to identify illegal connections and illicit discharges in the field. To date, the City has identified and eliminated nine illegal connections. (L1)

ID3 - Investigation/Inspection and Follow Up

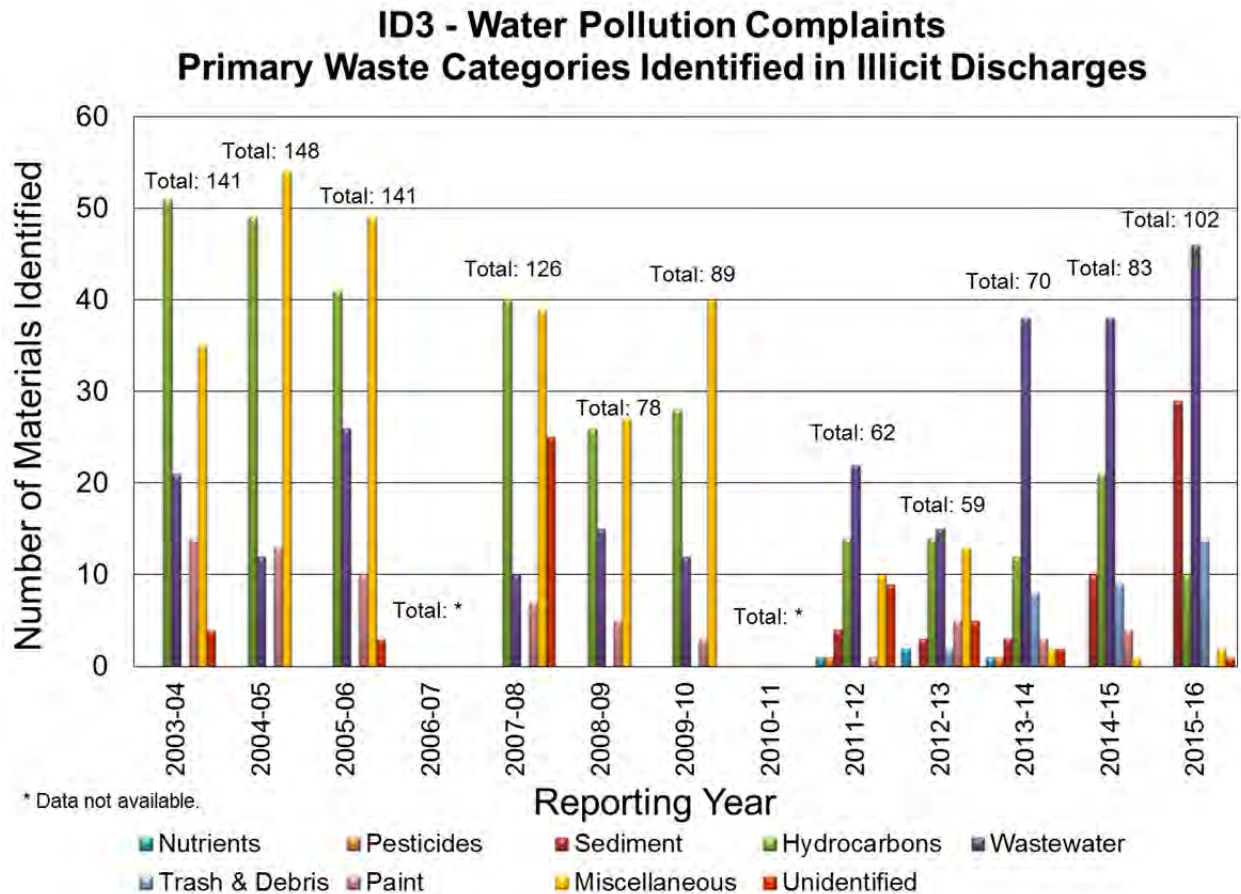
The City developed and maintains an Illicit Discharge Database. The City also maps the locations of the illicit discharges and illegal connections on an annual basis. (L1)

The City has established *Spill Response Procedures for Non-Hazardous Materials and Waste* and responds to such incidents within two business days, ensuring that the incidents are cleaned up appropriately. Since 2006-2007, the City has responded to 957 complaints/notifications from all sources. Of those, 823 were verified and addressed, and 412 required cleanup. (L1)

ID3 - Water Pollution Investigations

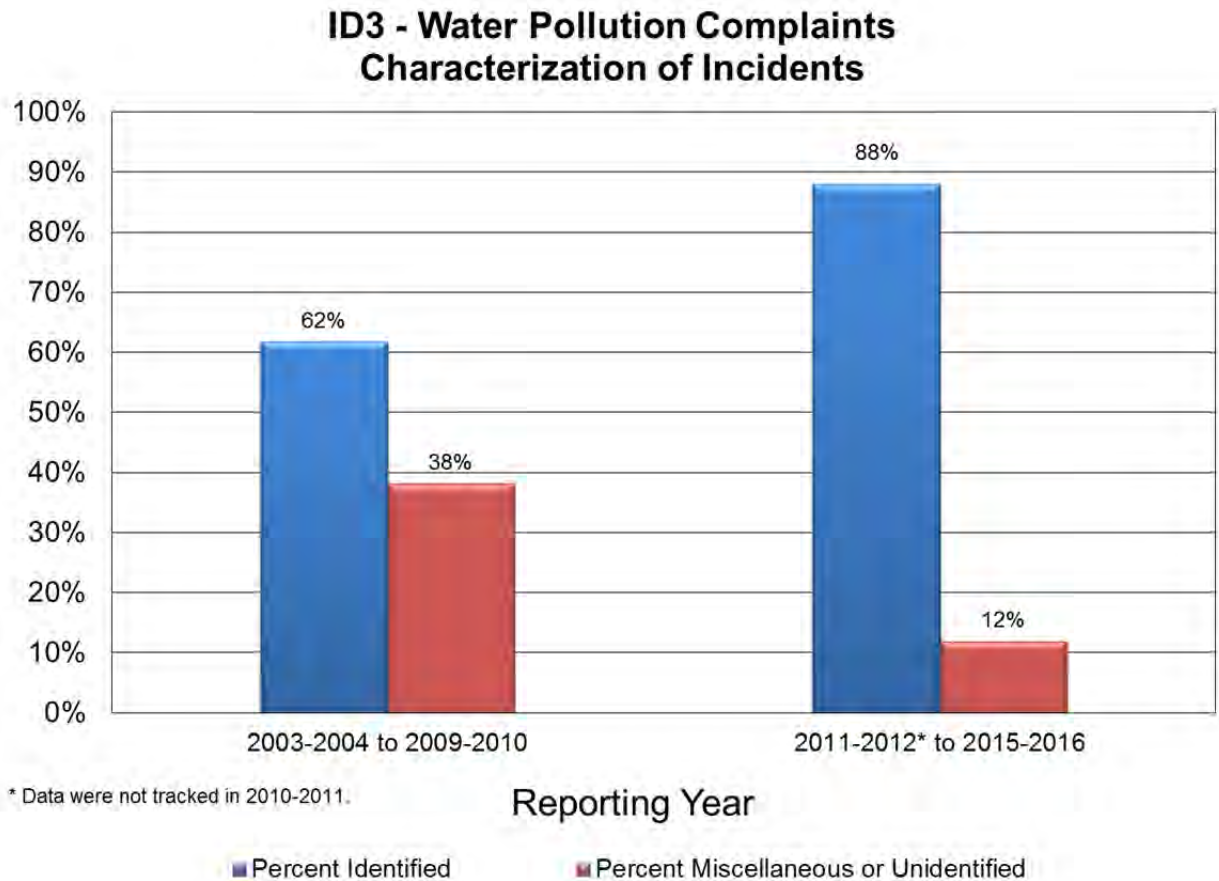


Since 2003-2004, City staff have worked to identify the types of materials involved in the illicit discharges or illegal connections. During the 2009-2010 reporting period, the City evaluated and optimized the waste categories it uses to categorize illicit discharges in order to minimize the number of illicit discharges described as “miscellaneous” or “unidentified” and more accurately characterize the pollutants and activities involved. Tracking of the current primary waste categories began in the 2011-2012 reporting period, and tracking of the waste subcategories began in the 2013-2014 reporting period (and continued to be tracked in 2015-2016). (L1)

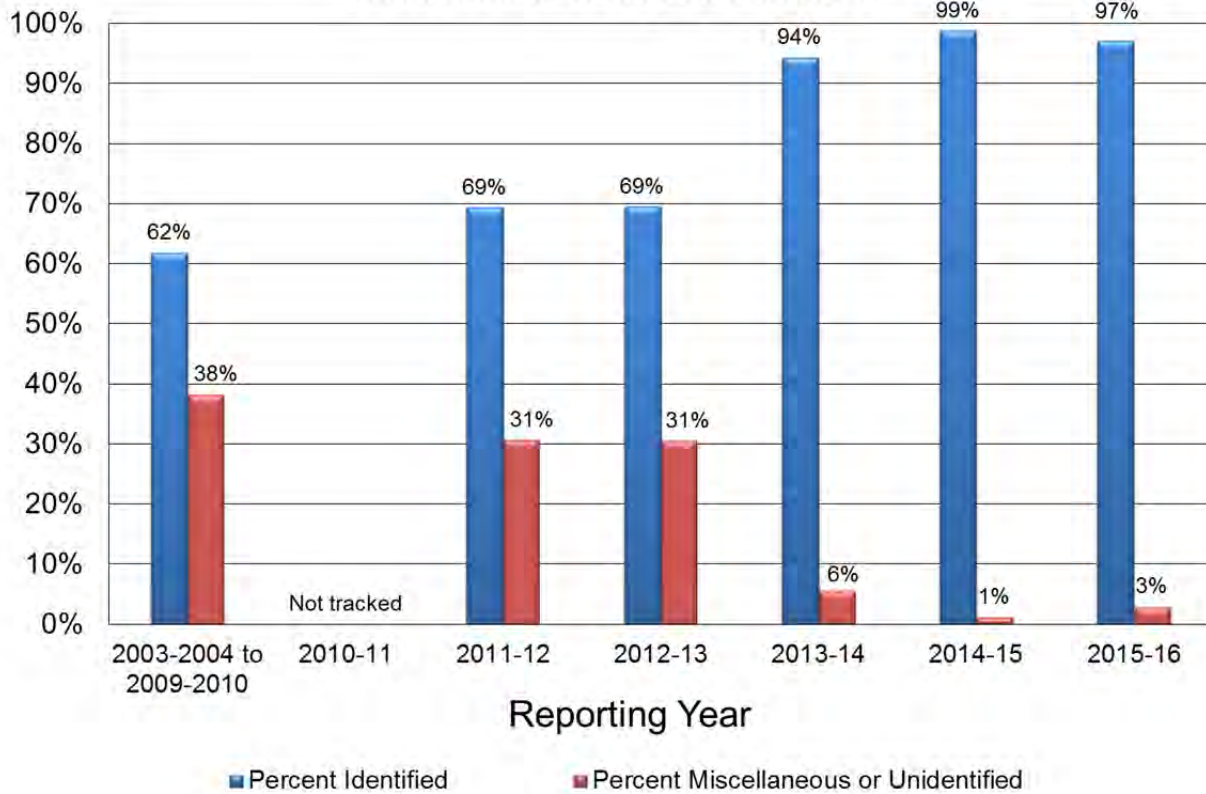


The use of the new waste categories in 2011-2012 through 2015-2016 resulted in 12% of illicit discharges being categorized as “miscellaneous” or “unidentified,” an improvement of 26% compared to 38% of illicit discharges categorized as “miscellaneous” or “unidentified” in 2003-2004 through 2009-2010.

In 2011-2012 through 2015-2016, 88% of illicit discharges were identified using a specific waste category, an improvement of 26% compared to 62% of illicit discharges identified using a specific waste category in 2003-2004 through 2009-2010 (62%). This indicates that field staff have become more aware of the different types of materials involved in illicit discharges and, by utilizing the revised waste categories, have progressed to providing more valuable details as they verify, characterize, and document illicit discharges. (L2, L3)



ID3 - Water Pollution Complaints Characterization of Incidents



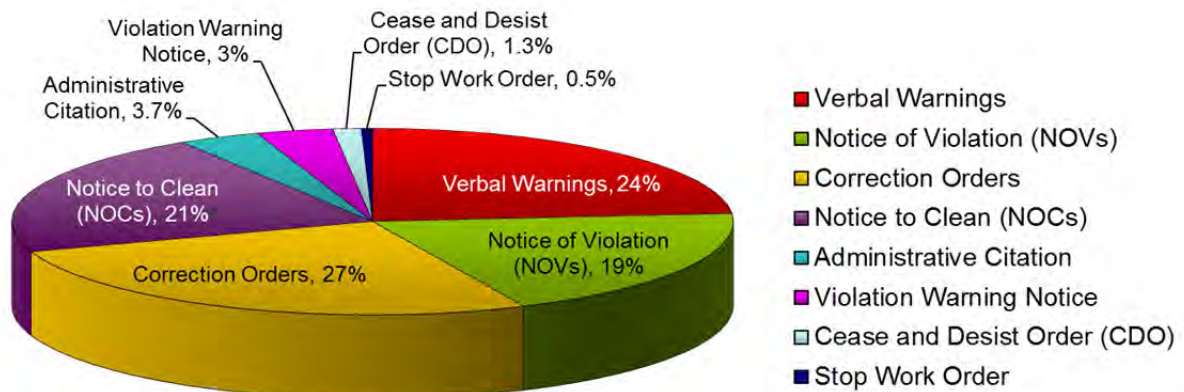
The City has developed an *Investigative Guidance Manual* to ensure that inspections of ID/IC are conducted in a uniform manner. The *Investigative Guidance Manual* covers protocols for obtaining permission to inspect, proper collection of evidence, and appropriate types of enforcement actions. This document has been distributed to, and will continue to be used by, MUD Environmental Control and MUD Stormwater staff. (L1)

ID4 - Enforcement

The City has developed and is currently implementing its *Municipal Utilities Department Directive Prohibiting Non-Stormwater Discharges to the Storm Drainage System* to ensure consistency in the enforcement of local ordinances and provides guidelines and protocols for enforcing violations. **(L1)**

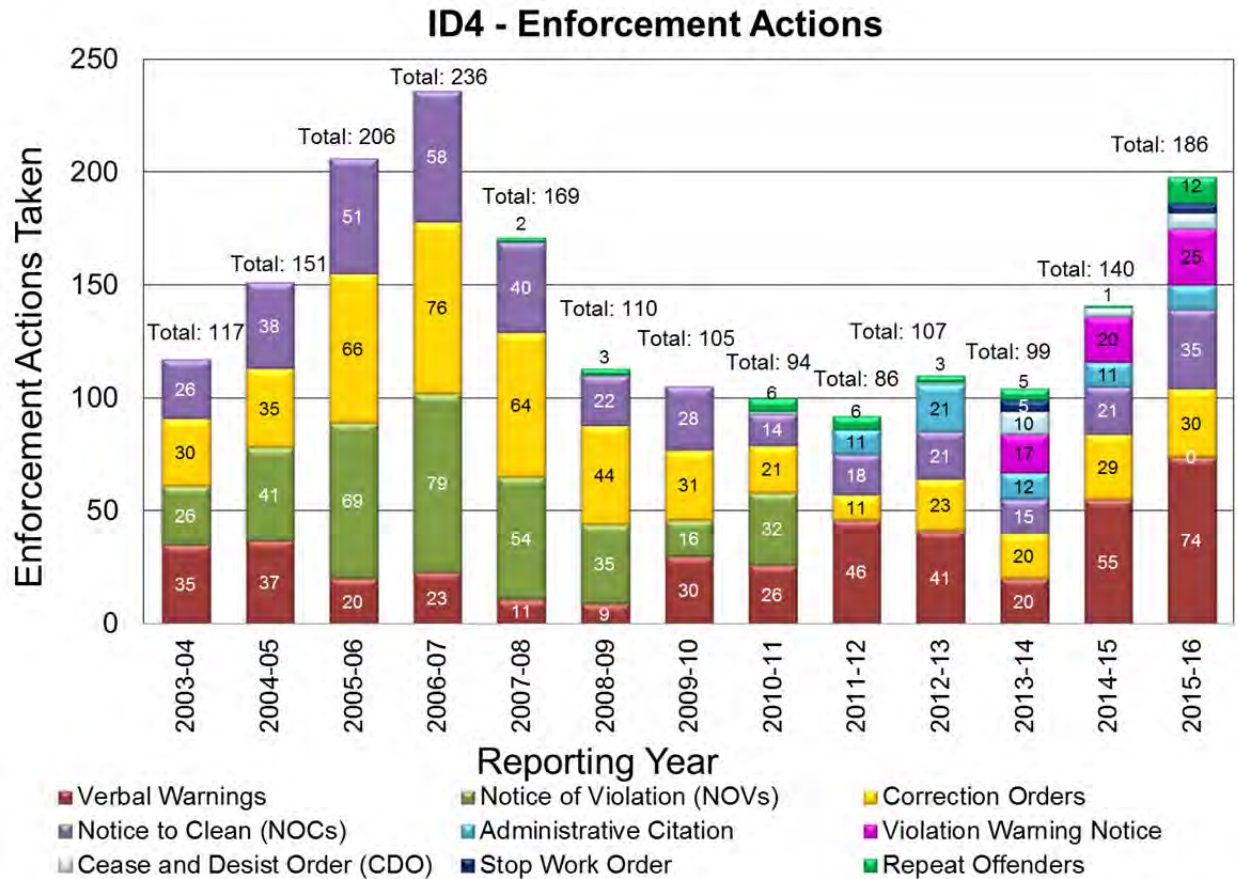
The City enforced against illicit discharges/illegal connections and utilized progressive enforcement when necessary. In 2011-2012, the City began using a form called “Notice of Violation – Administrative Citation,” which contains check boxes for multiple types of administrative violations, thus allowing multiple violations to be indicated for a single illicit discharge event. The citation form itself is not counted as an additional type of violation. Since 2003-2004, the City has pursued 1,806 enforcement actions with various degrees of severity. **(L1)**

ID4 - Enforcement Actions



Total: 1,806 Enforcement Actions since 2003-2004

- Since 2006-2007, there have been 1,806 enforcement actions in response to 957 notifications/complaints of illicit discharges and illegal connections that have been received from all sources, indicating that progressive enforcement, in the form of multiple enforcement actions per incident, is occurring when appropriate. To date, no criminal enforcement has occurred. The number of enforcement actions taken each year since 2006-2007 has been approximately proportional to the number of water pollution incidents for that year.



ID5 – Training

City staff are attending training sessions related to Illicit Discharges. **(L1)**

- Since 2007-2008, 617 City staff have attended 22 Illicit Discharges training sessions. A total of 147 City staff attended seven training sessions pertaining to illicit discharges during 2015-2016.

Section 3

Public Outreach (PO)

3.1 OVERVIEW

The purpose of the Public Outreach Program Element is to inform the public (increase knowledge) regarding the impacts of urban stormwater runoff and introduce steps the public can take (change behavior) to reduce pollutants from everyday activities. In addition, helping the public understand the problems associated with urban stormwater runoff can help build support for the stormwater program.

The Public Outreach Program Element is designed to implement and evaluate a comprehensive short- and long-term public education campaign that will inform the community about how our actions may adversely impact urban stormwater discharges and, subsequently, our local water bodies.

This Program Element is also designed to maximize the use of limited resources and to develop partnerships among all stakeholders in the SUA. Local stewardship and partnerships among governmental agencies, schools, universities, and private interests are vital parts of the types of involvement envisioned in this Program Element.

3.2 CONTROL MEASURES

The City has developed several Control Measures to ensure that the Public Outreach-related Permit requirements are effectively developed and implemented. Each Control Measure includes accompanying performance standards, which, once accomplished, constitute compliance with the SWMP/Permit.

The Public Outreach Program Control Measures consist of the following:

PO	Control Measure
PO1	Public Participation
PO2	Hotline
PO3	Public Outreach Implementation
PO4	Public School Education
PO5	Business Outreach
PO6	Effectiveness Assessment

The next section of the Annual Report provides information on the specific tasks initiated and/or completed during the reporting period pursuant to the Public Outreach Program Performance Standards and implementation schedules.

3.3 PO1 – PUBLIC PARTICIPATION

The participation of the public in the implementation of the City’s Stormwater Management Program is critical to a successful effort to protect the water resources. Therefore, active public participation is encouraged and supported by the City through a variety of mechanisms, described in additional detail below.

3.3.1 Implement Storm Drain Marker Program

For the Storm Drain Marker Program, the City loans the supplies to volunteers and coordinates the stenciling activities. By working with the citizen volunteers, the City has been able to mark storm drain inlets throughout the community.

The City continued implementation of the Storm Drain Marker Program by soliciting volunteers to mark the storm drain inlets throughout the year. The City solicited the volunteers through the following mechanisms:

- Local college contacts
- City Web site
- Newsletters
- Community events
- Community contacts

All of the storm drain inlets installed since 2003-2004 have been required to be permanently imprinted in the sidewalk with the message, “No Dumping – Flows to Delta.” The City has a total of 16,436 catch basins, most of which are stenciled or imprinted with the storm drain message.

- During the 2015-2016 reporting period, City Collections crew inspected 2,451 catch basins and re-stenciled 655 catch basins. City Stormwater crew stenciled four new catch basin drains and re-stenciled five drains that lead to two catch basins. Ninety-three volunteers (including commercial businesses) newly stenciled 58 catch basins and re-stenciled 160 catch basins.
- Local school districts within the region were informed in June 2014 of the need to stencil all storm drain inlets on facility grounds and are in the process of stenciling inlets.



City of Stockton Storm Drain Inlet Stencil

The total number of storm drain catch basins stenciled by volunteers is summarized in the table below (see also MO5).

Date	Volunteer Organization	Number of Volunteers	Number of Catch Basins	
			Re-Stenciled	Newly Stenciled
7/15/2015	Martin Brower	1	7	7
9/16/2015	Herrick	1	12	0
9/28/2015	Zacky Farms	1	8	0
9/30/2015	Boretech Resource Recovery Engineering LLC	1	7	0
11/16/2015	Old Castle Stockton	1	10	0
12/4/2015	SCAFCO Steel Stud Company Stockton Branch	1	5	0
2/11/2016	University of the Pacific	74	28	46
3/10/2016	Panda Express	1	0	5
3/11/2016	Jiffy Lube	1	6	0
3/24/2016	Christian Life Center	1	8	0
4/7/2016	Valley Trucking	1	3	0
4/21/2016	Vizion Auto Body	1	2	0
5/3/2016	Cintas Uniform Services	1	2	0
5/3/2016	Thanh Auto Repair	1	2	0
5/3/2016	Walmart #1554	2	30	0
5/5/2016	Speedee	1	3	0
6/15/2016	Kelly's Car Wash	1	6	0
6/17/2016	C & S Wholesale Grocers Inc. / Stockton Logistics LLC	1	20	0
6/22/2016	Los Primos	1	1	0
Total		93	160	58

3.3.2 Organize, Support, and/or Participate in Stream Cleanup Events

The City's stormwater program routinely partners with several groups for community stream cleanup events throughout the year. During the 2013 California Coastal Cleanup Day, City staff recruited the assistance of the local homeless population to clean up Mormon Slough. The City may be the first and only city in California to enlist the efforts of the transient population in a clean-up effort. Additional details can be found in a local news article dated September 28, 2013 in Appendix C-1 of the *2013-2014 Annual Report*.

During the 2015-2016 reporting period, the program participated in the 2016 California Coastal Cleanup Day. The City and County stormwater staff acted as resources and provided supplies (e.g., dumpsters, boots, gloves, trash bags) to the various volunteer groups and raised community awareness to encourage the participation of local residents.

A summary of the stream cleanup events, the types of volunteer organizations and number of volunteers involved in these efforts is provided below.

Date	Cleanup Location/Event	City's Role in Event	Volunteer Organization/Community Partner	Number of Volunteers Involved
9/19/2015	California Coastal Clean-up Day at: Mokelumne River Mosher Slough San Joaquin River Calaveras River (3 sites) Mormon Slough Duck Creek Walker Slough Burns Cut American Legion Park	Partner/ Organizer	California Coastal Commission City of Stockton County of San Joaquin Fishery Foundation of CA Port of Stockton Financial Center Credit Union Ingredion The Grupe Company City of Lodi Compliance First, LLC SJC Mosquito & Vector Control District Moroch / McDonalds REI Orchard Supply Company Various Educational Institutions Various Faith-Based Organizations	817
Total				817

Notes:

Since 1999, the County has been the California Coastal Commission's Inland Region Representative and has assisted in coordinating the annual California Coastal Cleanup Day.

Total Volume of Trash/Debris Removed during the 2015-2016 reporting period: 7.8 tons

Total Sites Visited: 12

A summary of the large items removed during California Coastal Cleanup Day in San Joaquin County is provided below.

Large Items	Estimated #
Passenger tires	51
Shopping Carts	21
Sinks	2



Trash Collected from Mormon Slough at Pilgrim



Volunteers at California Coastal Cleanup Day



Volunteers Cleaning Mormon Slough



Mormon Slough after Cleanup

3.3.3 Promote Used Oil and Household Hazardous Waste Programs

The City promotes the Used Oil and Household Hazardous Waste (HHW) Programs on the City Web site, the media, and through distribution of Waste Reduction and Recycling Guides, and the utility billing newsletter. The City directs its residents to the permanent HHW collection facility operated by the County and advertises the center using a variety of mechanisms including the following:

- Web site
- Flyers
- Newsletter
- Television Ads
- Radio Ads
- Print Ads
- Billboard Ads
- Bus Ads
- Utility Billing Inserts

The City promotes the County's used oil program on its Web site and through the distribution of HHW Facility brochures and in the City's utility billing newsletter. Additionally, ads that promote the recycling of used oil are displayed on billboards, buses, and on television.

The following ad has been run on billboards.



Billboard – Stormwater Pollution Prevention

An animated ad was run on television at the Stockton Department of Motor Vehicles (DMV) at a frequency of two times per hour during operating hours for all of 2015. The following image shows a series of screenshots from the ad.



City of Stockton Department of Motor Vehicles Television Ad

A summary of the wastes collected is provided below.

Type of Waste	Waste Collected ^a	
	2014-2015	2015-2016
Used Oil (gallons)^b		
HHW Facility	7,840	5,550
Certified Used Oil Collection Center	590,026	577,829
Total (gallons)	597,866	583,379
Used Filters (count)^c		
HHW Facility	281,930	2,250
Certified Used Oil Collection Center	6,000	147,250
Total (count)	287,930	149,500

Notes:

- [a] Includes City and County data. Separate City data is available only for City curbside collection: during calendar year 2014, the City curbside collection included 6,460 gallons of used oil and 3,250 pounds of used filters, and during calendar year 2015, 6,400 gallons of used oil and five drums of used filters.
- [b] With the City's three-bin waste collection system, used oil is also collected curbside.
- [c] Quantified as number of filter units.

A summary of types of wastes that were collected through local events (City and County) or through the permanent collection site (City) is provided in the table below. The data presented are for waste collected from both the City and the County during the 2015-2016 reporting period.

Category	Type of Waste	Total Amount Collected (lbs)	
		2014-2015	2015-2016
Reuse	Reusable items	103,110	148,674
Reuse Subtotal		103,110	148,674
Recyclables	Latex paint	175,387	177,860
	Motor oil	34,392	39,875
	Oil filters	954	800
	Antifreeze	9,666	10,385
	NiCd batteries	3,309	4,690
	Household batteries	26,256	22,895
	Lead acid batteries (automotive)	4,550	4,777
	Cylinders (Oxygen)	70	892
	Propane (BBQ size)	3,429	5,163
	Fire Extinguishers	1,278	1,319
	Fluorescent light tubes	39,388	36,070
	HID lamps	0	0
	Non-PCP ballasts	4,484	1,966
	Empty drums	3,401	1,785
	Mercury	67	134
	Electronic Waste	42,428	54,693
	Oil based paint	81,004	99,506
	Flammable liquids (bulk)	42,575	51,675
Recyclables Subtotal		472,914	514,485
Incineration	Flammable liquids	0	0
	Flammable solids	6,010	2,914
	Pesticide liquids	13,562	21,784
	Pesticide solids	15,567	17,817
	Inorganic acids	5,462	6,176
	Organic acids	3	220
	Inorganic bases	6,371	11,797
	Organic bases	1,071	63
	Neutral oxidizers	424	491
	Oxidizing bases	1,071	1,709
	Oxidizing acids	243	141
	Organic peroxides	20	89
	Aerosols	6,709	10,377
	PCB containing paints	0	91
	PCBs	1,650	6,652
	Reactives	1,408	1,013
	Compressed gasses	1,119	420
	Ammonium nitrate fertilizers	0	1,760
	Medical sharps	4,360	5,328
	Sulfur	4,955	0
	Fuses	712	0
	Other	23,849	25,919
Incineration Subtotal		93,770	114,761
Landfill	Asbestos	28,020	0
	Treated Wood	5,940	7,060
Landfill Subtotal		33,960	7,060
Grand Total		703,754	636,306

3.3.4 Coordinate with Household Hazardous Waste Program for Pesticide Disposal

As part of the Water Quality Based Programs, the Pesticide Plan aims to reduce pesticides entering urban runoff by implementing BMPs and Integrated Pest Management (IPM) to minimize pesticide use. In support of its Pesticide Plan, the City coordinates with the HHW Program to ensure that pesticides are safely and properly disposed. In 2015-2016, Public Works distributed information on the HHW Program at City-sponsored events. In addition to providing printed materials, staff members advise the public of proper disposal options and services offered by the HHW Facility.

3.3.5 Update City Web Site

One of the mechanisms through which the City supports active public participation is the City's Web site, which includes general stormwater information, pesticide disposal information, and stormwater information specific to summer activities and the rainy season. During the 2015-2016 reporting period, links to articles on green gardening and BMP Fact Sheets on pesticides and pollutants around the home were posted to the City's Web site. Web site materials updated during the 2015-2016 reporting period are attached in **Appendix C-1** (Stormwater Outreach Materials). Previous educational materials remained on the Web site, including the following:

- **General stormwater information and media pieces.**¹
- **Pesticide disposal, IPM, stormwater runoff, and pet waste information (Water Quality Based Programs Performance Standard).** As a component of the Water Quality Based Program, the City maintains and updates pesticide disposal information on the City Web site to inform the general public of proper pesticide handling and disposal procedures.²³ The Web site also links to the San Joaquin County HHW Facility. Links for pollution prevention regarding specific activities are listed, including: In Your Garage, In Your Garden, In Your Home, Outside Your Home, On Your Boat, Landscaping and Pool, and Paints and Solvents.
- **The City updated the Web site with outreach and messaging on summer activities.** The Green Car Wash Program was implemented starting in late summer and early fall 2010 as an effort to minimize the number and impact of traditional car washes by school fundraising and booster clubs, which often concentrate their efforts during the fall. Green Car Wash Program information continued to be displayed on the City's Web site throughout the 2015-2016 reporting period.
- **Rainy season and storm preparedness information.** Messages on rainy season preparedness, including topics on street flooding and preventing pollution from entering the storm drainage system during seasonal rains, remain posted on the City's Web site.

¹ <http://www.stocktongov.com/government/departments/municipalUtilities/utilStormOut.html>

² <http://www.stocktongov.com/government/departments/municipalUtilities/utilStormOut.html>

³ <http://www.sjgov.org/solidwaste/howdoi.htm>

3.4 PO2 – HOTLINE

The purpose of this Control Measure is to operate a public hotline number to facilitate public reporting of illicit discharges, illegal dumping, and other observed pollution problems. This Control Measure also ensures that through the hotline, complaint information is forwarded to the appropriate contacts for follow-up and/or investigation.

3.4.1 Maintain Hotline

The City maintains a hotline number (**209-937-8341**) that allows the public to report illegal dumping or illicit discharges into the storm drain system. Once a complaint is received, staff respond using the processes described within Section 2 of the 2009 SWMP. Additional summary information regarding the hotline is provided in Section 2 of this Annual Report.

The Stormwater Program also maintains a general program informational number (**209-937-5143**). The public is encouraged to use this number to report missing/faded storm drain inlet stencils, to inquire about such activities as volunteering opportunities, stream cleanup efforts, and the City's Green Car Wash Program, and to request school and/or community presentations.

During the 2015-2016 reporting period, the Stormwater Program received 114 calls. Of these calls, 94 were regarding clogged catch basins, and seven were reports of illegal dumping or illicit discharges. Of these calls, 101 were to the Hotline/Service Center (seven regarding some type of pollutant in the public area).

A summary of the hotline calls received and verified is provided below.

Type of Problem/Request	Total Number of Calls Received	
	Hotline	General Number
Clogged Catch Basins	94	0
Illegal Dumping or Illicit Discharges	0	15
Faded or Missing Catch Basin Stencils	0	18 ^a
General Stormwater Information	4	5
Total	98	38

Note:

[a] This represents the number of stencils loaned to industries and commercial businesses. The stencils were requested by telephone.

3.4.2 Promote/Publicize Hotline

The City promotes the 24-hour hotline by including it within public/business education materials and listing it on the Web site. Additional summary information regarding the promotion of the hotline number is provided in **Section 2** of the Annual Report. Additionally, during 2015-2016, the hotline was publicized in each edition of the *Stockton Water News*, the water utility billing newsletter insert, and on all new public education and outreach materials (see **Appendix C-1**).

3.5 PO3 – PUBLIC OUTREACH IMPLEMENTATION

The Public Outreach Implementation Control Measure provides that outreach be conducted with the residential community and general public to inform these audiences of the impacts of urban stormwater runoff and introduce steps they can take to reduce pollutants in stormwater runoff. Such outreach communicates to the City's residents and visitors the importance of stormwater quality protection and pollution prevention as it relates to the protection of the local water bodies.

An estimate of the total number of impressions made with the general public is provided in the table below.

Type of Outreach	Estimated Number of Impressions ^a
Distribution of Educational Materials	3,075
Conduct Mixed Media Campaigns	9,068,146
Participate in Community-Wide Events	3,550
Provide Community Relations	0
Provide Outreach to School-Age Children	7,784
Provide Business Outreach	367
Total	9,082,922

Note:

- [a] This table summarizes the totals from each performance standard and represents an estimated number of impressions. A final calculation for the total number of impressions is based on actual hand-outs distributed, circulation totals, listenership numbers, items mailed, estimated number of attendees contacted.

3.5.1 Update/Conduct Public Opinion Survey

To better understand the level of awareness in the community, the City, in collaboration with the County, conducted a baseline public opinion survey in March and April 2003. The survey results established a baseline for assessing public perceptions and behaviors related to stormwater quality management. The survey also assisted the Permittees in assessing the overall effectiveness of the Public Outreach Program.

The survey results provided information for the development of the overarching campaign approach, which was formalized in a document entitled “Public Outreach Strategic Implementation Plan, July 2003”. This document was transmitted to the Regional Water Board in October 2003 as Appendix C-1 of the SWMP. The Plan is comprehensive and includes development, implementation, and assessment tasks so that public education objectives may be achieved over the life of the permit.

A follow-up public opinion survey was conducted in April and May 2005 to assess the changes in attitudes, perceptions, and behaviors. The results of this survey were included as Appendix C-1 of the *2004-2005 Annual Report* (“Public Opinion Survey Report Follow-Up 2005”). This study was implemented through a telephone survey of 401 heads of household in the Stockton Urbanized Area. The information obtained from the survey was used to guide the implementation of the City and County’s public awareness campaign for 2005-2006.

The City and County conducted a follow-up public opinion survey in December 2009 (Appendix C-2 of the *2009-2010 Annual Report*) to assess changes in public perceptions and behaviors related to stormwater quality management as compared to the survey data from the spring of 2007, 2005, and 2003. This study was implemented through a telephone survey of 400 heads of household in the SUA to quantitatively evaluate how residents perceive and relate to environmental issues associated with stormwater.

The survey provided information about the following issues:

- Perceptions of the seriousness and impacts of pollution;
- Understanding of major contributors to water pollution;
- Use patterns and disposal practices of pollution related products;
- Awareness of storm drains and the storm drain system;
- Willingness to participate in pollution prevention practices;
- Awareness of City and County stormwater programs; and
- Exposure to stormwater information.

In addition, new questions were added to the survey to gain insight into residential application and purchasing preferences and practices related to pest control products. A full summary of this survey was provided in the *2009-2010 Annual Report*. The need for and usefulness of an updated survey will be considered during the next permit term.

3.5.2 Identify and/or Create, Revise, and Distribute Educational Materials

A multi-media campaign has been developed to provide stormwater education and outreach. The campaign consists of web, print, radio, and television advertising in English, and Spanish.

Municipal Utilities Staff of the Stormwater, Water Conservation, and Fats/Oils/Greases Programs combined efforts and resources to create a joint media outreach campaign. All print, radio, and community signage advertisements were jointly prepared for consistent, reinforced messaging and to strengthen public recognition that all water services, pollution prevention efforts, and programs are provided by the City's Municipal Utilities Department—and that the goals of these programs are integrated.

The City identified and/or created, revised, and distributed educational materials as needed. The educational materials are distributed through a number of mechanisms including:

- City Web site
- At civic locations
- At community events
- Mass mailings
- Utility billing inserts
- Posted at community centers

In 2008-2009, the Stormwater Program worked with a marketing firm to create new stormwater brochures and a stakeholder's information packet. The brochure was a simple tri-fold targeted toward residents, while the packet contained four tiered information sheets for both residents and businesses. During the 2013-2014 reporting periods, the City continued to utilize these brochures.

During the 2012-2013 reporting period, staff refreshed and updated the look of the following BMP informational brochures: In Your Garage, In Your Home, In Your Garden, Landscaping and Pools, On Your Boat, Outside Your Home, and Paints and Solvents (see Appendix C-1 of the *2011-2012 & 2012-2013 Annual Report*). The City also distributed County HHW brochures with information regarding the proper disposal of mercury-containing products at public outreach events (see Appendix C-1 of the *2011-2012 & 2012-2013 Annual Report*). Staff continue to utilize and distribute these informational brochures.

In 2014-2015 and 2015-2016, the Stormwater, Water Conservation, and Fats/Oils/Greases Programs worked collaboratively with a marketing firm to create a new Department "brand image." The new icon for the Department is intended to raise public awareness of how the three utilities (Stormwater, Wastewater, and Drinking Water) interact and the fact that pollution reduction efforts impact the water available for drinking, cooking, bathing, swimming, and other recreational uses. The brand image was finalized and approved by City Senior Management in November 2015. The image was unveiled in the November 2015 utility billing insert and imprinted on all community outreach materials, including tote bags, stylus pens, rulers, and plastic drinking glasses. In addition to increasing public recognition and awareness that these programs all have shared goals/objectives which reinforce one another, the new image allow the programs to stretch funding by collaborating on media messaging and sharing these costs.

The number of educational materials distributed was tracked during the 2015-2016 reporting period. The information that was tracked covered brochures, fact sheets, and additional literature targeting the general public, in addition to students, teachers, parents, homeowners, gardeners, and business owners/operators. The materials distributed are provided in **Appendix C-1**.

A summary of the educational materials distributed during the reporting periods is provided below.

Type of Material	Target Audience/ Activity	Multi-Lingual?	Language	Source	# Distributed
Brochures					
Green Car Wash Program	General Public Parents Principals Students Teachers	No	English	City of Stockton	6
Fact Sheets					
Our Water Our World IPM Fact Sheets	General Public	Yes	English Spanish	IPM Regional-BASMAA	150
Other					
Only Rain Down the Drain (Children's Activity Book – updated/reprinted in 2013-2014)	Families General Public Parents Students Teachers	No	English	City of Stockton	1,550
Stormwater Magnets – Ducks and General Program Information/hotline number	General Public Parents Residents Seniors Students	No	English	City of Stockton	30
Stormwater Post-Its	General Public	No	English	City	39
Tote bags with new MUD brand image	General Public	No	English	City	100
Stylus pens with new MUD brand image	General Public	No	English	City	1,000
Rulers with new MUD brand image	General Public	No	English	City	100
Plastic drinking glass with new MUD brand image	General Public	No	English	City	100
Total Distributed					3,075



Educational Materials Distributed: Activity Book, Tote Bag, Cup, Ruler, and Pen

3.5.3 Ensure Educational Materials Address Proper Disposal of Pet Waste

As a component of the Pathogen Plan, the City seeks to minimize pet waste entering urban runoff by educating pet owners about proper disposal of pet waste.

3.5.4 Develop Outreach Materials Targeting Pet Owners

The City developed an informational public service announcement video discussing the problem of pet waste pollution and possible actions pet owners can take to properly dispose of pet waste and help reduce pollution to local waterways. The video started running on December 8, 2011 on the City's Web site and has been available for viewing through the 2015-2016 reporting period.

During the 2015-2016 reporting period, the City maintained the outreach portion of its Web site.

3.5.5 Provide Pet Waste Outreach/Literature to Pet Owners and Animal Adoption Agencies

The City provided outreach and literature on the proper disposal of pet waste via other mechanisms. Information regarding proper disposal of pet waste is included on the City's Web site.⁴ Informational brochures (i.e., Outside Your Home⁵ and BMPs for Kennels⁶) discuss proper disposal of pet waste.

In 2012-2013, an article addressing proper disposal of pet waste was included in the March 2013 edition of the *Stockton Water News*, the City's utility billing insert that is distributed to all residents and businesses. The article was titled *Protecting Water Quality* and highlighted the importance of properly bagging and disposing of pet waste. The *Stockton Water News* utility billing inserts are distributed to all residents and businesses. As such, the March 2013 issue was distributed to a total of 52,576 residents and businesses. The issue of pet waste pollution prevention was also the subject of ads which ran in the Spanos and Brookside area residential magazines that were delivered to a total of 11,000 homes during the month of June 2013.

In 2013-2014, banner ads on the subject of pet waste pollution were posted for four weeks between July 22-August 18, 2013 on the Web sites of two local radio stations (KWIN and KAT Country) broadcasting to area residents with a total of 252,080 hits to the page/impressions made. In addition, the City wrote an article on *Pet Waste and the Environment* that was included in the June 2014 edition of the *Stockton Water News* utility billing insert, which was distributed to a total of 52,812 residents and businesses.

During the 2014-2015 and 2015-2016 reporting periods, the City maintained its Web site with the links to pet waste brochures, as described above.

3.5.6 Implement Pet Waste Outreach Program

The City implemented the pet waste outreach program by providing outreach to/at the following businesses, events, or pet organizations (Water Quality Based Programs Performance Standard):

- Kennels – Outreach was provided to kennels during inspections conducted during the 2011-2012 reporting period.
- Strut Your Mutt/Dog Day Afternoon – As of the 2009-2010 reporting period, the City is no longer participating in this event. The City provides public outreach regarding pet waste via billing inserts and its Web site.
- Barkleyville Dog Park – During the 2008-2009 Fiscal Year, signage was posted at the park.
- Other pet-related organizations/businesses – An article titled *Pet Waste and the Environment* was included in the June 2014 edition of the City's utility billing insert. The article highlighted the importance of properly bagging and disposing of pet waste. The *Stockton Water News* utility billing inserts are distributed to all residents and businesses.
- City of Stockton cable television station – During the 2011-2012 reporting period, stormwater staff developed a 60-second public service announcement on the topic of pet waste. The ad remains on the City Web site⁷ (see **Section 3.5.12**).

⁴ <http://www.stocktongov.com/government/departments/municipalUtilities/utilStormOut.html>

⁵ <http://www.stocktongov.com/files/OutsideYourHome.pdf>

⁶ <http://www.stocktongov.com/files/sw%20bmp%20kennels.pdf>

⁷ <http://www.stocktongov.com/government/departments/manager/chan97AV.html>

3.5.7 Develop Language for and Produce Pet Waste Signs

In 2010, Stormwater Program staff worked with the City's sign shop (Public Works Department) and Community Development to develop language for and produce new pet waste signs that remind the public to clean up and properly dispose of pet waste.



Example of Pet Waste Sign Developed and Installed in 2009-2010

3.5.8 Install Pet Waste Signs

In June 2010, as part of the Water Quality Based Programs, the City installed a total of 44 Pet Waste Signs within 10 existing City parks with stormwater inlets that discharge directly to local waterways. The locations of these signs are summarized in the table below.

Park Name	Sign Location	# of Signs
Victory Park	Argonne Drive & Yale Avenue Argonne Drive & Columbia Ave Argonne Drive & Pershing Ave Pershing Ave - Main Park Entrance Pershing Ave & Picardy - corner Picardy Dr - by Fire Station Picardy Dr - museum parking lot Parcardy Drive & Yale Ave Monte Diable Ave where splits to Picardy and Argonne	9
American Legion	Walnut St. entrance to park Stockton & Elm Sts SE corner of park - on Baker Street Baker Street and Baker Place Tuxedo Ave - near MUD pump station Tuxedo Ave and Yosemite Street	5
Louis Park	Boat Launch Boat Launch area - near doggie poop bag dispenser Shimizu Dr. - West side of park lot near picnic benches Shimizu Dr. - Parking lot entrance to park Shimizu Dr. - pathway entrance near horseshoe court Occidental Drive and Toyon Drive Occidental Drive pathway entrance Occidental Drive parking lot by handball/basketball court Monte Diablo Ave - parking lot in SE corner of park	10
Caldwell	Corner of Marisposa & Allston Way Along Allston Way - entrance to pathway leading Corner of Allston Way & Alpine Ave Pacific Avenue	4
Lafayette Square	Corner of Hunter Street & Worth Street Near Hunter St & fence by RR Tracks	2
Gleason	Corner of Church and California Sts. Corner of California & Sonora Sts Corner of Sonora & American Sts – walkway entrance	3
Columbus Square	Corner of Van Buren & Worth Street Corner of Lincoln and Worth Street	2
Liberty Square	Corner of Anderson and Stanislaus Sts Corner of Jefferson and Grant Sts	2
Union Square	Corner of Hazelton & Union Sts Corner of Scotts & Pilgrim Sts	2
Stribley	Corner of Della St & Hazelton Ave Along E. Hazelton Ave - pathway entrance Corner of E. Hazelton Ave & B St Visible from Marsh St - in park Corner of Della St & Marsh St - by community garden entrance	5
Total		44

3.5.9 Implement Phased Installation and Maintenance of Pet Waste Bag Dispensing Stations

As a component of the Pathogen Plan, the City seeks to minimize pet waste entering urban runoff through installing and maintaining pet waste dispensing stations, which include pet waste bags, in City parks. The City has used the Web site as the primary means of distributing public education materials (in lieu of the mixed media campaign and brochures). Information regarding proper disposal of pet waste is included on the City's Web site. Informational brochures (i.e. Outside Your Home and BMP for Kennels) discuss proper disposal of pet waste. An article titled *Pet Waste and the Environment* was included in the June 2014 edition of the City's utility billing insert. The article highlighted the importance of properly bagging and disposing of pet waste. The *Stockton Water News* utility billing inserts are distributed to all residents and businesses.

3.5.10 Track Installation of Pet Waste Bag Dispensing Stations

During the 2008-2009 reporting period, as part of the Water Quality Based Programs, the City tracked installation of pet waste bag dispensing stations. The City of Stockton entered into a Memorandum of Understanding with the Keep the Delta Clean Program to install pet waste bag dispensing stations. Through this partnership, the City installed ten (10) pet waste bag dispensing stations at various locations in parks and areas near waterways. Pet waste bag dispensing stations were installed in September 2008, as detailed in the *2008-2009 Annual Report*.

3.5.11 Update Audiovisual Tools and Web Site

On an as-needed basis, the City updates the Web site audiovisual tools so that they remain current (detailed in **Section 3.3.5**). During 2014-2015, the City updated its Web site⁸, including the stormwater public outreach information.^{9,10} During 2015-2016, the City's efforts were focused on the new logo launch and restructuring of the utility billing insert.

⁸ <http://www.stocktongov.com/government/departments/municipalUtilities/utilStorm.html>

⁹ <http://www.stocktongov.com/government/departments/municipalUtilities/utilStormOut.html>

¹⁰ <http://www.stocktongov.com/government/departments/manager/chan97AV.html>

3.5.12 Conduct Mixed Media Campaigns

The City conducted a mixed media campaign that consists of radio and government access cable channel public service announcements (PSAs), movie theater slides, print ads, and direct mailers. The mixed media campaign is the primary mechanism that is implemented in order to achieve impressions on the public.

A summary of the mixed media campaigns that were conducted for the general public is provided below. All outreach materials used to conduct the mixed media campaign are provided in **Appendix C-1**.

Type of Outreach	Description	Number of Impressions Made
Public Signage	University of the Pacific - sports center entry way signage	19,500
Print Ad	University of the Pacific - basketball pocket schedule	10,000
Print Ad	University of the Pacific - full page program ad	35,000
Website Ad	University of the Pacific website rotating ad on pacifictigers.com	2,500,000
Stadium Video Board Ad	University of the Pacific - public address message with 3 video board graphics	15,330
Spanish Radio Ad	La Poderosa station - 40 weekly spots year round Tu Vida station - 40 weekly spots year round	500,000
Spanish Radio Stations Facebook page	La Poderosa - weekly 52 posts Tu Vida - weekly 52 posts	234,000
Spanish Radio Stations - website banner ads	La Poderosa and Tu Vida stations	3,624,000
Spanish Radio Station events	La Poderosa and Tu Vida stations - handed out flyers magnets	60,000
English Radio	The Bull (country music radio) - 1536 ad spots over entire fiscal year/ran continuously	1,747,200
Latino Times	Spanish print ad Nov 2015	100,000
Latino Times	Spanish print ad Feb 2016	100,000
Stockton Ports Baseball	Stadium signage	13,000
Stockton Water News -Utility Billing Insert	July 2015	52,700
Stockton Water News - Utility Billing Insert	November 2015	52,700
Stockton Symphony	Print Ad	4,716
Total Number of Impressions		9,068,146

In 2012-2013, the City established new contracts with local media venues for seasonal messaging. Fall and winter seasonal messaging in 2013-2014 covered several topics, including storm preparedness, appropriate disposal of leaves, street flooding, boat maintenance, fall garage cleanups, and proper disposal of HHW. The messaging occurred in English, Spanish, Vietnamese and Hmong. Media venues

included Comcast Cable's Web site, local radio station KJOY, the Latino Times (print), theatres, and the City's utility billing inserts. City staff were in the process of negotiating contracts with various vendors to continue media outreach.

In 2014-2015, the City established new contracts with local media venues for seasonal messaging. Fall and winter seasonal messaging covered storm preparedness, appropriate disposal of leaves, street flooding, and proper disposal of HHW in collaboration with the City's Water Conservation and Fats/Oils/Greases Programs. The messaging occurred in English and Spanish. Media venues included local radio stations "The Bull," "La Poderosa," and "Tu Vida;" the Latino Times (print); the City's utility billing inserts; and public signage at the Stockton Ports Baseball Stadium, the University of the Pacific Stadium, and Stockton Arena.

Media outreach conducted during the 2015-2016 reporting period included ads which ran on English and Spanish radio stations, Web-based ads, ads at local event facilities such as University of the Pacific sporting event center and Stockton Ports Baseball Stadium, and printed ads in a Spanish newspaper. Program outreach continued to be conducted in both English and Spanish. The City also ran a television advertisement promoting water conservation and pollution prevention.

3.5.13 Participate in Community-Wide Events

The City co-sponsors neighborhood events and participates in community-wide events throughout the year that provide outreach to the general public. These efforts also include partnering with other organizations as appropriate, waste oil recycling, and HHW events. During the 2015-2016 reporting period, the City participated in 10 community-wide events.

A summary of the community-wide events is provided below.

Name of Event	Date(s)	City Role in Event	Target Audience or Activity	Total Number of Attendees	Number of Impressions Made
Family Day in the Park	9/18/2015	Staffed information booth	Children and Parents	11,000	400
REXPO (Chamber of Commerce Recycling Exposition)	3/12/2016	Staffed informational booth	Commercial businesses—Chamber of Commerce members	200	50
Stockton Earth Day Festival	4/6/2016	Staffed informational booth	General Public	2,000	300
Stockton Ports Baseball Game	5/2/2016	Staffed Informational booth	General Public	3,500	500
Stockton Ports Baseball Game	5/15/2016	Staffed information booth	General Public	3,500	500
Stockton Ports Baseball Game	5/19/2016	Staffed information booth	General Public	2,500	400
Stockton Ports Baseball Game	6/7/2016	Staffed information booth	General Public	2,500	400

Name of Event	Date(s)	City Role in Event	Target Audience or Activity	Total Number of Attendees	Number of Impressions Made
Family Resource & Referral Center's Children and Youth Day at Pixie Woods	5/21/2016	Staffed informational booth	Children and Parents	300	300
Stockton State of the City	5/22/2016	Staffed informational booth	Business community. Elected leaders, non-profit community service agency staff	500	200
San Joaquin County Senior Awareness Day	5/29/2016	Staffed informational booth	Elderly residents, caregivers, service providers in community	2,500	500
Total Number of Impressions					3,550



Photos of the Family Resource & Referral Center's Children and Youth Day at Pixie Woods, 5/21/2016



Photo of the Family Day in the Park, 9/18/2015

During the 2015-2016 reporting period, the City also partnered with other Departments and agencies as a part of the stormwater outreach effort. The City partnered with the Stockton Area Water Suppliers (SAWS) to provide educational outreach to school-aged children (see **Section 3.6.1**).

3.5.14 Provide Community Relations

In addition to the community relations established through the various outreach efforts undertaken, such as multi-media campaigns, mass mailings, web site postings, volunteer solicitation, editorial and media relations, and participation in community-wide events, the City also builds these relationships by holding briefing sessions for community leaders, educators and public employees as well as coordinating with local organizations.

During 2010-2011, the City provided community relations by holding briefing sessions for community leaders, educators and public employees and/or coordinating with local organizations. Although no community relations events were held in 2011-2012 and 2012-2013, the City participated in 12 community-wide events during this time to provide education on stormwater issues by reaching out and directly interacting with the public. City outreach efforts at 2011-2012 and 2012-2013 community-wide events made over 10,000 impressions. Additionally, the City provided updated stormwater public outreach information via its Web site. In 2013-2014, the City provided community relations by providing a stormwater-related tour to local college students. The City also continued its stormwater outreach through various other mechanisms, resulting in over 2 million impressions during this reporting period alone. In 2014-2015, City staff participated in a live radio interview with 105.9 The Bull, a local radio station, promoting Stockton's Clean Water Campaign. The interview occurred on February 12, 2015 and included tips for residents to help prevent stormwater pollution, including car washing and fertilizer use tips, promotion of the Used Oil and HHW Programs, and use of the public hotline to report illicit discharges.¹¹

In the past, the City has conducted outreach to and/or coordinated with local community and environmental organizations. During the 2015-2016 reporting period, in lieu of coordinating such activities, extensive public outreach to convey important stormwater messages was conducted via the City's mixed media campaign (see **Appendix C-1**) and Web site.

¹¹ <https://soundcloud.com/1059thebull/stocktons-clean-water-campaign>

3.5.15 Implement Pesticide Outreach Efforts

The City implemented pesticide outreach efforts for city staff, residents, retail stores, and pest control operators (PCOs) (Water Quality Based Program Performance Standard). Education and outreach efforts focus on the promotion of less toxic pest control methods and use of IPM.

Efforts during the 2014-2015 reporting period included contracting all landscape maintenance and weed control services. Maintenance contracts that started on January 1, 2010 and all future contracts/contract specifications will require that the contractor use IPM techniques and practices and least toxic methods of pest control to achieve the expected/specified results (see **Section 4**). In 2014-2015, staff distributed brochures updated in 2013-2014 on BMPs around the home¹² and in the garden.¹³ Staff also inserted a number of articles in the monthly utility bills on the subject of “green gardening” during the 2014-2015 reporting period.

3.5.16 Conduct Periodic Pest Control Product Surveys

The City conducted a survey in conjunction with other regional programs regarding local or regional sales and use of residential and commercial pest control products (Water Quality Based Program Performance Standard).

The Permittees conducted a survey of the regional sales of residential and commercial pesticides available for the public on a bi-annual basis. This survey allowed the Permittees to identify potential pesticide use and impacts before they occur. The survey was developed during 2008-2009, the first survey was completed during the 2009-2010 reporting year by December 2009, and the second survey was completed during the 2011-2012 reporting year.¹⁴

The Permittees designed a three-part survey approach to address this requirement. The three components of the pesticide survey were as follows:

- Residential pesticide sales, assessed through shelf surveys of local retailers (completed November 2009 and November 2011);
- Residential pesticide use, assessed by pesticide-specific questions in a telephone Public Opinion Survey (completed December 2009); and
- Commercial pesticide use, assessed through collaboration with the County Agriculture Commissioner’s office and Department of Pesticide Regulation (DPR). These records were obtained for 2008 and for 2010.

The approach and results of each of the three survey components were summarized in the 2009 Pesticide Survey Assessment and included in Section 9 as Appendix I-1 of the *2009-2010 Annual Report*.

The second survey was included as Appendix I-2 of the ROWD, which did not include the assessment of residential pesticide use, since the Public Opinion Survey was deferred, but did include an assessment of residential pesticide sales and commercial pesticide use.

¹² <http://www.stocktongov.com/files/InYourHome.pdf>

¹³ <http://www.stocktongov.com/files/InYourGarden.pdf>

¹⁴ The survey design and protocols were submitted with the 2009 Annual Work Plan and were included as an appendix in the 2008-2009 Annual Report.

3.6 PO4 – PUBLIC SCHOOL EDUCATION

Presentations made to school-age children may be an effective outreach method because the children are asked to pass the pollution prevention information on to their families. This Control Measure provides public school districts, after school programs, day camps, and the Children's Museum within the City with outreach materials to educate school-age children about stormwater pollution.

The City recently evaluated the ability to interface and coordinate with school education programs on a regional or local level. The school outreach efforts over the 2002-2007 Permit term were successful; however, due to increased curriculum and testing requirements, stormwater program staff has found it to be progressively more difficult to gain access to schools in order to provide outreach to students. The City is continuing with the assembly program to reach a large number of students.

The City has reviewed the existing program and assessed the feasibility of alternative programs. As a result, the City concluded that the most consistent mechanism for reaching out to school-aged children within the City is through an interactive stormwater exhibit at the Children's Museum and the continued participation with the assembly programs with SAWS (Stockton Area Water Suppliers) to reach a large number of students.

3.6.1 Send Letters to Fifth Grade Teachers and Principals

During the 2015-2016 reporting period, the City did not send letters to 5th grade teachers and principals inviting them to take part in the City's stormwater education program. However, the City continued its partnership with SAWS to make stormwater presentations to students and to participate in other school events as invited or requested (detailed in **Section 3.6.2**).

3.6.2 Reach Out to School Age Children Outside of School

As of 2009, the opportunity no longer exists for the City to reach out to school age children outside of school by providing presentations through the Community Services Department's After School Program. The City will continue to identify opportunities to reach out to school age children outside of school and to support the interactive display at the Children's Museum.

The Zun Zun Water Awareness Assembly is a musical assembly program which celebrates water and introduces students to the topics of clean water and watershed protection; it also highlights the impacts of stormwater pollution. The presentations were provided to area schools via the City of Stockton's partnership with SAWS. SAWS also works with students through classroom presentations and after school presentations.

During the 2015-2016 reporting period, 7,745 impressions were made via the Zun Zun Water Awareness Assembly and other presentations by SAWS, all of which include a stormwater pollution prevention message. Two hundred twelve presentations were held by SAWS in Fiscal Year 2015-2016 at schools across the City. The City also provided two student field trips/tours of a stormwater pump station and post-construction treatment device, one for high school students and one for college-age students.

A summary of events held by the City for school-age children is presented below:

Date(s)	School	Grade(s)	Event Type	Number of Events	Number of Students
2/24/16	University of the Pacific – Engineering class	College	Tour to stormwater pump station and post-construction treatment device; Outreach presentation	1	30
6/21/16	Telecare Early Intervention Recovery Services	High school (17-19 years)	Field trip to plant; Outreach presentation	1	9
Total				2	39

A summary of events held by SAWS at Stockton area schools is presented below:

District	School	Grade(s)	Presentation Type	Number of Events	Number of Students
SUSD	August Elementary	K-6	Classroom	11	385
	Bush Elementary	K-5	Classroom	17	595
	Commodore Stockton Skills Elementary	K-3	Classroom	12	420
	El Dorado Elementary	1	Classroom	2	70
	Fremont Elementary	3	Classroom	2	70
	Harrison Elementary	2-5	Classroom	6	210
	Hazelton Elementary	1	Classroom	2	70
	Hoover Elementary	K	Classroom	1	35
	Huerta Elementary	K-3	Classroom	6	210
	King Elementary	2-5	Classroom	10	350
	Madison Elementary	K-1	Classroom	4	140
	Marshall Elementary	3	Classroom	2	70
	Pittman Elementary	3	Classroom	3	105
	Roosevelt Elementary	2, 3	Classroom	2	70
	San Joaquin Elementary	1-6	Classroom	5	175
	Spanos Elementary	1	Classroom	2	70
	Taylor Elementary	K-1	Classroom	4	140
	Van Buren Elementary	6	Classroom	4	140
	Victory Elementary	K-4	Classroom	11	385
	Wilson Elementary	3, 4	Classroom	3	105
MUSD	August Knodt Elementary	K-5	Classroom	8	280
	Great Valley Elementary	3-5	Classroom	5	175
	Komure Elementary	3, 4	Classroom	7	245

District	School	Grade(s)	Presentation Type	Number of Events	Number of Students
Lincoln	Brookside Elementary	K-5	Classroom	11	385
	Landeen Elementary	3-5	Classroom	9	315
	Colonial Heights Elementary	A	After school	2	200
	Don Riggio Elementary	K-2	Classroom	2	70
	John McCanless STEM Elementary	A-5	Classroom	2	70
	JR Williams Elementary	1	Classroom & after school	12	485
	Lincoln Elementary	K-6	Classroom & after school	15	590
	Mabel Barron Elementary	1, 5	Classroom	6	210
	Tully Knoles Elementary	K-5	Classroom & after school	16	625
Private	First Baptist Elementary	2	Classroom	1	35
	St. Luke Elementary	K-6	Classroom	7	245
	Total			212	7,745

3.6.3 Present at Day Camps

As of 2009, the opportunity no longer exists for the City to present at Day Camps sponsored by the Community Services Department. The City will continue to identify opportunities to reach out to school age children outside of school and to support the interactive display at the Children's Museum. During 2015-2016, the City provided two student field trips/tours of a stormwater pump station and post-construction treatment device, one for high school and one for college-age students.

3.6.4 Develop Interactive Exhibit for Display at Children's Museum

During the 2009-2010 reporting period, the City completed design and development of an interactive stormwater exhibit that is displayed at the Children's Museum.

3.6.5 Implement Educational Signage and Displays Relevant to Stormwater Pollution

During the 2009-2010 reporting period, the City completed construction of an interactive stormwater exhibit containing education signage and displays relevant to stormwater pollution that is displayed at the Children's Museum. The display was completed at the end of June 2010, with an unveiling to the public in July 2010. The exhibit remained on display during the 2015-2016 reporting period.



Educational Signage and Display at Children's Museum

3.7 PO5 – BUSINESS OUTREACH

Since commercial and industrial businesses can be sources of stormwater pollutants, this Control Measure ensures that business owners and operators are informed about stormwater quality and impacts on water resources. Efforts are primarily targeted at specific business types.

3.7.1 Conduct Business Workshops

The City conducted business workshops and/or held business specific events as required during the Permit term. The Energy and Clean Air Expo was held in December 2008, and a “Got SWPPP?” workshop was held in April 2009. In addition, the City held a Pre- and Post-Construction 101 workshop in conjunction with the San Joaquin Stormwater Quality Partnership.

3.7.2 Distribute Educational Material to Selected Businesses

The City distributes educational materials regarding stormwater pollution and BMPs, stormwater regulations, and penalties for noncompliance to a number of different types of businesses. Outreach is focused on the priority businesses identified in **Section 5**.

The City continued its outreach to businesses as needed during the 2011-2012 reporting period, specifically during inspections as an inspector reviewed the inspection checklist with business owners and operators. Although industry-specific outreach materials were not distributed during the 2011-2012 reporting period, the industrial facility checklist contained a question regarding mercury disposal methods to prompt a discussion about mercury pollution as appropriate. Additionally, all food-related businesses were provided with informational brochures for “About Today’s Inspection” and the “Green Car Wash Program” during their inspections.

In 2013-2014, MUD Stormwater staff began the process of updating all outreach materials to ensure compliance and accuracy with acceptable industry practices. A BMP brochure for the Food Services Establishments/Restaurants was updated and distributed at the time of the new, combined Fats, Oils, and Grease and Stormwater Commercial inspections, which began in March 2014. A total of 115 inspections were completed by June 30, 2014. A brochure was provided to each business manager at the time of the inspection. In addition, to meet the needs of the business community, MUD Stormwater staff prepared an exterior surface cleaning brochure and a “Commercial and Industrial Inspection What to Expect” informational brochure. All of these materials have been received positively by the commercial and industrial sectors within the City of Stockton.

During the 2014-2015 reporting period, MUD Stormwater staff completed inspections of 313 food service establishments operating within the City. During each inspection, a BMP fact sheet was provided to each of the inspected sites.

During the 2015-2016 reporting period, City staff updated the BMP brochures for the following commercial industries: Auto Body, Auto Dealers, Dry Cleaners, Kennels, and Nurseries, in preparation for inspections of these commercial facilities. Inspections continued in 2015-2016 with a focus on the automotive industry. An industry-specific BMP brochure was presented at each inspection. MUD Stormwater staff inspected 358 commercial businesses and distributed BMP fact sheets to 348 of them (automotive-related facilities and restaurants). Information was also distributed to businesses when staff responded to 19 illicit discharges.

A summary of the materials distributed to businesses during the 2015-2016 reporting period is provided below.

Type of Business	Educational Materials Distributed	Distribution Method(s)	Number Distributed
Auto Washing and Detailing	BMP Auto Body Shops	During commercial inspection	3
Auto Sales	BMP Auto Dealers	During commercial inspection	12
Auto Repair	BMP Auto Body Shops	During commercial inspection	53
Auto Body	BMP Auto Body Shops	During commercial inspection	5
Retail Gas Outlets	About Today's Inspection	During illicit discharge response	1
Carpet Cleaning	About Today's Inspection	During illicit discharge response	1
Concrete Pouring Contractors	About Today's Inspection	During illicit discharge response	1
Concrete Cutting	About Today's Inspection	During illicit discharge response	3
Equipment Rental	About Today's Inspection	During illicit discharge response	1
General Building Contractors	About Today's Inspection	During illicit discharge response	8
Landscape Installation and/or Maintenance Contractors	About Today's Inspection	During illicit discharge response	1
Portable Toilet Rental	About Today's Inspection	During illicit discharge response	2
Pressure Washing	About Today's Inspection	During illicit discharge response	1
Restaurants	BMP Restaurants	During commercial inspection	275
Total			367

3.7.3 Ensure Business Workshops Address Mercury

The City's stormwater Web site provides a link to the San Joaquin County Solid Waste Division, which provides disposal information for "Devices Containing Mercury."¹⁵ The Stormwater Program provided information on mercury and mercury disposal to businesses during 2011-2012 as part of the Commercial and Industrial Business Program Inspections. The form for the industrial business inspections was modified to specifically inquire about and review the mercury management plan of each of the businesses inspected.

In 2013-2014, in preparation for the commercial/industrial inspections, all inspection forms were updated with questions regarding mercury handling and proper disposal. During the inspection, the inspector conducted a discussion with the business owners/managers on the subject and provided more detailed outreach based on the facility type.

In 2015-2016, business-specific informational handouts were updated for the auto body, auto dealers, dry cleaners, kennels, and nurseries. Information on the proper handling and disposal of mercury was included in the updates to the brochures (**Appendix E-3**).

3.7.4 Revise Business-Specific Fact Sheets to Address Mercury

As described above, business-specific informational handouts were updated in 2015-2016 for the auto body, auto dealers, dry cleaners, kennels, and nurseries. Information on the proper handling and disposal of mercury was included in the updates to the brochures.

¹⁵ <http://www.sjgov.org/solidwaste/>

3.8 PO6 – EFFECTIVENESS ASSESSMENT

To determine the effectiveness of the Public Outreach Program, a comprehensive assessment of the program data is conducted as a part of the annual report. The results of this assessment are used to identify modifications needed for the program. Each year, the effectiveness assessment is reviewed and revised as needed.

By conducting these assessments and modifying the program as needed, the City ensures that the iterative process is used as an effective management tool. Due to the types of data collected for the Public Outreach Program, the assessment primarily focused on Outcome Levels 1 through 4.

- Outcome Level 1 (L1) answers the question: Did the City implement the components of the Permit and the 2009 SWMP?
- Outcome Level 2 (L2) answers the question: Can the City demonstrate that the control measure/performance standard significantly increased the awareness of a target audience?
- Outcome Level 3 (L3) answers the question: Can the City demonstrate that the control measure/performance standard significantly modified the behavior of a target audience?
- Outcome Level 4 (L4) answers the question: Can the City demonstrate that the control measure/performance standard reduced the load from sources to the storm drain and/or receiving water?

The table below summarizes the effectiveness assessment conducted for the Public Outreach Program Element. Additional detail for each component of the assessment is provided on the following pages.

Program Effectiveness Assessment Summary for Public Outreach

Public Outreach	Level 1	Level 2	Level 3	Level 4
	Stormwater Program Activities	Barriers and Bridges to Action (Knowledge/Awareness)	Target Audience Actions	Source Contributions
PO1 - Public Participation	C – Catch Basins Marked C – Stream Cleanup Events C – Used Oil and HHW Programs C – Coordination with Pesticide and Mercury Plans C – Maintained Web Site	C – Volunteers Participating C – Participation in Used Oil and HHW Programs	C – Volunteers Participating C – Participation in Used Oil and HHW Programs	C – Materials Removed/ Diverted
PO2 - Hotline	C – Maintain and Promote/Publicize Hotline	A	N/A	N/A

Public Outreach	Level 1	Level 2	Level 3	Level 4
	Stormwater Program Activities	Barriers and Bridges to Action (Knowledge/Awareness)	Target Audience Actions	Source Contributions
PO3 - Public Outreach Implementation	C – Mixed Media Campaign C – Material Development and Distribution C – Coordination with Pesticide, Pathogen, and Mercury Plans C – Community-Wide Events C – Community Relations C – Partnerships	A	A	N/A
PO4 - Public School Education	C – Outreach to School Children	A	N/A	N/A
PO5 - Business Outreach	C – Distributed Outreach Materials to Businesses	A	N/A	N/A

C – An effectiveness assessment was conducted during the reporting periods.

A – It is anticipated that an effectiveness assessment may be conducted in future annual reports

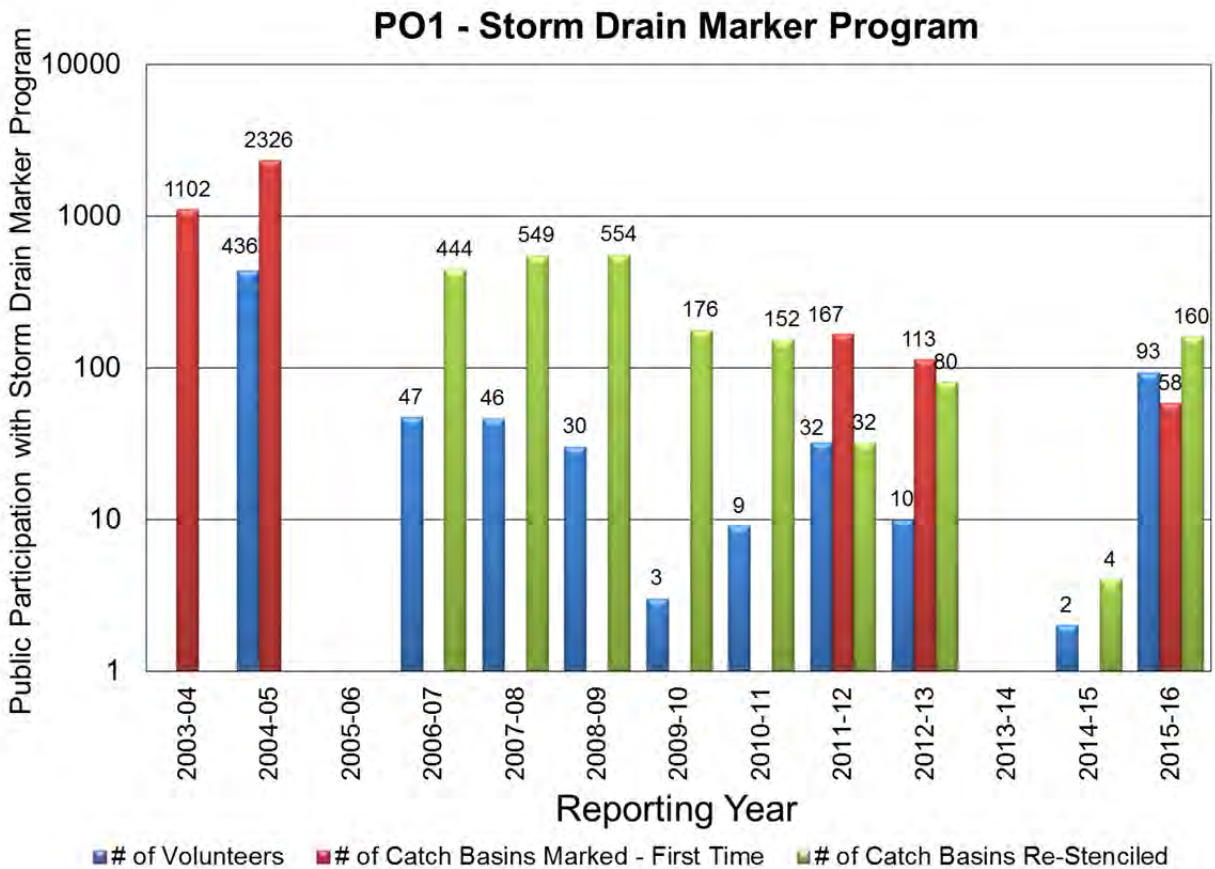
N/A – This outcome level is not applicable for this control measure

Following is an assessment regarding the effectiveness of the Public Outreach Program.

PO1 - Public Participation

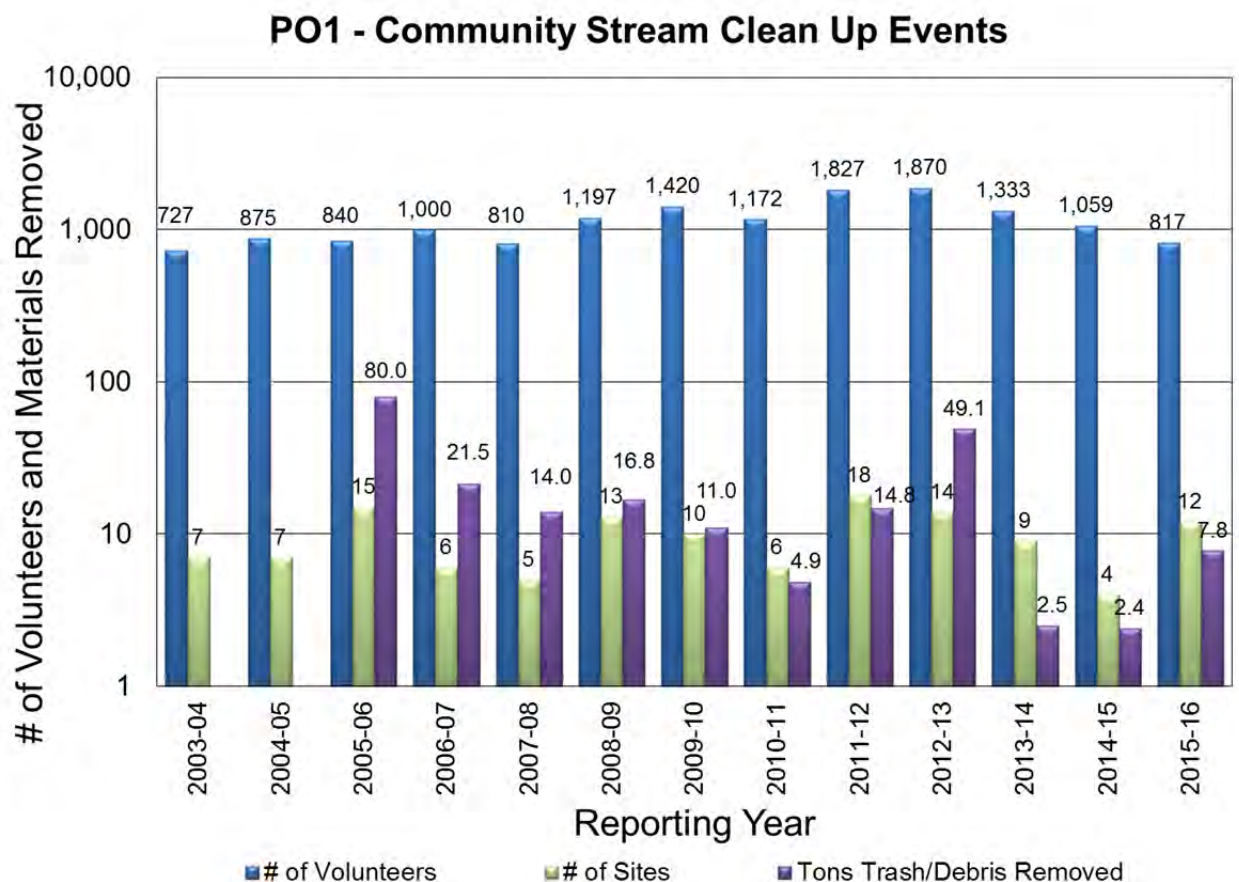
The City is outreaching to and involving the public in the implementation of the Public Outreach program. They are soliciting involvement in the program by advertising in the materials distributed, the Web site, newsletters, at community events, and distributing information at public counters. The public is aware of the public education campaign and community events and are involved in the implementation of the program. (L1, L2)

- Storm Drain Marker Program - The City has 16,436 catch basins, most of which are stenciled or permanently imprinted with the storm drain message. Since 2003-2004, 5,917 catch basins have been stenciled or permanently imprinted by 708 volunteers.

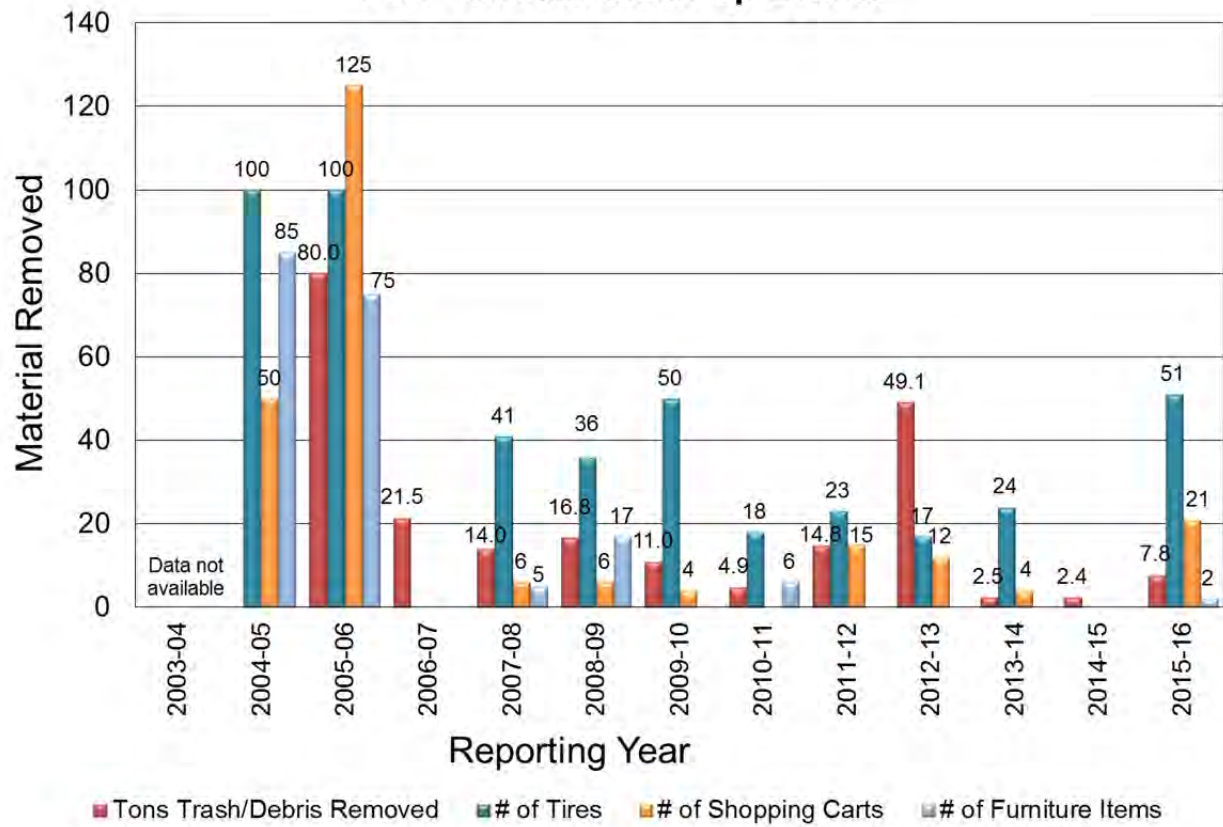


The public is aware of the education campaign and community events and is involved in the program. Materials are being removed from the local creeks and streams, thus reducing the amount of materials that may adversely impact the local waterways. (L2, L3, L4)

- Stream Cleanup Events - Since 2003-2004, 14,947 volunteers have participated in local stream cleanup events. As a result, approximately 225 tons of trash and debris have been removed. As a result of each cleanup event, a large amount of trash and debris has been removed annually from local streams and tributaries. In 2015-2016, a total of 7.8 tons of trash and debris were removed from twelve sites.

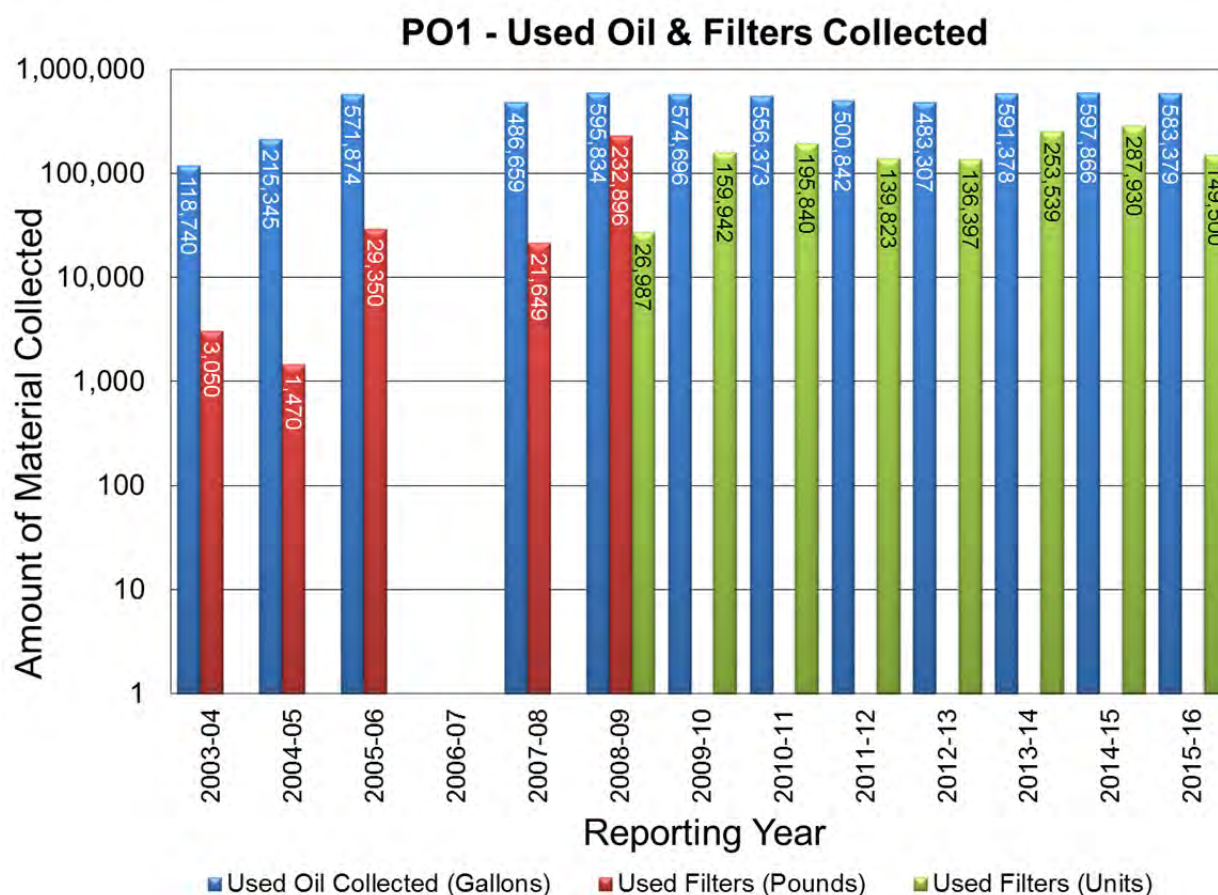


PO1 - Stream Clean Up Events



The City has collected used oil for proper disposal, thus reducing the potential load of pollutants that could enter the storm drain system. (L2, L3, L4)

- Used Oil Collection Program – Since 2003-2004, 5.8 million gallons of used motor oil or motor oil products, 288,415 pounds¹⁶ of used oil filters, and 1.3 million units¹⁷ of used oil filters have been collected at the permanent collection facility, the certified used oil collection centers, or via the City's curbside oil collection program. The amount of used oil collected increased substantially (482%) between 2003-2004 and 2005-2006; since that time, the amount of used oil collected has remained consistently high, averaging 552,259 gallons a year since 2007-2008.¹⁸



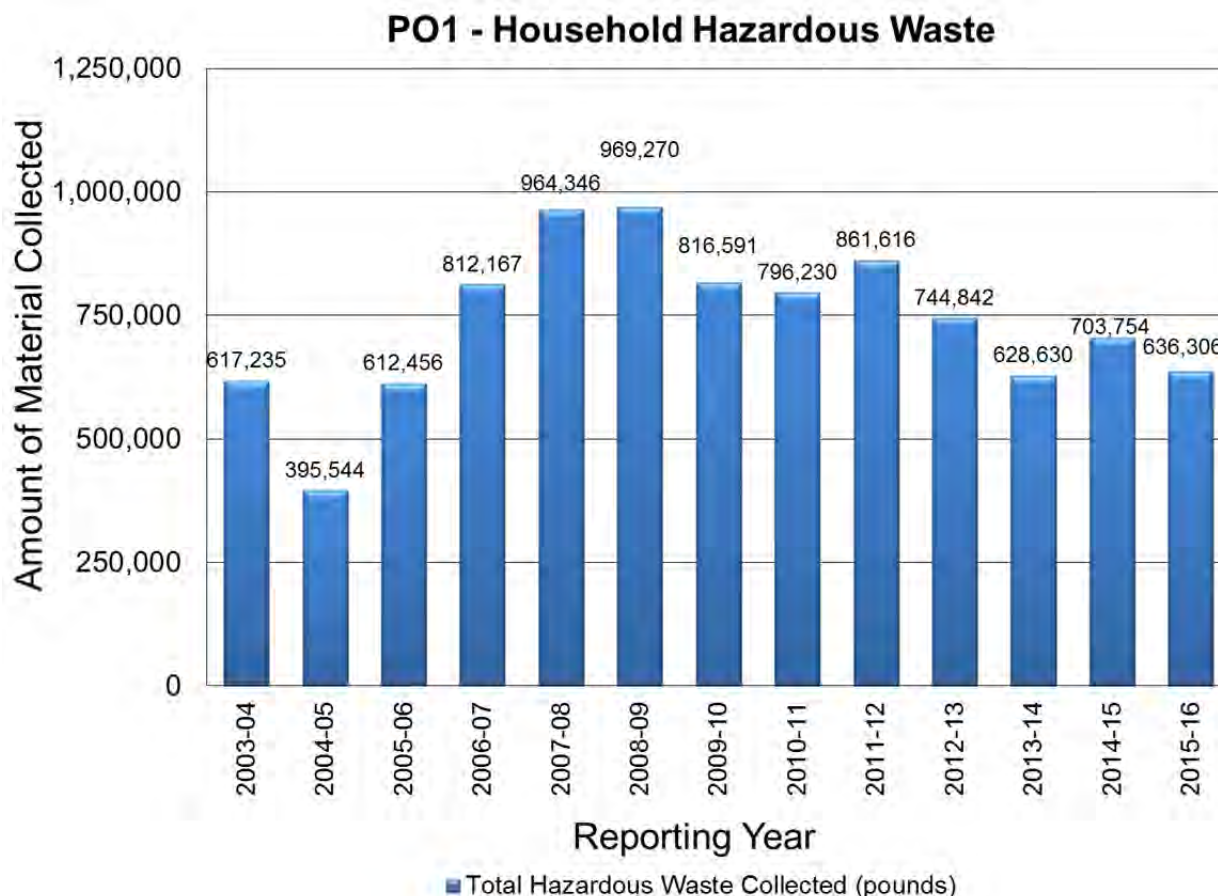
¹⁶ Tracked between 2003-2004 and 2008-2009

¹⁷ Tracked since 2008-2009

¹⁸ Data are not available for 2006-2007, so this reporting period is not included in the average.

The City is raising awareness about HHW collection services and is increasing the amount of HHW that is being disposed of properly, thus reducing the potential load of pollutants that could enter the storm drain system. **(L2, L3, L4)**

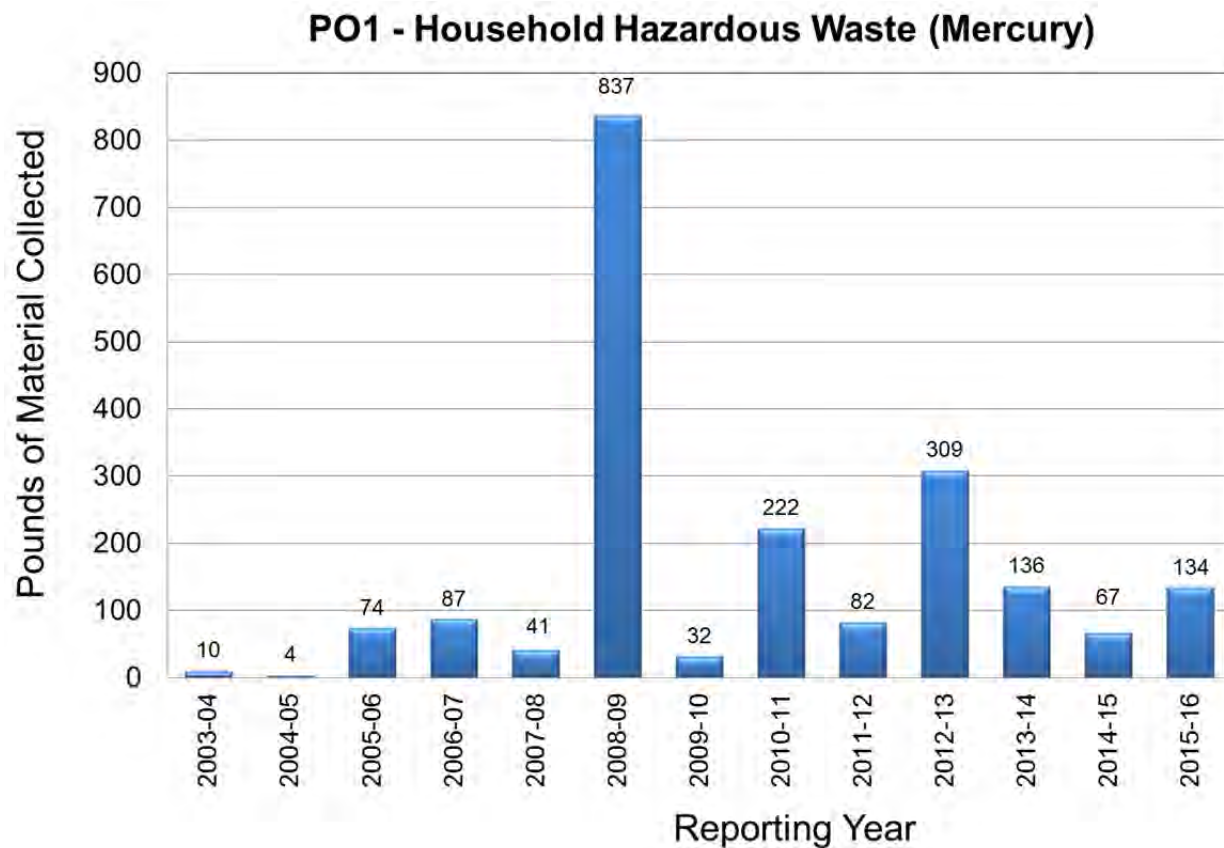
- Residents have properly disposed of HHW through the permanent collection facility. Since 2003-2004, these efforts have resulted in approximately 9.6 million pounds of hazardous waste being collected and disposed of properly.
- On average, the amount of HHW properly disposed has increased by 30% between the previous (2003-2004 to 2006-2007) and current (2007-2008 to 2015-2016) permit terms.¹⁹ This proper disposal of HHW ensures that potential impacts to the storm drain or receiving waters are prevented.



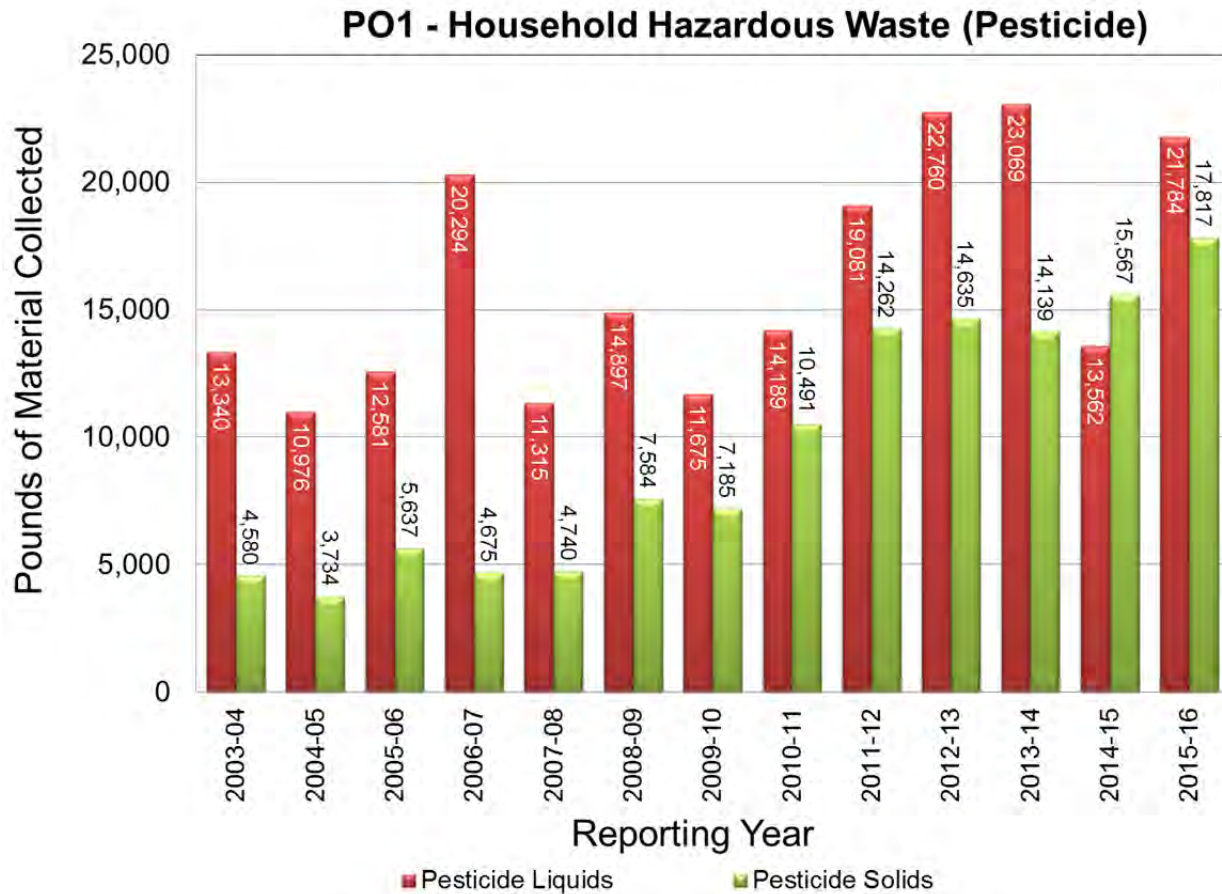
¹⁹ No data are available for 2002-2003

The Permittees are coordinating the HHW program with the Pesticide and Mercury Plans to ensure that these materials are safely and properly disposed of. The key messages are provided through printed materials, as well as the Web site. (L2, L3, L4)

- Since 2003-2004, 2,035 pounds of mercury have been collected at the HHW Facility; most of this was collected in 2008-2009.



- Since 2003-2004, 209,523 pounds of pesticide liquids and 125,046 pounds of pesticide solids have been collected at the HHW Facility. On average, the amount of pesticide solids collected at the HHW has increased by 154% between the previous (2003-2004 to 2006-2007) and current (2007-2008 to 2014-2015) permit terms.²⁰ The amount of pesticide liquids collected has increased 18% from the previous permit term, although annual amounts have been more variable. This indicates increased awareness of the HHW program, resulting in behavior change (i.e., proper disposal).



The City has supported active public participation by maintaining and periodically updating the City's Web site, which includes general stormwater information, links to pesticide disposal information, and stormwater information specific to summer activities and the rainy season. **(L1)**

²⁰ No data are available for 2002-2003

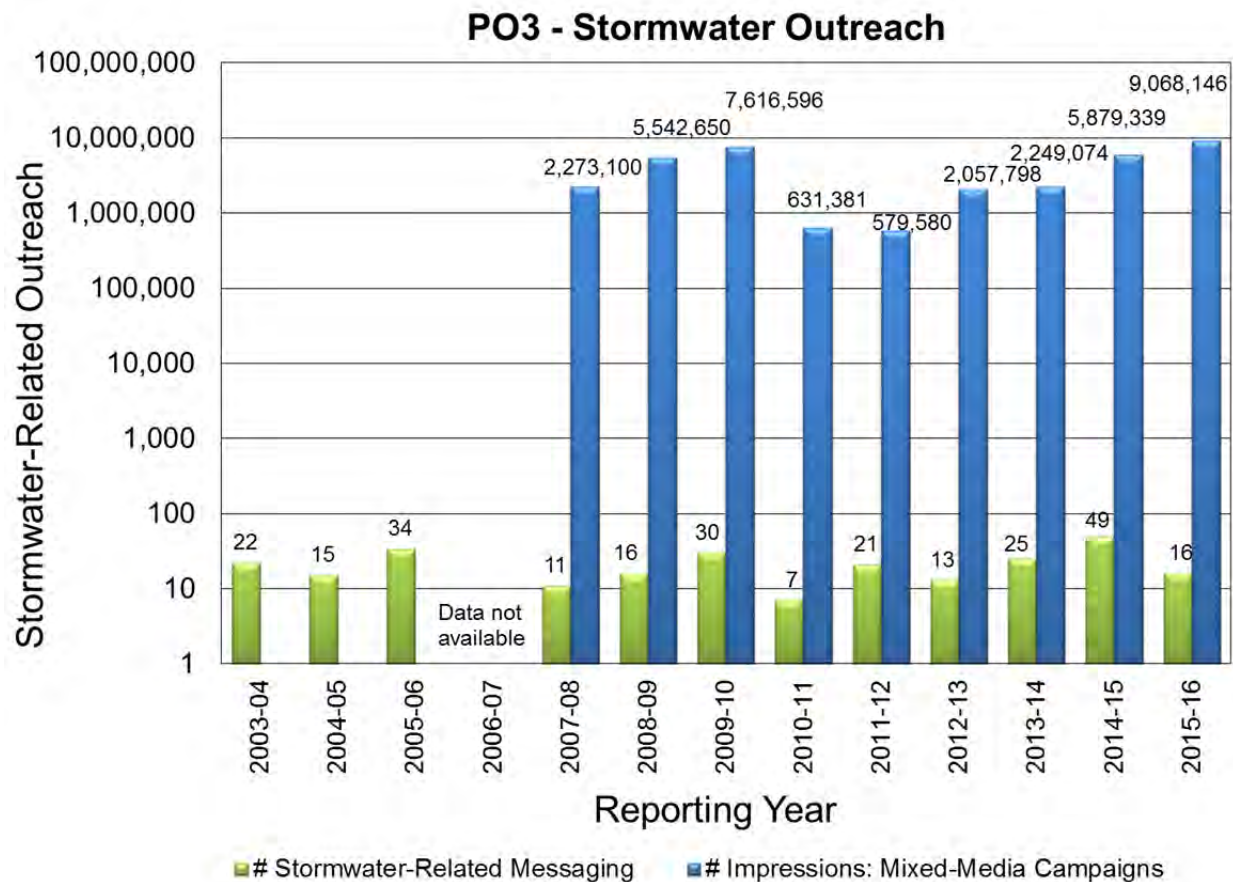
PO2 – Hotline

The City has established and advertises the 24-hour hotline, the used oil program, and the HHW consolidation facility contact numbers. The City is advertising the program through the Web site, the media (e.g., PSAs), and the utility bill newsletter. (L1)

PO3 - Public Outreach Implementation

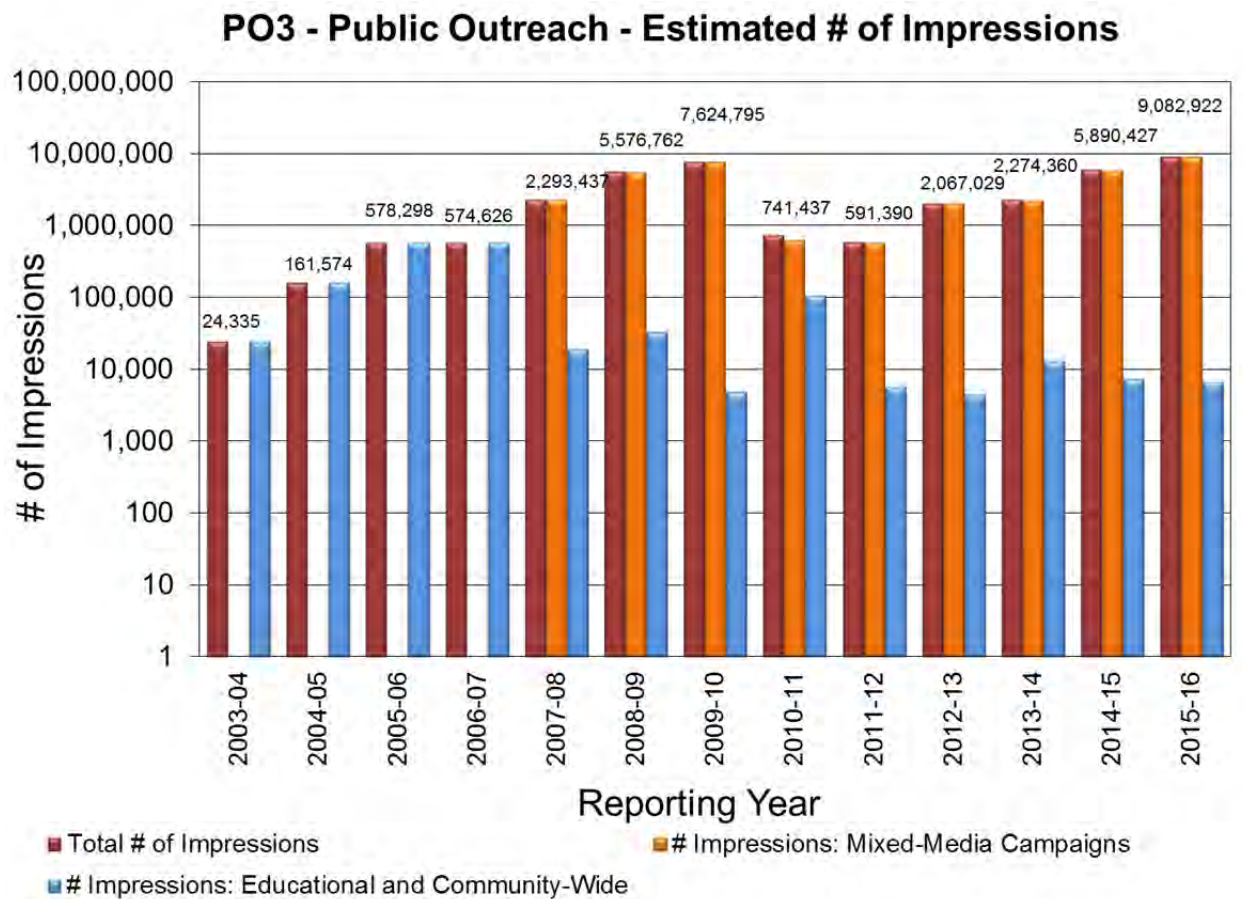
The City has developed and is implementing the public education and outreach program that provides key stormwater messages. (L1)

- General Outreach Efforts (see Section 3.5.2) – The City has developed and is providing a variety of outreach pieces such as brochures and fact sheets, some of which are multi-lingual. The materials are provided at a number of venues including the City's web site, civic locations, community events, and billing inserts. Through these efforts, more than 1.4 million pieces of educational outreach material have been distributed between 2003-2004 and 2015-2016 (1,406,615 total pieces of outreach material).
- Mixed Media Campaigns (see Section 3.5.12) – The City has continued to work with the local media, the government access cable station, movie theatres, and utility bill newsletters to provide the public with more than 259 different stormwater-related articles or messages since 2003-2004. Between 2007-2008 and 2015-2016, it is estimated that these mixed media campaigns have resulted in more than 36 million (35,897,664) impressions.



- Water Quality Based Plan Outreach – The City has implemented specific efforts in order to implement the Pesticide, Pathogen, and Mercury Plans. Efforts have included the development and distribution of materials addressing the disposal of pet waste, as well as methods for the proper disposal of household items that contain mercury. The City also coordinates with the HHW Facility for proper disposal of pesticides.
- Mass Mailings (*see Section 3.5.2*) – Since 2003-2004, outreach has been provided to approximately 100% of the City residential units by conducting mass mailings of various outreach materials. In 2005-2006, quarterly waste management newsletters were mailed to all residents. In 2006 and 2008, AT&T phone books with a recycling guide and stormwater and hotline information insert were mailed to all residents. In 2010-2011, two newsletters, a Clean Water Fee newsletter and the *Stockton Water News*, were provided to all residents via utility billing inserts. The *Stockton Water News* continued to be provided to all residents via utility billing inserts in 2011-2012, 2012-2013, 2013-2014, 2014-2015, and 2015-2016.
- Community-Wide Events (*see Section 3.5.13*) – The City has regularly attended community-wide events since 2003-2004. Since that time, the City has outreached to the general public by sponsoring, organizing, and/or exhibiting at these events and providing information to an estimated 133,498 event attendees.
- Community Relations (*see Section 3.5.14*) – Since 2007-2008, the City has provided community relations in the form of briefing sessions to more than 1,019 attendees. The City also has outreached to and/or coordinated with local community and environmental organizations. In 2014-2015, City staff participated in a live radio interview with 1059 The Bull, a local radio station, promoting Stockton's Clean Water Campaign. The interview occurred on February 12, 2015 and included tips for residents to help prevent stormwater pollution, including car washing and fertilizer use tips, promotion of the Used Oil and HHW Programs, and use of the public hotline to report illicit discharges.
- Partnerships (*see Section 3.5.2*) – The City continues to partner with other City departments and agencies and form additional partnerships, such as that with the Stockton Area Water Suppliers (SAWS), so that resources and efforts can be shared. In 2015-2016, City staff continued to work with the Water Conservation, Wastewater, Fats/Oils/Grease Programs to launch the Department's new "brand image." The brand image was finalized and approved by City Senior Management in November 2015 for use in outreach materials.

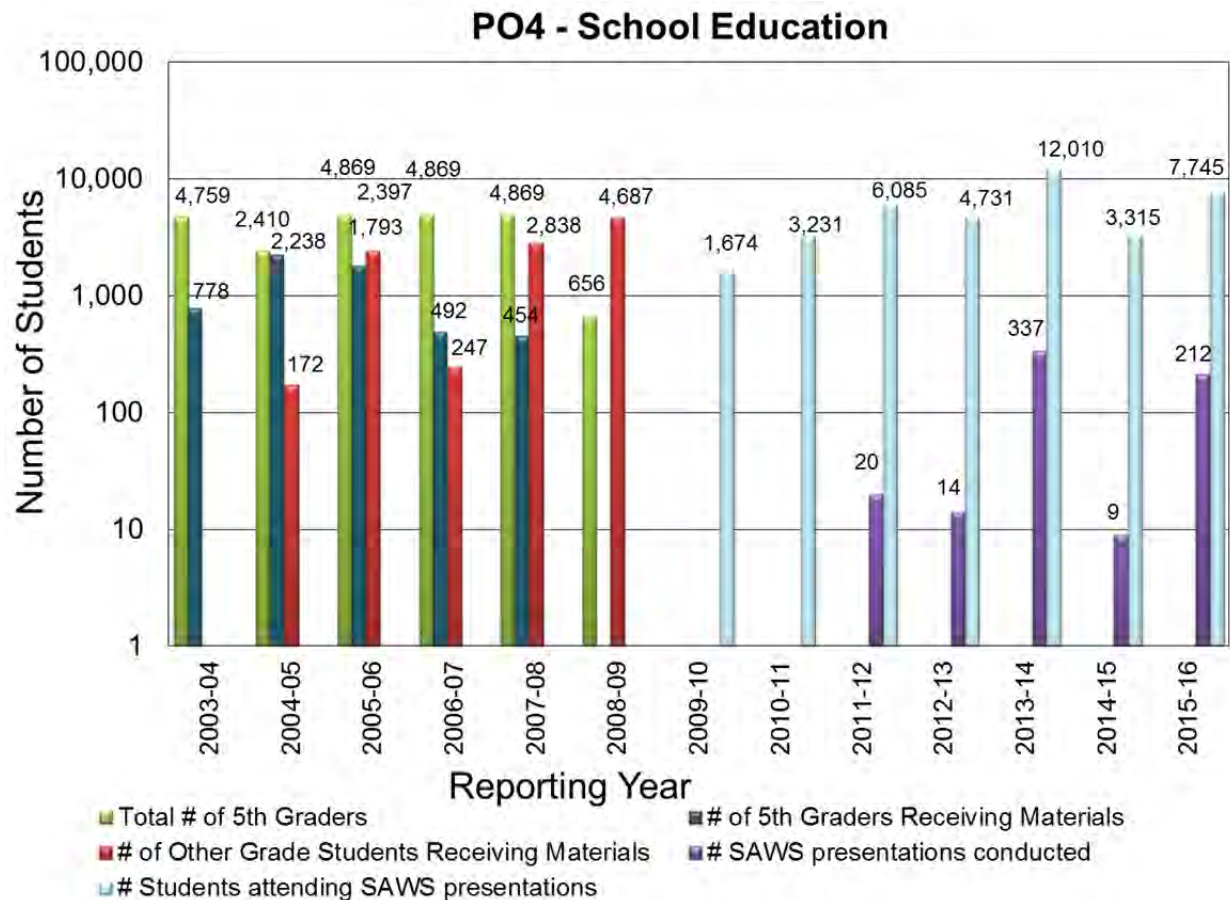
As a result of these efforts, more than 37 million impressions (37,481,947) have been made since 2003-2004, including 9,082,922 in 2015-2016. Overall, the number of impressions being made annually has increased significantly since 2003-2004.



PO4 - Public School Education

The City is outreaching to the schools, educators and school children and providing key stormwater messages. Past years' efforts (2003-2004 through 2007-2008) focused primarily on outreach to fifth graders; since then, the focus of the program has shifted to presentations made to school-age children in any grade, in public and charter schools. (L1)

- During 2015-2016, the City provided tours of a stormwater pump station and post-construction treatment device. The interactive stormwater pollution exhibit continued to be displayed at the Children's Museum.
- Since 2003-2004, 38,791 students have received materials related to stormwater pollution prevention. The City has provided individual stormwater presentations to classrooms, after-school programs, and summer day camp programs. The City also continues to partner with SAWS, which provides structured Stormwater/Water Conservation assemblies for students throughout the City and County. In 2015-2016, SAWS conducted 212 individual classroom stormwater presentations to school age children, reaching 7,745 students.



PO5 - Business Outreach

The City is outreaching to the business community and providing key stormwater messages. **(L1)**

- **Materials** – Since 2003-2004, the City has distributed educational materials to businesses regarding stormwater pollution and BMPs. As a result, approximately 6,250 pieces of educational materials have been distributed to industrial and commercial businesses. Materials are provided via the City's Web site, at community events, via utility billing inserts, during responses to reports of illicit discharge, and during industrial and commercial business inspections (see **Section 5**).

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Section 4

Municipal Operations (MO)

4.1 OVERVIEW

The City, as part of its normal operations, conducts a number of activities (e.g., catch basin cleaning, street repairs, street sweeping via a contract) that may generate or mobilize pollutants. The Municipal Operations Program Element comprises Control Measures that are designed to ensure that these operations and maintenance activities are performed using processes and procedures to minimize the pollutants generated and the potential for pollutants to enter the storm drain system.

4.2 CONTROL MEASURES

The City has developed several Control Measures and accompanying performance standards to ensure that the municipal operations-related Permit requirements are effectively developed and implemented. Each Control Measure includes accompanying performance standards, which, once accomplished, constitute compliance with the SWMP/Permit.

The Municipal Operations Program Control Measures consist of the following:

MO	Control Measure
MO1	Sanitary Sewer Overflow and Spill Response
MO2	New Development and Construction Requirements for Municipal Capital Improvement Projects
MO3	Pollution Prevention at City Facilities
MO4	Landscape and Pest Management
MO5	Storm Drain System Maintenance
MO6	Street Cleaning and Maintenance
MO7	Parking Lots Maintenance
MO8	Training
MO9	Effectiveness Assessment

The next section of the Annual Report provides information on the specific tasks initiated and/or completed during the reporting period pursuant to the Municipal Operations Program Performance Standards and implementation schedules.

4.3 MO1 – SANITARY SEWER OVERFLOW AND SPILL RESPONSE

The Sanitary Sewer Overflow Emergency Response Plan (SSOERP) minimizes potential impacts to the receiving water from sanitary sewer overflows and spills. Sanitary overflow and spill response comprises four steps: investigation of complaints, containment, notification to appropriate agencies, and clean-up / mitigation. Follow-up to an overflow or spill may include procedures for containing and cleaning spills and leaks that enter the storm drain system.

4.3.1 Implement Sanitary Sewer Overflow Emergency Response Plan

The SSOERP attempts to prevent SSOs from entering the storm drain system and includes reporting information so that the responsible agencies are notified when these spills occur. The Environmental Control Division has a cooperative relationship with the MUD – Stormwater Management Program staff and informs them whenever a spill occurs and a cleanup is necessary. They also work together to collect and record related data. In the event of a private SSO or hazardous spill, communication of both parties is essential in resolving these incidents.

The City maintains a complaint hotline and responds to sanitary sewer overflow complaints and/or notifications in a timely manner. A summary of the sewer overflows is provided below. The reported SSO data are consistent with those entered in the California Integrated Water Quality System (CIWQS).

Year	Total Number of SSOs	Total Number of SSOs that Entered the <u>Storm Drain System</u>	Total Number of SSOs that Entered a <u>Receiving Water</u>
Last Year 2014-2015	140	27	5
This Year 2015-2016	122	28	3

See **Appendix D-1** for a summary of reported SSOs, including locations, frequencies, total volume estimates, and the amount captured and returned to the sewer system.

4.3.2 Review/Revise Sanitary Sewer Overflow Emergency Response Plan

The City developed a SSOERP to address sewage spills and ensure that every report of an SSO would be addressed by the appropriate personnel so that the impacts of the overflow on the storm drain system would be minimized (March 2009). The City's SSOERP was included as Appendix B-1 to the 2009 SWMP, and reviewed and revised as changes occurred. Although the 2009 SSOERP identified and outlined the necessary actions and BMPs that should be employed to address SSOs, the City recognized that best professional judgment always needs to be used in the field to address unique issues that arise with every spill. For SSOs, MUD has primary responsibility for responding to, cleaning up, and reporting the spills. The 2009 SSOERP included reporting information to facilitate the notification of responsible agencies when these spills occur. In addition, the City's current program to limit infiltration of seepage from sanitary sewers uses a combination of inspecting sanitary systems to ensure proper construction, televising existing storm drain lines, reporting by experienced maintenance personnel, and dry weather field screening. During the construction phase, regular inspection ensures verification of leak testing, no cross connections, and televised final checks of construction quality when necessary.

On June 16, 2009, the County and the California Sportfishing Protection Alliance agreed to incorporate several procedures into the County's SSORP to ensure communication between, and coordinated response from, the County and the City of Stockton with respect to SSOs that originate from the City's sanitary sewer system and might reach the County's MS4. In November 2009, the County's SSORP was

revised to reflect a combined effort of communication and cooperation between the City and County with respect to sanitary sewer spills emanating from the City's collection system that threaten to discharge, or discharge, to the County's storm system (Appendix D-1 of the *2009-2010 Annual Report*).

The specific procedures that were addressed within the revised County SSORP include the following:

1. The County will ensure that the County of San Joaquin's Emergency Dispatch personnel are prepared to field any call from the City of Stockton related to any SSO occurring within the County's jurisdictional area of the Stockton Urbanized Area MS4 ("County's MS4 Jurisdiction") that has discharged to, or threatens to discharge to, the County MS4.
2. For any SSO from the City of Stockton's collection system that discharges, or threatens to discharge, to the County's MS4 Jurisdiction of which the County is aware, the County will work cooperatively with the City to take all feasible steps to prevent the SSO from reaching the County's MS4 Jurisdiction and/or waters of the United States, including by:
 - a. Controlling County owned and/or operated storm water pump stations at the request of the City, as necessary;
 - b. Allowing the City to obtain access to the County's MS4, as necessary; and
 - c. Using reasonable best efforts to facilitate the City's response to its SSOs to the County's MS4 in a cooperative manner.

During the 2010-2011 reporting period, the County's Utilities Maintenance Division developed a SSOERP to incorporate and implement the above procedures.¹ The SSOERP was included in the June 2011 Sewer System Management Plan (SSMP) as Element 6 and replaced the existing SSORP. (It was also included as Appendix D-1 to the *2010-2011 Annual Report*.) The County and City jointly utilize the 2011 SSOERP, which outlines the priority of work that should occur in the case of an SSO, and details the procedures and corresponding staff positions responsible for responding to SSOs. The general procedures are as follows:

- Investigate and Assess
- Control Traffic
- Minimize the Overflow
- Report and Notify
- Correct the Cause of the Overflow
- Estimate the Volume
- Initiate Cleanup
- Sample Receiving Water
- Submit Formal Reports
- Modify Maintenance Procedures.

Additionally, the SSOERP provides prioritized lists of contact information for relevant agencies to be notified in the incidence that an SSO occurs, and includes necessary actions and BMPs for containing

¹ Also during 2010-2011, the City finalized the *Sanitary Sewer Overflow and Backup Field Procedures Manual* (December 2010) (Appendix D-2 of the *2010-2011 Annual Report*).

SSOs. The 2011 SSOERP was included as Appendix D-2 of the *2011-2012 & 2012-2013 Annual Report* and will be reviewed and revised by the County as appropriate.

The State Water Board made changes to the City's Waste Discharge Requirements—Monitoring and Reporting Program (MRP), which became effective in September 2013. As such, the City updated the SSOERP on September 9, 2013 to meet the new requirements of the updated MRP. An updated version of the SSOERP was included as Appendix D-2 of the *2013-2014 Annual Report*.

The SSOERP was updated again on June 1, 2015. The updated version was included as Appendix D-2 of the *2014-2015 Annual Report*.

4.4 MO2 – NEW DEVELOPMENT AND CONSTRUCTION REQUIREMENTS FOR MUNICIPAL CAPITAL IMPROVEMENT PROJECTS

The New Development and Construction Requirements for Municipal Capital Improvement Projects (CIPs) Control Measure provides protocols to be followed in the design and construction phases of capital projects undertaken by the City. In essence, the City will follow the Development Standards and Construction Program Element requirements for all CIPs, and obtain coverage under the General Construction Permit for projects greater than or equal to one acre in size.

4.4.1 Review CIP Designs to Ensure Specifications and Notes are Included

The City requires that all CIPs be reviewed by Municipal Utilities Department (MUD) Engineering staff to ensure that the Construction BMPs and Stormwater Quality Control and Criteria Plan (SWQCCP) standards are incorporated during the design stage.

During the 2015-2016 reporting period, Public Works staff reviewed all MUD and Public Works CIPs to ensure that the Construction BMPs and SWQCCP standards (when applicable) were incorporated during the design stage.

4.4.2 Require Submission of NOI for CIPs Greater than or Equal to One Acre

The City requires that CIPs 1 acre or greater obtain coverage under the Construction General Permit.

The following table summarizes information for the reporting period regarding Notices of Intent (NOIs).

Total Number of Active Public Construction Sites	Total Number of Active Public Construction Sites ≥ 1 acre	Total Number of Active Sites that Submitted an NOI
5	1	1

4.4.3 Ensure CIP Priority Projects are Developed in Conformance with the SWQCCP

If a CIP meets the criteria as a Priority Project as defined within the SWQCCP, the CIP is developed so that it conforms to the new development standards. A summary of the CIPs reviewed during the reporting period is provided below.

Total Number of CIP that are Priority Projects	Total Number of CIP Priority Projects in Compliance with the SWQCCP
4	4

4.4.4 Improve Interdepartmental Communication to Facilitate Accurate Recordkeeping and Reporting

The City improved interdepartmental communication to facilitate accurate record keeping and reporting of data. During the 2013-2014 reporting period, the Stormwater Program Manager worked with other departments and divisions to ensure that they were accurately tracking data for the stormwater program and the annual reporting process. Stormwater personnel began participating in other divisional meetings on a routine basis during the 2013-2014 reporting period. These divisional meetings continued in the 2014-2015 and 2015-2016 reporting periods in an ongoing effort to improve communication and recordkeeping despite staffing changes.

4.5 MO3 – POLLUTION PREVENTION AT CITY FACILITIES

The Pollution Prevention at City Facilities Control Measure addresses pollutants that might enter the storm drain system from City-owned facilities (e.g., corporation yard). To further the framework provided by this Control Measure, Facility Pollution Prevention Plans (FPPPs) were developed and will be maintained for the City's facilities that are not otherwise required to secure coverage under the General Industrial Permit. The FPPPs include a site description and identify BMPs that address potential sources of pollutants to the storm drain system as well as procedures for addressing spills that may occur onsite.

4.5.1 Assess Facilities to Determine if They Require Coverage under the General Industrial Permit

The City's Corporation Yard was previously covered under the General Industrial Permit.² In June 2007, the Corporation Yard submitted a Notice of Termination (NOT) to the Regional Board. The Corporation Yard was released from this requirement by the RWQCB at the end of 2006-2007. As stated in the NOT, the Corporation Yard is covered by the Permit requirements. As of June 30, 2015, the City has not determined that any other facilities need coverage under the General Industrial Permit.

4.5.2 Modify SWPPP for Corporation Yard and Other Facilities into an FPPP

The City was originally planning to modify the SWPPP for the Corporation Yard and other facilities into an FPPP. Instead, however, the City opted to task Network Environmental Systems, Inc. (NES) with developing a FPPP for the Corporation Yard in conjunction with the Spill Prevention Control and Countermeasure (SPCC) Plan NES was already developing for the Corporation Yard. The SPCC Plan was certified on January 14, 2013. The FPPP contains updated elements including a facility description and map, and BMPs (see Appendix D-2 of the *2011-2012 & 2012-2013 Annual Report*).³

4.5.3 Implement SWPPP (FPPP) for Corporation Yard and other Facilities

The 2013 FPPP for the Corporation Yard was finalized in July 2013 and continued to be implemented during the 2013-2014, 2014-2015 and 2015-2016 reporting periods.

Prior to finalizing the Corporation Yard FPPP, the City developed and had been implementing BMPs for a wide variety of activities at the Corporation Yard, including materials storage, equipment washing, vehicle maintenance, spill control, and illicit discharges.

For instance, during the 2009-2010 reporting period, the Facilities Maintenance Manager shared with Project Managers and the Senior Facilities Maintenance Supervisor several BMPs for pressure washing City facilities. The Senior Facilities Maintenance Supervisor was made aware of the requirements to not allow pressure washing wash water to discharge to the storm drain system. During the 2010-2011 reporting period, Corporation Yard staff:

- Purchased an additional 24 Flo-gard plus catch basin inserts to more securely hold filters in place during maintenance activities, and to replace the less effective "fabric socks", and
- Obtained an updated map of storm drain catch basins and a map of hazardous materials/waste storage and the spill kits that are available onsite.

² The Corporation Yard is the only facility that met the criterion for requiring coverage under the General Industrial Permit.

³ The electronic version of the FPPP does not include a copy of the facility map, which is kept on-site.

During 2011-2012, 2012-2013, and in previous years, the equipment wash area runoff was collected in a self-contained pit. The material accumulated in the pit was treated as hazardous waste and removed by Evergreen Environmental bi-annually. Additionally, vehicle and equipment washing activities were performed at the wash rack since vehicle and equipment washing has a pollutant potential. Wash water was diverted to an oil water separator, which will be serviced as needed. Corporation Yard staff continues to implement BMPs onsite.

The City's Corporation Yard followed written storm drain maintenance procedures (Storm Drain, Catch Basin, and Filter Insert Maintenance Procedures, included as Appendix D-2 of the *2008-2009 Annual Report*). The procedures include the following:

- All paved surfaces will be kept clear of debris
- Corp Yard to be swept two times per month with 10-foot clearance around catch basins
- Cover materials stockpiles
- Annually, change filters on September 1; inspect and clean filters on November 1, January 1, and March 1

In addition, Corporation Yard staff continue to add more spill kits.

4.5.4 Update FPPP on an Annual Basis

The FPPP was finalized in July 2013 and will be reviewed and updated on an annual basis, following its certification by the City's Deputy Director.

4.5.5 Review CIPs for Compliance with General Stormwater Requirements

The City reviews CIP project lists to identify those projects for new or existing municipal facilities that have vehicle or equipment wash areas. The wash areas are required to be either self-contained (through the implementation of BMPs) or connected to a clarifier or alternative pre-treatment device and plumbed to the sanitary sewer. During the 2015-2016 reporting period, no projects meeting this requirement were designed or planned.

4.5.6 Develop BMP Fact Sheets for Non-Emergency Fire Fighting Flows

The City developed a fact sheet identifying the BMPs that must be incorporated for non-emergency fire fighting flows (i.e., those from controlled or practice blazes during training exercises). Fire department activities are not generally considered significant sources of stormwater pollution, but some activities can result in the discharge of water containing pollutants that pose a threat to both human health and the quality of receiving waters if it enters the storm drain system. The two main types of fire department activities that pose potential problems are:

- Emergency Fire Fighting Flows and
- Non-Emergency Fire Department Activities

Although the Permit recognizes that emergency fire fighting flows (i.e., flows necessary for the protection of life or property) can enter the storm drain system, fire department personnel should follow general BMPs in order to minimize the impact of fire fighting flows to the environment. During the 2008-2009 reporting period, the City developed procedures and BMPs addressing emergency and non-emergency fire fighting flows, entitled, "Emergency and Non-Emergency Fire Department Procedures" (Appendix D-4 of the 2009 SWMP).

4.5.7 Distribute BMP Fact Sheets for Non-Emergency Fire Fighting Flows

The City of Stockton Fire Department routinely updates Standard Operating Procedures (SOPs) for training and proper handling of non-emergency fire fighting flows. In 2009-2010, the Stormwater Program worked collaboratively with training staff from the Fire Department as part of a work group to update the SOPs, and the updated SOPs are included as part of the Fire Department's routine training program. During the 2013-2014, 2014-2015 and 2015-2016 reporting periods, no changes relating to stormwater were made by the City's Fire Department. Stormwater personnel worked to introduce new Fire Department staff in charge of training to the "Emergency and Non-Emergency Fire Department Procedures" and to recommend incorporation of these procedures into future trainings.

4.5.8 Develop Procedures to Address Emergency Events

During 2009-2010, the City developed procedures to address emergency events and included them within the *City of Stockton Spill Response Procedures* (Appendix B-1 of the *2009-2010 Annual Report*). An emergency event is considered to be a severe, natural or manmade disaster within the City, including any of the following:

- Earthquakes
- Floods
- Major power outages
- Major fires
- Radiological accidents/attacks
- Chemical accidents/attacks
- Biological accidents/attacks
- Terrorist attacks

In the case of an emergency event, issues related to human health and safety will be prioritized. Once these issues have been addressed, the Stockton Fire Department will notify and coordinate with MUD to address any spills or runoff that are related to the emergency event and ensure the protection of water quality.

During the 2012-2013 reporting period, the Fire Department:

- Provided all new personnel with the City's 2011-2012 Emergency Plan that includes emergency response training and SOPs that specifically address stormwater emergencies;
- Sponsored training to all City senior administration including department directors and deputy directors. The training was delivered during the 2012-2013 reporting period at a Senior Officials Workshop held on May 10, 2013. This workshop focused on the management of a flood emergency, and included all senior officials and city staff that participate in the operation of the City's Emergency Operations Center; and
- Conducted an orientation to the City's new Emergency Operation Plan during a one-day training session that was offered on three separate dates (November 29, November 30, and December 7, 2012). The purpose of the training session was to introduce the contents and organization of the newly revised Emergency Operations Plan.

4.6 MO4 – LANDSCAPE AND PEST MANAGEMENT

The Landscape and Pest Management Control Measure ensures that the discharge of pollutants from the City's use and storage of fertilizers and pesticides is reduced to the Maximum Extent Practicable (MEP). Among other things, the BMPs promote the use of integrated pest management (IPM) and retention and planting of native plant species requiring less water and chemical augmentation to remain healthy. By choosing less toxic and non-chemical landscaping methods, the City serves as a positive example to citizens and prevents adverse impacts on the local water bodies.

4.6.1 Implement Pesticide and Fertilizer Application Protocol

The Water Quality Based Program aims to reduce pesticides entering urban runoff by implementing BMPs and IPM to minimize pesticide use. In support of its Pesticide Plan, the City developed and began to implement protocols for routine and non-routine use of pesticides and fertilizers. In general, the City follows these procedures:

- Chemicals are stored in a central facility, meeting Occupational Safety and Health Administration (OSHA), Hazardous materials (HAZMAT), and County Agricultural Commissioner's requirements by providing secure storage and spill control.
- Landscaping is performed to maintain a healthy landscape, and a regular fertilizer program ensures healthy turf.
- Pesticides are used as a last resort, conforming to a sound integrated pest management program.
- To maximize the benefit of applications, all chemicals are applied at the minimum dose while avoiding runoff and wind drift.
- Native plants and trees are used whenever possible to reduce water needs while promoting resistance to disease and pests.

In August 2008, the parks maintenance functions were transferred to Public Works. Maintenance of the golf courses remained under the Parks and Recreation Department, subsequently renamed Community Services. As of July 1, 2009, all park landscape maintenance tasks are contracted. Contract specifications call for parks to be fertilized, as necessary, to maintain the turf in healthy condition. The specifications provided require that fertilizer be a balanced granular type. Weed control is to be provided as necessary and only by the use of non-restricted chemicals or hand pulling. All herbicide applications shall be done in accordance with manufacturer labels and proper IPM practices.

During the 2013-2014 reporting period, the City implemented the pesticide and fertilizer application protocol (Parks and Recreation Department Landscape Management Procedures, Landscape Maintenance BMP MO-1) at park sites, landscaped medians, and golf courses. The City also implemented a pesticide application protocol for the detention basins maintained by the City's Storm Drainage Maintenance Assessment Districts. The Assessment Districts' basin maintenance was outsourced and completed under a contract with Odyssey Landscape, Inc. The contract expired and is currently being bid out again. The City's contracts with its contractors specify that they shall use less toxic pesticide alternatives in accordance with IPM techniques and practices. In addition, any pesticide determined to cause cancer, birth defects, mutations, or other severe chronic health effects is banned from use. The contractor is required to supply a written pest control recommendation by a licensed pest control adviser for each material to be used at each site—for approval by the City—and to keep a log of all chemicals and their quantities applied.

The City has reevaluated how it requests and collects information regarding fertilizer and pesticide application from outside contractors on the maintenance done for City-owned parks and landscape

medians and golf courses. Since the completion of the evaluation in 2010-2011, there have been no further changes in how the City requests and collects information from outside contractors. During the 2015-2016 reporting period, Public Works continued to require contractors to accurately track applications and submit pesticide, herbicide, and fertilizer reports in an electronic format that is compatible with City software.

The following table summarizes information regarding the implementation of the **fertilizer protocols** during the last two reporting periods.

	Total Number of Acres Treated with Fertilizers	Total Pounds of Fertilizer Applied	
		Nitrogen	Phosphorous
Last Year 2014-2015	250 (Golf Courses) 646 (Parks)	1,631 (Golf Courses) 400 (Parks)	571 (Golf Courses) 150 (Parks)
This Year 2015-2016	250 (Golf Courses) 646 (Parks)	1,492 (Golf Courses) 400 (Parks)	146 (Golf Courses) 150 (Parks)

A summary of the **pesticide** (e.g., herbicides, algaecides) applications during the last two reporting periods is provided in the tables below.

	Total Number of Acres Treated with Pesticides
Last Year 2014-2015	77 (Golf Courses) 646 (Parks)
This Year 2015-2016	77 (Golf Courses) 646 (Parks)

4.6.2 Implement IPM Program

The City has developed and implemented an IPM program that requires the use of less toxic or non-toxic approaches to pest management. These efforts support the Pesticide Plan, which focuses on public outreach and IPM to protect water quality and promote safe, and minimal, pesticide use.

During 2010-2011, the City contracted all landscape maintenance and weed control services. Maintenance contracts that started on January 1, 2010, and all future contracts/contract specifications require that the contractor use IPM techniques and practices and least toxic methods of pest control to achieve the expected/specified results. Contractors are encouraged to consult the University of California Agricultural and Natural Resources State Wide Integrated Pest Management Program⁴ to determine the most effective and least toxic methods of pest control.

During 2010-2011, the City reevaluated how it requests and collects information regarding implementation of the IPM Program from outside contractors on the maintenance done for City-owned parks and landscape medians and golf courses. City landscape maintenance specifications for all new contracts starting January 1, 2010 and later require contractors to submit a written report by July 15 each year describing the IPM practices, principles, concepts, and least toxic methods of pest control used during the previous year of their contract term. New contracts in 2011-2012, 2012-2013, 2013-2014, 2014-2015, and 2015-2016 continued to require the same specifications.

⁴ www.ipm.ucdavis.edu

The following table summarizes information regarding the implementation of the IPM program during the last two reporting periods.

	Total Number of Acres Under the IPM Program
Last Year 2014-2015	400 (Golf Courses) 646 (Parks)
This Year 2015-2016	400 (Golf Courses) 646 (Parks)

The specific alternatives to pesticides that were employed by the pest control crews as a part of the implementation of the IPM program are listed below:

Weeds

- ☒ Hand weeding/hoeing
- ☒ Mulch for suppression
- ☐ Fabric for suppression
- ☒ Adjust mowing height
- ☐ Improve Drainage
- ☐ Flaming
- ☐ Landscape Design

Diseases

- ☒ Irrigation
- ☐ Plant Selection
- ☐ Pruning
- ☐ Fertilization
- ☐ Landscape Design
- ☐ Other_____

Insects

- ☐ Biological Controls
- ☐ Plant Selection
- ☐ Pruning
- ☒ Physical Removal
- ☐ Landscape Design

4.6.3 Develop Formal Document Describing IPM-Related Policies and Procedures

During 2009-2010, the City worked to formalize IPM protocols within an administrative directive. The *City Manager Administrative Directive P&R-03* (P&R-03) would have established standard procedures for the administration and use of pesticides, herbicides and fertilizers on City rights-of-way and at City-owned facilities. During 2009-2010, a draft update to P&R-03 was prepared to specify that each department using regulated pesticides, herbicides and/or fertilizers would ensure that employees and/or contractors utilize IPM and alternatives to pesticides whenever applicable. A supplementary IPM Guide referred to IPM policies in greater detail. Contract language was developed to specify that contracted pesticide applicators would utilize IPM. The draft administrative directive and IPM Guide were included as Appendix I-2 of the *2009-2010 Annual Report*. In March 2011, the City revisited the draft administrative directive and categorized it as a non-formal procedure instead of a formally adopted directive. The following language has been included in all contract specifications since January 2010:

"INTEGRATED PEST MANAGEMENT

To the greatest extent practicable, the City expects the Contractor to use the Integrated Pest Management practices, principals, and concepts and least toxic methods of pest control to achieve the expected/specified results. Contractor is encouraged to consult the University of California Agriculture and Natural Resources State Wide Integrated Pest Management Program at www.ipm.ucdavis.edu to determine the most effective and least toxic methods of pest control. By July 15 of each year, Contractor shall provide a written report of Integrated Pest Management practices, principles, and concepts and least toxic methods of pest control used during the previous year."

During the 2013-2014, 2014-2015, and 2015-2016 reporting periods, these protocols continued to be utilized by contractors hired by the City.

4.6.4 Maintain and Expand Internal Inventory on Pesticide Use

The Water Quality Based Program aims to reduce pesticides entering urban runoff by implementing BMPs and IPM to minimize pesticide use. To evaluate its municipal pesticide use over time, the City will maintain and expand its internal inventory on pesticide use and continue to track pesticide use by the Department of Public Works.

A summary of total pesticide use (by active ingredient, when available) at City parks, golf courses, and detention basins during the last two reporting periods is provided below.

No pesticides were applied to detention basins in 2011-2012, 2012-2013, or 2013-2014. During the 2014-2015 reporting period, Turf supreme with Trimec was applied to the detention basin located off of the 99-frontage, north of Mosher Slough. During the 2015-2016 reporting period, Ranger Pro was applied at MUD facilities and pump stations.

Brand Name of Product(s) & EPA Number	Name of Active Ingredient	Total Amount Applied (lbs)	
		2014-2015 ^a	2015-2016 ^b
Speedzone, 2217-835	Carfentrazone-ethyl (.62%)	18.2	1.11
	2,4-D, 2-ethylhexyl ester (28.57%)		51.05
	Mecoprop-p acid (5.88%)		10.51
	Dicamba Acid (1.71%)		3.06
	Carfentrazone-ethyl Mecoprop-p acid		15.6
Amistar, 100-1164	Azoxystrobin	5.3	0
Heritage/Headaway G, 100-1378	Azoxystrobin	0	3.82
	Chlorothalonil	0.42	0.4175
Lontrel, 62719-305	Clopyralid (40.9%)	0.24	0.241
Arrow 2EC, 66222-60	Clethodium	0	9.45
Wilco Gopher Bait Type II, 36029-23	Diaphacinone (.005%)	30	0
PCQ, 12455-50003-AA	Diaphacinone	126	0
Answer Gopher Bait AN1, 56-57	Diaphacinone (.005%)	4,844	0.009
Wilco Ground Squirrel Bait, 36029-17	Diaphacinone	594	0.006
Turf Supreme 16-6-8 plus Trimec, 2217-643-7001	2,4-Dichlorophenoxyacetic acid (.55%)	900	1.68
	(+)-(R)-2-(2 methyl-f-chlorophenoxy) propionic acid (.12%)		0.37
	Dicamba: 3,6-dichloro-o-anisic acid (.05%)		0.153
Turf Supreme 16-6-8		1,600 ^c	0
Ranger Pro, 524-517	Glyphosate, Isopropylamine salt (41%)	52,653 ^d	1706.77
Prosecutor Professional Max, 100-1169	Glyphosate	87.52	280
	Imidacloprid	15.51	0
	Indoxacarb	10.2	0
Barricade, 100-1139	Prodiamine	72.8	72.8
Banner Maxx II, 100-1326	Propiconazole	14.85	13
Garlon 4 Ultra, 62719-527	Triclopyr: 3,5,6-trichloro-2-pyridinyloxyacetic acid, butoxyethyl ester	0	98.57
Fusilade II, 100-1084	Fluazifop-P-butyl Butyl (R)-2-[4[[5-(trifluoromethyl)-2-pyridinyl]oxy]phenoxy]propanoate*	0	0.061
Surflan A.S. Herbicide, 40506-43	Oryzalin: 3,5-dinitro-N4, N4-dipropylsulfanilamide	0	6.262
	Total	60,972	2,275

Notes:

- [a] Full inspection reports were not received by the contractor performing maintenance on detention basins in 2014-2015, therefore the amount of pesticide applied to detention basins is not available. The amount shown is the total material applied, not the active ingredient.
- [b] The amount shown is the amount of active ingredient applied.
- [c] During the 2014-2015 reporting year, 1,600 pounds of Turf Supreme 16-6-8 was reported, however this is a fertilizer product which does not contain herbicide.
- [d] For Ranger Pro, most of the actual material applied was water (at a dilution ratio of 1.5oz product per 1 gallon water), which greatly increased the pounds of total material applied (not the pounds of active ingredient).

4.6.5 Implement Landscaping Standards

In 2003-2004, the City reviewed and modified the landscaping standards to promote planting and retention of native species and minimization of water use, pesticides, fertilizers, and herbicides. The City continues to implement the Landscaping Standards (Stockton Municipal Code Sections 16.56.040 and 16.72.240). The Landscaping Standards contain language that addresses water conservation and reduction of herbicide and pesticide use by means of appropriate plant selection and usage.

4.7 MO5 – Storm Drain System Maintenance

The Storm Drainage System Maintenance Control Measure provides for the long-term performance and integrity of the City's storm drain system. The City prioritizes catch basins for cleaning based on the required level of maintenance, and all catch basins are marked with a storm drain message, whether stenciled or permanently imprinted. This Control Measure includes special event requirements to prevent debris accumulation in catch basins and storm drains.

4.7.1 Implement Storm Drain System Mapping

The City's Municipal Utilities Department implements maintenance program for the storm drain system, including main lines, catch basins, and catch basin laterals. Records are maintained for numbers of catch basin grates and laterals unplugged, main lines unplugged, catch basins cleaned, catch basin laterals cleaned, main lines cleaned, and lines televised.

The City's Geographic Information Systems (GIS) data were created in 1993 and have been maintained at MUD since then by entering new storm drain lines from improvement plans. The data are stored in the Geodatabase GIS format in a Structured Query Language (SQL) Server database. The City began a storm drain mapping project using GIS during fiscal year 2007-2008. As of 2008-2009, all storm drain lines were indicated on the GIS mapping software (ArcMap by ESRI). Since that year, the City has continued to map and document all storm facilities using this mapping software. When the field crews find errors, they notify City staff so the data can be corrected. The database is periodically updated with the latest information regarding new additions to the system.

4.7.2 Review/Revise Prioritization for Catch Basin Cleaning

The City maintains the storm drain system, including all catch basins, and has established maintenance procedures for catch basins and pumps. The maintenance procedures include protocols for the prioritization of catch basins, inspection and cleaning protocols, and general information on recordkeeping of the waste that is removed.

In past years, a few State, county, private, or 'other' catch basins were added to the inventory. In 2014-2015, the GIS tracking was refined to include only City catch basins, reducing the total to a more accurate number.

As of June 30, 2016, the City has a total of 16,436 catch basin laterals, 16,436 catch basins, and 627 miles of lines. Catch basins are cleaned if they are at 40% capacity. Catch basins that drain to receiving waters (without the use of a pump) are inspected annually and cleaned as necessary. All pump stations are cleaned out every other year, regardless of their priority; priority for cleaning is determined by the amount of debris at each station.

The following table contains a summary of the City's prioritization.

Priority	Relevant Conditions	Inspection & Cleaning Frequency	Number of Catch Basins/Pump Stations ^a
A (High)	Catch basins that discharges directly to waters of the state (direct outfalls)	Inspect annually prior to rainy season and clean if >40% debris accumulation	3,132
B (Medium)	Pump stations	Inspect monthly, clean every other year	73
C (Low)	Catch basins that discharge to a pump station	Inspect every five years; more routine inspection if incident, complaint, or local flooding occurs. Clean if >40% debris accumulation	13,304
Total Number of Catch Basins			16,436

Note:

[a] As of June 30, 2016. Priority ranking values may not have been updated to match the refined number of catch basins in the GIS database.

4.7.3 Maintain and Annually Update Catch Basin Database

The City maintains and annually updates its catch basin database, which identifies catch basins and drainage areas. Catch basin cleaning is also tracked using work orders created by the database. The database information can be exported to GIS as needed.

4.7.4 Implement Catch Basin Maintenance Program

The City regularly cleans a number of catch basins annually regardless of catch basin prioritization. All clogged and partially clogged catch basins are cleaned first and prior to the wet season. During the 2015-2016 reporting period, the City cleaned a total of 1,417 catch basins. This total includes the high priority catch basins, which are inspected once prior to the wet season (between August and October), as well as the low-priority catch basins, which were inspected and cleaned as necessary.

The following table summarizes the inspection and cleaning of high priority catch basins.

Total Number of High Priority Catch Basins Inspected Annually	Total Number of High Priority Catch Basins Cleaned
2,451	269

The following table summarizes the inspection and cleaning of low priority catch basins.

Total Number of Low Priority Catch Basins Inspected	Total Number of Low Priority Catch Basins Cleaned ^[a]
0	1,148

Note:

[a] These low priority catch basins were cleaned to remove blockages that occurred during rain events, a reactive procedure that did not correspond to a documented inspection.

The following table summarizes information regarding overall storm drain system maintenance activities.

	Last Year 2014-2015	This Year 2015-2016
Total Length of Channel/Pipe Cleaned (linear feet)	11,925	10,189
Total Amount of Material/Debris Removed From Catch Basins (tons)	22.54	18.94

4.7.5 Implement Pump Station Maintenance Program

The City developed maintenance procedures for pump stations. The procedures include protocols for pump station inspection and cleaning and general information on recordkeeping of the waste that is removed. The city has implemented the pump station maintenance program. The City inspects the pump stations annually and cleans them as necessary (a minimum of once every two years).

The following table summarizes the inspection of pump stations during 2015-2016.

Total Number of Pump Stations	Total Number of Pump Stations Inspected
73	73

The following table provides a summary regarding overall pump station maintenance activities:

	Total Number of Pump Stations Cleaned	Total Amount of Material/Debris Removed (tons)^a
Last Year 2014-2015	45	35.85
This Year 2015-2016	21	14.80

Note:

[a] Amount of debris removed is based on wet tonnage.

4.7.6 Develop Maintenance Procedures and Prioritization for Cleaning Detention Basins

The City developed maintenance procedures and prioritization for cleaning detention basins as part of the Water Quality Based Programs. On June 9, 2009, the City contracted with a local firm, Odyssey Landscape Company, Incorporated to routinely inspect and maintain the City's five storm detention basins that are operated under maintenance assessment districts. Under this contract, the contractor performed an initial, extensive clean-out of each of the original seven basins during the summer of 2009. Thereafter, the contractor performed quarterly inspections and routine maintenance as needed, for a total of 13 site visits during the contract period. On May 22, 2012, the City awarded a new two-year contract to Odyssey to provide maintenance to the detention basins for the 2012-2013 and 2013-2014 reporting years. This contract included the possibility of a one-time one-year extension. In 2014-2015, work on this contract ceased until some administrative paperwork matters could be resolved.

Consistent with the previous contract, the 2012 contract scope of work includes vector control, weed abatement, rodent control, slope dressing, erosion control, mowing, ripping, discing or grading basin bottoms, trash and debris pick-up and removal, cleaning of basin structures, and sedimentation relocation.

Also consistent with the previous contract, quarterly inspections were performed on each of the basins. The 2012 contract continued to specify the use of less toxic pesticide alternatives in accordance with the IPM techniques and practices and required advance notification and approval of the City prior to the application of any weed abatement and/or pest control substances.

Evaluation of the maintenance frequency needed during the previous contract term indicated to staff that routine maintenance was not necessarily needed every quarter. Therefore, the 2012 contract allowed for up to two annual maintenance services per site as needed. This also allowed staff to better manage limited funds and reserves. During the 2013-2014 reporting period, three quarterly inspections were conducted at each of the basins. During the 2014-2015 reporting period, no changes were made to the protocol of quarterly inspections and two cleanings per year.

During 2015-2016 reporting period, the City made an extensive review of and update to the scope of work for the next maintenance bid for these basins. The bid was finalized by June 30, 2016, with plans for immediate public release after the start of Fiscal Year 2016-2017. The City intends to complete the public bidding process and award the contract during the fall of 2016. After City Council approval and contract issuance, routine inspection and maintenance will commence within 30 days of the Notice to Proceed. Inspections will be scheduled annually for September and March (before and after the rainy season), and approved maintenance will be performed annually during April and October. This maintenance contract will continue for three years with two possible one-year extensions.

4.7.7 Implement Detention Basin Maintenance Program

The City maintains a total of five flood control basins (i.e., Arch Road Industrial, Stockton Airport Business Center, Western Pacific, Charter Way, and Stockton Airport Gateway) located in the industrial sectors of south Stockton (a map of the flood control basins is included as **Appendix D-2**). These basins were developed prior to the development and implementation of water quality control measures and are therefore primarily designed for flood control. These basins are maintained by an outside contractor.

The maintenance of another basin, the ProLogis Park at Duck Creek extended detention basin, began per the contract during Fiscal Year 2010-2011. The contractor performed the first inspection and maintenance of the basin in August 2010. The operation and maintenance was then turned over to the Stockton Consolidated Storm Drainage Maintenance Assessment District No. 2005-1 (Assessment District).

The Assessment District now maintains a total of three basins (i.e., Riverbend, Morada, and ProLogis Park at Duck Creek) that were developed to provide water quality control functions as well as flood control. During the 2013-2014 reporting period, a total of 24 site inspections/ maintenance events were performed on these basins, resulting in the removal of a total of 10 cubic yards of trash and debris.

During the 2014-2015 reporting period, the service contract for the maintenance of the basins expired, and due to changes in staffing of the Stormwater Program during Fiscal year 2014-2015, the maintenance work bid-out had to be delayed. One round of maintenance was performed on these basins in 2014-2015 using an abbreviated contract scope of work extension. This was done to ensure weeds were abated and did not become a fire hazard and to ensure waters flowed appropriately through the basins during the rainy season. Full inspection reports were not completed. As a result, information on the amount of trash removed from the basins during maintenance that occurred during the 2014-2015 reporting period is not available.

During the 2015-2016 reporting period, the scope of work for the next maintenance bid was finalized, and the City intends to complete the public bidding process and award the maintenance contract during the fall of 2016.

4.7.8 Implement Notification Procedures for ID/IC and Missing Catch Basin Markers or Illegible Stencils

Catch basins are marked with a storm drain message that is either permanently imprinted or stenciled in the curb above the catch basin. Volunteers stencil catch basins through the Public Outreach Program Element (see PO1), and municipal staff are also responsible for stenciling and/or marking the catch basins with missing or faded stencils.

In 2003-2004, the City developed and implemented a protocol so that responsible staff can be notified of and respond to the following:

- Illegible inlet stenciling or missing markers (to be re-stenciled in 180 days)
- Evidence of illicit connections or discharges as discovered by municipal field crews (respond within 2 business days)

All of the catch basins installed since 2003-2004 have been required to be permanently imprinted in the sidewalk with the message, "No Dumping – Flows to Delta".

The City has a total of 16,436 catch basins, most of which are stenciled or imprinted with the storm drain message. During the 2015-2016 reporting period, collections crew inspected 2,451 and re-stenciled 655 catch basins.

4.7.9 Include Special Event Use Provisions in Special Use Permits

Periodically, special events occur at City owned and operated facilities (including parks). The City requires large events, as well as large venues, to address trash and debris removal, including containerization and street sweeping as appropriate. This process occurs through the Public Works Department Solid Waste and Recycling Division.

A "large event" means an event that charges an admission price or is operated by a local agency and serves an average of more than 2,000 individuals per day of operation of the event. A "large venue" means a permanent venue facility that annually seats or serves an average of more than 2,000 individuals within the grounds of the facility per day of operation of the venue facility.

During the 2015-2016 reporting period, a total of two City events were required to address trash and debris removal, as summarized in the table below.

Date(s)	Event	Tons of Material	
		Total Removed ^a	Amount Recycled
4/26/2016	Earth Day	0.72	0.44
4/21/2016	Stockton Asparagus Festival ^b	N/A	N/A
5/3/2016	Cinco de Mayo	1.56	1.08
Total		2.28	1.52

Notes:

[a] Total material removed includes amount recycled.

[b] The Asparagus Festival is by definition the only true "large event". The other events are selected for reporting purposes. However, the Asparagus Festival venue changed from City property to the Fairgrounds, which is under County jurisdiction.

4.7.10 Treatment Feasibility Study

The Treatment Feasibility Study conducted by the City and County from 2006 to 2011 determined that treatment would be technically infeasible or cost-prohibitive (see *2014-2015 Annual Report*). Once covered by the General Permit, the City will re-evaluate the potential for treatment based upon the City's water quality-based priorities.

4.8 MO6 – STREET CLEANING AND MAINTENANCE

The Street Cleaning and Maintenance Control Measure ensures that City streets are maintained and cleaned to reduce pollutants to the MEP. In conducting the Control Measure, the City designates the streets or segments of streets based on the required level of maintenance. Street sweeping requirements and street maintenance materials control are also components of this Control Measure. The City maintains a long-term contractual relationship with two major waste haulers to conduct this work effort.

4.8.1 Implement Street Sweeping Program

The City implements a street sweeping program. Currently, streets and parking lots in the downtown area are swept three times each week. Residential, Industrial, Commercial and Open Space streets are swept every other week on the day after garbage, recycling, and green waste collection. Street sweeping is a component of the 15-year franchise agreements between the City of Stockton, Republic Services (formerly Allied Waste) and Waste Management, Inc., and is sub-contracted out to Universal Sweeping.

The following table summarizes the street sweeping and green waste collection activities during the last two reporting periods.

	Total Miles Swept	Total Amount of Debris Removed by Street Sweeping (tons)	Total Amount of Green Waste Collected (tons)
Last Year 2014-2015	45,983	4,900	45,038
This Year 2015-2016	48,227	6,261	71,996

4.8.2 Review/Revise Prioritization of Streets for Street Sweeping Program

At the time the first term permit was drafted, the City swept with its own staff and equipment. Due to lack of funding, sweeping was minimal; streets often were only swept once a month. The Regional Water Board incorporated the concept of prioritization so that the City could prioritize sweeping locations and frequency to adequately address specific areas of the City.

The City currently has 15-year franchise agreements with Republic Services and Waste Management, Inc. which are responsible for street sweeping (see Exhibit H, Street Sweeping and Leaf Collection, included as Appendix D-4 of the *2008-2009 Annual Report*). The frequency was set as noted above in the franchise agreements in June 2004, and sweeping services are provided on a much more frequent basis than before the franchise agreements were implemented. Since then, prioritization has no longer been necessary.

The downtown street sweeping area is depicted below.



Street Sweeping is Conducted Every Other Week in Residential Areas

4.8.3 Implement Green Waste Collection Program

As part of the Water Quality Based Programs, the City maintains a program to pick up leaves through the green waste collection component of the solid waste and recycling program developed June 1, 2004. Among other things, the program provides residents with several 90-gallon wheeled carts to use for green waste collection rather than placing loose green waste in the street for pickup. In addition to weekly green waste collection, residents are provided with additional green waste services (e.g., Christmas tree collection, leaf service during “Leaf Season”) at no additional charge. Extra green waste carts are available, upon demonstrated need, at no additional charge. Up to five bags of leaves are allowed each week during leaf season at no additional charge.

During the 2015-2016 reporting period, the City continued to implement the green waste collection program through its 15-year franchise agreements with waste haulers, Waste Management and Allied Waste.

4.8.4 Update Maintenance Staff Guide – Road Maintenance and Small Construction BMPs

During 2009-2010, the City updated its *Maintenance Staff Guide – Road Maintenance and Small Construction BMPs* to refer primarily to California Stormwater Quality Association (CASQA) BMPs that are available online (see Appendix D-3 of the *2009-2010 Annual Report*). This approach was used to ensure that BMPs remained up to date and in accordance with CASQA recommendations.

4.8.5 Implement Maintenance Staff Guide – Road Maintenance and Small Construction BMPs

The *Maintenance Staff Guide – Road Maintenance and Small Construction BMPs* details BMPs for a wide variety of maintenance activities, including road maintenance and small construction. The *Maintenance Staff Guide* was originally developed in 2004-2005, and the City continues to implement those BMPs. Public Works – Operations and Maintenance has an established pavement maintenance program that addresses the removal and proper disposal of pavement material, paint residue, and other construction waste. A street sweeper is permanently assigned to each road crew to facilitate daily clean-up of debris, at a minimum, with more frequent clean-up activities conducted as needed.

During 2009-2010, the *Maintenance Staff Guide – Road Maintenance and Small Construction BMPs* was updated, and the updated version has been distributed to City staff. The *Maintenance Staff Guide – Road Maintenance and Small Construction BMPs* has been implemented by staff since 2010-2011.

4.9 MO7 – PARKING LOTS MAINTENANCE

The Parking Lots Maintenance Control Measure ensures the City's parking lots and structures are kept clear of debris and excessive oil buildup is prevented. This Control Measure consists of a schedule of inspections and cleaning of the parking lots and structures. The City maintains a long-term contractual relationship with two major waste haulers, Waste Management and Republic (formerly Allied Waste), to conduct this work effort.

During the 2015-2016 reporting period, the City contracted with SP+ to manage the operation and maintenance of City-owned parking lots and garages in downtown Stockton, overseen by the Parking Authority. As stated in the management agreement, SP+ is responsible for cleaning the lots and garages in this area. SP+ utilizes Waste Management Services for major waste hauling, hazardous waste disposal, and regular track pickup (twice per week).

4.9.1 Implement BMPs for Parking Lot Cleaning

The City maintains several parking lots, managed by both SP+ and Public Works. A Parking Lot Cleaning BMPs Fact Sheet (included as Appendix D-1 to the 2009 SWMP) was developed and is currently implemented by the City for the parking areas other than the downtown Stockton area. In the downtown Stockton area, SP+'s parking lot cleaning practices adhere to the same guidelines and practices. SP+ utilizes its own "Environmental Programs Manual" (included as **Appendix D-3**), which outlines proper waste and water management while taking into account federal, State and local requirements. This manual was developed by Cardno and has been implemented in all of SP+'s national locations, including the downtown Stockton parking lots and garages.

The downtown parking lots and garages are monitored and cleaned by SP+ as needed to prevent excessive oil or debris build-up. SP+ cleans all city-owned lots and garages located downtown, sweeping bi-weekly with SP+ sweepers. During the 2015-2016 reporting period, the Coy, Channel, Market Street, Steward Eberhardt Building, and Arena garages were swept once every two weeks. Lots B, F, J, K, L, N, O, R, S, Z, State, Civic, EDD, Fremont East, Fremont West, Stadium North, Stadium South, and Edison were swept bi-weekly during the 2015-2016 reporting period. Extensive cleaning was performed on the Channel Street Garage in April 2016.

Excessive oil clean-up is performed by SP+ as needed, with the use of sand/cat litter. The absorbed oil/sand is swept into trash bags and held in a separate trash receptacle. Waste Management is contacted to pick up the oil/sand as needed from the Arena Garage. During the 2015-2016 reporting period, Waste Management collected sand/oil debris on the following dates:

- July 14, 2015
- September 15, 2015
- November 17, 2015
- January 12, 2016
- March 15, 2016
- April 12, 2016
- June 14, 2016

All parking lots that are not downtown are monitored and cleaned to prevent excessive oil or debris build-up as needed. These parking lots are swept bi-weekly by the sweepers contracted with the City's contracted waste haulers to control litter. Since the 2010-2011 reporting period, MUD Stormwater has worked collaboratively with the City's Central Parking District to contract with Universal Site services to

clean the parking structure surfaces and clean out sand filters that collect oily waste from these parking structures.

4.9.2 Inspect City-Owned Parking Lots Annually

The City's Parking Authority is responsible for operations and maintenance of city-owned parking lots and parking structures in downtown Stockton. A summary of the city-owned parking lots and parking structures is provided below.

- 5 parking structures in the downtown area
- 18 flat parking lots in the downtown area

The City's Public Works Department is responsible for operations and maintenance of city-owned parking lots outside of the downtown area. There are 17 parking sites throughout the city which are not in the downtown area.

During the 2015-2016 reporting period, random inspections (in addition to cleanings) were performed on all lots and garages for the primary purpose of ensuring that there were no stormwater-related issues.

4.10 MO8 – TRAINING

Training is important for the implementation of the Municipal Operations Program Element. An effective training program is one of the best pollution prevention BMPs that can be implemented because it prompts behavioral changes that are fundamentally necessary to protect water quality.

Areas of Focus for the Municipal Operations Program Element Training

Target Audience	Format	Subject Material	Comments
<ul style="list-style-type: none">• Maintenance crews• Road crews• Street sweepers• Parking Facilities crews• Waste Pickup• Parks & Rec crews• Pesticide/fertilizer applicators• Contract/lease staff involved in above activities	<ul style="list-style-type: none">• Classroom• Field demos• Tailgate sessions	<ul style="list-style-type: none">• Overview of stormwater management• BMPs for municipal operations	<ul style="list-style-type: none">• Pesticide applicators must also attend annual pesticide application classes

4.10.1 Conduct Training

City staff attended training sessions relevant to Municipal Operations during the 2015-2016 reporting period. A summary of the training sessions held during the 2015-2016 reporting period is provided below. The Municipal Operations training materials are included in **Appendix D-4**.

Date(s) of Training	Title of Training Module	Number of Attendees	Staff Positions Trained	Trainee City Departments or Divisions
3/15/2016	Stormwater Pollution Prevention and Good Housekeeping for Municipal Operations and Maintenance	60	Engineer Supervisor Field Staff Inspector Stormwater staff Stormwater manager L.S.O. Administrative	Municipal Operations and Maintenance
4/7/2016	Stormwater Pollution Prevention and Good Housekeeping for Municipal Operations and Maintenance	55	Engineer Supervisor Field Staff Inspector Stormwater staff Stormwater manager Mechanical/Fleet Administrative	Municipal Operations and Maintenance

A summary of the pre- and post-training surveys conducted during the 2015-2016 reporting period is provided below.

Date of Training	Training Module	Total Number of Surveys	Average Pre-Survey Score^a	Average Post-Survey Score^a	% Difference
3/15/2016	Stormwater Pollution Prevention and Good Housekeeping for Municipal Operations and Maintenance	60 pre- 54 post-	63%	74%	11%
4/7/2016	Stormwater Pollution Prevention and Good Housekeeping for Municipal Operations and Maintenance	55 pre- 54 post-	64%	72%	8%

Note:

[a] Average is weighted based on number of students in each class

4.11 MO9 – EFFECTIVENESS ASSESSMENT

To determine the effectiveness of the Municipal Operations Program, a comprehensive assessment of the program data is conducted as a part of the annual report. The results of this assessment are used to identify modifications needed for the program. Each year, the effectiveness assessment is reviewed and revised as needed.

By conducting these assessments and modifying the program as needed, the City ensures that the iterative process is used as an effective management tool. Due to the types of data collected for the Municipal Operations Program, the assessment primarily focused on Outcome Levels 1 through 4.

- Outcome Level 1 (L1) answers the question: Did the City implement the components of the Permit and the 2009 SWMP?
- Outcome Level 2 (L2) answers the question: Can the City demonstrate that the control measure/performance standard significantly increased the awareness of a target audience?
- Outcome Level 3 (L3) answers the question: Can the City demonstrate that the control measure/performance standard significantly modified the behavior of a target audience?
- Outcome Level 4 (L4) answers the question: Can the City demonstrate that the control measure/performance standard reduced the load from sources to the storm drain and/or receiving water?

The table below summarizes the effectiveness assessment conducted for the Municipal Operations Program Element. Additional detail for each component of the assessment is provided on the following pages.

Program Effectiveness Assessment Summary for Municipal Operations

Municipal Operations	Level 1	Level 2	Level 3	Level 4
	Stormwater Program Activities	Barriers and Bridges to Action (Knowledge/Awareness)	Target Audience Actions	Source Contributions
MO1 - Sanitary Sewer Overflow and Spill Response	C – Implementation of SSOERP	N/A	N/A	C – Diversion of SSOs
MO2 - Construction Requirements for Municipal Capital Improvement Projects	C – Reviewed CIP Designs C – Require Submission of NOI C – Ensured CIP Priority Projects are Developed in Conformance with the SWQCCP C – Improved Interdepartmental Communication	N/A	C – NOIs submitted	N/A

Municipal Operations	Level 1	Level 2	Level 3	Level 4
	Stormwater Program Activities	Barriers and Bridges to Action (Knowledge/Awareness)	Target Audience Actions	Source Contributions
MO3 - Pollution Prevention at City Facilities	C – Assessed Facilities C – Developed FPPP for Corporation Yard C – Implemented FPPP for Corporation Yard	N/A	N/A	N/A
MO4 - Landscape and Pest Management	C – Require Implementation of Landscape and Pest Management Protocols C – Require Implementation of IPM Program	N/A	N/A	A
MO5 - Storm Drain System Maintenance	C – Storm Drain Maintenance Program C – Catch Basin Maintenance C – Pump Station Maintenance Program C – Detention Basin Maintenance Program C – Catch Basin Marker/Stencil Maintenance C – Implement Special Event Use Provisions for Trash and Debris Removal	N/A	N/A	C – Materials Removed
MO6 - Street Cleaning and Maintenance	C – Street Sweeping Program C – Green Waste Program C – Implemented Maintenance Staff Guide	N/A	N/A	C – Materials Removed
MO7 - Parking Lots Maintenance	C – Parking Lot Maintenance	N/A	N/A	N/A
MO8 - Training	C – Attended Training	C – Pre- and Post-Training Surveys	N/A	N/A

C – An effectiveness assessment was conducted during the reporting periods

A – It is anticipated that an effectiveness assessment may be conducted in future annual reports

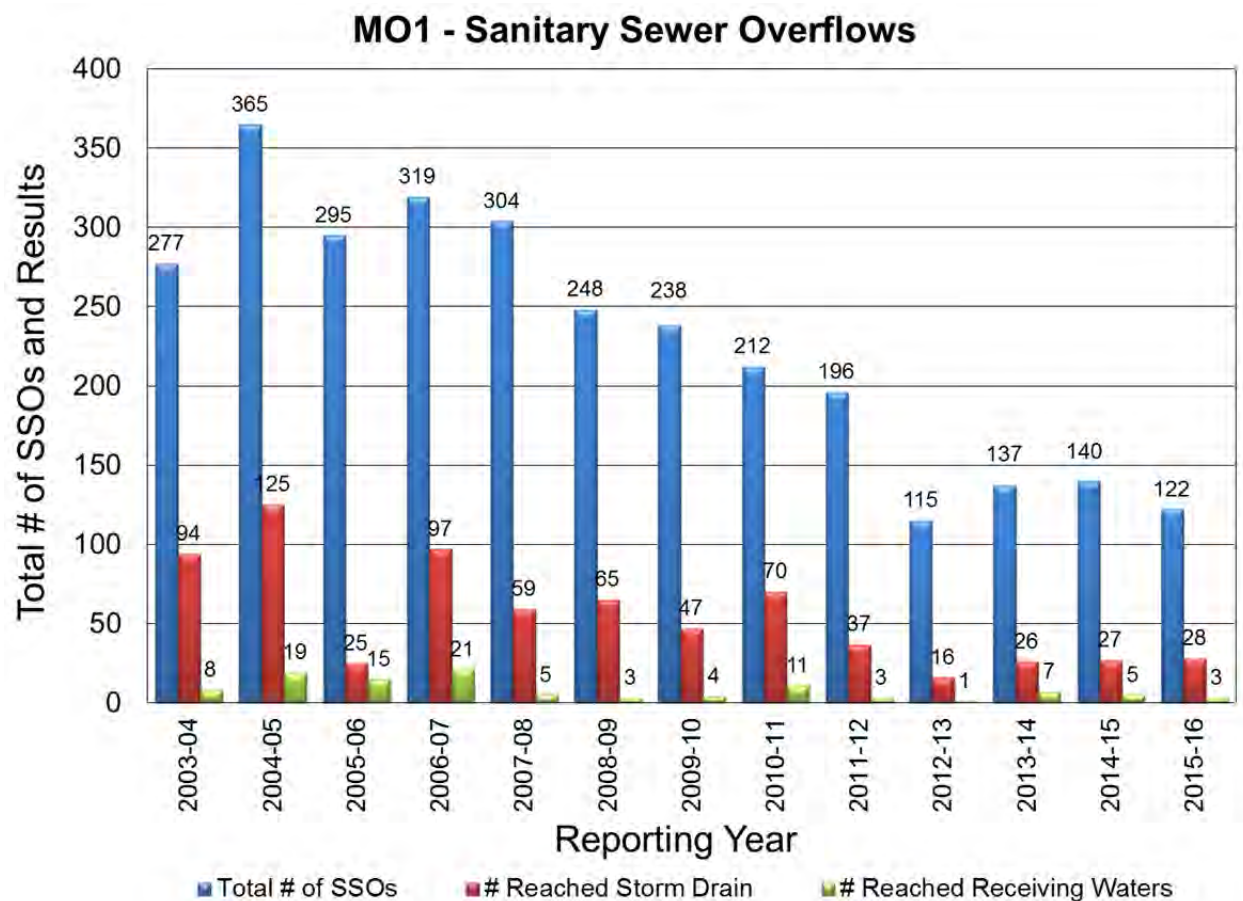
N/A – This outcome level is not applicable for this control measure

Following is an assessment regarding the effectiveness of the Municipal Operations Program.

MO1 - Sanitary Sewer Overflow and Spill Response

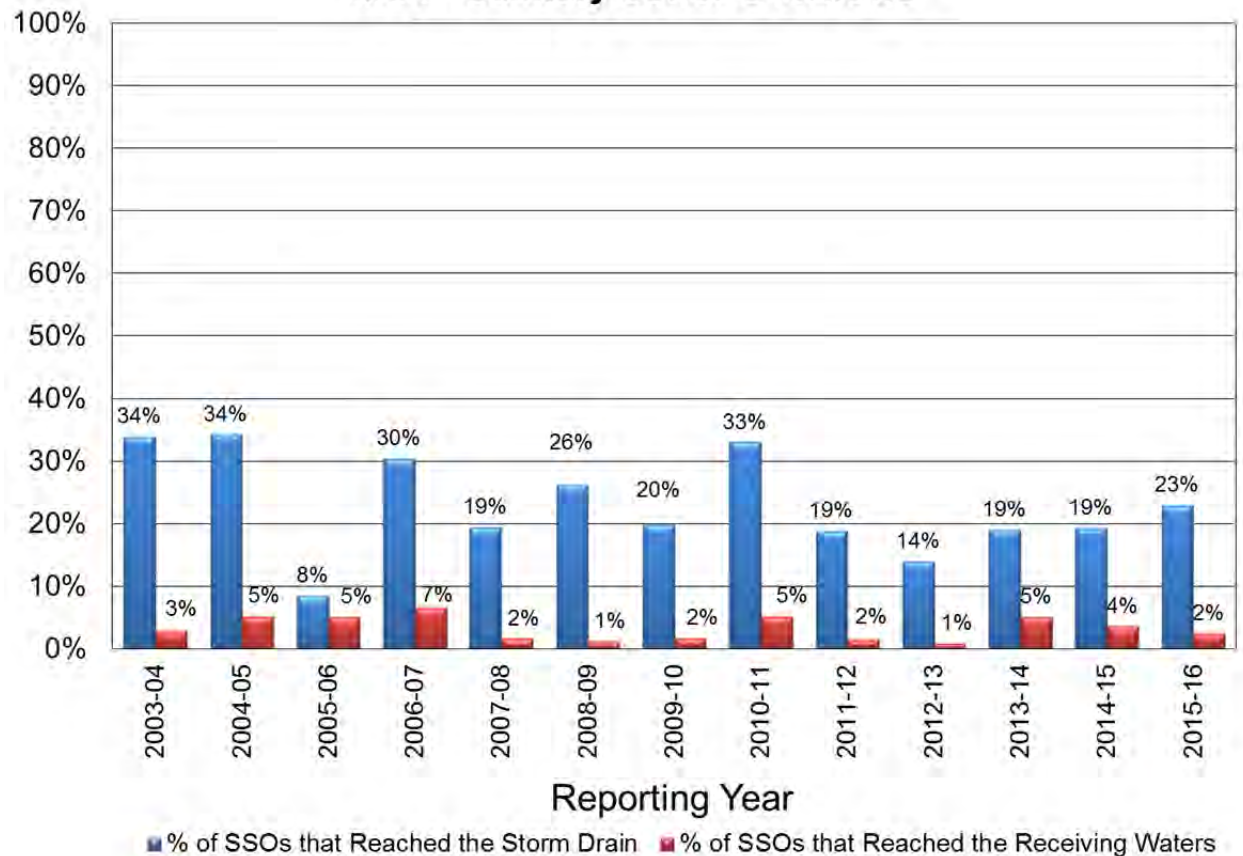
The City developed and continues to implement the SSOERP and, when possible, prevent the spills from entering the storm drain system and/or the receiving waters. The City also reviews and revises the SSOERP as needed. (L1, L4)

- Since 2003-2004, 2,968 SSOs have occurred and were responded to by the City. Of the 2,968 spills, 716 reached the storm drain system, and 105 reached a receiving water. In general, a downward trend has been observed in the total annual number of SSOs and those reaching the storm drain or receiving waters, indicating that implementation of the SSOERP has been effective.



- On average, the City's success rate at preventing SSOs from reaching the storm drain has increased by 5% between the current Permit term (22% of SSOs reached the storm drain from 2007-2008 to 2015-2016) and the previous permit term (27% of SSOs reached the storm drain from 2003-2004 to 2006-2007). The City's success rate at preventing SSOs from reaching the receiving waters has also increased by 2.6%, on average, from the previous permit term. This indicates an increased load reduction due to the diversion of SSOs.

MO1 - Sanitary Sewer Overflows

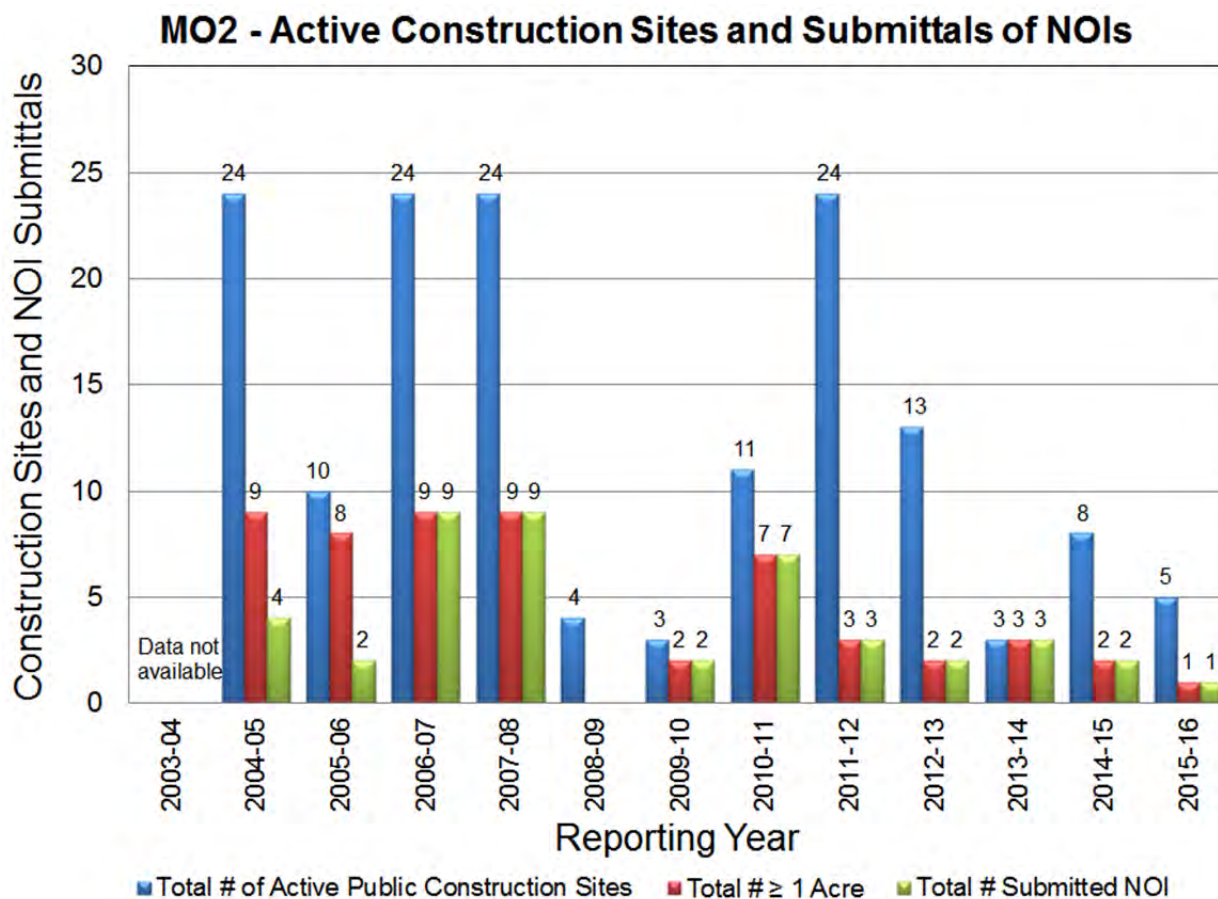


MO2 – Construction Requirements for Municipal Capital Improvement Projects

City staff have reviewed the CIPs to ensure that the construction BMPs and SWQCCP requirements have been incorporated during the design stage. (L1)

The City also requires that CIPs greater than or equal to one acre obtain coverage under the General Construction Permit. Staff are aware of this requirement and have, over time, obtained coverage for the projects as needed. (L1)

- Since 2006-2007, 100% of the required NOIs for CIPs have been submitted, a sustained improvement from 2004-2005 (44%) and 2005-2006 (25%). (L3)



The City continued to work towards improved interdepartmental communication to facilitate accurate recordkeeping and reporting of data for the stormwater program and the annual reporting process. (L1)

MO3 – Pollution Prevention at City Facilities

The City assessed its facilities to determine if they require coverage under the General Industrial Permit. For the City-owned and operated facilities that do not require coverage under the General Industrial Permit but have potential stormwater-related issues, the City implements a FPPP. Currently, the only facility required to implement stormwater BMPs is the Corporation Yard. The City has developed and is implementing an FPPP for the Corporation Yard. **(L1)**

MO4 – Landscape and Pest Management

The City staff involved in landscape and pest management is responsive to the stormwater program requirements and has developed and is implementing standard protocols for the application of fertilizers and pesticides. **(L1)**

- The City continues to require that contractors abide by standardized fertilizer and pesticide applicator protocols and IPM practices.
- In 2003-2004, the City reviewed and revised the landscape standards to promote the planting and retention of drought-tolerant and native species and to minimize the use of water, fertilizers, pesticides, and herbicides. The City continues to implement the landscape standards.

The City continues to implement an IPM program that requires the use of less toxic or non-toxic approaches to pest management. **(L1)**

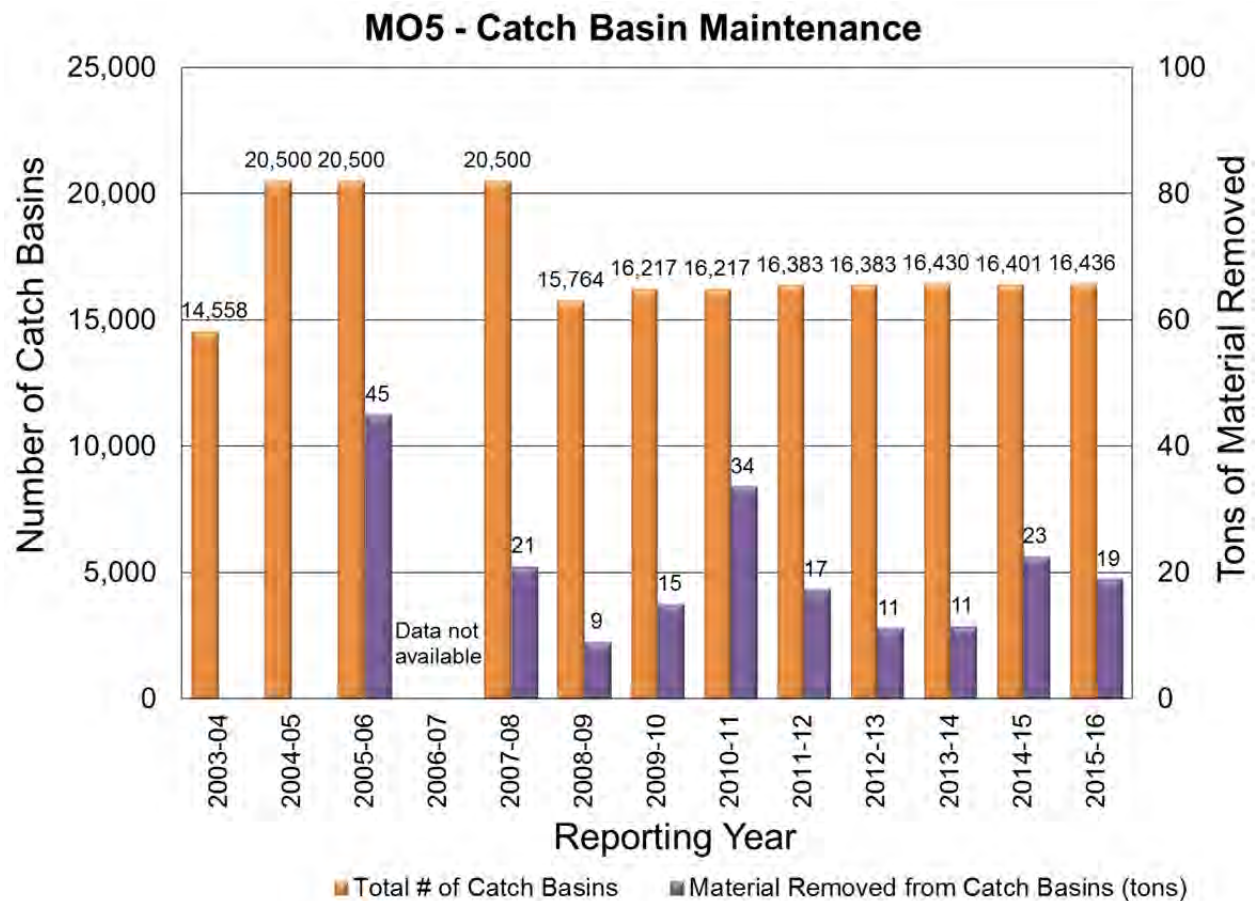
MO5 – Storm Drain System Maintenance

City staff remain responsive to the stormwater program and continues to implement the programs to maintain the storm drain system, including the following: **(L1)**

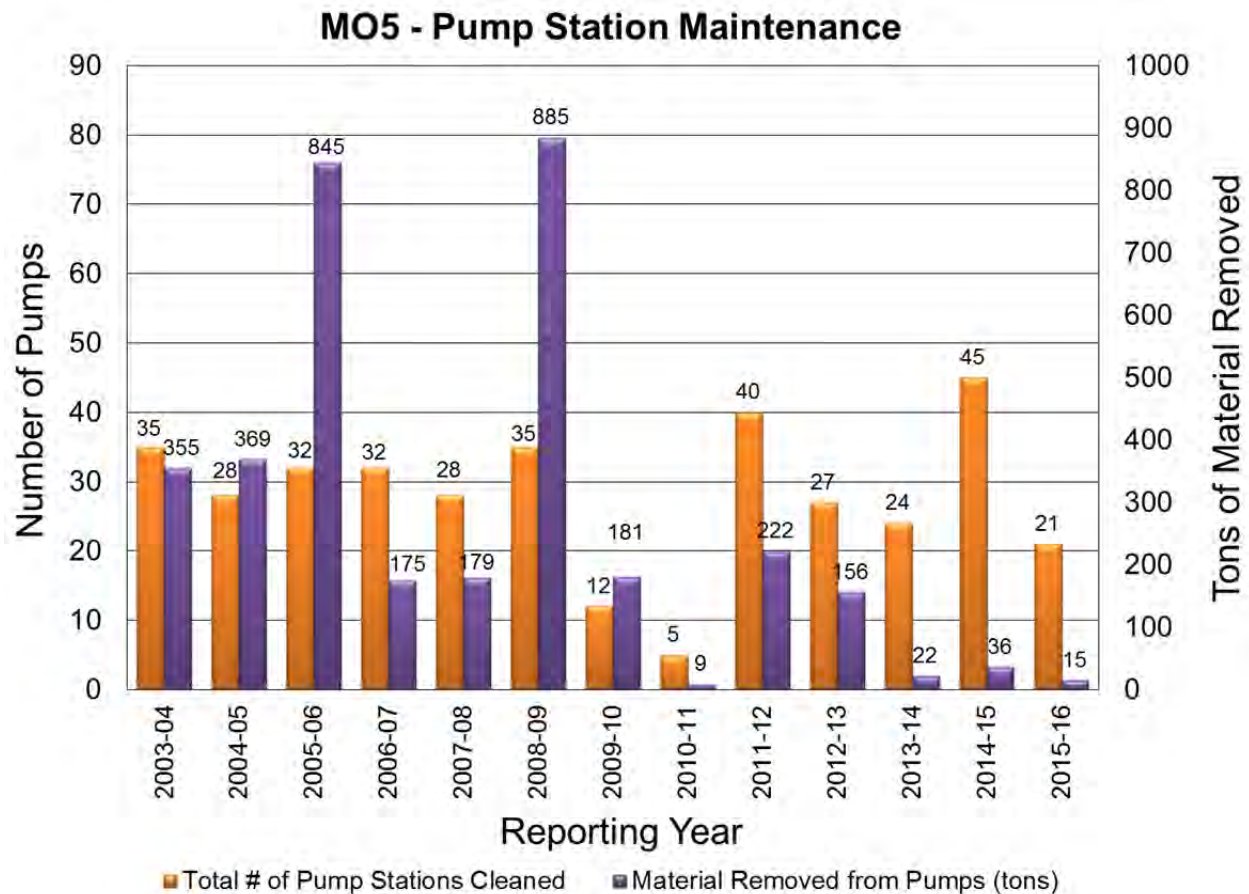
- Storm Drain System Mapping & Maintenance
- Catch Basin Maintenance
- Pump Station Maintenance
- Detention Basin Maintenance
- Catch Basin Marker/Stencil Maintenance

The City continues to utilize the catch basin database to assist in the maintenance of catch basins. **(L1)**

- **Catch Basin Maintenance** – The City has prioritized its catch basins and cleans a number of catch basins annually, regardless of prioritization. **(L4)**
 - During 2015-2016, the City inspected 3,132 and cleaned 269 high priority catch basins.
 - Since 2005-2006, approximately 205 tons of materials have been removed from catch basins (data are not available for 2006-2007).



- Pump Station Maintenance – The City has inspected pump stations annually and removed approximately 3,448 tons of mud and debris since 2003-2004. (L4)

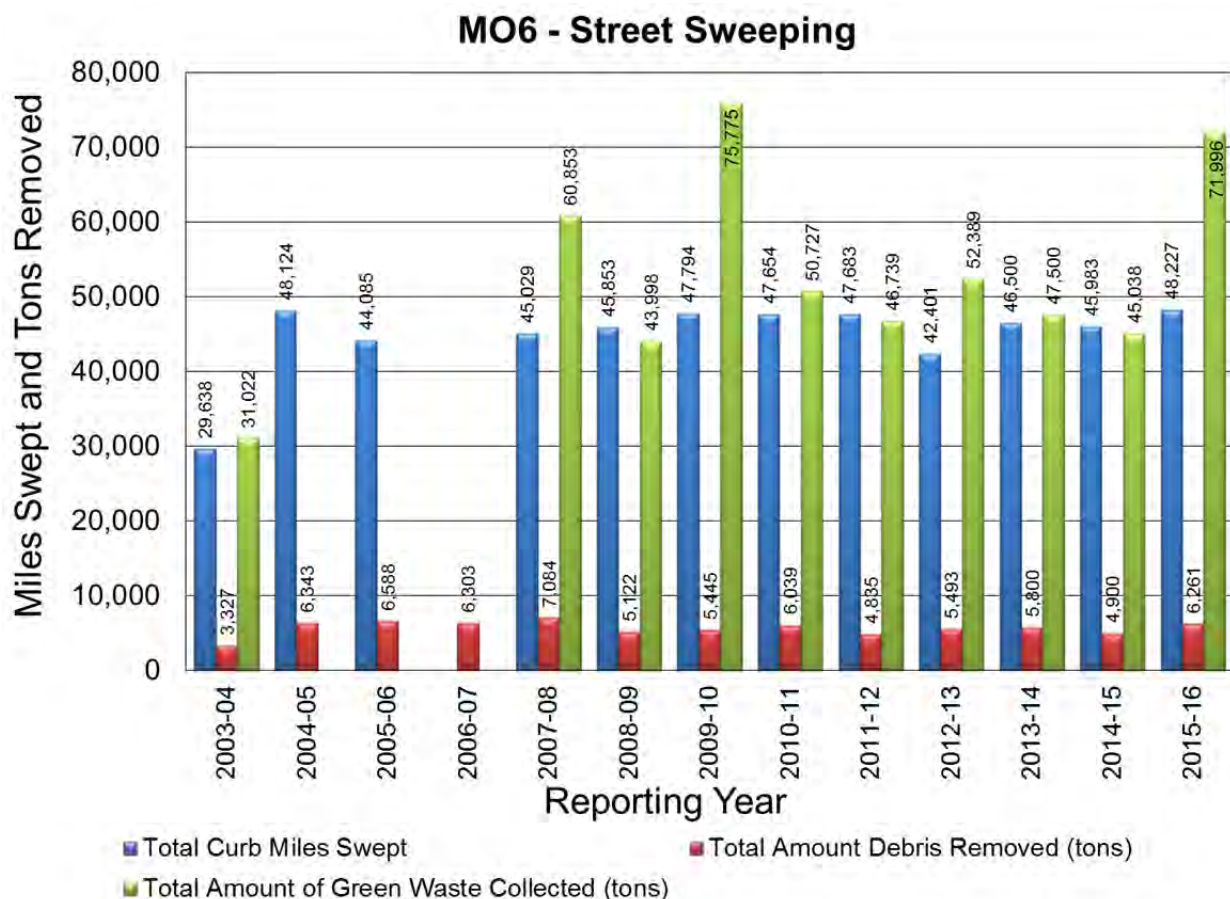


- Detention Basin Maintenance: The City continued to inspect and maintain a total of eight detention basins (five flood control basins and three water quality and flood control basins). (L1, L4)
 - A total of 76 inspections and 52 maintenance events have been performed on the five flood control basins since 2010, resulting in the removal of over 235 cubic yards of trash and debris. A total of 44 inspections and 39 maintenance events have been performed on the three water quality and flood control basins since 2010, resulting in the removal of over 115 cubic yards of trash and debris.
- Catch Basin Marker/Stencil Maintenance: City staff continued to inspect and re-stencil its 16,436 catch basins as needed, inspecting 2,451 and re-stenciling 655 during 2015-2016. (L1)
- Special Use Provisions: The City is requiring large events (as well as large venues) to address trash and debris removal, including containerization and street sweeping as appropriate. (L1, L4)
 - During 2015-2016, the two large events were required to address trash and debris removal, resulting in the collection of 2.28 tons of trash and debris and 1.5 tons of recyclables.

MO6 – STREET CLEANING AND MAINTENANCE

The street sweeping program is effectively removing material from the streets that may otherwise end up in the catch basins and/or storm drain system. (L4)

- Since 2003-2004, approximately 73,540 tons of debris have been removed and properly disposed of through the street sweeping program.
- In addition, approximately 526,037 tons of green waste have been collected and disposed of as a part of the green waste program.⁵



During the reporting period, the City continued to implement the updated Maintenance Staff Guide – Road Maintenance and Small Construction BMPs. (L1)

MO7 – PARKING LOTS MAINTENANCE

The City has developed and is currently implementing BMPs for parking lot maintenance, sweeping, and cleaning activities to ensure that wash water and associated wastes are appropriately managed. The City's contractor for the downtown Stockton area parking lots also implements appropriate BMPs during such activities. (L1)

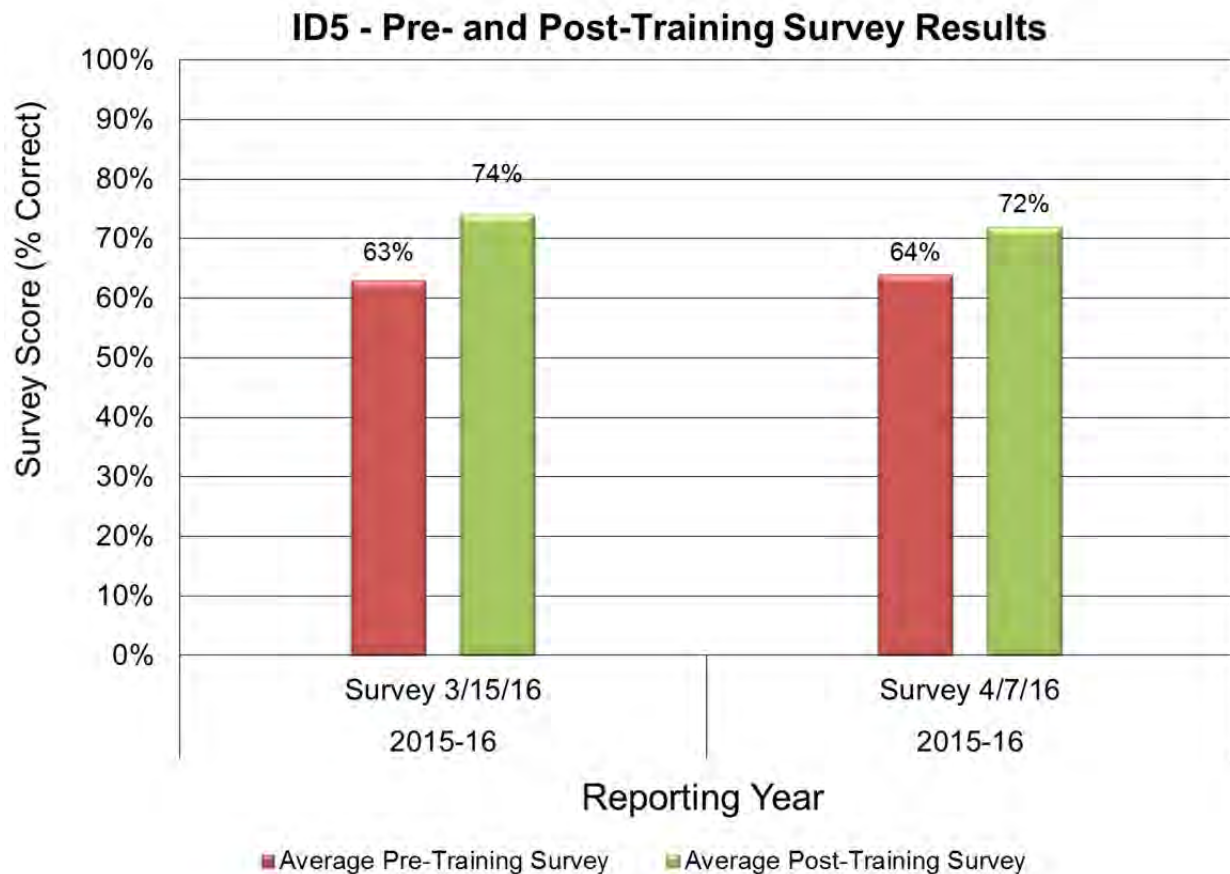
⁵ Green waste data are unavailable for 2004 through 2007, and curb miles swept are unavailable for 2006-2007.

MO8 – TRAINING

City staff are attending training sessions related to Municipal Operations. (L1)

- Since 2007-2008, 652 City staff have attended 45 Municipal Operations training sessions. The City provided two Municipal Operations training modules for 115 staff during 2015-2016.

Two pre- and post-training surveys were administered during 2015-2016. Average increases of 11% and 8% in correct responses were observed after the trainings, indicating increased awareness and understanding of the subject material that was presented. (L2)



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Section 5

Industrial and Commercial (IC)

5.1 OVERVIEW

The purpose of the Industrial and Commercial Program Element is to effectively prohibit unauthorized non-stormwater discharges and reduce pollutants in stormwater runoff from industrial and commercial facilities to the MEP. The program for industrial and commercial facilities is accomplished by tracking, inspecting, providing outreach, and ensuring compliance at industrial and commercial facilities identified as potentially significant sources of pollutants in stormwater.

5.2 CONTROL MEASURES

The City has developed several Control Measures and accompanying performance standards to ensure that the industrial and commercial business-related Permit requirements are effectively developed and implemented. Each Control Measure includes accompanying performance standards, which, once accomplished, constitute compliance with the SWMP/Permit.

The Industrial and Commercial Businesses Program Control Measures consist of the following:

Control Measures for the Industrial and Commercial Program Element

IC	Control Measure
IC1	Facility Inventory
IC2	Prioritization and Inspection
IC3	Industrial/Commercial Outreach
IC4	Enforcement
IC5	Training
IC6	Effectiveness Assessment

The next section of the Annual Report provides information on the specific tasks initiated and/or completed during the reporting period pursuant to the Industrial and Commercial Program performance standards and implementation schedules.

5.3 IC1 – FACILITY INVENTORY

The Facility Inventory Control Measure addresses the need to develop and maintain a complete database of industrial and commercial facilities that have a significant potential to impact water quality. Information for the database is primarily obtained from new business licenses and sanitary sewer hook-up permits. The inventory provides the basis for prioritization of facilities within the City and serves as a repository for all outreach, inspection, and notices for each facility.

5.3.1 Perform Internal Audit of Database

The City reviews the commercial and industrial database prior to the start of each inspection round.

5.3.2 Maintain and Annually Update the Industrial and Commercial Facility Inventory

The City maintains an inventory of industrial and commercial facilities, including those covered under the state Industrial General Permit that are within City jurisdiction. The City utilizes information provided by the Regional Water Board, Business License, and County Health to obtain current facility numbers prior to scheduled inspections. The Commercial Facility Inventory was updated in Fiscal Year 2013-2014 beginning with the inventory of restaurants/Food Service Establishments (FSEs). The inspections of FSEs began in March 2013; the inspections of 313 FSEs were completed during the period from July to November 2014. These facilities were added to the Commercial Facility Inventory, which Staff continued to update throughout Fiscal Year 2014-2015, but an electronic restaurant inspection form has not yet been created. Therefore, restaurant inspection data continues to be hand-entered from hardcopy inspection reports.

Staff updated the Industrial Facility Inventory, developed an Automotive Facility Inventory, and created an electronic automotive facility inspection form in preparation for the 2015-2016 Industrial and Commercial inspections. Industrial facilities, automotive facilities and restaurants were inspected throughout Fiscal Year 2015-2016.

The Industrial and Commercial Facility Inventory is included as **Appendix E-1**.

A summary of the information tracked by the inventory/database is provided below.

Category	Current Inventory ^a	Total Number of Facilities To Be Inspected
Industrial Facilities	214	214
Commercial Facilities (Significant Sources)	858	858

Notes:

- [a] The industrial facility data represent the most recent data based on inventory numbers determined during the 2015-2016 reporting period. The commercial facility data represent automotive facilities and restaurants inventoried during the 2015-2016 reporting period. However, only the 394 automotive facilities are currently in the database, as restaurant data must be hand-entered.

A summary of the Commercial Facilities (Significant Sources) by category is provided below. The commercial facility data represent the most recent data based on inventory numbers determined during the 2015-2016 reporting period. Only automotive facilities and restaurants were inventoried during the 2015-2016 reporting period. The other categories will be inventoried as their electronic forms are developed for the database.

Category	Current Inventory
Automotive-Related Facilities ^a	393
Dry Cleaners/Laundromats	0
Equipment Rentals	0
Pet-Related Facilities ^b	0
Nurseries	0
Restaurants/ Food Service Establishments ³	465
Retail Gasoline Outlets	0
Other	0
Total	858

Note:

[a] The category of "Automotive-Related Facilities" includes Auto Washing and Detailing, Auto Body Shops, Auto Dealers and Auto Repair Shops.

[b] The category of "Pet-Related Facilities" includes Kennels, veterinary clinics/hospitals, and groomers.

5.3.3 Map Industrial and Commercial Facilities

Although the City does not map the industrial and commercial facilities on an annual basis, it does utilize information provided by the Regional Water Board, Business License, City of Stockton's Administrative Services (Business Licenses Division) and County Health to obtain current facility numbers, addresses, and other identifying information prior to scheduled inspections. These data are provided in the inventory, which is included as **Appendix E-1**.

5.3.4 Develop a Mobile Business Pilot Program

During the 2009-2010 reporting period, the Permittees developed a mobile business pilot program for one mobile business category deemed to be a potentially significant source of pollution.

The category chosen for the pilot program was mobile carpet cleaners. The *Mobile Business Pilot Program: Carpet Cleaners Implementation Strategy* (Appendix E-5 of the *2009-2010 Annual Report*) identifies how the various components of the carpet cleaner pilot program (pilot program) will be implemented. The strategy addresses inventory, inspections, outreach/education, and enforcement. The carpet cleaner inventory (Attachment A of Appendix E-2 of the *2009-2010 Annual Report*) includes carpet cleaners located within the San Joaquin County area—those most likely to operate within the jurisdictions of the City and Phase I area of the County. The pilot program serves as a template for the potential development of implementation strategies for other mobile business categories.

The Permittees conducted a Pressure Washing/Stormwater BMPs Workshop during the 2014-2015 reporting period, on August 5, 2014. Preparations for this workshop were performed in 2013-2014, and the brochure developed for the workshop, *BMPs for Power Washing (Mobile Surface Cleaning)*, was included as Appendix E-2 of the *2013-2014 Annual Report*.

During the 2015-2016 reporting period, the Permittees conducted Mobile Business Program self-certification outreach efforts, as described in subsequent sections.

5.3.5 Implement a Mobile Business Pilot Program

The Permittees implemented a mobile business pilot program for mobile carpet cleaners.

To ensure that the information for the mobile carpet cleaner inventory is accurate and up-to-date, the Permittees utilize several resources to find addresses, phone numbers, and other pertinent information for these businesses. Sources that are utilized include: City and/or County business license information, Yellow Pages® listings, and internet-based listings.

During the 2015-2016 reporting period, the County Outreach Program updated the inventory of all carpet cleaning businesses throughout the entire County, encompassing the cities of Stockton, Lodi, Manteca, Lathrop, Tracy, French Camp, and Ripon. To ensure accuracy, the Permittees contacted each business during the week of December 28, 2015 to verify business category, service area, and contact mailing information. The original carpet cleaner inventory (Attachment A of Appendix E-2 of the 2009-2010 Annual Report), consisting of 211 carpet cleaning businesses, was revised as the 2016 Mobile Business Program Carpet Cleaner Inventory, with a total of 95 valid carpet cleaning businesses operating in San Joaquin County.

Efforts related to implementation of the mobile business pilot program are described in **Sections 5.4.10, 5.5.4, 5.5.5, and 5.6.5.**

5.4 IC2 – PRIORITIZATION AND INSPECTION

The Prioritization and Inspection Control Measure establishes procedures for prioritizing industrial and commercial facilities within the City for inspection as well as the inspection requirements associated with the site visits. The inspections ensure that the facility operator has pertinent educational materials, complies with the City ordinances, and does not allow unauthorized non-stormwater discharges. Inspection of facilities covered under the state Industrial General Permit also ensure that the operator has a current Waste Discharge Identification (WDID) number, the SWPPP is available on site, and the operator is effectively implementing BMPs in compliance with City ordinances.

5.4.1 Prioritize Facilities

The City prioritizes all industrial facilities and the significant sources for commercial facilities (e.g., auto body shops, nurseries, and kennels) as high priority and inspects each facility twice during the five-year Permit term. If the City encounters a new industrial or commercial facility that may pose a threat to water quality, the City will evaluate the business using the evaluation criteria and ranking system that has been developed.

A summary of the prioritizations is provided below. The industrial and commercial facility information is current as of June 30, 2016.

Category	Total Number of Facilities Prioritized As High	Total Number of Facilities Prioritized As Low
Industrial Facilities	214	0
Commercial Facilities	858	0

5.4.2 Evaluate the Prioritization Criteria and Incorporate Exceedances of Water Quality Benchmarks as Criteria for Prioritizing Industrial Facilities

The City evaluated the prioritization criteria (see technical memorandum, *Industrial Facility Prioritization Criteria*, Appendix E-3 of the *2009-2010 Annual Report*) and incorporated exceedances of the water quality benchmark data as criteria for prioritizing the industrial facilities.

During the 2009-2010 reporting period, the City used benchmark data provided by the Regional Water Board for 2007-2008 and 2008-2009 to prioritize the industrial inspections. Facilities that received multiple compliance inspections due to violations or BMP issues—or that had benchmark exceedances during both years, based on reports received from the Regional Water Board—were prioritized so inspections for these facilities were completed first. A total of 35 industrial facilities met this criteria and were inspected before the remaining 86 industrial facilities. During the 2011-2012 reporting period, the City followed a similar process, but focused on inspecting all high priority facilities only. As such, a total of 113 industrial facilities were inspected during 2011-2012. No industrial facilities were inspected during the 2013-2014 reporting period.

During the 2014-2015 reporting period, staff identified all industrial facilities on the State's industrial permittee database and compared them with those on the City's Wastewater Pretreatment Permit facilities list to create the inspection inventory. If inspectors encounter additional facilities while in the field, these facilities will be added to the inventory. All industrial facilities are considered to be a high priority for inspections. No changes were made to this procedure in 2015-2016.

5.4.3 Inspections

The City ordinance allows authorized officers to enter any property or building to perform inspections. On refusal to allow inspection by the owner, tenant, occupant, agent or other responsible party, the City may seek an Administrative search warrant.

In order to ensure that the inspectors conduct thorough and consistent inspections, industrial and commercial checklists have been developed. City industrial inspectors receive proper training to adequately assess facilities and offer assistance in suggesting remedies. City ordinances and City Attorney's Office also provide the proper legal backing for inspections and any necessary enforcement.

5.4.4 Review/Revise the Industrial Inspection Checklists as Needed

The industrial inspection checklist was reviewed and revised during the 2013-2014 reporting period in preparation for the next round of inspections. The revised checklist was included as Appendix E-2 of the *2013-2014 Annual Report*.

5.4.5 Review/Revise the Commercial Business-Specific Inspection Checklists as Needed

Prior to the 2009-2010 commercial facility inspections, the City reviewed the kennel-specific checklist and determined that critical areas within kennel facilities that have a significant potential to discharge a pollutant for which there is a water quality based plan (i.e., pathogens) are inspected. In addition, general updates were made to the commercial inspection checklists. The commercial checklists used during 2009-2010 were provided as Appendix E-5 to the *2009-2010 Annual Report*. The commercial business-specific inspection checklists were also reviewed during the 2011-2012 reporting period in preparation for the start of the 2011-2012 round of inspections.

In 2013-2014, the City updated the checklists and had them ready for use during inspections, which began in March 2014. Revisions were made as needed to ensure that critical areas within facilities that have a significant potential to discharge a pollutant for which there is a water quality based plan are inspected. In particular, vehicle maintenance and repair and restaurant and food service facility checklists were revised to include mercury information and conformance to Universal Waste Rule standards, and the nursery checklist was revised to include an IPM-related item (Water Quality Based Programs Performance Standard). All updated inspection checklists were included in Appendix E-3 of the *2013-2014 Annual Report*.

5.4.6 Revise Industrial and Commercial Inspection Evaluation Checklists to Include Mercury Handling and Disposal Procedures

During the 2009-2010 reporting period, the City revised the industrial inspection checklist to include two questions pertaining to mercury (Water Quality Based Programs Performance Standard) (Appendix E-4 to the *2009-2010 Annual Report*). During the industrial inspections, the following questions were asked:

- Does the business have a mercury management, reduction, and elimination plan?
- Are mercury-containing devices present which show evidence of leakage, spillage, or damage that could cause leaks?

During the 2013-2014 reporting period, the City revised the commercial inspection evaluation checklists to include discussion of mercury-containing products, along with proper handling and disposal procedures (included as Appendix E-4 of the *2013-2014 Annual Report*).

5.4.7 Inspect High Priority Industrial and Commercial Facilities Twice during Permit Term

The second and final round of commercial and industrial inspections for the Permit term took place in 2011-2012. Prior to the commencement of the inspections, the City issued a press release advising businesses on the start of the inspections, the nature of the inspections, the types of businesses that would be inspected, and items that would be addressed during the inspections (Appendix E-3 of the *2011-2012 & 2012-2013 Annual Report*).

During 2012-2013 and at the request of the RWQCB, the City also conducted one unscheduled inspection of an industrial grain storage facility. Although the facility received a warning from the City stormwater inspector, the facility operators responded promptly, working with the City to resolve the issues and to bring the facility back into compliance. There were no other industrial facilities that necessitated an inspection in response to complaints during the 2011-2012 and 2012-2013 reporting periods.

In 2013-2014, administrative decisions were made to restructure the commercial and industrial inspection program within the City. The City will complete the first round of inspections within the first two and a half years of a permit term and complete the second round of inspections within the final two and half years of the permit term. Although a new permit was not issued in 2013-2014 as anticipated, staff began the next round of inspections in March 2014.

Stormwater inspections for restaurants were restructured in 2013-2014. An administrative decision was made to combine the stormwater inspection with the MUD – Wastewater Fats, Oils, and Grease (FOG) inspection under a combination “Commercial Food Service Establishment” (FSE) inspection. The inspection program launched in March 2014, and by June 30, 2014 a total of 279 food service establishments were inspected (i.e., 224 commercial businesses and 55 food services within Stockton-area schools). In addition, a number of high priority facility inspections were completed on a complaint-driven basis during 2013-2014.

In 2013-2014, to streamline the inspection process and facilitate cooperation on the part of businesses, staff developed a notification letter and an informational brochure, *Commercial & Industrial Stormwater Inspections (What to Expect)*, which was mailed to all affected businesses advising them of what to expect during a routine commercial/industrial stormwater inspection (included as Appendix E-5 of the *2013-2014 Annual Report*).

During the 2014-2015 reporting period, inspections of 313 food service establishments were completed during the period from July to November 2014. Inspections for this commercial facility type are now complete for this round. The City also completed 24 industrial facility inspections.

During the 2015-2016 reporting period, the City inspected industries, automotive facilities, and restaurants. The inspection results for industries and automotive facilities are included as **Appendix E-2**. Restaurant inspection results are currently available as hard copy only.

A summary of the industrial facility inspections conducted during the permit term from 2009-2016 is provided below.

High Priority Industrial Facility Inspection Summary (2009-2016)

Reporting Period	Total Number of Industrial Facilities Requiring Inspection	Total Number of Industrial Facilities Inspected		Inspection Results		
		By City	By RWQCB	Number of Facilities with SWPPPs on Site	Number of Facilities Adequately Implementing BMPs	Number of Facilities in General Compliance with Stormwater Control Requirements
2009-2010	121	121	4	98	94	94
2010-2011	N/A	9	N/A	6	1	2
2011-2012	113	113	0	96	108	113
2012-2013	N/A	1	N/A	1	1 ^a	1 ^a
2013-2014	176	N/A	N/A	N/A	N/A	N/A
2014-2015	153	36 ^b	N/A	23 ^b	21 ^c	21 ^c
2015-2016	214	54	0	45	47 ^d	52 ^e

Notes:

- [a] Although a City stormwater inspector issued a warning to one facility during inspection, the facility operators responded promptly by working with the City to bring the facility back into compliance.
- [b] The number of facilities reported during 2014-2015 (29) was revised in 2015-2016 due to improvement of the database. Number of facilities with SWPPPs was revised from 23 to 30. The number of adequately implemented BMPs and compliance with stormwater requirements was not updated due to reporting differences. The inspections performed but not reported in 2014-2015 are included in Appendix E-2.
- [c] The majority of issues identified during inspections were minor (e.g., BMP implementation needed improvement) and did not necessitate follow-up inspections.
- [d] The number of facilities responding positively to more than 12 of the 18 BMP-related questions in the inspection.
- [e] The number of facilities that did not receive a NOV during the inspection.

A summary of the commercial facility inspections conducted during the 2015-2016 reporting period is provided below.

High-Priority Commercial Facility Inspection Summary (2015-2016)

Category	Total Number of Commercial Facilities Requiring Inspection	Number of Commercial Facilities Inspected	Inspection Results	
			Number of Facilities Adequately Implementing BMPs ^a	Number of Facilities in General Compliance with Stormwater Control Requirements ^b
Automotive-Related Facilities	393	83	82	83
Dry Cleaners/Laundromats	0	0	0	0
Equipment Rentals	0	0	0	0
Pet-Related Facilities	0	0	0	0
Nurseries	0	0	0	0
Restaurants/ Food Service Establishments	465	275	^c	^c
Retail Gasoline	0	0	0	0
Other	0	0	0	0
Total	858	358	82^c	83^c

Notes:

- [a] The number of facilities adequately implementing BMPs was tabulated as the number of facilities responding positively to more than 9 of the 14 BMP-related questions during the inspection.
- [b] The number of facilities in general compliance was tabulated as the number of facilities that did not receive an NOV during the inspection.
- [c] This information was collected during restaurant inspections but was not entered into the database during 2015-2016. The database will be updated to include restaurant inspection results in 2016-2017. These results relate to the 83 automotive-related facility inspections performed during 2015-2016.

A summary of the commercial facility inspections conducted during the permit term from 2009-2016 is provided below.

High-Priority Commercial Facility Inspection Summary (2009-2016)

Reporting Period	Total Number of Commercial Facilities Requiring Inspection	Number of Commercial Facilities Inspected	Inspection Results	
			Number of Facilities Adequately Implementing BMPs ^a	Number of Facilities in General Compliance with Stormwater Control Requirements ^b
2009-2010	1,235	1,235	1,138	1,138
2010-2011	N/A	N/A	N/A	N/A
2011-2012	1,120	1,120	1,070	1,070
2012-2013	N/A	N/A	N/A	N/A
2013-2014	1,161	279	253	250
2014-2015	1,474	313	293	292
2015-2016	858	358	82 ^c	83 ^c

Notes:

- [a] The number of facilities adequately implementing BMPs was tabulated as the number of facilities that did not contain any inspection notes stating "Better BMPs Required" and/or required no follow-up inspections.
- [b] The number of facilities in general compliance was tabulated as the number of facilities that did not contain any inspection notes stating "Better BMPs Required" and/or required no enforcement actions and/or follow-up inspections. No commercial facilities requiring follow-up inspections were reported.
- [c] This information was collected during restaurant inspections but was not entered into the database during 2015-2016. The database will be updated to include restaurant inspection results in 2016-2017. These results relate to the 83 automotive-related facility inspections performed during 2015-2016.

The commercial facilities considered temporary or intermittent dischargers are not significant sources of pollutants in stormwater. The City inspects these facilities on an as-needed basis. An inspection is performed only if (1) there is a complaint filed; (2) a phone call, email, or inquiry via Ask Stockton is received regarding the discharge of potential pollutants into storm drain from these facilities; or (3) City field staff identifies a suspicious discharge.

During 2009-2010, the City updated the waste categories it uses to categorize illicit discharges. During 2010-2011, the City utilized the updated waste categories, as described in **Section 2**, to specifically track illicit discharges from these commercial sources.

Under the new system, each illicit discharge is tracked by facility type, activity causing the illicit discharge, and updated waste categories. The facility types to be tracked will incorporate subcategories of commercial facilities, including those considered to be temporary or intermittent sources, as listed below:

- Automotive washing and detailing
- Carpet cleaners
- Commercial pesticide applicators
- Concrete pouring contractors
- Concrete cutting contractors
- General building contractors
- Landscape installation / maintenance contractors
- Painting contractors
- Portable toilet rental and maintenance
- Pressure washers
- Street sweepers
- Swimming pool contractors
- Swimming pool maintenance
- Other

5.4.8 Evaluate the Feasibility of Developing a Compliance Rating System

During the 2009-2010 reporting period, the City evaluated the feasibility of developing a compliance rating system to track the effectiveness of the program and to assist inspectors in defining compliance. The City has determined that it will not develop a compliance rating system because it considers the current program to be effective, and such a system is not anticipated to significantly enhance the effectiveness of the program. The City will continue to implement the current industrial and commercial program, which includes progressive enforcement and the tracking of any enforcement actions taken against specific businesses.

5.4.9 Conduct Follow-up Inspections as Necessary

When facilities are deemed out of compliance, the City conducts follow-up inspections as necessary in order to bring the facility into compliance.

No follow-up inspections were conducted during the 2015-2016 reporting period based on the results of the industrial or commercial routine inspection results. The majority of issues identified during the 2015-

2016 industrial and commercial inspections were minor (e.g., BMP implementation needed improvement) and did not necessitate follow-up inspections. One industrial facility received follow-up inspections due to illicit discharges and this was documented in Section 2.

5.4.10 Identify How Inspections May Be Conducted for the Mobile Business Category

As discussed above, the Permittees developed a *Mobile Business Pilot Program: Carpet Cleaners Implementation Strategy* (Appendix E-5 of the *2009-2010 Annual Report*). Inspections of carpet cleaner businesses are challenging because they are often small and transient operations that lack a fixed facility location. Thus, a mandatory, regional self-certification program is implemented to cost-effectively and comprehensively address this requirement and to send a consistent message to carpet cleaners regarding the applicable regulations and BMPs that should be implemented. The Permittees will follow up with particular businesses if they are not responsive to the request to complete a self-certification form.

Based on the 2016 Mobile Business Program Carpet Cleaner Inventory (see **Section 5.3.5**), on January 29, 2016, the Permittees mailed each carpet cleaning business owner the Self Certification cover letter, the Carpet Cleaners Water Quality Self-Certification form, and the Stormwater Pollution Prevention for Carpet Cleaners brochure. The Permittees received 41 responses to the self-certification mailing. Of the 95 self-certifications mailed, 37 self-certifications were returned to the Permittees, four responses claimed the business was no longer in operation, and five were returned unopened. The information received from the returned self-certification forms was used to update the 2016 Mobile Business Program Carpet Cleaner Inventory.

The mobile business program is ongoing, and the Permittees will continue self-certification and outreach efforts to target mobile carpet cleaners during 2016-2017.

The Self-Certifications mailed and received during the last two reporting periods are summarized below.

Reporting Period	Self-Certifications Mailed	Self-Certifications Received by Permittees
Last Year 2014-2015	53 ^a	14
This Year 2015-2016	95	37

Note:

[a] Self-certification forms were mailed during the 2013-2014 reporting period.

5.5 IC3 – INDUSTRIAL/COMMERCIAL OUTREACH

The Industrial/Commercial Outreach Control Measure requires industrial and commercial businesses to reduce pollutants in stormwater discharges and effectively prohibits unauthorized non-stormwater discharges to the storm drain system. Although the City may provide guidance to facility operators on appropriate Source and Treatment Control BMP selection and application, the selection of specific BMPs to be implemented is the responsibility of the discharger.

5.5.1 Review/Revise BMP Fact Sheets for High Priority Facilities

In order to assist the industrial and commercial facilities in selecting and implementing the appropriate types of BMPs, the City developed BMP Fact Sheets for the high priority industrial and commercial businesses. The BMP Fact Sheets are made available on the City's website.¹ Business-specific BMP Fact Sheets are available for the following businesses:

- Auto Body Shops
- Auto Dealers
- Auto Repair Shops
- Dry Cleaning
- Equipment Rental
- Kennels
- Nurseries
- Restaurants
- Retail Gas Outlets

The brochures distributed during 2011-2012 inspections were provided to commercial businesses and included "About Today's Inspection" and the "Green Car Wash Program" (Appendix C-1 of the *2011-2012 & 2012-2013 Annual Report*), in addition to copies of the commercial inspection checklist (Appendix E-3 of the *2011-2012 & 2012-2013 Annual Report*). The "Green Car Wash Program" brochures were provided to businesses to promote the awareness of the fact that allowing a parking lot fundraiser car wash on facility premises could result in the detection of an illicit discharge of soapy water to the stormwater system, and the facility could subsequently be found in violation.

A review and revision of the business-specific BMP Fact Sheets began in June 2014. The first BMP Fact Sheet updated was for the Restaurants/Food Service Establishments (Appendix E-6 of the *2013-2014 Annual Report*).

¹ http://www.stocktongov.com/documents/bySC/Municipal_Uilities.html

During 2013-2014, to streamline the inspection process and facilitate cooperation on the part of businesses, staff developed a notification letter and an informational brochure, *Commercial & Industrial Stormwater Inspections (What to Expect)*, to be mailed to all affected businesses advising them of what to expect during a routine commercial/industrial stormwater inspection (Appendix E-5 of the *2013-2014 Annual Report*). During the 2014-2015 reporting period, the City revised the brochure “About Today’s Industrial Inspection.” The revised brochure is included as Appendix E-3 of the *2014-2015 Annual Report*.

Prior to the 2014-2015 inspections, the City trained the industrial inspectors on stormwater pollution prevention efforts unique to the industrial business community, as well as the new mandates to the industrial community as a result of the effective implementation of the New State Industrial Permit beginning in July 2015. The inspectors were instructed on how to use the industrial inspections as a means of providing outreach to the facility owners/operators about the new mandates.

During the 2015-2016 inspections, the City worked with its inspectors to ensure that facilities that have a significant potential to discharge a pollutant for which there is a water quality-based plan (i.e., pesticides, pathogens, mercury) receive guidance. For example, since there is a Pathogen Plan, kennels receive a kennel-specific BMP Fact Sheet that identifies BMPs that would reduce the discharge of pollutants of concern (Water Quality Based Programs Performance Standard). The City Stormwater Inspector spent additional time discussing the information included in the BMP Fact Sheets while distributing them to businesses with a significant potential to discharge a pollutant for which there is a water quality-based plan. In particular, these businesses included kennels, nurseries, automotive facilities (auto body and auto dealers), and dry cleaners. The revised brochures are included as **Appendix E-3**.

5.5.2 Distribute BMP Fact Sheets During Inspections

The City distributes BMP Fact Sheets to the facility owners/operators as part of the industrial and commercial facility inspection procedures. The City distributed the brochure “About Today’s Industrial Inspection” (Appendix E-3 of the *2014-2015 Annual Report*) at 48 of the 54 industrial sites inspected during 2015-2016. The Restaurant BMP fact sheet updated in 2013-2014 (Appendix E-6 of the *2013-2014 Annual Report*) was distributed to all 275 food service establishments inspected during 2015-2016 and the Automotive BMP fact sheets updated in 2015-2016 (included in **Appendix E-3**) were distributed to 73 of the 83 automotive facilities inspected during 2015-2016. BMP fact sheets have been and will continue to be updated for distribution during inspections.

A summary of BMP Fact Sheets distributed during the 2015-2016 inspections is provided below.

Category	Total Number BMP Fact Sheets Distributed
Industrial	
Industrial Facilities	48
Commercial	
Automotive-Related Facilities	73
Restaurants/Food Service Establishments	275
Total	396

5.5.3 Target Outreach Efforts as Needed

Although the City opted not to develop a compliance rating system (see IC2), during the 2011-2012, 2012-2013, 2013-2014, 2014-2015 and 2015-2016 reporting periods, the City provided outreach to high priority facilities, as described in **Sections 5.5.1** and **5.5.2**.

5.5.4 Identify BMPs and Develop an Outreach/Education Strategy for the Mobile Business Category Identified in IC1

During the 2009-2010 reporting period, the Permittees identified BMPs for the mobile business category identified in IC1, carpet cleaners, and developed an outreach/education strategy. In order to assist carpet cleaners in selecting and implementing the appropriate types of BMPs, a *Carpet Cleaner BMP Fact Sheet* was developed (Attachment C to Appendix E-2 of the *2009-2010 Annual Report*).

Outreach to carpet cleaners takes several forms, including distribution of BMP Fact Sheets, outreach via carpet cleaner associations and suppliers, and outreach to homeowners. The goal of this multi-faceted approach is to increase carpet cleaners' awareness of water quality issues and promote compliance with regulations.

In addition, the Permittees will contact the inventoried carpet cleaners by mail and request that they fill out the Self-Certification Form. This approach will ensure that the Permittees provide outreach to the inventoried carpet cleaners, since educational materials will also be provided as part of the mailing. As of 2013-2014, the mailing (Appendix E-6 of the *2013-2014 Annual Report*) included the following components:

- Cover letter that provides background information on stormwater quality, the purpose of the mailing, and what is required to be completed;
- Self-Certification Form; and
- *Stormwater Pollution Prevention for Carpet Cleaners* brochure.

5.5.5 Implement Outreach Efforts to Mobile Businesses

During the 2015-2016 reporting period, the Permittees included outreach materials in the mailings to businesses in the 2016 Mobile Business Program Carpet Cleaner Inventory (see **Sections 5.4.10 and 5.5.4**).

The Permittees have identified potential partners in the carpet cleaning industry, such as carpet cleaner industry associations and suppliers, and will be pursuing and exploring relations with these potential partners as a joint effort in reaching out to mobile carpet cleaners in the next permit term.

The Permittees also recognize that residents who choose to do their own carpet cleaning should follow the same BMPs as mobile business operators. Outreach to homeowners regarding these BMPs primarily occurs via the County's Web site.² The focus of these BMPs is to educate homeowners and to provide the motivation to protect water quality from illicit discharges that may occur during carpet cleaning activities.

² www.sjcleanwater.org

5.6 IC4 – ENFORCEMENT

The Enforcement Control Measure outlines the progressive levels of enforcement applied to industrial and commercial facilities that are out of compliance with local ordinances and establishes the protocol for referring apparent violations of facilities subject to the Industrial General Permit to the Regional Water Board.

5.6.1 Implement the Progressive Enforcement and Referral Policy

The City has a progressive enforcement and referral policy so that the enforcement actions match the severity of the violation and include distinct, progressive steps. Options are available for progressive, corrective actions for repeat offenders. Enforcement actions are taken in accordance with the *Municipal Utilities Department Directive Prohibiting Non-Stormwater Discharges to the Storm Drainage System* (MUD Directive) (Appendix B-8 of the *2009-2010 Annual Report*). Inspections are performed to assess compliance with City stormwater ordinances. Noncompliance may include non-submittal by an industrial facility of an NOI, failure to implement BMPs, or other violation of City ordinances.

The number and types of enforcement actions taken *against all industrial/commercial businesses* during inspections and illicit discharge responses are summarized below.

Stormwater Division Enforcement Actions ^a	2014-2015 ^b	2015-2016	
		Illicit Discharge Response ^c	Industrial/ Commercial Inspections ^d
None – No Action Taken ^e	1	14	NT ^f
Administrative			
Verbal Warning	7	46	NT ^f
Notice of Violation ^g	-	-	12
Cease and Desist Order ^g	0	6	-
Violation Warning Notice ^g	3	20	-
Notice to Clean ^g	4	25	-
Stop Work Order ^g	0	4	-
Administrative Citation (Fine) ^g	1	9	-
Correction Order ^g	7	23	-
Criminal Enforcement^h			
Misdemeanor	0	0	0
Infraction	0	0	0
Total	22	145	

Notes:

- [a] The total number of enforcement actions taken may be greater than the number of verified incidents due to multiple enforcement actions for a single incident.
- [b] Industrial & Commercial inspections were performed by the Environmental Control Division in 2014-2015. Enforcement was tracked in the Illicit Discharges Database (Appendix B-1 of the *2014-2015 Annual Report*).
- [c] The number of enforcement actions taken during responses to reports of illicit discharges from industrial/commercial facilities during 2015-2016 (see Section 2).
- [d] The number of enforcement actions taken during the industrial and automotive commercial businesses inspections by the Stormwater Division during 2015-2016.
- [e] **None – No Action Taken:** This enforcement action type denotes that no enforcement action was taken. The responsible party may have taken corrective measures before agency personnel arrived and/or a responsible party was not identifiable.
- [f] NT – Not Tracked, however multiple enforcement actions of this type were taken.
- [g] The **Notice of Violation – Administrative Citation** form used by MUD – Stormwater includes the following enforcement options: Cease and Desist Order; Violation Warning Notice; Notice to Clean; Stop Work Order; Fine; and Correction Order. During 2015-2016, these options were specified for enforcement actions taken during illicit discharge responses, while only the NOV was indicated in the industrial/ commercial inspection results.
- [h] **Criminal Enforcement:** This category presumes that an action turned over to the District Attorney resulted in a criminal prosecution within the year of the incident. However, data for this section can only be updated in subsequent years (i.e., after criminal prosecution has been successful).

Total number of incidents with Administrative enforcement: **145**

Total number of enforcement actions taken during the reporting period: **145**

Number of repeat offenders identified during the reporting period: **12**³

Total number of complaints/problems referred to the Regional Water Board: **1** (illicit discharge)

³ Repeat offenders were identified by tracking responsible parties for multiple incidents at the same address on different dates. All were identified during illicit discharge responses.

5.6.2 Track Enforcement Actions Using the Industrial/Commercial Database

During the 2015-2016 reporting period, the City tracked inspections within an Excel database. Enforcement actions were recorded as “NOV issued” or the date by which a violation must be corrected. However, enforcement was not a focus of, and nor were egregious violations were found during the 2015-2016 industrial or commercial inspections.

5.6.3 Implement Procedures for Responding to Regional Water Board-Based Complaints

The City implements procedures for responding to complaints forwarded by the Regional Water Board to ensure inspections occur within two business days. Inspections initiated in response to complaints will determine, at a minimum, if the facility is out of compliance with City stormwater ordinances.

The City will continue to work closely with the Regional Water Board when a facility is identified as requiring a compliance inspection.

5.6.4 Implement Industrial Referral Policy

The City will review and modify, as necessary, the procedures for informing the Regional Water Board of violations at industries covered by the Industrial General Permit. Referral in writing to the Regional Water Board is appropriate concurrently (within 30 days) with issuance of Notices of Violation or the discovery of the non-filer. The City must refer industrial business violations to the Regional Water Board under three circumstances:

- If a facility fails to respond to progressive enforcement actions;
- If an industrial facility receives a notice for a significant violation under the City’s stormwater ordinance; or
- If it is determined that a site should obtain coverage under the General Industrial Permit (non-filers).

The referral to the Regional Water Board should include:

- Name of facility
- Operator of facility
- Owner of facility
- Industrial activity or activities subject to the state Industrial General Permit conducted at the facility
- Records of communication between the City and facility owner and operator.

Non-filers are referred to the Regional Water Board via its website as they are discovered.

The table below summarizes the number and causes of referrals made to the Regional Water Board due to illicit discharge violations, and not during the 2015-2016 industrial inspections.

Cause of Referral	Total Number of Referrals
Progressive Enforcement	1
Significant Violations	1
Potential Non-Filers	1

The one case involved progressive enforcement measures due to illicit discharge violations and failure to respond to progressive enforcement. The business was reported to the Regional Water Board.

5.6.5 Develop an Enforcement Strategy Specifically Addressing the Mobile Business Category Identified in IC1

The Permittees have developed an enforcement strategy that specifically addresses the mobile business category identified in IC1, carpet cleaners.

The Permittees have progressive enforcement and referral policies in place to address violations by commercial or industrial businesses, including carpet cleaners. As with other businesses, enforcement actions match the severity of violation and include distinct, progressive steps. Enforcement steps are addressed within the Permittees' ordinances, as well as within the MUD Directive (Appendix B-8 of the *2009-2010 Annual Report*).

The progressively severe corrective actions include verbal warnings, followed by written warnings and legal action, if necessary. Illicit discharges are addressed in a formal manner through the appropriate administrative remedies, depending upon the compliance history of the business. Corrective actions are taken in every instance where a responsible party is identified. Progressive enforcement will be utilized when the Permittees are conducting follow-up actions for businesses that do not respond to the initial mailing by failing to return the Self-Certification Form within the specified timeframe stated on the form (i.e., 90 days). Enforcement will include the following steps:

- **Second notification** – A second mailing (as described within the Carpet Cleaner Self-Certification Form section) will be sent, with a cover letter stating that if the Self-Certification Form and appropriate business license application(s) are not completed within 30 days, a Notice of Violation will be sent to the business owner.
- **Notice of Violation** – If the Permittees do not receive the Self-Certification Form and appropriate business license application(s) within 30 days, a Notice of Violation will be sent to the business owner.

Major violations of stormwater regulations or violations that have a potential for a significant impact to the environment will result in a more stringent enforcement response. Repeat offenders (i.e., businesses with multiple violations within a 12-month period) will also be subject to progressive enforcement actions. Incidents that require clean-up will be re-inspected within a short timeframe appropriate for mobile businesses (i.e., within hours).

Enforcement against non-responsive mobile carpet cleaning businesses may include a NOV or more stringent enforcement steps. Violations will be mailed to mobile carpet cleaning businesses that are unresponsive 30 days past the initial 90-day allowance.⁴ To date, no NOVs have been issued.

During the 2015-2016 reporting period, the Permittees conducted their Mobile Business Program self-certification efforts, the results of which are detailed in **Section 5.4.10**.

The number and types of enforcement steps, taken during the 2015-2016 reporting period *that were related to Self-Certification Forms* are summarized below.

Total Number of Enforcement Steps Related to Self-Certification Forms	
Second Notification (Mailing)	Notice of Violation
55 ^a	0

Note:

[a] Second notices for the 2015-2016 reporting period were sent on August 5, 2016.

Total number of enforcement actions taken during this reporting period: 0

Number of repeat offenders identified during the reporting period: 0

The number and types of enforcement actions taken during the 2015-2016 reporting period *against carpet cleaners* are summarized below.

	Administrative Remedies			Legal Action
	Verbal Warnings	Warning Notice or Notice to Clean	Notice of Violation	Type (Misdemeanor, Infraction. Etc.)
Total Number	0	0	0	0

Total number of enforcement actions taken during this reporting period: 0

Number of repeat offenders identified: 0

⁴ During the 2015-2016 reporting year, the response timeframe for businesses to respond to the initial mailing was 30 days. Non-responsive businesses have an additional 30 days to respond from the receipt of a second notification.

5.7 IC5 – TRAINING

The Training Control Measure is important for the implementation of the Industrial and Commercial Program Element. An effective training program is one of the best pollution prevention BMPs that can be implemented because it prompts behavioral changes that are fundamentally necessary to protect water quality.

Areas of Focus for the Industrial/Commercial Program Training

Target Audience	Format	Subject Material	Comments
<ul style="list-style-type: none">Industrial/Commercial inspectors (City staff, not contracted inspectors)Code Enforcement Officers	<ul style="list-style-type: none">ClassroomField Demos	<ul style="list-style-type: none">Overview of stormwater management programStormwater ordinance and enforcement policyBMPs for facilitiesDatabase tracking	<ul style="list-style-type: none">Training seminars or workshops related to the program may be made available by other organizations

5.7.1 Conduct Training

The last training for the Industrial and Commercial Program occurred on May 18, 2015, prior to the industrial and commercial inspections that were conducted in 2015-2016. The Deputy Director of Maintenance and Collections Systems and the Stormwater Program Manager attended the *NOI/NEC Coverage Under Industrial Permit Workshop* hosted by the State Water Resources Control Board – Stormwater Section on May 24, 2016. The purpose of attendance was to identify any updates or new information that City inspectors should be trained on; however, the information was the same as May 2015, thus, there was no need to conduct additional training for inspectors in 2015-2016.

5.8 IC6 – EFFECTIVENESS ASSESSMENT

To determine the effectiveness of the Industrial and Commercial Program, a comprehensive assessment of the program data is conducted as a part of the annual report. The results of this assessment are used to identify modifications needed for the program. Each year, the effectiveness assessment is reviewed and revised as needed.

By conducting these assessments and modifying the program as needed, the City ensures that the iterative process is used as an effective management tool. Due to the types of data collected for the Industrial and Commercial Program, the assessment primarily focused on Outcome Levels 1, 2, and 3.

- Outcome Level 1 (L1) answers the question: Did the City implement the components of the Permit and the 2009 SWMP?
- Outcome Level 2 (L2) answers the question: Can the City demonstrate that the control measure/performance standard significantly increased the awareness of a target audience?
- Outcome Level 3 (L3) answers the question: Can the City demonstrate that the control measure/performance standard significantly modified the behavior of a target audience?

The table below summarizes the effectiveness assessment conducted for the Industrial and Commercial Program Element. Additional detail for each component of the assessment is provided on the following pages.

Program Effectiveness Assessment Summary for Industrial/Commercial Program

Industrial/Commercial	Level 1	Level 2	Level 3	Level 4
	Stormwater Program Activities	Barriers and Bridges to Action (Knowledge/Awareness)	Target Audience Actions	Source Contributions
IC1 – Facility Inventory	C – Maintain/ Update Industrial/ Commercial Facility Inventory	N/A	N/A	N/A
IC2 – Prioritization and Inspection	C – Prioritized Facilities C – Conducted Inspections C – Mobile Business Self-Certification	C – Received Self-Certification Forms	C – BMP Implementation	N/A
IC3 – Industrial/ Commercial Outreach	C – Reviewed/Revised Outreach Material C – Distributed Outreach Material	A	A	N/A
IC4 – Enforcement	C – Implemented Progressive Enforcement C – Tracked Enforcement Actions	N/A	N/A	N/A
IC5 – Training	C – Training	A	A	N/A

C – An effectiveness assessment was conducted during the reporting periods.

A – It is anticipated that an effectiveness assessment may be conducted in future annual reports

N/A – This outcome level is not applicable for this control measure

Following is an assessment regarding the effectiveness of the Industrial and Commercial Program.

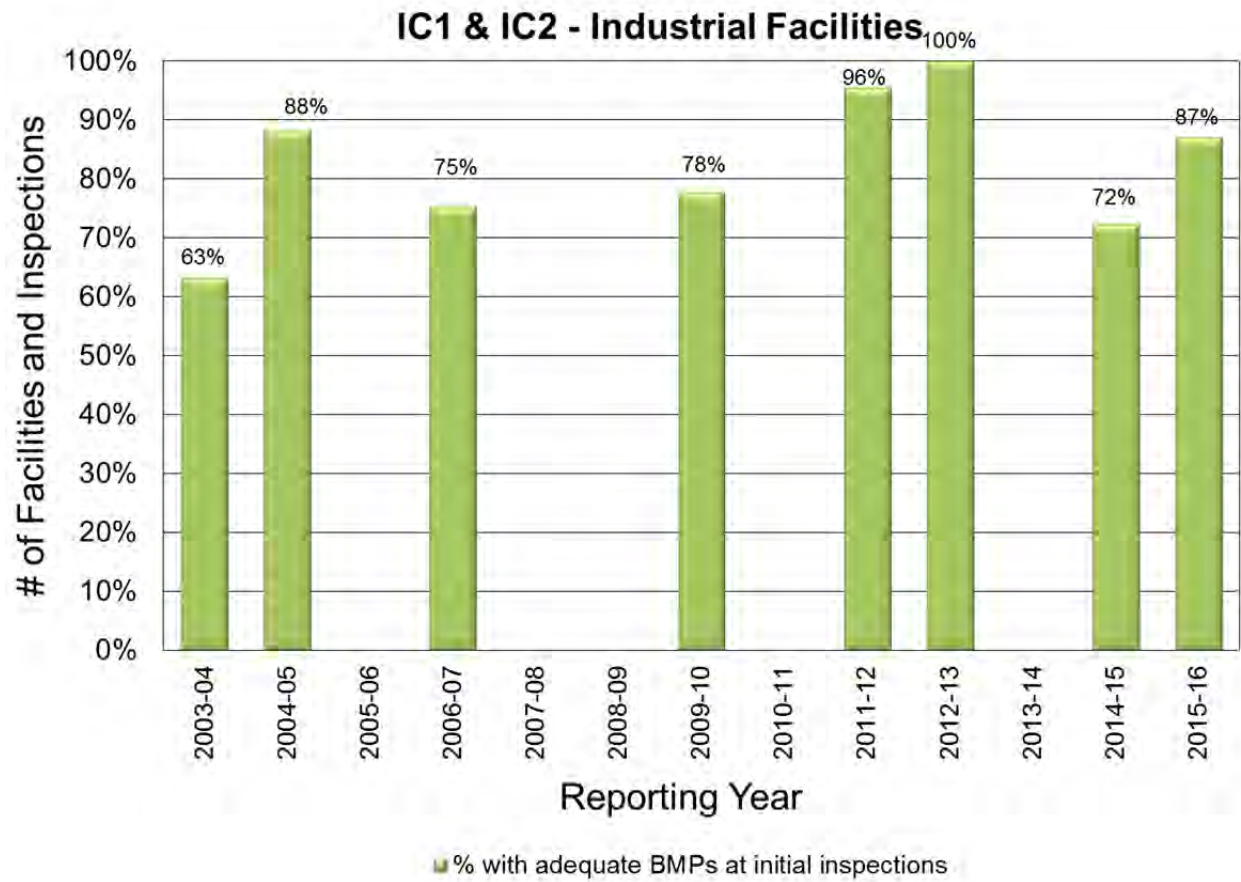
IC1 - Facility Inventory

The City maintains and updates the inventory of industrial and commercial facilities prior to the start of each inspection round. As of June 30, 2016, 214 industrial facilities and 858 commercial facilities have been inventoried as existing within the City's jurisdiction. **(L1)**

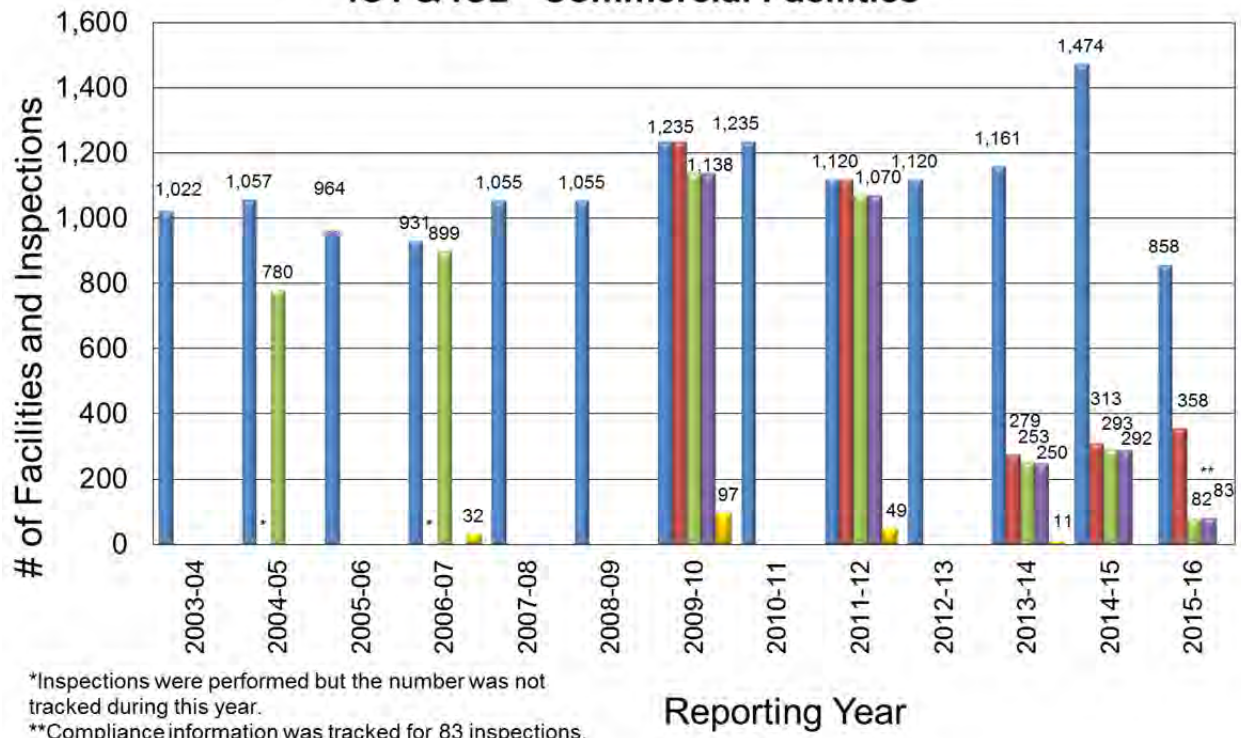
IC2 - Prioritization and Inspection

Since 2003-2004, the City has performed more than 721 industrial and 3,305 commercial facility inspections. During the most recent inspections conducted in 2015-2016, all of the industrial and commercial facilities were prioritized as "high". **(L1, L3)**

- Of the 54 industrial facilities inspected in 2015-2016, 52 (96%) were in general compliance with stormwater control requirements.
- 358 commercial facilities were inspected in 2015-2016 and 83 inspection results were entered into the database as of June 30, 2016. Of those 83 inspection results entered, 100% were in general compliance with stormwater control requirements.
- The number of commercial facilities adequately implementing BMPs at the time of initial inspection and those in general compliance with stormwater control requirements has increased over time, indicating increased awareness of the requirements and the need for BMPs.
 - The average number of industrial facilities with adequate BMPs in place at the time of the initial inspection has increased by 11% since the previous permit term (86.5% from 2007-2008 to 2015-2016, compared to 75.6% from 2003-2004 to 2006-2007).
 - The average number of commercial facilities with adequate BMPs in place at the time of the initial inspection has increased by 21% since the previous permit term (95% from 2007-2008 to 2015-2016, compared to 74% from 2003-2004 to 2006-2007).
 - Since tracking began (2009-2010), an average of 88% of industrial facilities and 86% of the commercial facilities have been found to be in general compliance with stormwater control requirements.

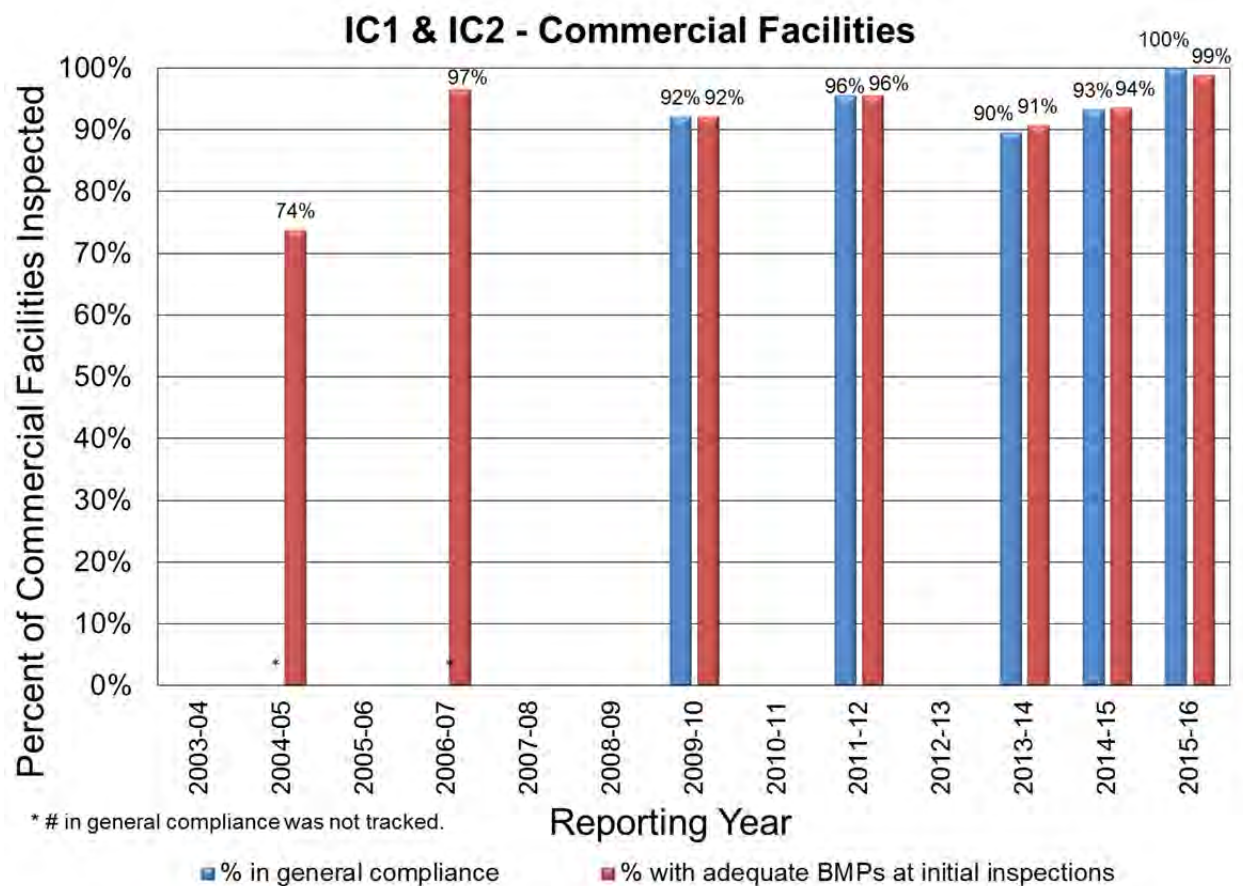


IC1 & IC2 - Commercial Facilities



- Total Commercial Facilities (Significant Sources)
- # of Facilities with Adequate BMPs
- # of Facilities Requiring Follow Up Inspections

- Total # Inspected by City
- # of Facilities in General Compliance



The City implemented the Mobile Business Pilot Program for carpet cleaners. **(L1, L2)**

- In 2015-2016, the City received 37 self-certification letters from mobile cleaners.

IC3 - Outreach

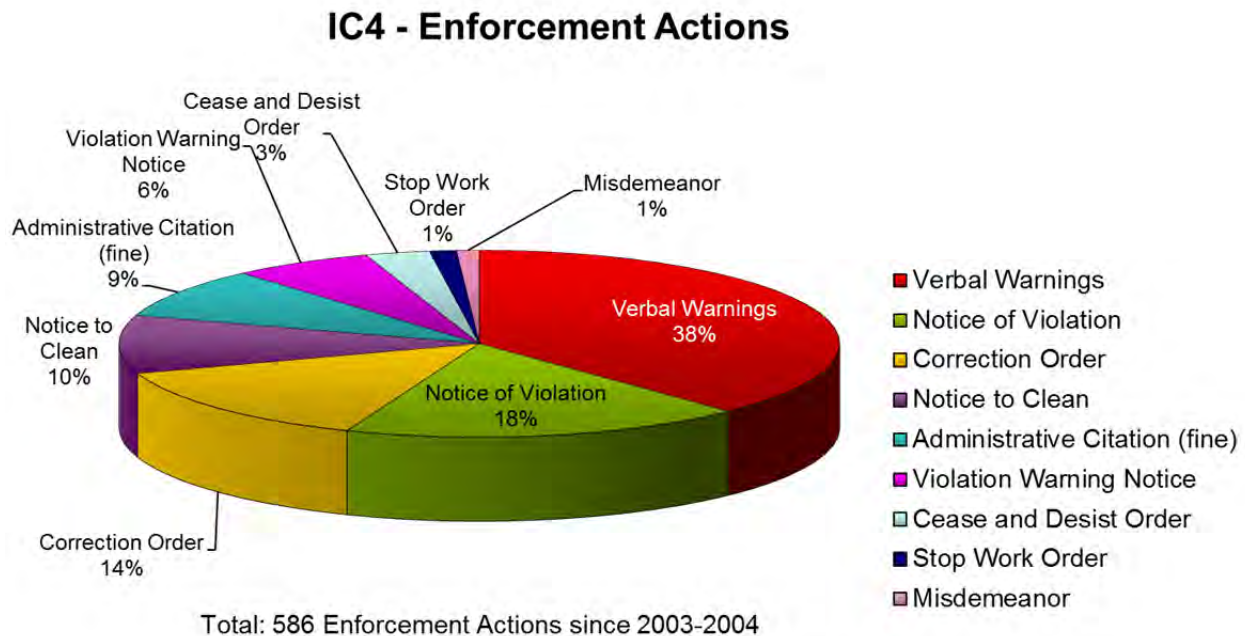
The City updated and distributes BMP Fact Sheets to the facility owners/operators as a part of the industrial and commercial facility inspection procedures. The brochure “About Today’s Industrial Inspection” was distributed at 48 industrial sites, and BMP fact sheets were distributed at 348 commercial sites during the 2015-2016 inspections. **(L1)**

IC4 - Enforcement

The City has developed and currently employs a progressive enforcement policy so that the enforcement actions match the severity of the violation and include distinct, progressive steps. (L1)

Since 2003-2004, the City has taken 586 enforcement actions against industrial and commercial businesses and utilized progressive enforcement when necessary. (L1)

- The primary type of enforcement actions used has been Verbal Warnings (38%); however, progressively more severe enforcement actions have been taken as needed to bring facilities into compliance.



The City continued to track enforcement actions taken. (L1)

The City has developed and currently implements procedures for informing the Regional Water Board about potential non-filers or other enforcement related issues. (L1)

The City has developed and implemented an enforcement strategy for mobile carpet cleaners operating within the SUA. (L1)

IC5 - Training

City staff are attending training sessions related to the Industrial and Commercial Program Element. (L1)

- Since 2014-2015, a total of 19 City staff have attended three Industrial and Commercial training sessions.

Section 6

Construction (CO)

6.1 OVERVIEW

During construction projects, a number of activities may generate or mobilize pollutants. The purpose of the Construction Program Element is to coordinate City programs and resources to effectively reduce pollutants in runoff from construction sites during all construction phases.

6.2 CONTROL MEASURES

The City has developed several Control Measures and accompanying performance standards to ensure that the construction-related Permit requirements are effectively developed and implemented. Each Control Measure includes accompanying performance standards, which, once accomplished, constitute compliance with the SWMP/Permit.

The Construction Program Control Measures consist of the following:

CO	Control Measure
CO1	Municipal Code for Construction Sites
CO2	Plan Review and Approval Process
CO3	Construction Projects Inventory
CO4	Construction Outreach
CO5	Construction Site Inspections & BMP Implementation
CO6	Enforcement
CO7	Training
CO8	Effectiveness Assessment

The next section of the Annual Report provides information on the specific tasks initiated and/or completed during the reporting period pursuant to the Construction Program performance standards and implementation schedules.

6.3 CO1 – MUNICIPAL CODE FOR CONSTRUCTION SITES

The goal of this Control Measure is to ensure that the City has adequate legal authority to control pollutants from construction sites with land disturbances greater than or equal to one acre. This authority is typically provided through the adoption of an ordinance (and resulting codification in the City's Municipal Code) and erosion and sediment control standards. This Control Measure addresses specific legal authority issues related to construction activities and should be implemented in coordination with Section 1 of the SWMP.

6.3.1 Review/Modify Grading and Erosion Control Ordinance and Standard Specifications

The City adopted a Grading and Erosion Control Ordinance (Municipal Code Section 15.48) effective July 1, 1997.¹ Pursuant to this ordinance, construction activities (with some exclusions, such as mining and agriculture) disturbing more than 50 cubic yards of material and clearing and grubbing more than 0.5 acres are required to obtain a Grading and Erosion Control Permit.

During the 2008-2009 reporting period, the City reviewed and modified the Grading and Erosion Control Ordinance and the Standard Specifications, including items such as changing the Grading and Erosion Control Ordinance language stating "...Disturbances of 5 Acres or More" to "Disturbances of 1 Acre or More". The revised Grading and Erosion Control Ordinance and the Standard Specifications were provided as Appendix F-1 of the *2008-2009 Annual Report*.

¹ This ordinance, Stockton Municipal Code - Grading and Erosion Control (Title 15: Buildings and Construction), can be found online at www.stocktongov.com/. The City of Stockton Standard Specifications (Appendix D-1 of the SWMP) also require erosion and sediment control measures.

6.4 CO2 – PLAN REVIEW AND APPROVAL PROCESS

Effective planning of construction site activities leads to minimizing erosion and preventing pollutants from entering the storm drain system. The City requires projects that disturb greater than one acre of land to address pollutants and activities during the construction phase of the project. Prior to issuing a grading permit, the City reviews construction drawings to ensure that erosion and sediment control BMPs and source and treatment control BMPs are identified.

6.4.1 Review Grading and Building Permit Applications for SWPPP Requirements

The City's Grading and Erosion Control Ordinance (see Control Measure CO1) requires the submittal with grading plans of proof that a NOI has been filed and that a SWPPP has been developed. The City provides a "Planning & Permits" page for project developers on its Web site that includes information on SWPPP requirements, as well as a link to the Construction General Permit and related State Board guidance.² The SWPPP requirements listed on the City "Planning & Permits" page cover site map(s), stormwater BMPs, and a monitoring program/plan. Additionally, the page references Section A of the Construction General Permit, which describes the elements that a SWPPP must contain.

To ensure that site plans, improvement plans, and building plans are reviewed for stormwater requirements, all plans that are submitted to the City are routed to the MUD representative at the Permit Center for review. A plan review process flow chart was provided as Appendix F-1 to the 2009 SWMP. As part of this review, the MUD representative in the Permit Center reviews project plans, as well as grading and building permit applications, to determine if a SWPPP is required and to verify the following:

- An NOI has been submitted to the State Water Resources Control Board;
- The name of and contact information for the person responsible for SWPPP implementation are provided; and
- The location of and details for all construction activity BMPs are listed.

No permit is issued until the stormwater requirements are satisfied.

During the 2015-2016 reporting period, the City reviewed the following permit applications to ensure that they complied with the above requirements.

Time Period	Grading Permit Issued	No. of Applicants Requiring SWPPPs and NOIs
Last Year 2014-2015	12	12
This Year 2015-2016	29	30

A detailed list of all construction sites tracked during the 2015-2016 reporting period is provided as **Appendix F-1**.

² <http://www.stocktongov.com/government/departments/municipalUtilities/utilStormPlan.html>

6.4.2 Develop a Plan & Permit Application Review Procedure Handout

Although the City has not specifically developed a Plan & Permit Application Review Procedure handout explaining the review procedure to be provided to all construction project applicants identified as having to comply with the Grading and Erosion Control Ordinance, a flow chart of the plan review process is provided as Figure 2-3 of the 2009 SWQCCP and encompasses both construction and post-construction requirements. This flow chart is available to the public on the City's Web site and can be found within the 2009 SWQCCP.³

6.4.3 Distribute the Plan & Permit Application Review Procedure Handout

A flow chart of the plan review process was provided as Figure 2-3 of the 2009 SWQCCP and encompasses both construction and post-construction requirements. This flow chart is available to the public on the City's Web site and can be found within the 2009 SWQCCP.

6.4.4 Evaluate the County's Construction Small Site SWMP

During the 2009-2010 reporting period, the City evaluated the County's Construction Small Site Stormwater Management Plan and determined that a similar handbook is not warranted for the City, since smaller sites (<1 acre) are adequately addressed by the City's current process. Such sites are not routinely inspected by MUD Stormwater; however, all sites that have a building permit are inspected by Building Inspectors, and they conduct a Stormwater Inspection. If a site has inadequate BMPs, the site is referred to MUD Stormwater for continued follow-up.

In 2013-2014, the City completed a Construction General Permit Fact Sheet, entitled *Stormwater Program Best Management Practices for all Construction Sites*, for distribution at the permit counter by City staff. The fact sheet provides a general overview of the various BMPs required on construction sites. The new fact sheet has been designed to assist applicants for both small and large sites during the project planning phase and throughout the construction phase.

During the 2014-2015 and 2015-2016 reporting periods, the City found it unnecessary to update the Construction General Permit Fact Sheet.

³ http://www.stocktongov.com/files/sw_swqccp.pdf

6.5 CO3 – CONSTRUCTION PROJECTS INVENTORY

The Construction Projects Inventory Control Measure involves tracking construction sites from the planning stage to completion. This is essential for ensuring that stormwater pollutants are reduced to the MEP. Maintaining a database to track all stages of the construction process is the foundation of construction-related source identification and helps to ensure that pollution prevention and source control are emphasized during all phases of the construction project.

6.5.1 Maintain and Update the Construction Project Database

The MUD – Stormwater Management Program maintains a database system that is capable of tracking inspections that occur at each construction site. The current database fields include:

- Site owner and contact information
- Name, address, and description (type) of project
- WDID numbers
- Inspector and inspection date
- Comments on site conditions
- Notices of Violation and other letters sent

The City maintained and updated the Construction Project Database during the 2015-2016 reporting period.

The following construction sites were tracked within the City's database during the 2015-2016 reporting period.

Construction Site Category	Total Number of Active Construction Sites Requiring SWPPPs	Total Number of Completed Construction Sites
Private Projects	18	4
Public Projects	7	1

A detailed list of all construction sites tracked during the 2015-2016 reporting period is provided as **Appendix F-1**.

6.6 CO4 – CONSTRUCTION OUTREACH

The Construction BMP Implementation Control Measure is required to ensure that appropriate BMPs are implemented at construction sites to prevent pollutants from being discharged to the storm drain system. This Control Measure focuses on the City's requirements for BMPs at construction sites and the associated outreach efforts to the building community.

6.6.1 Distribute Appropriate BMP Fact Sheets During Inspections

As noted in Control Measure CO2, all construction project applicants identified as having to comply with the Grading and Erosion Control Ordinance are provided a two-page handout describing the application review procedure. The City also provides a link on its Web site to the State's Model SWPPP that includes a list of BMPs applicable to construction activities.

During 2009-2010, a flyer announcing and explaining the requirements of the new General Construction Permit requirements was developed and mailed out to property owners with active construction projects. During the 2010-2011 reporting period, appropriate outreach materials (e.g., concrete washout/trash, general BMPs) were provided during inspections. In addition, property owners were referred to the CASQA BMP handbooks.

In 2011-2012 and 2012-2013, the Wet Season Stormwater Construction Site Reminder was sent to all active construction site managers, operators, and developers in charge of sites that are inspected by the City on a monthly basis as a reminder to prepare their sites for the rainy season.

During the 2013-2014 reporting period, the City developed a Construction General Permit Fact Sheet, entitled *Stormwater Program Best Management Practices for all Construction Sites*, for distribution at the permit counter by City staff. It is also available on the City's Web site.⁴ The fact sheet provides a general overview of the various BMPs required on construction sites. The City also updated the Web site with the City's PowerPoint presentation for the May 9, 2014 Construction Stormwater Workshop.⁵

During the 2014-2015 reporting period, the Fact Sheet was distributed by staff at the Permit Center to small development sites applying for either a building permit or grading permit, including sites less than one acre; however, the number of sheets distributed was not tracked. Fact Sheet distribution did not occur during inspections in 2014-2015 or 2015-2016, but this outreach will begin for inspections conducted in 2016-2017.

6.6.2 Conduct Contractor Tailgate Meetings

The City conducts education and training for construction activities through informational brochures, the City's Web site, and through one-on-one discussions during site inspections by MUD – Stormwater Construction staff. Experience has shown that the best environment to educate contractors is in the field, where issues, BMP implementation, and regulatory requirements can be discussed on-site.

Tailgate meetings are held on an as-needed basis by the MUD Stormwater Inspector as inspections are conducted. These meetings are held on-site with the site superintendent and any of the sub-consultants that are present that day. During these meetings, the MUD Stormwater Inspector reviews the Construction General Permit and City requirements for construction sites, including BMPs.

⁴ http://www.stocktongov.com/files/sw_construction_bmp.pdf

⁵ http://www.stocktongov.com/files/sw_construction_training.pdf

A summary of the contractor tailgate meetings held during the 2015-2016 reporting period is provided below.

Date	Location	Number of Active Construction Sites Represented	Number of Attendees
2/2/2016	3663 Arch Rd, Stockton CA 95215	1	8
3/10/2016	1122 Runway Dr, Stockton, CA 95206	1	6
3/15/2016	36 E Weber Ave, Stockton, CA 95202	1	3
4/5/2016	5756 Pacific Ave # 14, Stockton, CA 95207	1	4
5/31/2016	206 N Sutter St, Stockton, CA 95202	1	3
	Total	5	24

6.6.3 Conduct Training for Developers, Builders and Contractors

The City has invited developers, builders, and contractors to internal construction training. During the 2015-2016 reporting period, the City held five contractor tailgate meetings that drew 24 attendees, as described in **Section 6.6.2**.

6.7 CO5 – CONSTRUCTION SITE INSPECTIONS & BMP IMPLEMENTATION

The Construction Site Inspection Control Measure is critical to the ultimate success of the Construction Program Element. An effective construction site inspection program requires having adequate legal authority to enforce City requirements, tracking active construction sites to identify repeat violators, and conducting inspections to ensure the sources are identified and that BMPs are being implemented and maintained. The inspection program also provides the basis for notifying the Regional Water Board when inspectors identify non-compliant sites including non-filers or repeat violators. Building and engineering inspectors should also be aware of stormwater quality issues and notify the MUD – Stormwater Management Program if any violations are noticed.

6.7.1 Review/Revise Stormwater Construction Site Inspection Form

The MUD – Stormwater Management Program's current inspection checklist includes key fields recommended by the Regional Water Board, as well as an area for general comments. During the first field visit, the inspector verifies that SWPPPs are on-site and being implemented. BMP implementation is assessed at each site. If any problems are identified, the current practice is to identify the sources and conduct a comparison of on-site conditions with SWPPPs or grading plans.

The City reviewed the Stormwater Construction Site Inspection Form and updated it in September 2007. During the 2009-2010 reporting period, the City's Stormwater Construction Site Inspection Form was reviewed and updated by the stormwater construction inspector. The updated Stormwater Construction Site Inspection Form was included as Appendix F-2 of the *2009-2010 Annual Report*.

During the 2014-2015 and 2015-2016 reporting periods, the City continued to use the Stormwater Construction Site Inspection Form.

6.7.2 Evaluate Options for a Construction Site Compliance Rating System

During the 2009-2010 reporting period, the City discussed options for a rating system for construction site compliance. A rating system will not be developed; however, the intent of this performance standard is being met by the City's existing inspection process. The City determined that the consistency desired for the construction inspection program is currently achieved through use of the updated Stormwater Construction Site Inspection Form, regular inspections, documentation with photographs, and progressive enforcement.

6.7.3 Inspect Construction Sites \geq 1 Acre

All construction sites greater than or equal to one (1) acre are inspected once per month (at a minimum) during the wet season and one time during the dry season until a notice of termination for coverage under the General Construction Permit is issued by the Regional Water Board.

Additional inspections are conducted as time allows or as follow-up when problems were detected in previous inspections. The inspection program ensures that the following minimum requirements are effectively implemented at construction sites:

- Sediments generated on the project site are retained using adequate source control BMPs;
- Construction-related materials, wastes, spills, or residues are retained at the project site to avoid discharges to streets, drainage facilities, receiving waters, or adjacent properties by wind or runoff;
- Non-stormwater runoff from equipment and vehicle washing and any other activity is contained at the project site; and

- Erosion from slopes and channels are controlled by implementing an effective combination of BMPs.

A summary of the active construction sites and inspections conducted is provided below.

Reporting Period	Number of Active Construction Sites Greater than or Equal to One (1) Acre	Number of Regular Inspections Conducted at Active Construction Sites	Number of Follow-Up Inspections Conducted at Active Construction Sites due to Violations
Last Year 2014-2015	14	251	12
This Year 2015-2016	25	79	6

A detailed list of all construction sites tracked and inspected during the 2015-2016 reporting period is provided as **Appendix F-1**.

6.8 CO6 – ENFORCEMENT

The Enforcement Control Measure outlines the progressive levels of enforcement applied to construction sites that are out of compliance with local ordinances and establishes the protocol for referring apparent violations of construction sites subject to the General Construction Permit to the Regional Water Board. The progressive enforcement and referral policy, as well as the accompanying legal authority to execute it, is an important tool for providing a fair and equitable approach to bringing contractors and developers into compliance with the City's municipal code requirements.

6.8.1 Implement Progressive Enforcement and Referral Policy

City inspectors currently have the legal authority, under the Stormwater Management and Discharge Control Ordinance (Chapter 13.16)⁶, to issue administrative complaints (Notice of Violation, or NOV) and, if necessary, to pursue civil actions, criminal actions, and criminal penalties, including arrests and issuance of citations. The Regional Board is routinely mailed copies of NOVs.

The City has developed a *Municipal Utilities Department Directive Prohibiting Non-Stormwater Discharges to the Storm Drainage System* (MUD Directive) for Construction Activities, Commercial/Industrial Businesses, Residential Activities, and Special Events (see Appendix B-5 of the 2009 SWMP). The MUD Directive⁷ identifies the steps that should be taken when citing violators of ordinances, allows for Citywide consistency in the enforcement of the local ordinances, and provides a mechanism for cost recovery. The progressively severe corrective actions involve verbal warnings followed by written warnings and legal action, if necessary. Illicit discharges by industrial or commercial facilities or construction sites are addressed in a formal manner through issuance of notices of violations, citations, or notices and orders (Cease and Desist) depending upon the compliance history of the facility. Corrective actions are taken in every instance where a responsible party is identified.

The City generally refers construction site violations to the Regional Board under two circumstances:

- If three *significant violations* have occurred; and
- If it is determined that a site should obtain coverage under the General Construction Permit (*potential non-filers*)

If a construction site has received its third notice for a significant violation of the City's Stormwater Management and Discharge Control Ordinance⁸ within a 12-month period, the City notifies the Regional Board. The construction site referral is made in writing within 30 days of the inspection that led to the third notice. It should be noted that some referrals may vary from this schedule due to the nature of the violation and the type of response involved (i.e., an egregious violation would result in immediate notification of the Regional Board).

⁶ The relevant ordinances are available on the City of Stockton's Web site, <http://www.stocktongov.com>, or at <http://qcode.us/codes/stockton/>.

⁷ The City had planned to develop an Enforcement Consistency Guide (ECG); however, the MUD Directive and the Investigative Guidance Manual being developed (see ID3) together adequately address consistency in the enforcement of the local ordinances and provide standard guidelines and protocols for identifying, documenting, responding to, and enforcing violations.

⁸ Chapter 13.16 of the Stockton Municipal Code, available at <http://qcode.us/codes/stockton/>

6.8.2 Track Enforcement Actions Using Construction Database

During the 2015-2016 reporting period, the City tracked the results of construction inspections. The City continues to use the database to ensure thorough tracking and documentation of all enforcement actions.

Enforcement Action Type	Number ^a	
	2014-2015	2015-2016
Administrative		
Verbal Warning	86	85
Written Warning	0	0
Cease and Desist Order ^b	1	1
Violation Warning Notice ^b	9	20
Notice to Clean ^b	45	52
Stop Work Order ^b	0	0
Administrative Citation (Fine) ^b	0	1
Correction Order ^b	47	42
Criminal Enforcement		
Misdemeanor	0	0
Infraction	0	0

Notes:

- [a] The total number of enforcement actions taken is greater than the number of verified sources, due to multiple enforcement actions for a single discharge.
- [b] The *Notice of Violation – Administrative Citation* form used by the City includes the following enforcement options: Cease and Desist Order; Violation Warning Notice; Notice to Clean; Stop Work Order; Fine; and Correction Order.

Total number of enforcement actions taken during the reporting period: 201

Number of repeat offenders identified during the reporting period: 6⁹

The City generally refers construction site violations to the Regional Board under two circumstances:

- If three *significant violations* have occurred; and
- If it is determined that a site should obtain coverage under the General Construction Permit (*potential non-filers*)

If a construction site has received its third notice for a significant violation of the City's Stormwater Management and Discharge Control Ordinance within a 12-month period, the City notifies the Regional Board. The construction site referral is made in writing within 30 days of the inspection that led to the third notice. It should be noted that some referrals may vary from this schedule due to the nature of the violation and the type of response involved.

⁹ Repeat offenders were counted as the number of re-inspections performed due to violations.

6.8.3 Review/Modify Procedures for Informing Regional Water Board of Violations

The City will review and modify, as necessary, the procedures for informing the Regional Board of violations at construction sites subject to the General Construction Permit. Referral to the Regional Board is appropriate concurrently (within 30 days) with issuance of a third citation, or immediately if the violation is egregious. As of the 2009-2010 reporting period, the City has reviewed the procedures for informing the Regional Board of violations at construction sites subject to the General Construction Permit. No modifications were deemed necessary. City staff routinely discusses reporting requirements during internal meetings.

6.9 CO7 – TRAINING

Training is important for the implementation of the Construction Program Element. An effective training program is one of the best pollution prevention BMPs that can be implemented because it prompts behavioral changes that are fundamentally necessary to protect water quality.

Areas of Focus for Construction Program Element Training

Target Audience	Format	Subject Material	Comments
<ul style="list-style-type: none">• Stormwater construction inspectors• Building inspectors• Grading permit inspectors• Developers• Builders• Contractors	<ul style="list-style-type: none">• Classroom• Field demos• Tailgate sessions	<ul style="list-style-type: none">• Overview of stormwater management• Stormwater impacts of land development• Stormwater ordinance and enforcement policy• Construction stormwater inspection training• BMPs for construction activities• Tracking database	<ul style="list-style-type: none">• Training seminars or workshops related to Construction may be made available by other organizations
<ul style="list-style-type: none">• Grading plan and SWPPP reviewers	<ul style="list-style-type: none">• Classroom• Field demos	<ul style="list-style-type: none">• Overview of stormwater management• BMPs for construction activities• SWPPP requirements• Tracking database	<ul style="list-style-type: none">• Training seminars or workshops related to Construction may be made available by other organizations

6.9.1 Conduct Training

As reported in Section 4, staff attended the *Stormwater Pollution Prevention and Good Housekeeping for Municipal Operations and Maintenance* training on April 7, 2016.

6.10 CO8 – EFFECTIVENESS ASSESSMENT

To determine the effectiveness of the Construction Program, a comprehensive assessment of the program data is conducted as a part of the annual report. The results of this assessment are used to identify modifications needed for the program. Each year, the effectiveness assessment is reviewed and revised as needed.

By conducting these assessments and modifying the program as needed, the City ensures that the iterative process is used as an effective management tool. Due to the types of data collected for the Construction Program, the assessment primarily focused on Outcome Levels 1 and 3.

- Outcome Level 1 (L1) answers the question: Did the City implement the components of the Permit and the 2009 SWMP?
- Outcome Level 3 (L3) answers the question: Can the City demonstrate that the control measure/performance standard significantly modified the behavior of a target audience?

The table below summarizes the effectiveness assessment conducted for the Construction Program Element. Additional detail for each component of the assessment is provided on the following pages.

Program Effectiveness Assessment Summary for Construction

Construction	Level 1	Level 2	Level 3	Level 4
	Stormwater Program Activities	Barriers and Bridges to Action (Knowledge/Awareness)	Target Audience Actions	Source Contributions
CO1 - Municipal Code for Construction Sites	N/A	N/A	N/A	N/A
CO2 - Plan Review and Approval Process	C – Plan Review Process	N/A	N/A	N/A
CO3 - Construction Projects Inventory	C – Maintained and Updated the Database	N/A	N/A	N/A
CO4 - Construction Outreach	C – Distributed Materials C – Held Tailgate Meetings as Needed	A	A	N/A
CO5 - Construction Site Inspections & BMP Implementation	C – Conducted Inspections	A	C – BMP Implementation	N/A
CO6 - Enforcement	C – Conducted Enforcement Actions	N/A	N/A	N/A
CO7 - Training	C – Attended Training	A	A	N/A

C – An effectiveness assessment was conducted during the reporting periods.

A – It is anticipated that an effectiveness assessment may be conducted in future annual reports

N/A – This outcome level is not applicable for this control measure

Following is an assessment regarding the effectiveness of the Construction Program.

CO2 – Plan Review and Approval Process

Project plans are reviewed by a MUD representative at the Permit Center to ensure that the construction requirements are met. **(L1)**

The City provides educational materials to the developers via its Web site and at the permit counters. Developers and construction contractors are becoming better educated and responsive to the City's stormwater requirements as indicated by the following: **(L1)**

- Since 2003-2004, 243 applicants have applied for coverage under the General Construction Permit, and they all have submitted proof of an NOI to the City.

CO3 – Construction Projects Inventory

The City has developed and is maintaining a Construction Project Database. The Construction Project Database is updated on an ongoing basis. **(L1)**

CO4 – Construction Outreach

All construction project applicants identified as having to comply with the Grading and Erosion Control Ordinance are provided with a two-page handout describing the application review procedure. The City also provides a link on its Web site to the Construction General Permit and related State Board guidance. **(L1)**

The City has developed and is distributing construction-related outreach materials. The City also holds tailgate meetings as needed. **(L1)**

The MUD Stormwater Inspector holds tailgate meetings on-site with the site superintendent. The MUD Stormwater Inspector reviews the Construction General Plan and associated City requirements at these meetings. **(L1)**

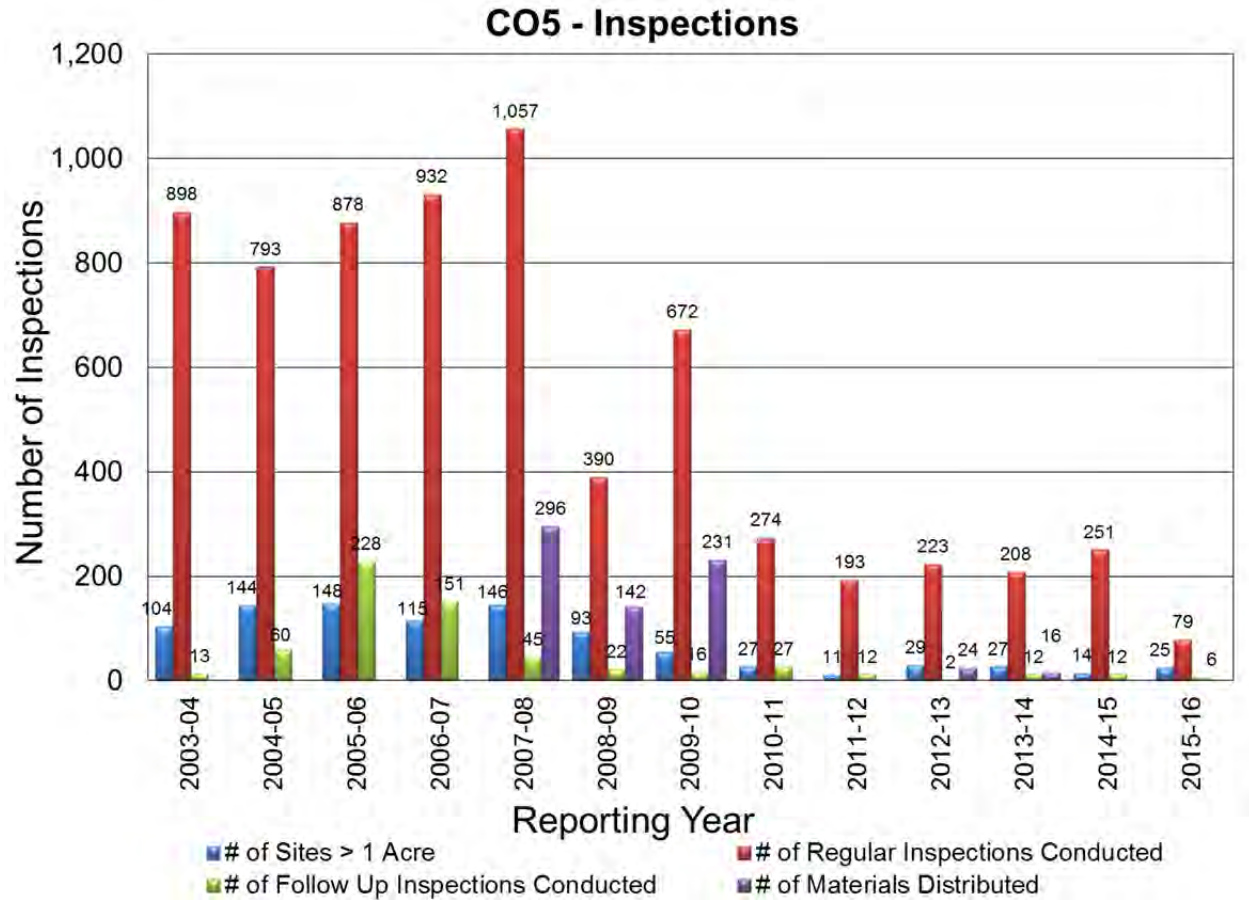
- Since 2007-2008, 167 construction sites have been represented at tailgate meetings, with a total of 530 attendees.

CO5 – Construction Site Inspections and BMP Implementation

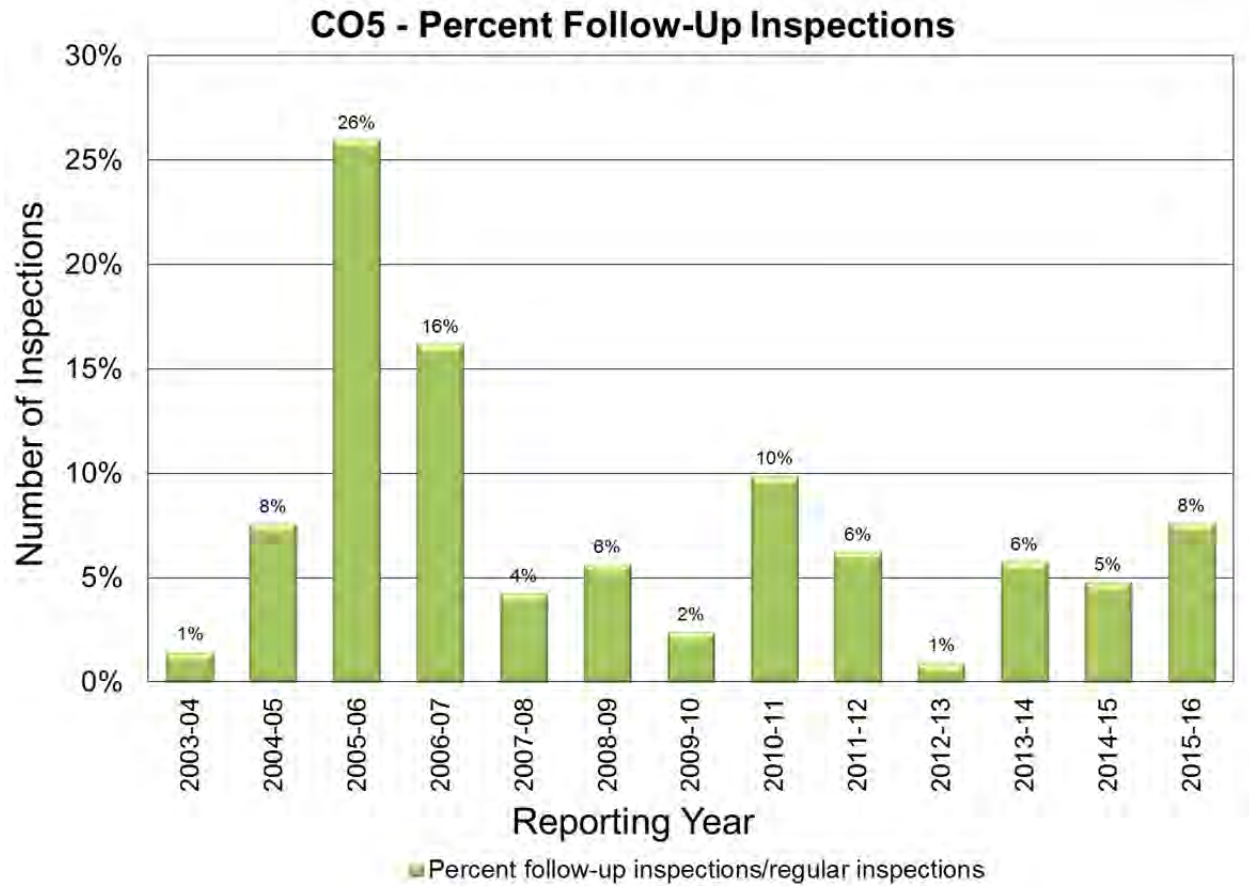
The City reviewed the Construction Site Inspection Form, determined that it was adequate, and conducted routine inspections of all active construction sites within City’s jurisdiction. (L1)

Developers/contractors remain responsible and continue to be proactive when implementing and maintaining the construction site BMPs. (L1, L3)

- Since 2003-2004, the City has conducted 6,849 inspections and found that 91% of the construction sites that were inspected were in compliance with the City’s stormwater program requirements and ordinances and did not require enforcement actions or follow-up inspections.



- The number of follow-up inspections required per regular inspection at construction sites decreased between 2005-2006 and 2015-2016—and has remained low ($\leq 10\%$) since 2007-2008—indicating that construction sites owners and operators are aware of the BMPs that are required to be implemented and maintained and are doing so.

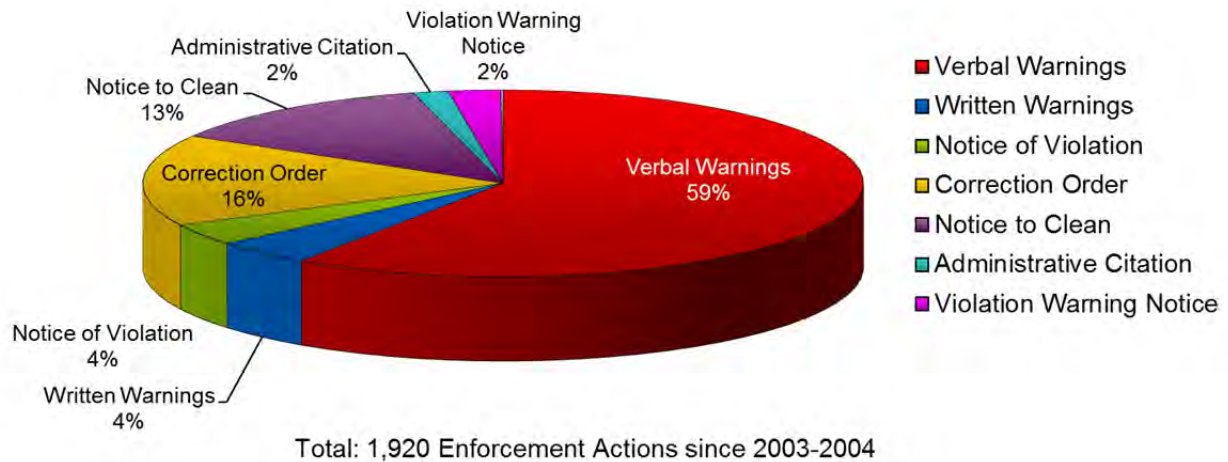


CO6 – Enforcement

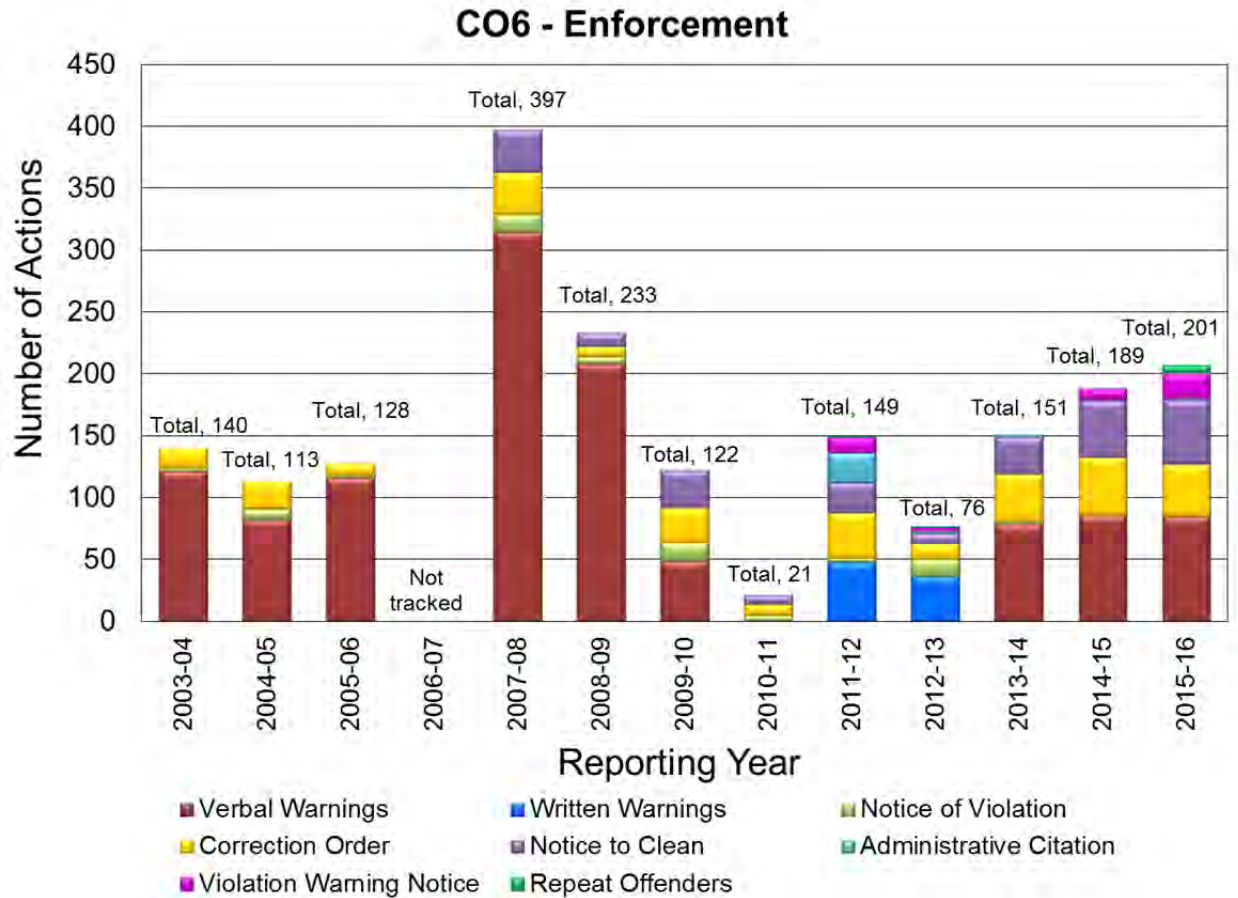
The City tracks enforcement actions in the Construction Project Inventory Database, which is regularly maintained. (L1)

- While 1,920 enforcement actions have been taken between 2003-2004 and 2015-2016, the majority of the enforcement actions (1,226, or 64%) have been verbal or written warnings. No criminal enforcement has been required during any year.

CO6 - Enforcement Actions



- The decrease in the number of enforcement actions taken since 2007-2008 is generally consistent with the decrease in the number of active construction sites during this timeframe. The slight increases in the number of enforcement actions in 2014-2015 and 2015-2016 are most likely related to the increased presence of field staff conducting inspections and identifying and correcting stormwater-related issues during these reporting periods.



CO7 – Training

City staff are attending training sessions related to Construction. **(L1)**

- Since 2013-2014, a total of 59 City staff have attended 17 Construction training sessions.

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Section 7

Planning and Land Development (LD)

7.1 OVERVIEW

The addition of impervious areas for homes, industrial and commercial businesses, parking lots, streets and roads increases the amount of stormwater runoff, as well as the potential for pollution. The Planning and Land Development Program Element ensures that the impacts on stormwater quality from new development and redevelopment are limited through implementation of Site Design Controls, Source Controls, Volume Reduction Measures, and Treatment Controls. The general strategy for development is to avoid, minimize, and mitigate (in that order) the potential adverse impacts to stormwater. The potential for long-term stormwater impacts from development is also reduced by requiring ongoing operation and maintenance of post-construction treatment controls selected for a site.

7.2 CONTROL MEASURES

The City has developed several Control Measures and accompanying performance standards to ensure that the planning and land development-related Permit requirements are effectively developed and implemented. Each Control Measure includes accompanying performance standards, which, once accomplished, constitute compliance with the SWMP/Permit.

The Planning and Land Development Program Control Measures consists of the following:

LD	Control Measure
LD1	Incorporation of Water Quality Protection Principles into City Procedures and Policies
LD2	New Development Standards
LD3	Plan Review Sign-Off
LD4	Maintenance Agreement and Transfer
LD5	Training
LD6	Effectiveness Assessment

The next section of the Annual Report provides information on the specific tasks initiated and/or completed during the reporting period pursuant to the Planning and Land Development Program performance standards and implementation schedules.

7.3 LD1 – INCORPORATION OF WATER QUALITY PROTECTION PRINCIPLES INTO CITY PROCEDURES AND POLICIES

Traditional methods of land development tend to increase stormwater discharge volumes and flow velocities. These alterations to the natural hydrologic regime may lead to increased erosion and flooding and decreased habitat integrity. Water quality and watershed protection principles and policies such as minimization of impervious areas, pollutant source controls, preservation of natural areas, and peak runoff controls can help to minimize the impacts of urban development on the local hydrology and aquatic environment. Integration of stormwater quality and watershed principles into the City's General Plan will serve as the basis for directing future planning and development in order to minimize these adverse effects. In addition, the California Environmental Quality Act (CEQA) process provides for consideration of water quality impacts and appropriate mitigation measures.

7.3.1 Review and Revise CEQA Review Documents

The CEQA review process determines what impacts a proposed development project could have on the environment. The City's current CEQA review process includes procedures for considering potential stormwater quality impacts and providing for appropriate mitigation.

The City reviews and revises the CEQA review documents as needed for consistency with the Permit. MUD reviews all CEQA documents, responding to checklist items under the Hydrology and Water Quality section.

7.3.2 Revise Municipal Code

The City's Stormwater Management and Discharge Control Ordinance No. 010-97 (Section 13.20) serves as the enforcement mechanism to ensure new development and redevelopment projects comply with the General Plan and City policies, including the Stormwater Quality Control Criteria Plan (SWQCCP) requirements for post-construction BMPs.

During fiscal year 2008-2009, the City of Stockton updated/codified the Stormwater Management Control Ordinance. No additional changes to the Standards are necessary.

7.4 LD2 – NEW DEVELOPMENT STANDARDS

Post-construction BMPs, including those for site design, source control, volume reduction, and treatment, are necessary for development and redevelopment projects in order to mitigate potential water quality impacts. In addition, Priority Projects identified within the Permit require specific mitigation measures. In order to assist developers in meeting these requirements, the City developed a guidance manual for stormwater quality control measures for new development and redevelopment, the SWQCCP.

7.4.1 Require Priority Projects to Implement the 2009 SWQCCP

The City and County updated the 2003 SWQCCP to reflect new permit requirements with a special emphasis on the implementation of low impact development (LID) strategies in the Stockton Urbanized Area. Revision of the SWQCCP included a stakeholder participation element. Stakeholder input was solicited through three stakeholder meetings and three rounds of public comment. Modifications to the SWQCCP included the creation of a Volume Reduction Requirement to provide a measureable criterion for achievement of LID. The Volume Reduction Requirement is defined as the post-project runoff volume minus the pre-project runoff volume for the 0.51" rainfall event. The Volume Reduction Requirement must be met through the application of Volume Reduction Measures (e.g., rain barrels, interception trees) and LID Treatment Controls (e.g., bioretention, tree-well filters).

The City Council of the City of Stockton adopted the 2009 SWQCCP on February 9, 2010. Priority Projects are required to comply with the 2009 SWQCCP, which is available on the City's website.¹ A 2009 SWQCCP fact sheet (Appendix G-1 of the *2009-2010 Annual Report*) and Volume Reduction Requirement (VRR) Calculator (Appendix G-2 of the *2009-2010 Annual Report*) were also developed in February 2010 to communicate changes to the SWQCCP and assist with new requirements. On March 11, 2010, the City and County held a four-hour workshop at the San Joaquin County Agricultural Center for key personnel and the development and construction community to highlight the requirements of the 2009 SWQCCP. This workshop was also used to introduce the VRR Calculator and illustrate how it is to be used to comply with the Volume Reduction Requirement.

During the 2015-2016 reporting period, the City continued to enforce compliance with the 2009 SWQCCP for Priority Projects.

7.4.2 Review Local Development Standards for Compatibility with the 2009 SWQCCP

During the 2010-2011 reporting period, the City reviewed its development regulations in the context of the 2009 SWQCCP requirements. A summary of findings is provided below:

- **Setbacks:** For the residential medium-density zoning district, the City of Stockton's Development Standards require the following: side setbacks of five feet, front setbacks of 15 feet and rear setback of 10 feet. Setbacks are considered minimal and provide the flexibility needed to minimize clearing and grading and conserve natural resources.
- **Landscaping:** The Landscaping Standards do not prohibit integration of stormwater management with landscape features.
- **Tree Canopy/Tree Preservation:** Tree preservation is indirectly encouraged through the Volume Reduction Requirement. The Volume Reduction Requirement can be reduced through the conservation of trees and other natural vegetation. The 2009 SWQCCP also includes tree interception as a Volume Reduction Measure. No known conflicts exist.

¹ <http://www.stocktongov.com/government/departments/municipalUtilities/utilStorm.html>

- Street Width: The Public Works Standard Specifications include street schematics that depict curb and gutter. Standard Specifications indicate that the minimum street width for residential collector street with no parking is 26 feet. The 2009 SWQCCP strongly encourages the use of swales in place of curb and gutter.
- Parking Lot Design: The City's minimum parking space requirements are standard in comparison with most other communities. For example, for most business types, 1 space per 200 square feet of gross floor area is required for the first 50,000 square feet of floor area. Gross floor area exceeding 50,000 square feet is required to provide 1 space per 500 square feet. Landscape and parking requirements specify that continuous curbing must be provided, but alternatives may be approved. The Parking Standards address shared parking which may reduce impervious cover: where two or more adjacent nonresidential uses have distinct and differing peak parking usage periods, (e.g. a theater and a bank), a reduction in the required number of parking spaces may be approved.
- Rooftop Runoff: The SWQCCP strongly encourage rooftop runoff to be conveyed to vegetated swales and vegetative buffer strips. The SWQCCP also actively encourages the use of rain gardens, cisterns and rain barrels. No known conflicts exist.

This review revealed that the majority of Stockton's codes and ordinances were not in conflict with the 2009 SWQCCP.

During 2012-2013, the City conducted another review of its development regulations in the context of the 2009 SWQCCP requirements. The City found that although the 2009 SWQCCP strongly encourages the use of swales in place of curb and gutter, the Standard Specifications require the inclusion of curb and gutter. In the next revision of the SWQCCP, City will recommend the removal of swales as an option contained in the SWQCCP.

An update of the Standard Specifications is not anticipated at this time, but the City plans to hold a dialogue with Public Works staff so that this issue may be revisited during the next permit term.

7.5 LD3 – PLAN REVIEW SIGN-OFF

Stormwater quality controls should be considered throughout the development plan review and approval process. The City provides comprehensive review of development plans in order to ensure that stormwater controls minimize water quality impacts.

7.5.1 Review the Post-Construction Plan Review Database

The City requires that each Priority Project submit a Project Stormwater Quality Control Plan (SWQCP) that documents how the project is complying with the requirements contained within the 2009 SWQCCP. An Excel spreadsheet is used to document control measures proposed on the site plan. The City has reviewed the SWQCP template and the Excel spreadsheet.

7.5.2 Revise the Post-Construction Plan Review Database

The City has revised the SWQCP template and Excel spreadsheet. Each Priority Project is required to submit a SWQCP as documentation of compliance with the 2009 SWQCCP. The Stormwater Quality Control Plan (SWQCP) guidance is provided as Appendix E to the 2009 SWQCCP on the City's website.²

7.5.3 Use Post-Construction Plan Review Database

The City utilized the SWQCP template and Excel spreadsheet for each Priority Project, as described above.

7.5.4 Participate on the DRC

The City's Development Review Committee (DRC), which is made up of representatives from various City departments, primarily reviews and approves larger projects and sub-divisions and ensures that the erosion control, SWPPP requirements, and post-construction controls are identified and included on the tentative map. A MUD representative is on the DRC to ensure that post-construction stormwater quality controls are addressed and included during the planning of new development projects. If there are any issues identified by the DRC, they are resolved with the developer prior to project approval.

A summary of MUD participation on the DRC is presented below:

- Number of times the DRC met during the reporting period: 12
- Number of meetings the MUD staff participated in during the reporting period: 12

² <http://www.stocktongov.com/government/departments/municipalUtilities/utilStorm.html>

7.5.5 Review Project Plans and Grading Plans for Stormwater BMPs

The City reviewed project and grading plans to make sure that stormwater BMPs were incorporated. Since the 2009 SWQCCP was formally adopted by the City Council on July 7, 2009, some of the projects reviewed have fallen under the 2009 SWQCCP requirements. During the 2010-2011 reporting period, the majority of the projects fell under the SWQCCP requirements; whereas during the 2011-2012 and 2012-2013 reporting periods, few of the projects met the criteria to be subject to the SWQCCP requirements. During the 2013-2014 reporting period, 16 projects required SWQCCP review. During the 2014-2015 reporting period, 17 projects required SWQCCP review. During the 2015-2016 reporting period, 15 projects required SWQCCP review.

A summary of the projects that were reviewed during the last two reporting periods is provided below.

Reporting Period	Total Number of Project Plans Reviewed
Last Year 2014-2015	17
This Year 2015-2016	15

The table below summarizes the Priority Projects:

Priority Project Category ^a	Total Projects Reviewed
Significant Redevelopment	6
Commercial Developments ($\geq 100,000$ SF)	0
Commercial Developments ($\geq 5,000$ SF)	6
Automotive Repair Shops	0
Retail Gasoline Outlets	0
Restaurants	0
Parking Lots ($\geq 5,000$ SF or 25 spaces)	2
Streets and Roads (>1 acre paved surface)	0
Home Subdivisions (≥ 10 units)	1
Total	15

Note:

[a] The Development Standards apply to all Priority Projects or phases of Priority Projects at the date of adoption unless the projects already had approval by the City or County Engineer, a permit for development or construction or an approved tentative map prior to the Development Standards date of adoption.

During the 2015-2016 reporting period:

Total acreage covered by the approved Priority Projects: 44.70 (as of June 30, 2016)

The following table provides a summary of the type and number of post-construction BMPs implemented as a part of the Priority Projects that were approved. Definitions and guidance for each of the controls can be found in the City's 2009 SWQCCP.

Control Measure Type	Total Number Approved
Site Design Controls	
G-1: Conserve Natural Areas	9
G-2: Protect Slopes and Channels	8
G-3: Minimize Soil Compaction	13
G-4: Minimize Impervious Area	13
Total Site Design Controls	43
Source Controls	
S-1: Storm Drain Message and Signage	15
S-2: Outdoor Materials Storage Area Design	4
S-3: Outdoor Trash Storage and Waste Handling Area Design	11
S-4: Outdoor Loading/Unloading Dock Area Design	0
S-5: Outdoor Repair/Maintenance Bay Design	0
S-6: Outdoor Vehicle/Equipment/Accessory Wash Area Design	0
S-7: Fuel Area Design	0
Total Source Controls	30
Volume Reduction Measures	
V-1: Rain Garden	2
V-2: Rain Barrel/ Cistern	0
V-3: Vegetated Roof	0
V-4: Interception Trees	3
V-5: Grassy Channel	1
V-6: Vegetated Buffer Strip	0
Total Volume Reduction Measures	6
Treatment Control Measures	
L-1: Bioretention	8
L-2: Stormwater Planter	0
L-3: Tree-well Filter	0
L-4: Infiltration Basin	0
L-5: Infiltration Trench	0
L-6: Porous Pavement Filter	0
L-7: Vegetated (Dry) Swale	2
L-8: Grassy Swale	0
L-9: Grassy Filter Strip	0
C-1: Constructed Wetland	0
C-2: Extended Detention Basin	0
C-3: Wet Pond	0
C-4: Proprietary Treatment Controls (see table below for details)	7
Total Treatment Control Measures	17

Number of Priority Projects draining to a regional treatment facility³ during the reporting period: 0 (as of June 30, 2016)

Additional detail on approval of proprietary control measures (Treatment Control Measures C-4) is provided in the table below.

Facility Name	Type of Treatment Unit
Panda Express	Contech Stormfilter
WSS Shoes	Contech Stormfilter
Lincoln Unified School District	Contech Stormfilter
The Palms at Morada	Contech Stormfilter
Bruceck Commons 2	Contech Stormfilter
Cal Weber 40	Jensen Precast StormVault
Dutch Bros. Coffee	Contech Stormfilter

A summary of approved control measures is provided in the table below.

Type of Control Measure	Total Number Approved During the Reporting Period
Site Design Control Measures	43
Source Control Measures	30
Volume Reduction Measures	6
Treatment Control Measures	17
Total Projects^a	15

Note:

[a] Total Priority Projects reviewed and approved under 2009 SWQCCP requirements.

The City has a comprehensive database established for all developments projects reviewed for stormwater quality as well as for other requirements.

7.5.6 Explore Options for a GIS or Other Electronic System for Tracking Projects with Post-Construction Treatment Control BMPs

During the 2007-2008 reporting period the City developed a GIS system for tracking projects with post-construction BMPs.

7.5.7 Implement a GIS or Other Electronic System for Tracking Projects with Post-Construction Treatment Control BMPs

Information related to tracking the project while under active construction is kept within the Stormwater Construction Inspection database and is included as **Appendix F-1** (List of All Construction Sites Tracked and Inspected). Specifically, the construction inspector tracks project information including contact information, project size and WDID number.

³ A regional treatment facility is a treatment facility that serves more than one development project regardless of acreage

By June 30, 2010, the City completed GIS plotting of all permanent post-construction stormwater treatment devices that had been approved and constructed within the City of Stockton up until that date. Staff also developed maps which pinpointed the location of all devices (see Appendix G-1 of the *2009-2010 Annual Report*). As new devices are constructed, they are plotted, and the maps are updated annually. During the 2010-2011 reporting year, the maps were updated with eight (8) new constructed devices (see Appendix G-1 of the *2010-2011 Annual Report*). During the 2011-2012 and 2012-2013 Fiscal Years, the maps were updated with eleven (11) newly constructed devices (Appendix G-1 of the *2011-2012 & 2012-2013 Annual Report*). In the 2013-2014 reporting period, ten (10) more sites were added that included post-construction treatment features. During the 2014-2015 reporting period, sixteen (16) indicator marks representing new devices installed in six locations were added to the map. There were no updates to the map during the 2015-2016 reporting period (see Appendix G-1 of the *2014-2015 Annual Report*).

During 2015-2016, the City completed a significant review of and update to the information captured by the post-construction treatment device access and maintenance agreement database (a spreadsheet database). New information fields were added for better tracking and capture of unit details. The City continues to review corresponding files for each unit logged on the tracking database, to ensure that the database is complete and that access and maintenance agreements have been fully executed and recorded on all projects that had water quality reviews, and that devices were installed per the development plans that were approved by the Permit Center and MUD Engineering. This updated information will be used to resume routine annual follow-up activities including inspection and maintenance on the units by Fall 2016.

The location maps will assist in monitoring and maintenance and will be placed on the MUD Web site for public information.

In addition, the City tracks relevant information for all permanent post-construction stormwater treatment devices in its Post-Construction BMP Treatment Devices Database (**Appendix G-1**).

7.5.8 Conduct Inspections of Completed Priority Projects

Completed projects with post-construction treatment control BMPs are inspected annually as part of the management of Stockton Consolidated Storm Drainage Maintenance Assessment District No. 2005-1 to ensure that all approved control measures have been implemented and are being maintained. City-maintained BMPs are addressed through a contractor (see below), and privately-maintained BMPs are addressed through maintenance agreements (see Section 7.6).

During the 2010-2011 reporting period, the City developed maintenance procedures for the inspection and maintenance of the underground proprietary stormwater treatment devices operated under the Stockton Consolidated Storm Drainage Maintenance Assessment District No. 2005-1 and by the City. A total of 11 units are inspected and maintained under a contract with the City. Nine of the units are operated under the Maintenance Assessment District and exist in residential developments. The remaining two units (at Legion Park and Stockton Event Center) are owned and operated by the City at-large. A map of the Maintenance Assessment Districts is included as **Appendix G-2**.

Maintenance includes the semi-annual inspection of the treatment devices, removal of accumulated sediment, and for a few devices, replacement of filter cartridges as needed to ensure optimal operation of the units. In January 2011, initial inspections were performed to establish a baseline assessment of the condition of each of the units. A second round of inspections and a first clean-out of each of the units occurred in March 2011. After the first round of clean-outs, the units are to be inspected each fall, in advance of the winter rains, between September 15 and October 31, and again each spring, between May 1 and June 30. Routine pump-outs and any necessary maintenance on the units are to occur in the spring.

In October 2011 and June 2012, all units were inspected according to the established procedure and schedule. The inspections scheduled for fall 2012 were not completed as a result of extended delays in the City's internal process for approving the extension of the original contract.

Inspections resumed in June 2013. Only the Stockton Events Center Continuous Deflective Separation (CDS) Unit required a routine maintenance servicing clean out and cartridge replacement. Inspection and maintenance of the Stockton Events Center and Legion Park CDS Units will be completed when new maintenance contracts have been issued. The City will release a bid for the Units' maintenance contract in the fall of 2016, and the inspection and maintenance schedule will resume in Fiscal Year 2016-2017.

7.6 LD4 – MAINTENANCE AGREEMENT AND TRANSFER

Maintenance agreements and transfers ensure that selected post-construction stormwater control measures will remain effective upon project completion. As a condition of approval for all Priority Projects, the City requires the owner/developer/successor-in-interest (ODS) of stormwater control measures to provide proof of control measure maintenance in the form of a Stormwater Treatment Device Access and Maintenance Agreement and a Maintenance Plan. Alternatively, a maintenance district zone may be established by the City.

7.6.1 Require Stormwater Treatment Device Access and Maintenance Agreement

The City integrated the development/submittal of a stormwater maintenance agreement as a condition within the project approval process for Priority Projects. To enforce the requirements of post-construction BMPs, a Maintenance Agreement is required to be executed between the City and the ODS for any private facilities who remain the responsible party in operating and maintaining the post-construction treatment control measures. However, if the project is annexed to the City, the Stockton Consolidated Storm Drainage Maintenance Assessment District No. 2005-1, established on July 26, 2005, is responsible for operation and maintenance of all post-construction treatment control measures built within each subdivision zone. Funding to provide O&M services is provided through an annual tax roll levied upon the ODS of the property in the subject district.

The SWQCCP addresses the City's Development Standards (see LD2) as well as the need for the development and submittal of Maintenance Agreements when a developer is responsible for ongoing maintenance of on-site treatment BMPs.

During the 2015-2016 reporting period, the City required the Stormwater Treatment Device Access and Maintenance Agreement as part of the project approval process.

A summary of the maintenance agreements executed during the 2015-2016 reporting period is provided in the table below.

Agreements for City-Maintained BMPs	Agreements for Privately Maintained BMPs
0	a

Note:

[a] As of June 30, 2016, 15 agreements were moving through the signature process but had not been fully executed and recorded against the title of the property with the Assessor's Office.

7.6.2 Finalize and Populate Post-Construction BMP Tracking Spreadsheet

By June 2011, staff completed the GIS tracking of all post-construction treatment devices, both those that are privately owned and those maintained by the Stockton Consolidated Storm Drainage Maintenance Assessment District No. 2005-1. A citywide map containing all approved and fully constructed BMPs was developed. A map of the City's Maintenance Assessment Districts is provided as **Appendix G-2**.

Staff also worked throughout the 2010-2011 reporting period to update property owner information for all additional privately owned properties with signed and recorded access and maintenance agreements. Due to the economic crisis and the high foreclosure rates during this time, staff experienced difficulties securing accurate property owner information of these parcels to send the new annual maintenance reminder letter.

Throughout the reporting period, staff continued to track all new post-construction treatment devices that were both approved and installed. No new Assessment Districts were added during the 2013-2014 or

2014-2015 reporting periods. During the 2015-2016 reporting period, the City spent considerable staff time reviewing and updating the database and corresponding unit file.

7.6.3 Finalize Post-Construction BMP Maintenance Oversight Protocols

Maintenance efforts began on the post-construction treatment devices operated under the Stockton Consolidated Storm Drainage Maintenance Assessment District No. 2005-1. City staff developed and utilized a basin maintenance inspection form that was provided as Appendix G-2 of the *2008-2009 Annual Report*.

The City's BMP maintenance oversight protocol includes sending a letter to each owner of privately maintained post-construction stormwater treatment devices reminding them of their maintenance responsibilities, as stipulated in their executed and recorded access and maintenance agreements with the city. The letter requests copies of documentation from the owner's operation and maintenance records that verifies that the unit has undergone periodic inspection, the manufacturer's general maintenance guidelines for the unit have been followed, and the unit continues to operate at peak performance. The City also sends follow-up letters to those owners who fail to respond to the first letter. This second letter indicates that failure to respond will result in an inspection completed by the City and that the owner will be invoiced for reimbursement of cost to the City as well as for any required maintenance.

7.6.4 Implement Post-Construction BMP Maintenance Oversight Protocols

The letters described above were mailed to 68 owners by certified mail on September 23, 2010. The owners were given until November 5, 2010 to respond. The City received a response from 50 (73.5%) of the owners, who sent in documentation of inspection and maintenance, notified the City that the property had been sold, or stated that their development plans had slowed and the device had not been installed. A second, more severe letter was generated and sent specifically to those owners who failed to respond to the first letter by November 5, 2010. A copy of the mailing list and letter was provided in Appendix G-3 of the *2010-2011 Annual Report*. With the hiring of additional stormwater program administrative staff, the City will be able to resume its protocol of sending all owners of device letters reminding them of their responsibility and requesting updated information on the inspection and maintenance of the devices during the next reporting period. In 2015-2016, staff began work with the review and update of the owner database in preparation for sending letters to the current property/device owners.

7.7 LD5 – TRAINING

Training is important to the successful implementation of the Planning and Land Development Program Element. An effective training program is one of the best pollution prevention BMPs that can be implemented because it prompts behavioral changes that are fundamentally necessary to protect water quality.

Areas of Focus for Training

Target Audience	Format	Subject Material
<ul style="list-style-type: none">• Plan Checkers• Engineers• Building and Construction Inspectors	<ul style="list-style-type: none">• Classroom	<ul style="list-style-type: none">• Overview of storm water management• Stormwater Ordinance• Enforcement policy• SWQCCP and overview of post-construction control measures• Project tracking database

7.7.1 Conduct Project Planning and Design Training

City staff did not attend training sessions relevant to Project Planning and Design or Project Inspection during the 2015-2016 reporting period; however, trainings are planned for 2016-2017.

7.8 LD6 – EFFECTIVENESS ASSESSMENT

To determine the effectiveness of the Planning and Land Development Program, a comprehensive assessment of the program data is conducted as a part of the annual report. The results of this assessment are used to identify modifications needed for the program. Each year, the effectiveness assessment is reviewed and revised as needed.

By conducting these assessments and modifying the program as needed, the City ensures that the iterative process is used as an effective management tool. Due to the types of data collected for the Planning and Land Development Program, the assessment primarily focused on Outcome Level 1.

- Outcome Level 1 (L1) answers the question: Did the City implement the components of the Permit and the SWMP?

The table below summarizes the effectiveness assessment conducted for the Planning and Land Development Program Element. Additional detail for each component of the assessment is provided on the following pages.

Program Effectiveness Assessment Summary for Planning and Land Development

Planning and Land Development	Level 1	Level 2	Level 3	Level 4
	Stormwater Program Activities	Barriers and Bridges to Action (Knowledge/Awareness)	Target Audience Actions	Source Contributions
LD1 - Incorporation of Water Quality Protection Principles into City Procedures and Policies	C – Reviewed CEQA Documents	N/A	N/A	N/A
LD2 - New Development Standards	C – Required Implementation of 2009 SWQCCP C – Reviewed Local Development Standards	N/A	N/A	N/A
LD3 - Plan Review Sign-Off	C – Used Plan Review Database and Required SWQCP Submittal C – Participated on DRC C – Reviewed Project Plans for BMPs C – Implemented BMP Tracking System	A	N/A	N/A
LD4 - Maintenance Agreement and Transfer	C – Required Maintenance Agreement C – Used GIS to Track Post-Construction Treatment Devices	N/A	N/A	N/A
LD5 - Training	C – Training	A	N/A	N/A

C – An effectiveness assessment was conducted during the reporting periods.

A – It is anticipated that an effectiveness assessment may be conducted in future annual reports

N/A – This outcome level is not applicable for this control measure

The following is a general assessment regarding the effectiveness of the Planning and Land Development Program:

LD1 - Incorporation of Water Quality Protection Principles into City Procedures and Policies

The City's current CEQA review process includes procedures for considering potential stormwater quality impacts and providing for appropriate mitigation. The City's MUD reviews all CEQA documents, responding to checklist items under the Hydrology and Water Quality section. **(L1)**

LD2 - New Development Standards

Since mid-July 2009, the City has required Priority Projects to implement the 2009 SWQCCP. A fact sheet and Volume Reduction Calculator were developed to communicate changes to the SWQCCP and assist with compliance. **(L1)**

The City reviewed local development standards for compatibility with the 2009 SWQCCP and determined that the majority of Stockton's codes and ordinances do not present barriers to the 2009 SWQCCP. The City will continue to hold a dialogue with Public Works staff to discuss the potential to update the Standard Specifications during any future revisions. **(L1)**

LD3 - Plan Review Sign-Off

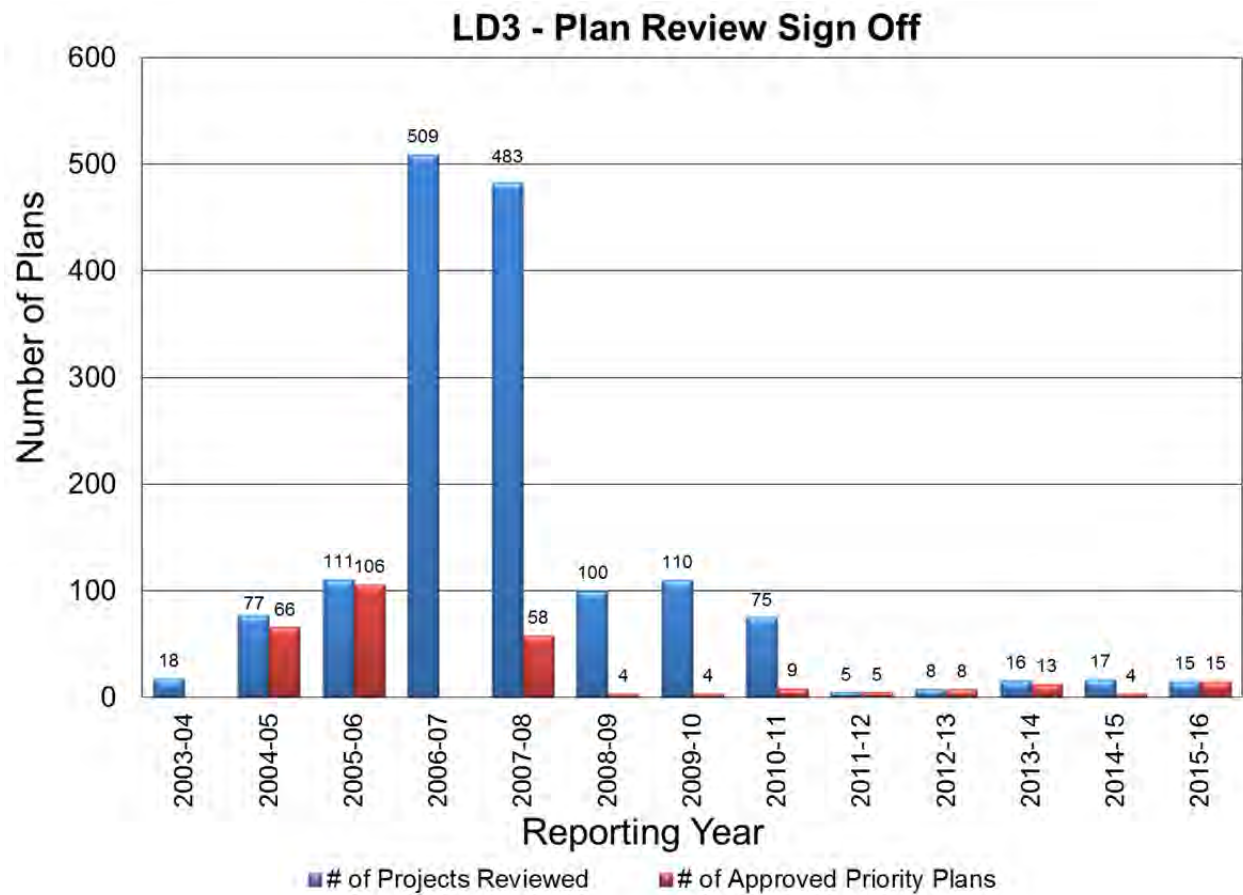
The City continued to require submittal of a SWQCP that documents how the project is complying with the 2009 SWQCCP. The City also uses the Microsoft Excel Volume Reduction Requirement Calculator to document control measures proposed on the site plan. **(L1)**

The City's DRC, which is made up of representatives from various departments, primarily reviews and approves larger projects and subdivisions and ensures that the erosion control, SWPPP requirements, and post-construction controls are identified and included on the tentative map. A MUD representative continues to participate on the DRC to ensure that post-construction stormwater quality controls are addressed and included during the planning of new development projects. **(L1)**

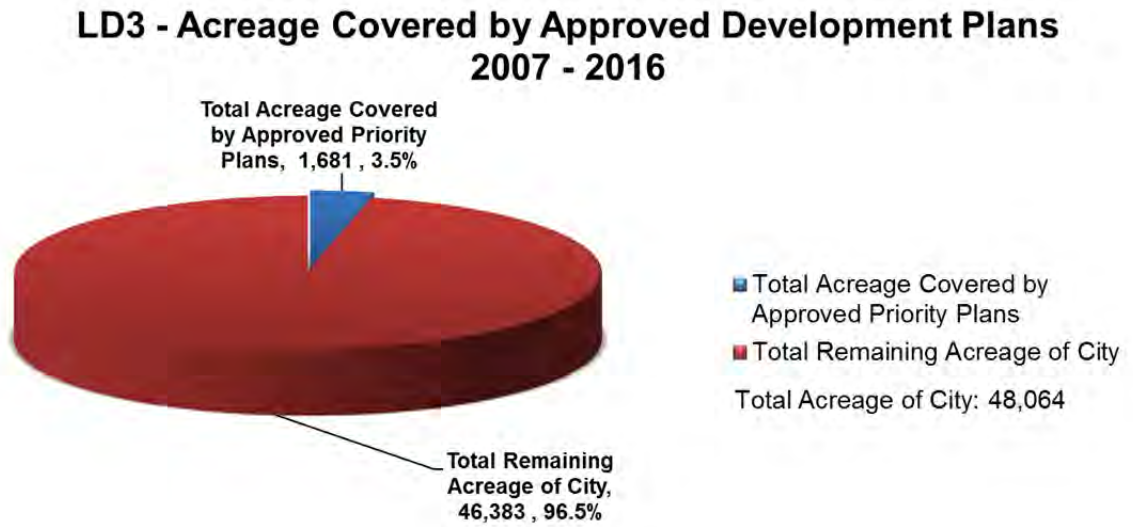
During 2015-2016, the City participated in 12 DRC meetings to ensure that post-construction stormwater quality controls are addressed and included during the planning of new priority projects. **(L1)**

The City has a comprehensive database established for all development projects reviewed for stormwater quality issues as well as for other requirements. **(L1)**

Since 2003, the City has reviewed and approved 292 Priority Project plans. Due to the economic climate since 2007-2008, the City has seen low numbers of development applications, including those for Priority Projects. This is reflected in the figure below. (L1)

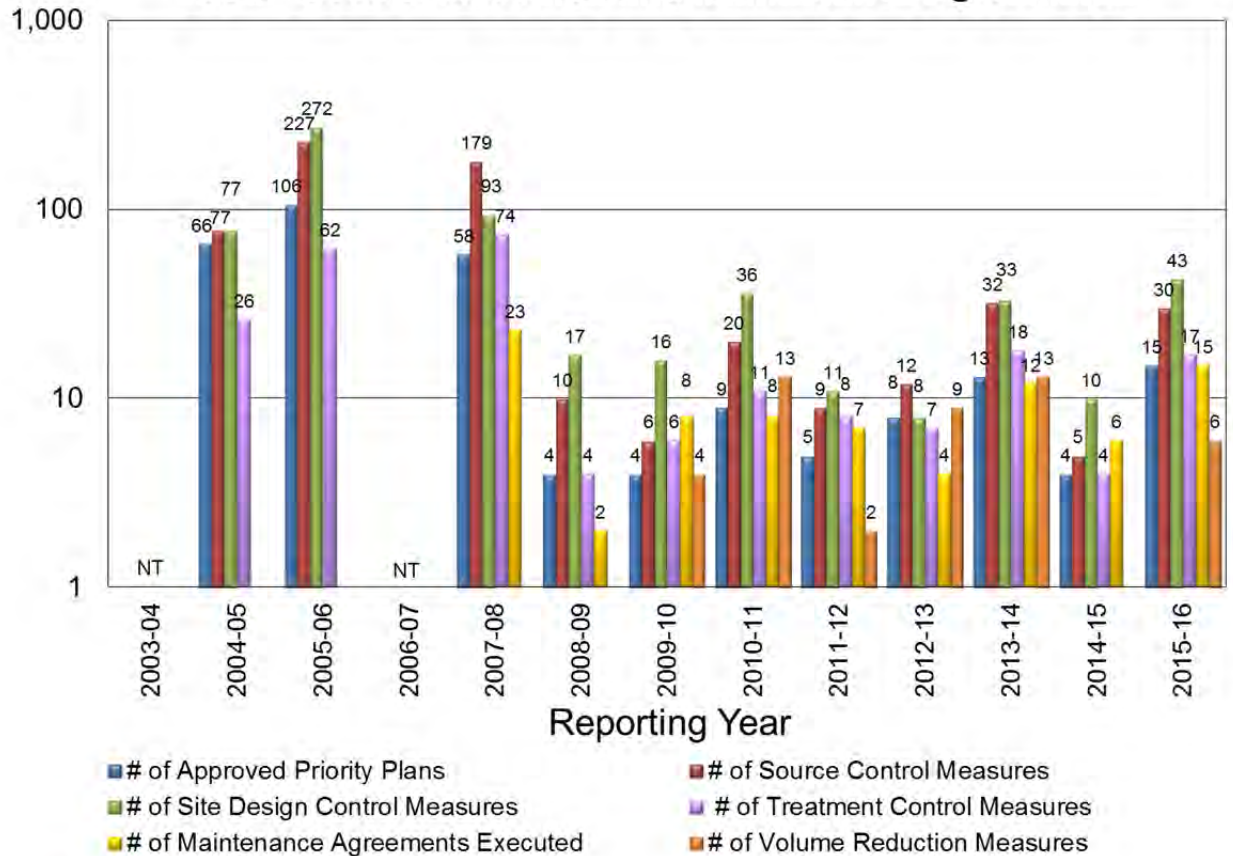


As illustrated in the figure below, approximately 3.5% of the City's acreage is covered by approved Priority Project plans. **(L1)**



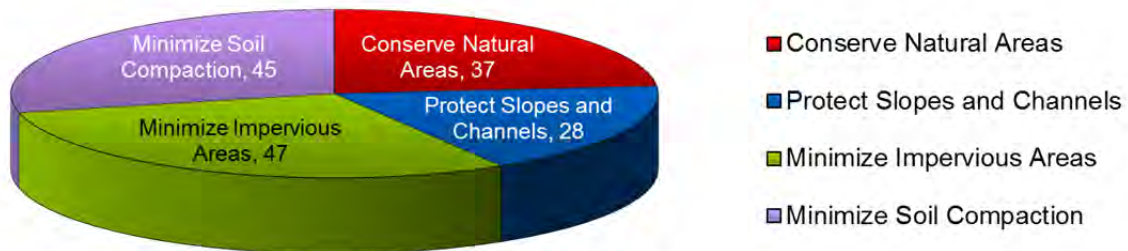
Since 2003, 616 Site Design Control Measures, 607 Source Control Measures (i.e., site-specific control measures), 47 Volume Reduction Measures, and 237 Treatment Control Measures have been incorporated into 292 priority projects. (Note that Volume Reduction Measures were not required until the adoption of the revised SWQCCP in 2009.) (L1)

LD3 - Control Measures and Maintenance Agreements



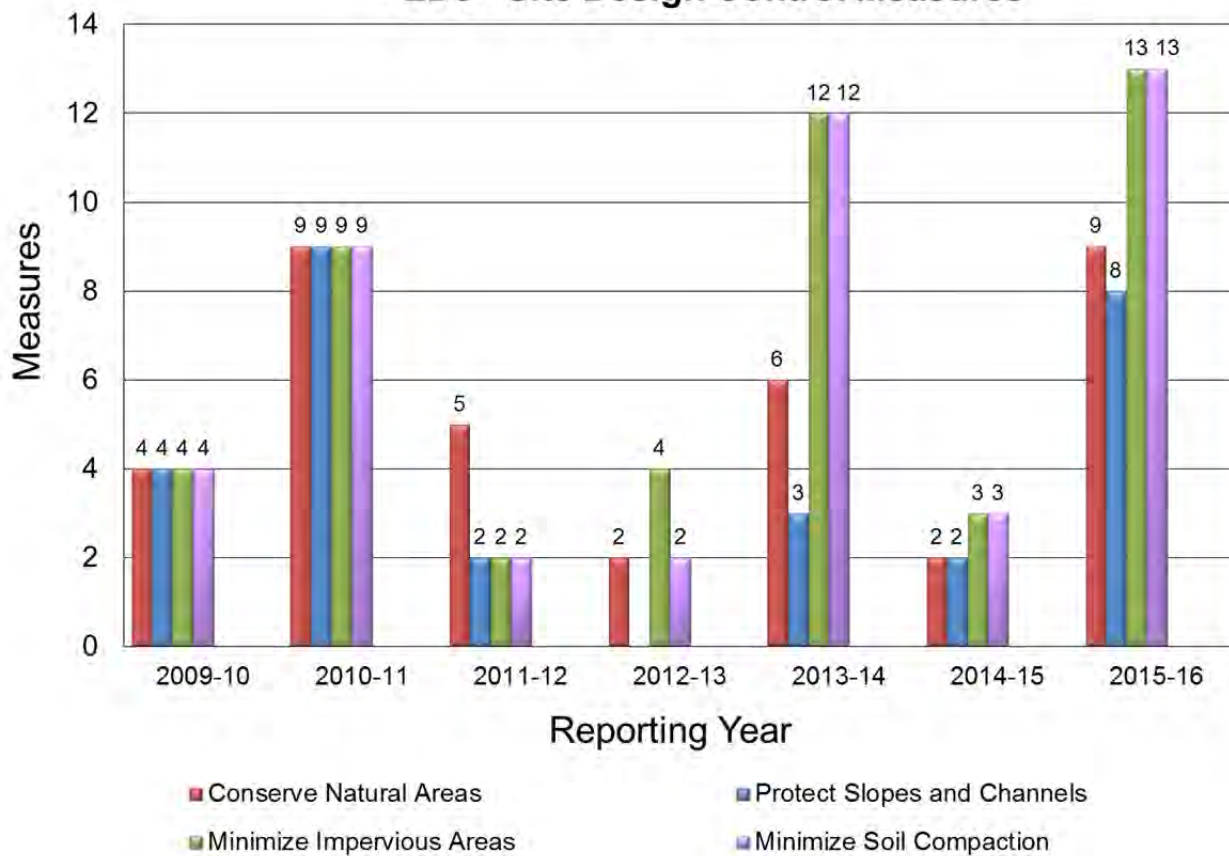
Since the 2009 SWQCCP was approved, priority projects have included a variety of all four categories of control measures (site design, source control, volume reduction, and treatment control), as shown in the figures below. (L1)

LD3 - 2009-2016 Site Design Control Measures

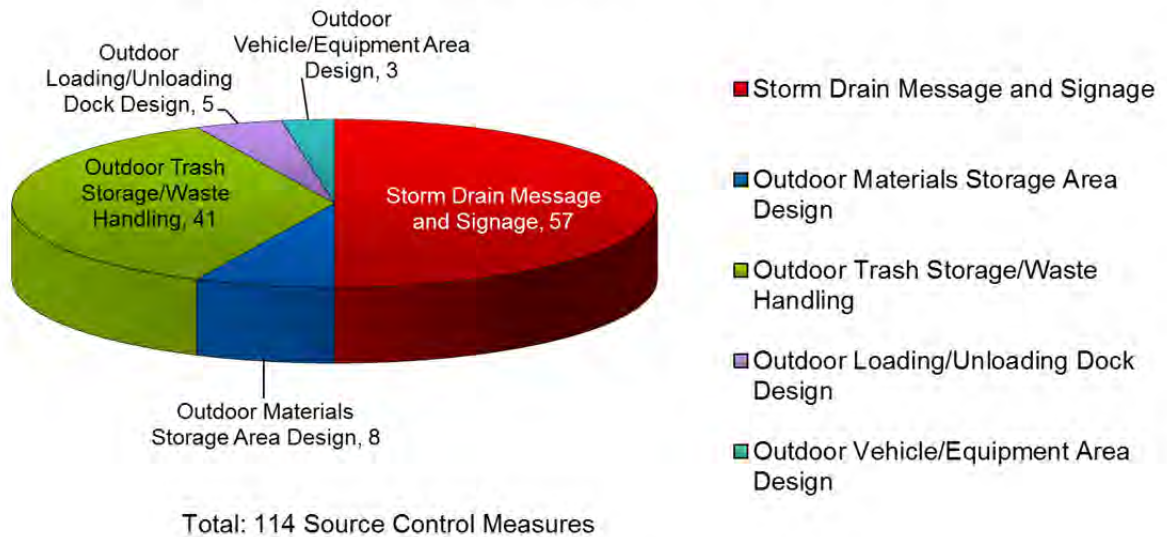


Total: 157 Site Design Control Measures

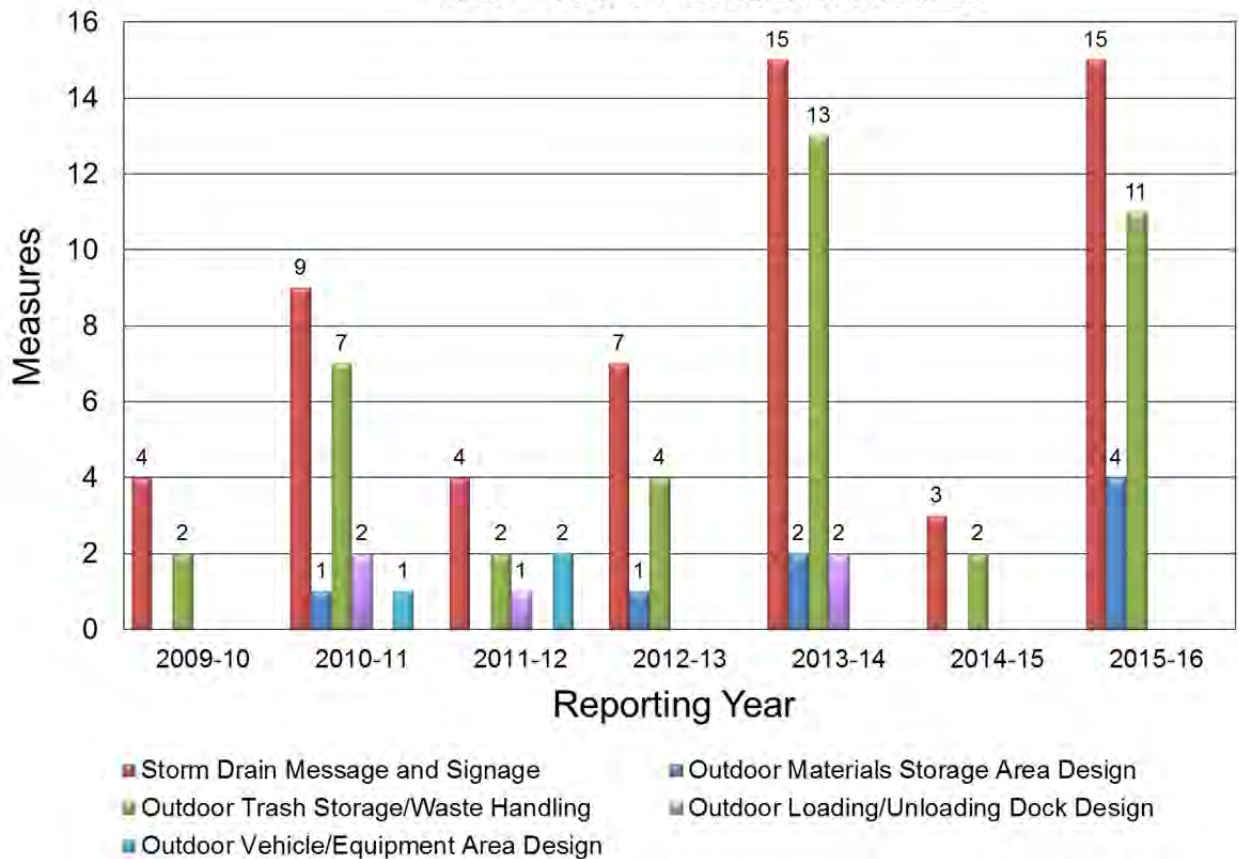
LD3 - Site Design Control Measures



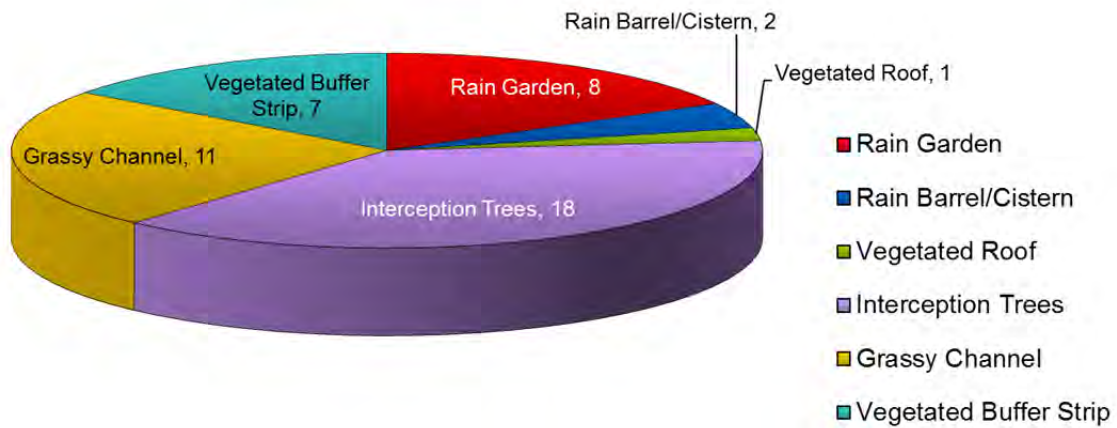
LD3 - 2009-2016 Source Control Measures



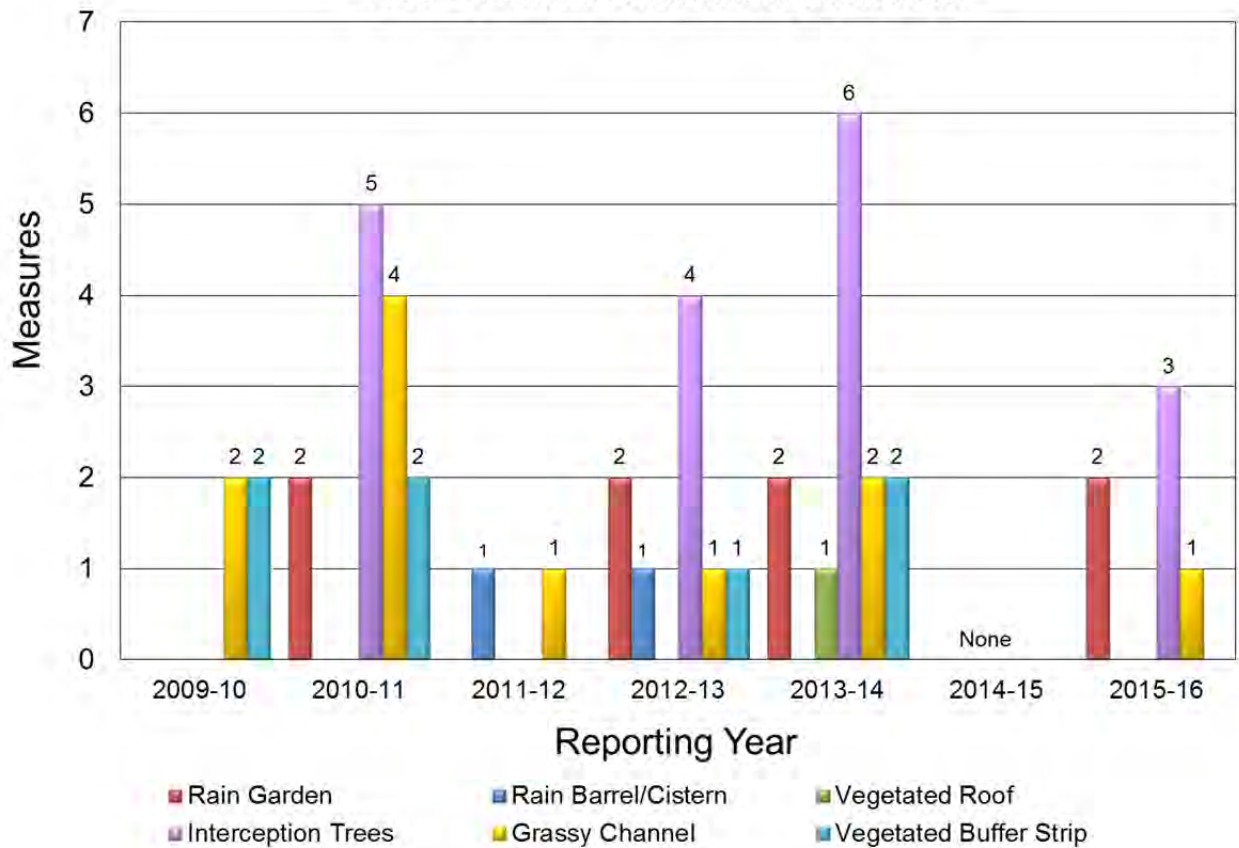
LD3 - Source Control Measures



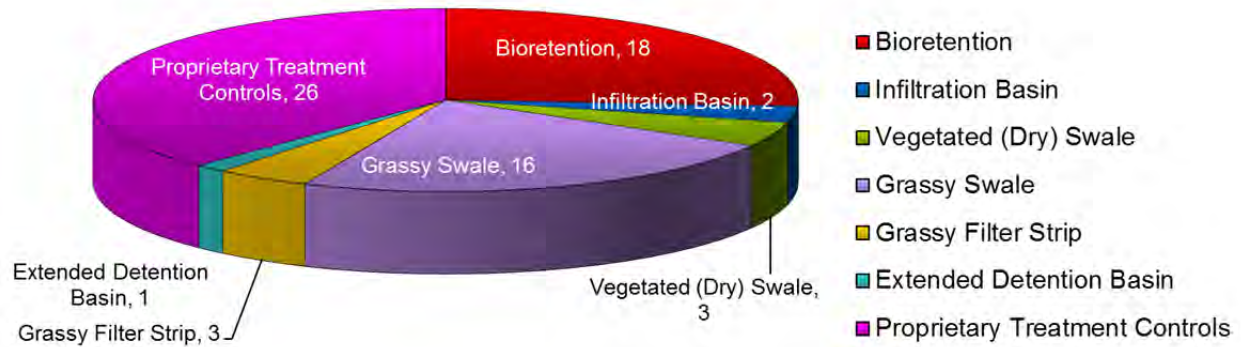
LD3 - 2009-2016 Volume Reduction Measures



LD3 - Volume Reduction Measures

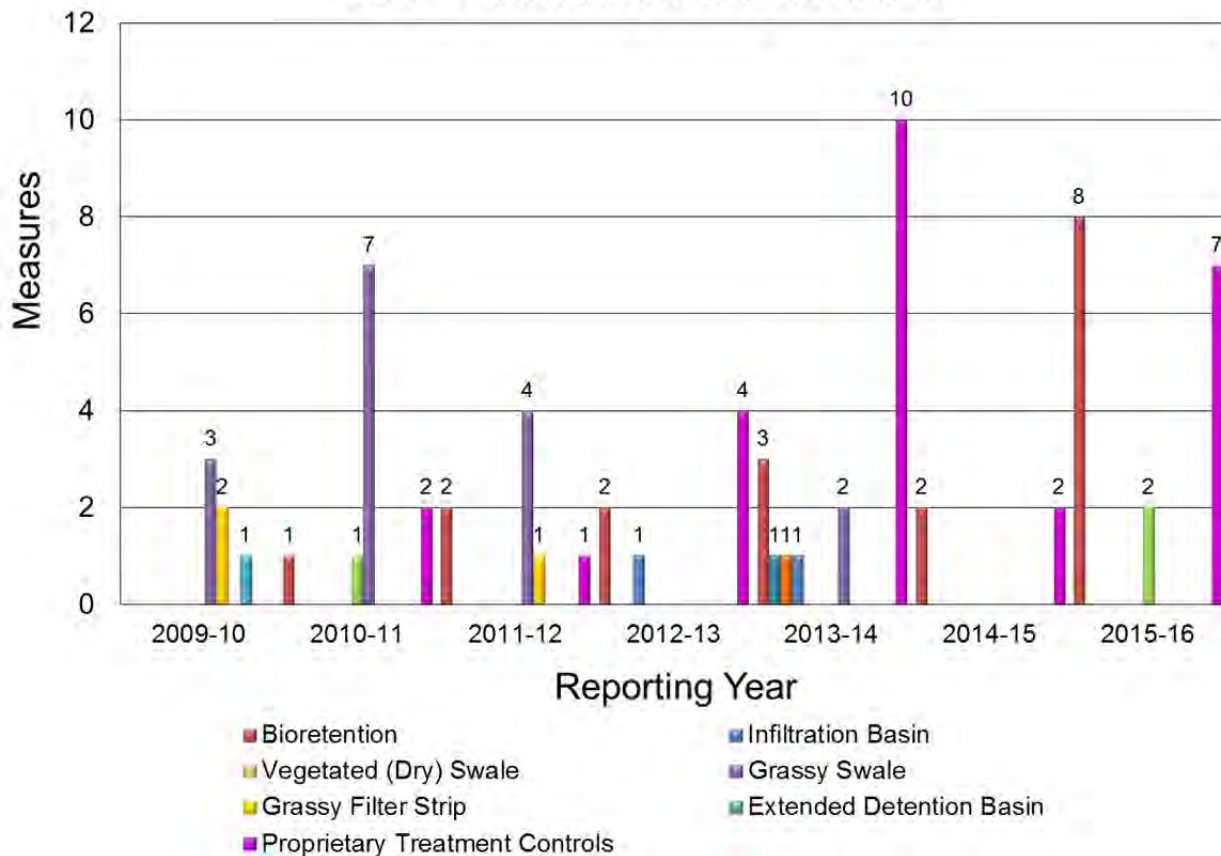


LD3 - 2009-2016 Treatment Control Measures



Total: 71 Treatment Control Measures

LD3 - Treatment Control Measures



The City completed the GIS layer of all post-construction BMPs that have been approved and constructed within the City to date. The City will continue to develop layers that identify devices maintained by the Consolidated Storm Drainage Maintenance Assessment District and identify the properties that benefit from those devices. **(L1)**

LD4 - Maintenance Agreement and Transfer

The City continues to require and execute maintenance agreements for all post-construction BMPs. Fifteen maintenance agreements were moving through the signature process during the 2015-2016 reporting period. All 15 agreements will be privately maintained. **(L1)**

The City continues to implement GIS as a method for tracking post-construction BMPs. **(L1)**

LD5 – Training

City staff are attending training sessions related to the Planning and Land Development Program Element. **(L1)**

- Since 2007-2008, four City staff have attended 67 Planning and Land Development training sessions.

Section 8

Stormwater Quality Monitoring Program

The Permit requires monitoring of urban runoff and receiving waters as detailed in the Monitoring and Reporting Program (MRP). In accordance with Provision II of the MRP, the City and County submitted a request to the Regional Water Board for consideration and approval of an Alternative Monitoring Program (AMP).¹ The AMP was proposed in lieu of the monitoring program outlined in Section II and III of the MRP. The AMP is consistent with the proposed monitoring program from the Report of Waste Discharge,² meets the objectives of the MRP, directs resources to the most critical water quality issues, and collects data to support management decisions to address those priority water quality issues. The primary objective of the AMP is to focus on Pollutants of Concern (POCs) and implement an intensive monitoring approach to determine the source(s) of pollutants in urban discharges. In addition to the AMP, the Permittees requested to participate in the Delta Regional Monitoring Program (Delta RMP) in lieu of conducting some of the local water quality monitoring.

In 2015, the Regional Water Board Executive Officer approved the Permittees' AMP³ (hereafter referred to as the stormwater quality monitoring program, or monitoring program) and participation in the Delta RMP.⁴ As a result, the revised monitoring program was initiated during the 2015-2016 reporting period.

The monitoring program is a focused monitoring effort conducted within six key water bodies on a rotating basis. The schedule for the staggered waterbody monitoring is shown in **Table 8-1**. During 2015-2016, monitoring occurred on Mosher Slough.

Table 8-1. Staggered Waterbody Monitoring

Waterbody	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Mosher Slough ¹						
Calaveras River ¹						
Duck Creek ¹						
Smith Canal ¹						
Mormon Slough						
Five-Mile Slough						

Notes:

¹Historic monitoring location

¹ City of Stockton and County of San Joaquin. Submittal of Alternative Stormwater Monitoring Program (Order No. R5-2015-0024). June 10, 2015.

² National Pollutant Discharge Elimination System Municipal Stormwater Program – *Report of Waste Discharge & Proposed Stormwater Management Plan*, June 2012 (Section 2.7; Tables 2-42, 2-43, 2-44, 2-45, 2-46, and 2-47).

³ Central Valley Regional Water Quality Control Board. Approval of City of Stockton and County of San Joaquin's 27 October Alternative Monitoring Program. 4 November 2015.

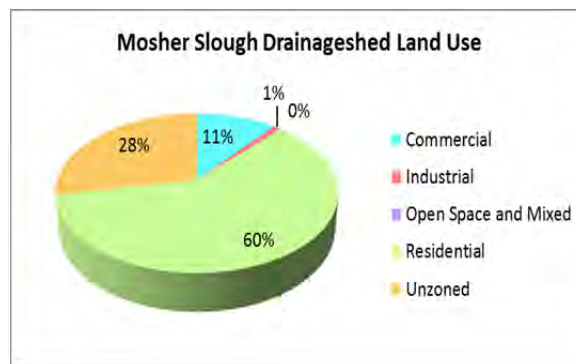
⁴ Central Valley Regional Water Quality Control Board. Approval to Allow the City of Stockton and County of San Joaquin to Reduce Local Water Quality Monitoring and Participate in the Delta Regional Monitoring Program. 4 November 2015.

8.1 WATERBODY AND DRAINAGESHED MONITORING

Mosher Slough is one of Stockton's least-improved waterways and is located in the northern portion of the SUA. The urbanized portion of Mosher Slough flows naturally only when it receives input from upstream agricultural flow/tail waters or surface water runoff. In general, Mosher Slough is a shallow waterway that increases in depth west of the SUA; at high tide, the water level immediately west of I-5 is approximately four to five feet above mean sea level.

Land use within the urbanized portion of the Mosher Slough drainageshed is primarily (60%) residential with a small percentage of commercial, industrial, and public lands. To the west of I-5, land use is predominantly agricultural. In addition to urban runoff, Mosher Slough receives inflow from upstream agricultural runoff and agricultural return flows (tail water).

Monitoring sites are shown in **Figure 8-1**. **Table 8-2** identifies the constituents monitored at each site.



- The full list of constituents (**Table 8-7**) is monitored at the historic locations, MS-14 and MS-14R.
- Monitoring at the other locations is focused on the POCs within the Mosher Slough drainageshed. The POCs include:
 - *E. coli* and fecal coliform;
 - Chlorpyrifos and pyrethroids (an emerging POC); and
 - Mercury and methylmercury.

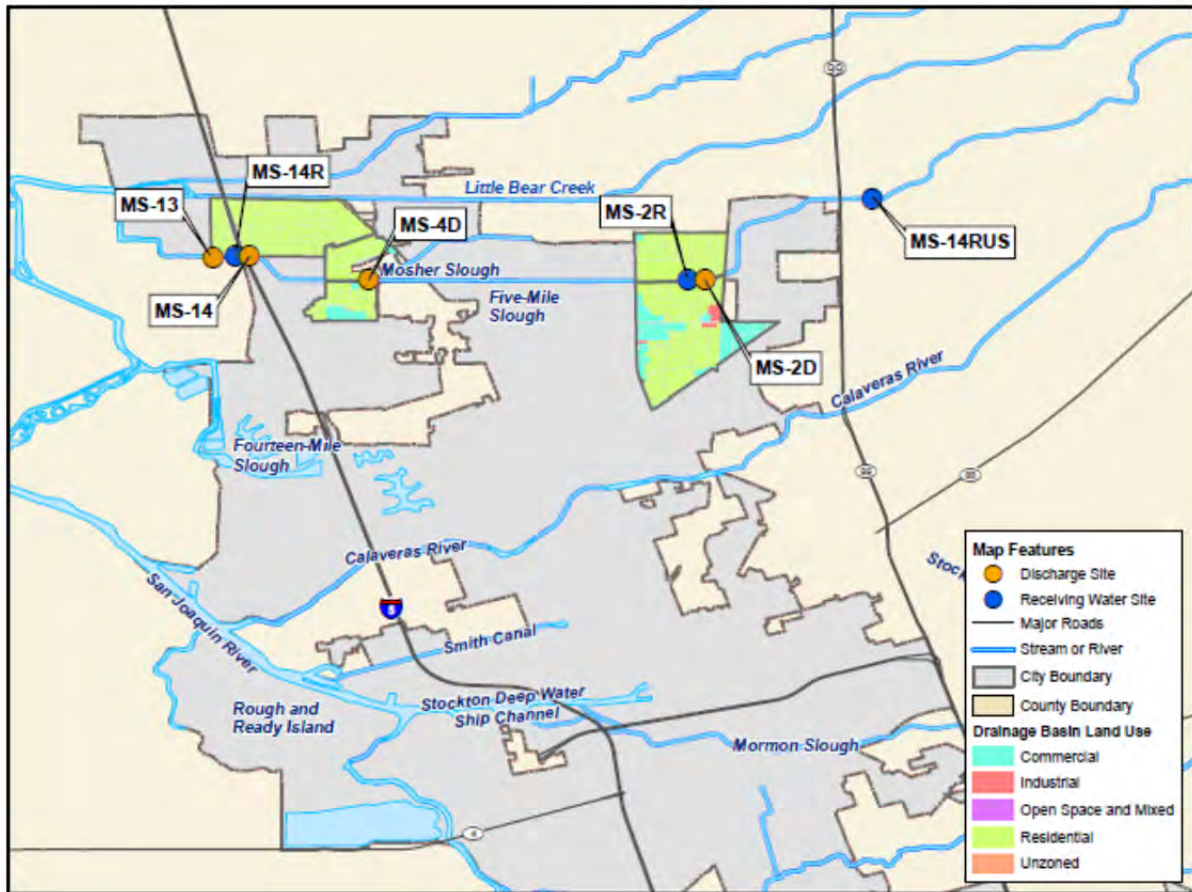


Figure 8-1. Mosher Slough Monitoring Sites and Discharge Site Drainagesheds

Table 8-2. Mosher Slough Monitoring Sites and Constituents Monitored

Constituents Monitored	Type of Monitoring	Sites Monitored						
		MS-14RUS	MS-2D	MS-2R	MS-4D	MS-14 ^{1,2}	MS-14R ^{1,2}	MS-13
Full suite of constituents (Table 8-7)	Water quality					C	G	
<i>E. coli</i> and fecal coliform	Water quality	G	G	G	G			G
Chlorpyrifos and pyrethroids	Water quality	G	G	G	G			G
Mercury (and methylmercury)	Water quality	G	G	G	G			G
Sediment toxicity and sediment chemistry ³	Sediment						Sed	
Water column toxicity	Water column						G	

Notes:

1. Historic Monitoring Site.

2. Diazinon is monitored at this site in addition to the full suite of constituents.

3. Follow-up testing of sediment chemistry is performed if toxicity is determined to be statistically significant and greater than or equal to 50% increase in *Hyalella azteca* mortality is observed during the USEPA standardized ten-day sediment toxicity testing method for freshwaters.⁵

G = Grab

C = Composite

Sed = Sediment

Monitoring activities completed during 2015-2016 are summarized in **Table 8-3**. Monitoring efforts and results for these POCs are presented in the following sections.

Table 8-3. 2015-2016 Monitoring Program Accomplishments

Monitoring Program Activity	Status
Waterbody/Drainageshed Monitoring (Section 8.1)	
Outfall and Receiving Water Monitoring (Section 8.1.2)	<ul style="list-style-type: none"> 4 wet weather events successfully monitored at 2 urban discharge and 4 receiving water sites 4 dry weather events successfully monitored at 2 urban discharge and 4 receiving water sites 1 wet weather event and 2 dry weather events successfully monitored at 1 upstream site
Rainwater/Atmospheric Deposition Monitoring (Section 8.1.3)	<ul style="list-style-type: none"> Rainwater monitored at 3 locations during 4 wet weather events
Sediment Toxicity and Sediment Chemistry (Section 8.1.4)	<ul style="list-style-type: none"> 1 wet weather event and 2 dry weather events monitored for sediment toxicity at the historic monitoring location (MS-14R)
Water Column Toxicity (Section 8.1.5)	<ul style="list-style-type: none"> 1 wet weather event and 1 dry weather event monitored at the historic monitoring location (MS-14R)

⁵ USEPA 2000. Methods for measuring the toxicity and bioaccumulation of sediment-associated contaminants with freshwater invertebrates. EPA 600/R-99/064. Office of Research and Development. Washington, DC.

8.1.1 Storm Tracking and Selection

Monitoring of stormwater runoff is a key component of the monitoring program and requires a high level of coordination of equipment and field crews. Incoming storms are tracked and assessed against storm selection criteria (e.g., amount of precipitation, days since last rain event, duration of event) and the forecasted reliability that the storm will occur in the SUA. Wet weather monitoring is particularly challenging in the SUA, as rainfall forecasts are often unreliable due to the convective nature of incoming storms. In addition, because storms normally intersect Stockton traveling from the west to the east, it is not unusual for northern Stockton to receive substantial rainfall, while southern Stockton remains dry, or vice versa.

Wet weather events are timed to capture urban runoff impacts with the highest possible representation of the targeted storm event (i.e., high percent capture), using flow-based composite samplers at urban discharge stations when possible. Grab sampling techniques, which are, when feasible, conducted near the peak of storm event hydrographs, are used at all receiving water stations. Due to standard method requirements, grab sampling is used for the following constituents:

- Oil and grease;
- Indicator bacteria (*E. coli*, fecal coliform, and total coliform);
- Pesticides; and
- Mercury/ methylmercury.

The daily total rainfall at the Stockton Metro Airport⁶ during the 2015-2016 monitoring year⁷ is shown in **Figure 8-2**. The total cumulative seasonal rainfall is also shown (compared to the historic average⁸) as well as the timing of monitoring events. Historic average annual rainfall at the Stockton Metro Airport is 14 inches. The 2015-2016 monitoring year was wetter than average with 16.62 inches of rain, which is 119% of historic annual rainfall. Although 2016 had a wet start, the California Department of Water Resources classified the 2015 water year (ending September 30, 2015) as “critically dry” for the San Joaquin Valley. The 2016 water year classification is still to be determined.

⁶ http://cdec.water.ca.gov/cgi-progs/selectQuery?station_id=SOC&dur_code=D&sensor_num=45&start_date=07/01/2014+00:00&end_date=06/30/2015+00:00

⁷ 7/1/15 to 6/30/16

⁸ Based on 1981-2010 data. <http://www.cnrfc.noaa.gov/awipsProducts/RNOWRKCLI.php>

Details of 2015-2016 Wet Weather Monitoring Events

Each monitoring event is unique in terms of the antecedent weather conditions, flow in the receiving waterbody, field conditions, etc. Runoff quality is particularly influenced by the amount and intensity of rainfall and time of sampling with respect to the rainfall hydrograph. The conditions for wet weather events conducted during 2015-2016 are summarized in **Table 8-4**.

Table 8-4. Details of 2015-2016 Wet Weather Monitoring Events

Storm Events	SE57 11/15/15	SE58 2/17/16	SE59 3/5/16	SE60 4/22/16
Time of first rain	5:55	20:55	1:55	7:55
Time of last rain	9:55	22:55	3:55 3/6/16	15:55
Total rain (in)	0.15	0.95	1.18	0.44
Antecedent Conditions¹				
Date of last precipitation	11/10/15	1/31/16	3/4/16	4/14/16
Date of last storm > .1	11/9/15	1/30/16	3/4/16	4/14/16
Days since last storm	6	18	1	8
Date of last storm > .25	11/9/15	1/29/16	3/4/16	4/10/16
Days since last storm	6	19	1	12
Cumulative rainfall to date (in)	2.84	16.65	18.45	25.50

Notes:

1. Precipitation data is taken from the Stockton Metro Airport, and is available at: http://mesowest.utah.edu/cgi-bin/droman/download_ndb.cgi?stn=KSCK&year1=2014&day1=19&month1=6&hour1=&timetype=LOCAL&unit=0

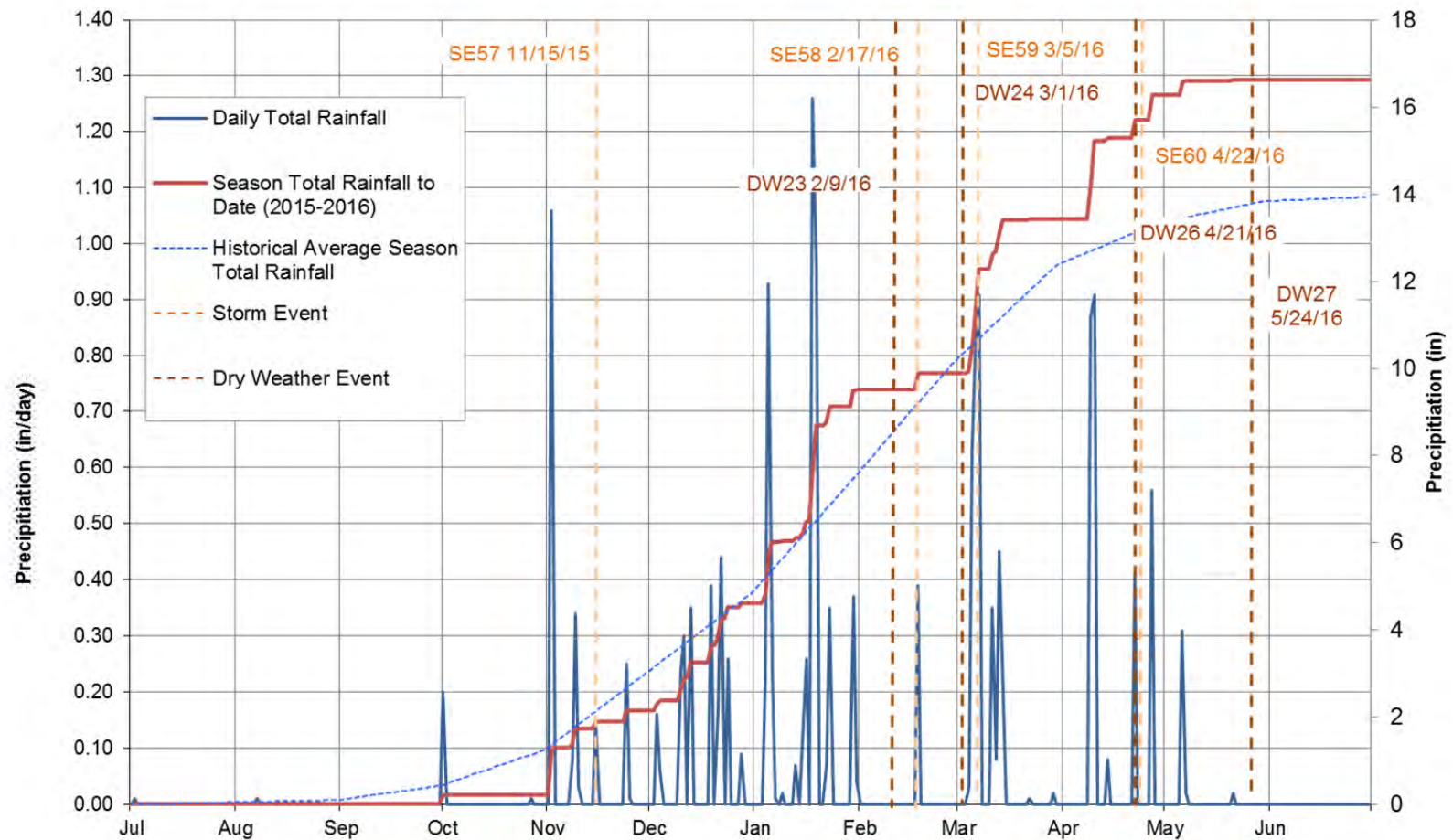


Figure 8-2. 2015-2016 Precipitation at Stockton Metro Airport and Captured Monitoring Events⁹

⁹ Precipitation data is taken from the Stockton Metro Airport. Data for this site is available at: http://cdec.water.ca.gov/cgi-progs/selectQuery?station_id=SOC&dur_code=D&sensor_num=45&start_date=07/01/2014+00:00&end_date=06/30/2015+00:00

8.1.2 Outfall and Receiving Water Monitoring

The monitoring program includes urban discharge outfall and receiving water monitoring. Urban discharge outfall monitoring characterizes the quality of urban runoff discharged from four storm drain outfalls along Mosher Slough. In addition, receiving water monitoring characterizes the quality of the receiving waters within the SUA. Two receiving water sites were sampled downstream of the urban discharge sites. The co-located sites are used to help determine if the urban discharge is causing or contributing to exceedances of applicable water quality objectives (discussed in **Section 8.3**).

One additional upstream site (upstream of the SUA boundary) was sampled in order to characterize the quality of water entering the SUA. The upstream receiving water site is intended to be as close to the boundary of the SUA as possible.

Monitoring sites that were sampled in 2015-2016 are shown in **Figure 8-1**.

- Urban discharge sites are labeled with a station and number code (e.g., MS-14) or are labeled with a “D” for discharge (e.g., MS-2D).
- Receiving water sites are labeled with an “R” for receiving water (e.g., MS-14R).
- Sites upstream of the SUA are labeled with an “RUS” for receiving water, upstream (e.g., MS-14RUS).

The outfall and receiving water monitoring sites and predominant land uses are summarized in **Table 8-5**.

Table 8-5. 2015-2016 Outfall and Receiving Water Monitoring Sites

Site Type	Station ID	Monitoring Site Description	Predominant Land Use	Drainage Area (acres)
Urban Outfall	MS-2D	Cherbourg Way	Residential	388
	MS-4D	Don Ave, Pump Station	Residential	1,118
	MS-14 ¹	Kelly Drive Pump Station	Residential	533
	MS-13	Twin Brooks Lane Pump Station	Residential	102
Receiving Water	MS-2R	Mosher Slough at Cherbourg Way	Residential	NA
	MS-14R ¹	Mosher Slough at Mariners Drive Bridge	Residential	NA
Upstream Receiving Water	MS-14RUS	Mosher Slough on east side of the over-crossing at Hildreth Lane	Agricultural	NA

Notes:

1 = Historic Monitoring Site

NA = Not Applicable

The monitoring program requires monitoring during three wet weather events and four dry weather events each year. Monitoring was completed during 2015-2016 at each urban discharge and receiving water site four times during the wet season and four times during the dry season. The timeline of the 2015-2016 events is shown in **Figure 8-2**. The sites that were sampled during each event are listed in **Table 8-6**. Wet weather events (labeled “SE” for storm event) and dry weather events (labeled “DW” for dry weather) are numbered sequentially from the initiation of monitoring wet weather and dry weather events (in 1992 and 2004, respectively).

Table 8-6. Sites Sampled and Type of Sample Collected in 2015-2016

Site Type	Station ID	SE57 11/15/15	DW23 2/9/16	SE58 2/17/15	SE59 3/5/16	DW24 3/1/16	SE60 4/22/15	DW25 4/21/16	DW26 5/24/16
Urban Discharge	MS-2D	G	G	G	G	G	G	G	G
	MS-4D	G	G	G	G	G	G	G	G
	MS-14 ¹	G	G	G	G	G	G	G	G
	MS-13	G	G	G	G	G	G	G	G
Receiving Water	MS-2R	G	G	G	G	G	G	G	G
	MS-14R	G	G	G	G	G	G	G	G
Upstream Receiving Water	MS- 14RUS	NS	NS	NS	NS	NS	G	G	G

C = Composite

G = Grab

NS = Not sampled due to lack of representative upstream flow / dry channel.

1: Mosher Slough MS-14 composite sampler had electrical issues; wet weather samples were collected as grabs

Monitored Constituents and Analytical Methods

The constituents and corresponding analytical methods for urban discharge and receiving water monitoring are in accordance with the Method Detection Limits (MDLs) that are specified in the monitoring program. During the 2015-2016 events, samples at the historic sites (MS-14 and MS-14R) were analyzed for the constituents shown in **Table 8-7**. Samples at all other sampling locations on Mosher Slough were analyzed for a targeted set of constituents, based on POCs identified in the 2012 ROWD, as shown in **Table 8-2**.

Table 8-7. Constituent Analysis for Outfall and Receiving Water Monitoring at Historic Sites

Constituents	Method Detection Limits (MDLs)
Conventional Pollutants	mg/L
Oil and Grease	5
pH	0-14
Dissolved Oxygen	Sensitivity to 5 mg/L
Field Measurements	
Date	mm/dd/yyyy
Sample Time	hr:min (regular time)
Weather	degrees F
Water Temperature	degrees C
Bacteria	
Fecal coliform	<20 MPN/100 mL
<i>E. coli</i>	<20 MPN/100 mL
General	mg/L
Turbidity	0.1 NTU
Total Suspended Solids	2
Total Dissolved Solids	2
Total Organic Carbon	1
Biochemical Oxygen Demand	2
Chemical Oxygen Demand	20-900
Total Kjeldahl Nitrogen	0.1
Alkalinity	2
Total Ammonia-Nitrogen	0.1
Specific Conductance	1 µmhos/cm
Total Hardness	2
Metals	µg/L
Aluminum, Dissolved	50
Aluminum, Total	50
Copper, Dissolved	0.5
Copper, Total	0.5
Iron, Total	100
Lead, Dissolved	0.5
Lead, Total	0.5
Mercury, Total	0.5 ng/L
Methylmercury, Total	0.05 ng/L
Zinc, Total	1
Pesticides	µg/L
Chlorpyrifos	0.01
Diazinon ¹	0.05
Pyrethroids	5 ng/L

Note:

1. Diazinon is monitored only at Mosher Slough locations MS-14 and MS-14R.

Waterbody/drainageshed monitoring results are included in **Appendix H-1**, which contains the following information:

- Sample location
- Station type (urban discharge [UD] or receiving water [RW])
- Sampling method (composite or grab)
- Sample date and time
- Sample result
- MDLs
- Reporting Limits (RLs)
- Data qualifiers
- Comparison to the lowest applicable water quality objective (WQO)
- The analyzing laboratory

For analyses that were non-detect (ND), the value is reported as less than the MDL where the MDL is provided by the lab; otherwise, the value is reported as less than the RL. A discussion of data quality evaluation and Quality Assurance/Quality Control (QA/QC), is included in **Section 8.2**. A discussion of urban discharge water quality objective exceedances, which potentially caused or contributed to receiving water exceedances, is included in **Section 8.3**.

Monitoring results for the constituents identified as water quality POCs for Mosher Slough are presented graphically to provide a characterization of Mosher Slough:

- *E. coli* and fecal coliform (
- **Figure 8-3**);
- Chlorpyrifos (**Figure 8-4**) and pyrethroids (an emerging POC; **Figure 8-5**); and
- Mercury and methylmercury (**Figure 8-6**).

Data for the POCs are summarized in tables in **Appendix H-2**. A complete assessment of monitoring results from Mosher Slough within the context of all monitored waterbodies, including data from the historic monitoring locations and an assessment of trends, will be provided in the End-Term Report required by the General Permit. General observations from the 2015-2016 monitoring results are provided below:

- Indicator bacteria concentrations are generally higher during storm events than during dry weather events.
- Chlorpyrifos concentrations were all below applicable WQOs. All pesticides were more frequently detected during storm events than during dry weather events.
- Similarly, mercury concentrations tended to be higher during storm events compared to dry weather events.

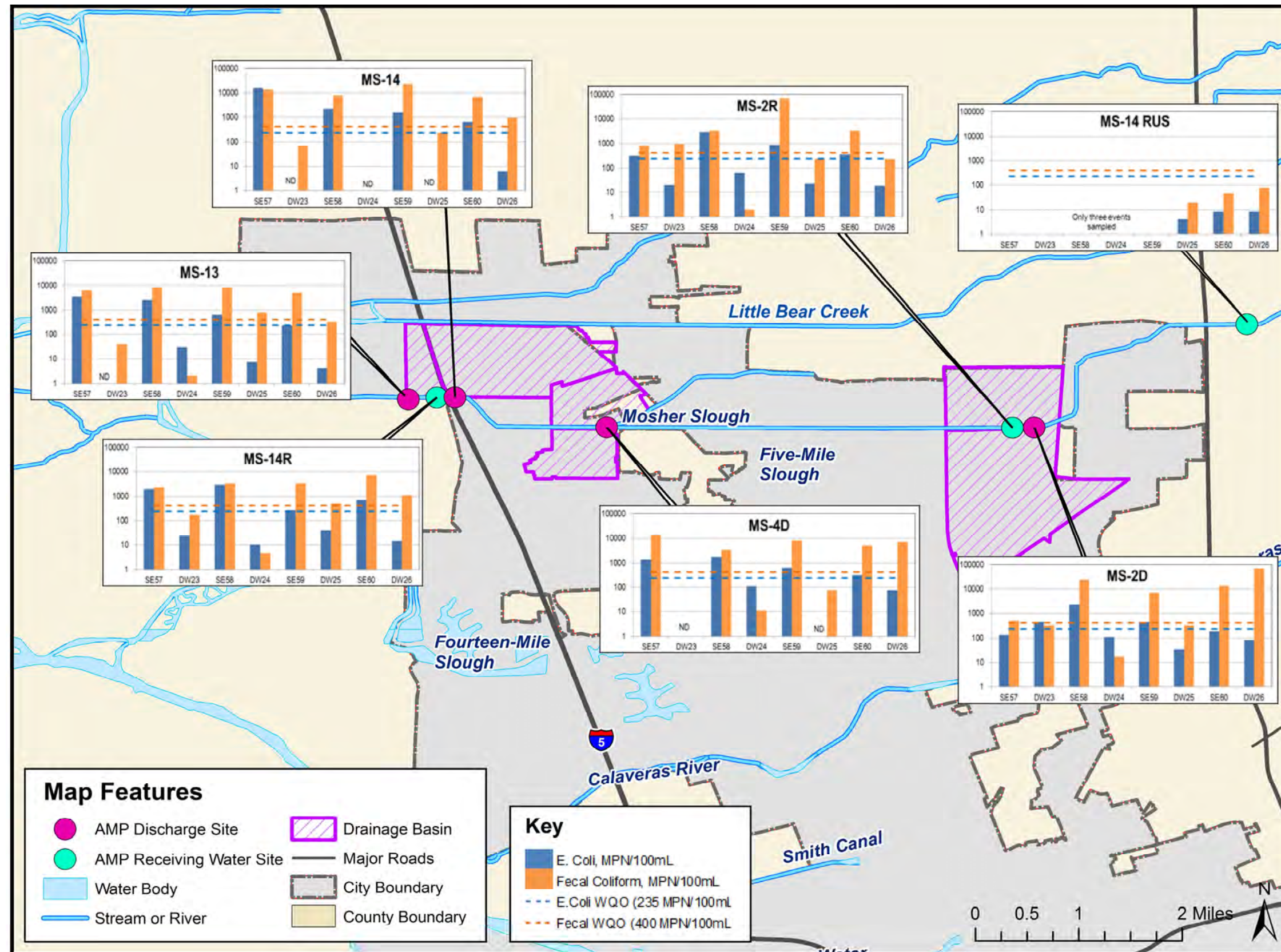


Figure 8-3. Moshier Slough 2015-2016 *E. coli* and Fecal Coliform Concentrations (MPN/100 mL)

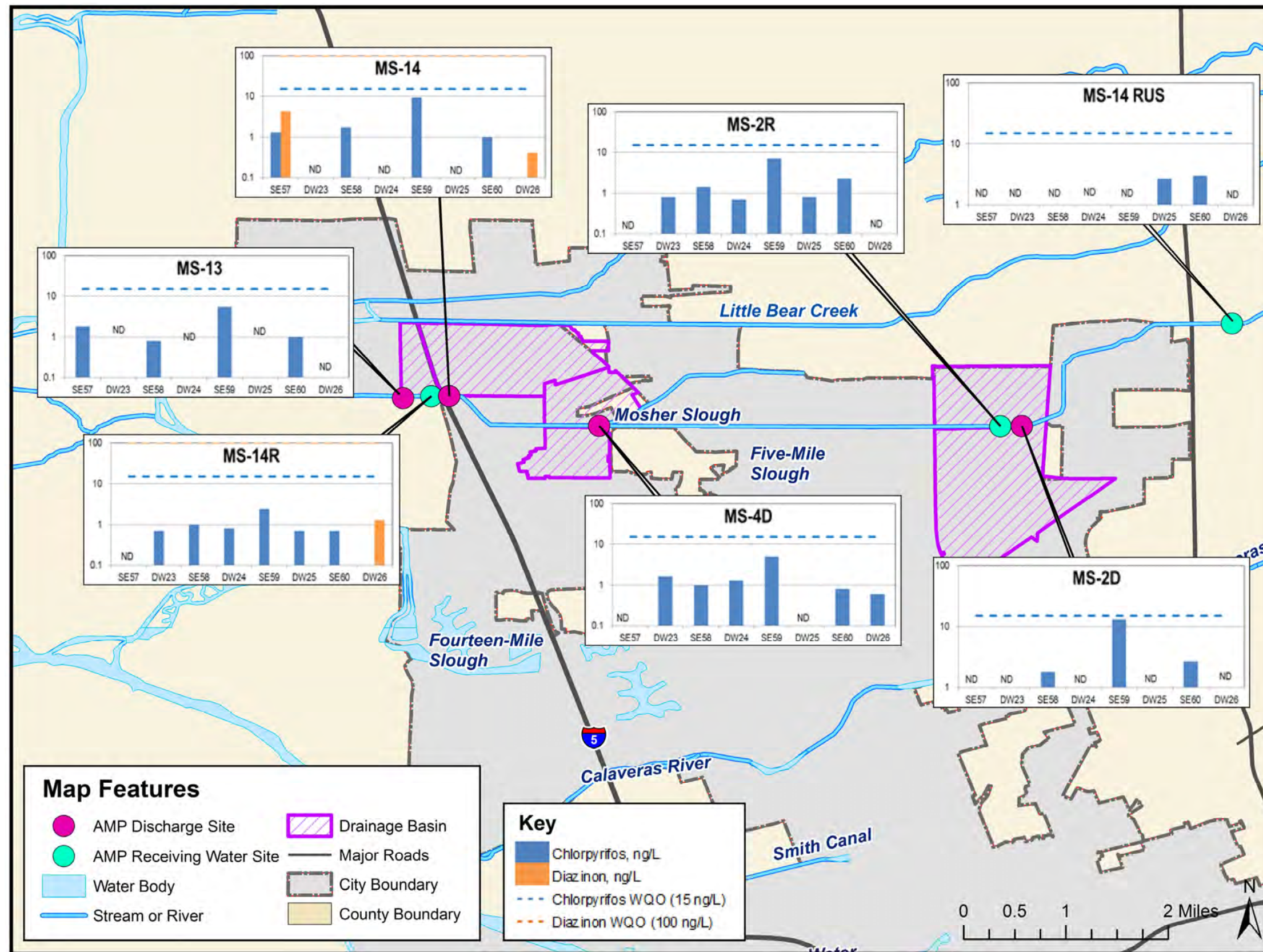


Figure 8-4. Mosher Slough 2015-2016 Chlorpyrifos and Diazinon Concentrations (ng/L)

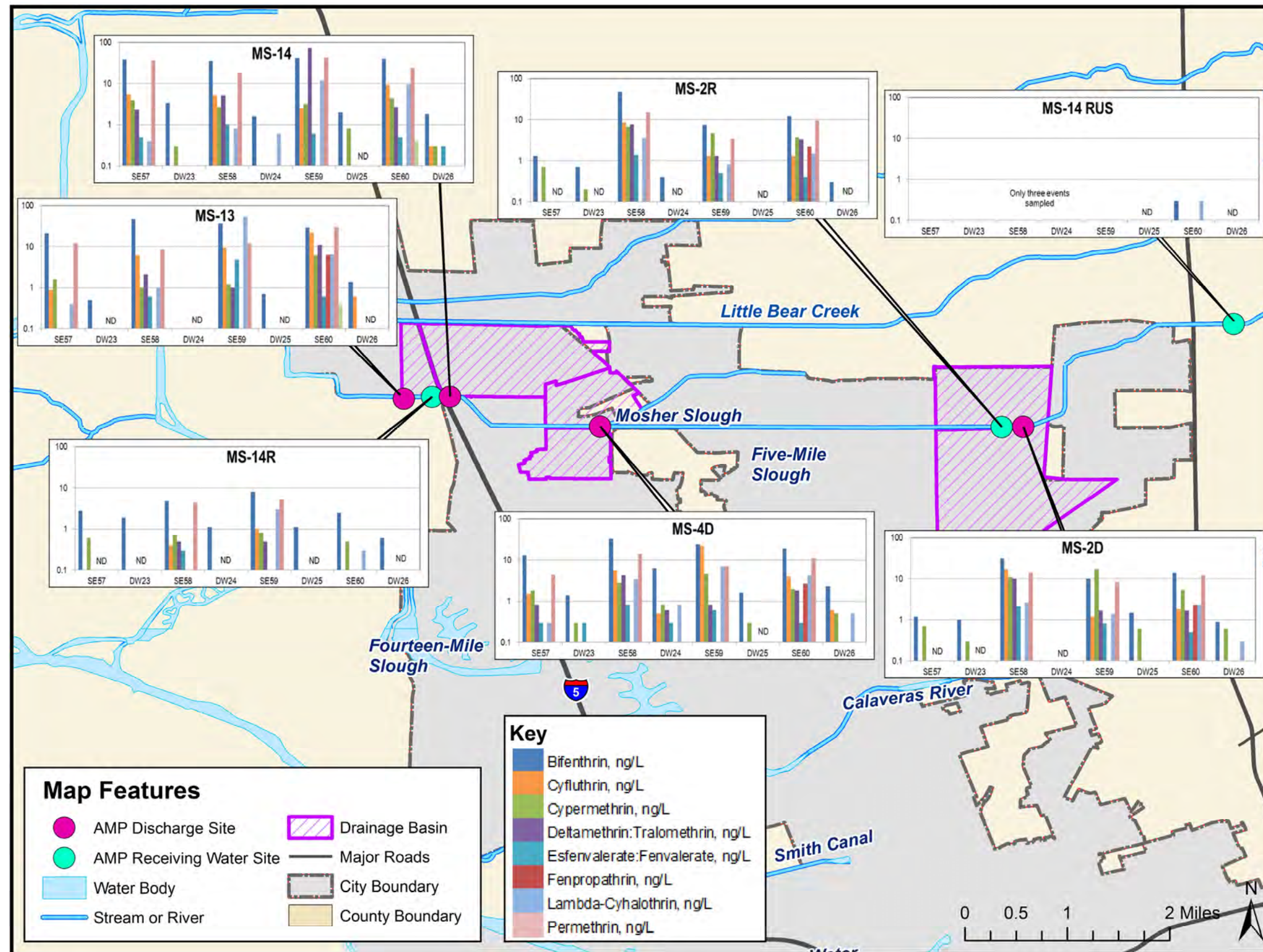


Figure 8-5. Mosher Slough 2015-2016 Pyrethroid Concentrations (ng/L)

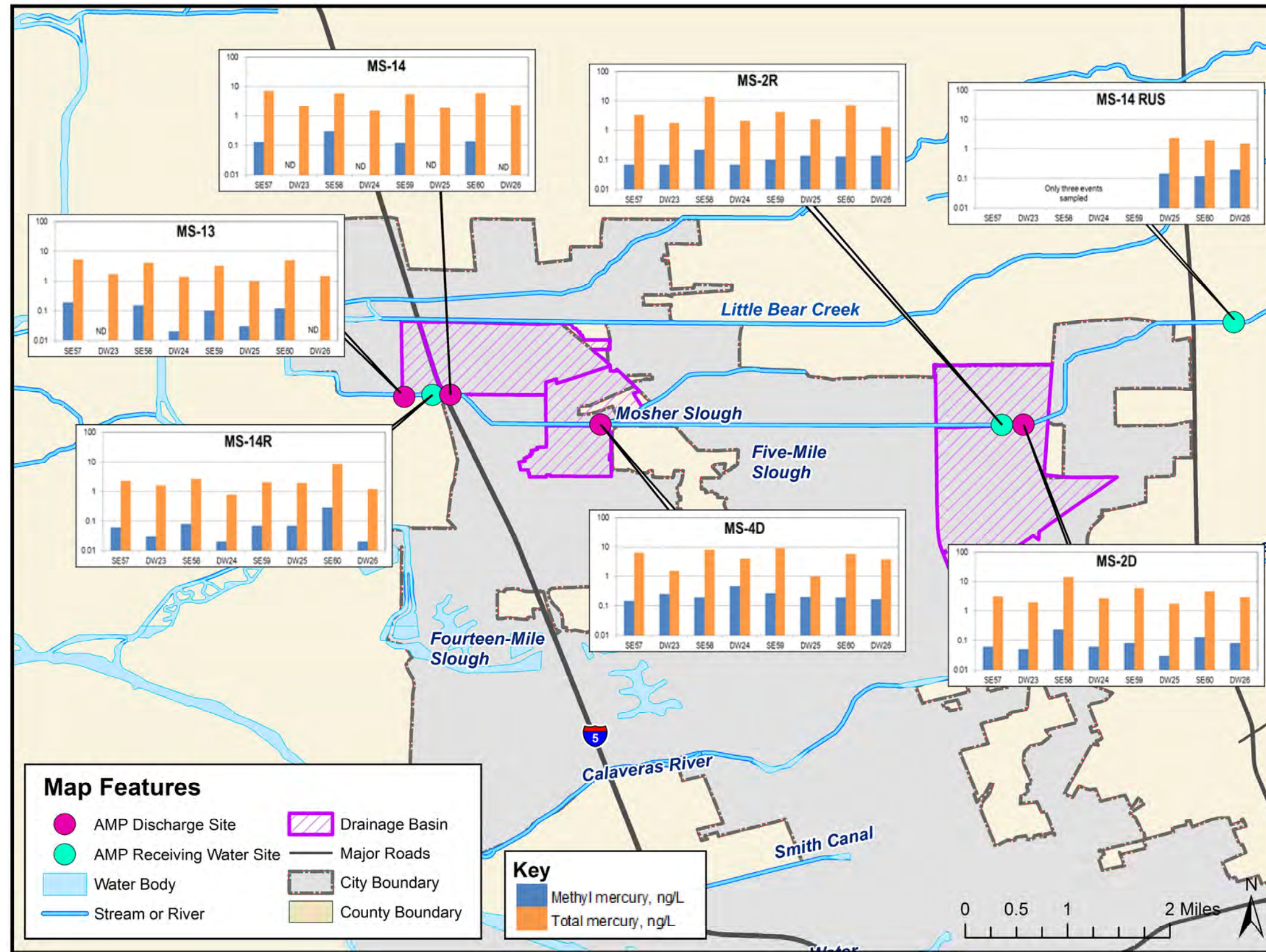


Figure 8-6. Moshier Slough 2015-2016 Total Mercury and Total Methylmercury Concentrations (ng/L)

8.1.3 Rainwater/Atmospheric Deposition Monitoring

During 2015-2016, rainwater/atmospheric deposition was monitored for mercury (total mercury and total methylmercury) and pesticides (chlorpyrifos & pyrethroids) at three representative locations in the SUA. Diazinon was monitored at the NW-Rain location, in addition to chlorpyrifos and pyrethroids. The three locations are shown in **Figure 8-7**.

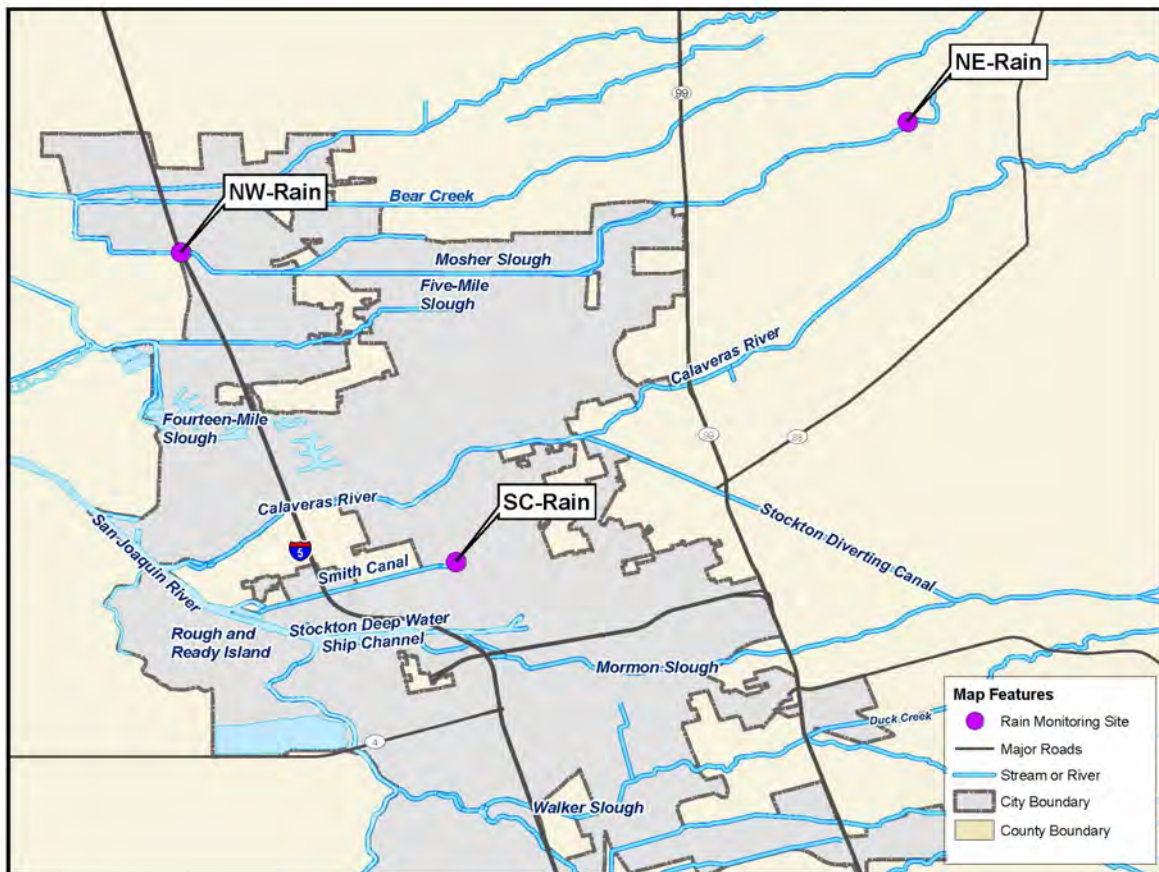


Figure 8-7. Rainwater/Atmospheric Deposition Monitoring Locations

The monitoring sites include the following:

- NW-Rain – Located along Moshier Slough in the northwest corner of the SUA. This site has been historically monitored for the Pesticide Plan. The site is representative of atmospheric deposition generated within and outside of the SUA.
- NE-Rain – Located along Moshier Slough outside of the SUA, to the northeast. This site has been historically monitored for the Pesticide Plan. The site is representative of atmospheric deposition generated outside of the SUA.
- SC-Rain – Located at the Legion Park Pump Station, in the center of the SUA. This site is representative of atmospheric deposition that is generated within the SUA.

During 2015-2016, rainwater was monitored at all three sites during all four storm events that were sampled for the outfall and receiving water monitoring. Monitoring results are shown in **Figure 8-8**.

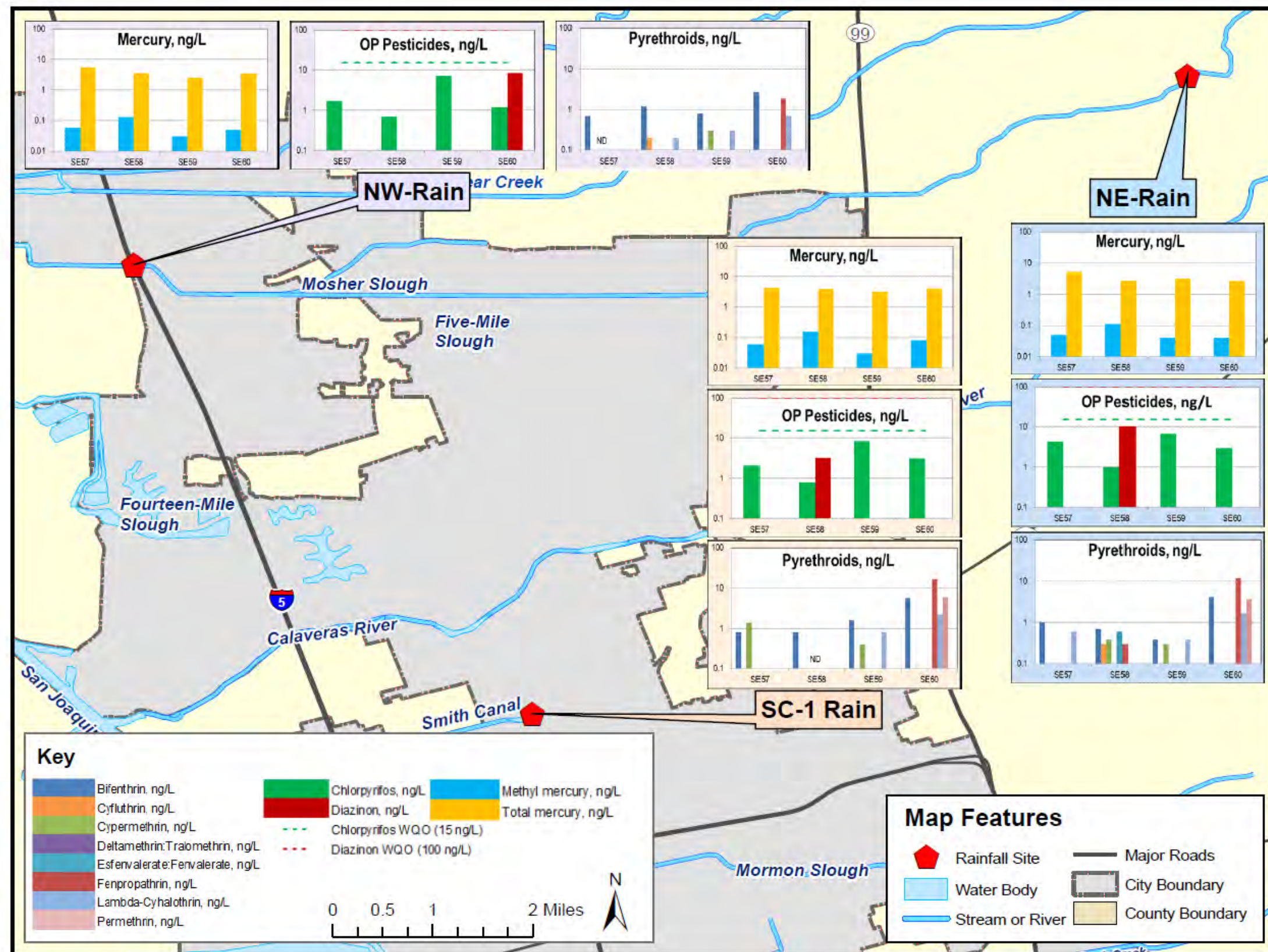


Figure 8-8. 2015-2016 Rainwater/Atmospheric Deposition Monitoring Results

8.1.4 Sediment Toxicity and Sediment Chemistry

The monitoring program specifies that sediment toxicity will be monitored at receiving water sites on each historic waterbody. Monitoring is performed 2-4 days following one storm event and two dry weather events. Sediment samples are analyzed using the USEPA standardized ten-day sediment toxicity testing method¹⁰ for freshwaters using *Hyalella azteca*, and sediment total organic carbon (TOC) and grain size are reported. If toxicity is determined to be statistically significant and greater than or equal to 50% increase in *Hyalella azteca* mortality¹¹ is observed, follow-up testing of sediment chemistry is performed for the parameters specified in **Table 8-8**.

Table 8-8. Sediment Chemistry Constituents to be Monitored at Historic Sites¹

Pesticides in Sediment	Target Reporting Limit
Organophosphate Pesticides	µg/kg
Chlorpyrifos	0.01
Diazinon ²	0.05
Pyrethroid Pesticides³	ng/g
Bifenthrin	1
Cyfluthrin-1	3
Cyfluthrin-2	3
Cyfluthrin-3	3
Cyfluthrin-4	3
Cypermethrin-1	3
Cypermethrin-2	3
Cypermethrin-3	3
Cypermethrin-4	3
Deltamethrin	2
Esfenvalerate/Fenvalerate-1	2
Esfenvalerate/Fenvalerate-2	1
Lambda-cyhalothrin-1	1
Lambda-cyhalothrin-2	4
Permethrin-1	4
Permethrin-2	1

Notes:

1. Follow-up testing of sediment chemistry will be performed if toxicity is determined to be statistically significant and greater than or equal to 50% increase in *Hyalella azteca* mortality is observed.
2. Diazinon will be monitored only at Mosher Slough.
3. Pyrethroid isomers are typically reported as totals instead of the individual isomers except where individual isomers may be obtained

¹⁰ USEPA 2000. Methods for measuring the toxicity and bioaccumulation of sediment-associated contaminants with freshwater invertebrates. EPA 600/R-99/064. Office of Research and Development. Washington, DC.

¹¹ City of Stockton and County of San Joaquin. Sediment Toxicity Work Plan. March 27, 2009, revised June 2009.

During 2015-2016, monitoring was completed at MS-14R during three events:

- 2 days following storm event SE58: 2/19/16;
- Dry weather event DW24: 3/1/16; and
- Dry weather event DW26: 5/24/16.

Sediment toxicity results are summarized in **Table 8-9**, and included in **Appendix H-3**. There were statistically significant reductions in *Hyalella* survival and growth during the February wet weather event; however, the survival was above the 50% threshold for follow-up sediment chemistry testing. During the March 2016 dry weather event, there was no significant reduction in *Hyalella* survival, but a significant reduction in growth. During the May 2016 dry weather event, there was a significant reduction in both survival and growth, however, the decrease in survival was below the 50% threshold for follow-up sediment chemistry testing (**Table 8-9**).

Table 8-9. Sediment Toxicity Results

Sample ID	Date	Toxicity Present Relative to Lab Control?		Mean % Survival	Reduction in Survival (%)	Mean Growth (mg)
		<i>Hyalella azteca</i> Survival	<i>Hyalella azteca</i> Growth			
SE58						
Control				97.5		0.19
MS-14R	2/19/16	Yes	Yes	83.7	14.2	0.09
MS-14R FD	2/19/16	Yes	Yes	76.3	21.7	0.08
DW24						
Control				97.5		0.19
MS-14R	3/1/16	No	Yes	93.8	3.8	0.09
MS-14R FD	3/1/16	No	Yes	92.5	5.1	0.07
DW26						
Control				97.5		0.22
MS-14R	5/24/16	Yes	Yes	57.5	41	0.10
MS-14R FD	5/24/16	Yes	Yes	52.5	46.2	0.09

Notes:

FD = Field Duplicate

Bold indicates that toxicity observed was statistically significant

C = Coarse (>50% sand)

F = Fine (>50% silt and clay)

8.1.5 Water Column Toxicity Monitoring

The monitoring program specifies that water column toxicity is monitored during one storm event and one dry weather event when the historic monitoring location (MS-14R) is sampled. Water column toxicity is conducted in accordance with USEPA methods¹² using short-term chronic toxicity tests based on two freshwater species: 1) Three-brood (6-8 day) survival and reproduction test with water fleas (the crustacean *Ceriodaphnia dubia*); and 2) Seven-day survival and growth test with larval fathead minnows (*Pimephales promelas*). If 100% mortality of either species is detected in a receiving water sample within 24 hours of test initiation, a dilution series testing is initiated (from 6.25% to 100% receiving water) to determine if toxicity was persistent. If statistically significant toxicity is detected, and a greater than or equal to 50% increase in fathead minnow or *Ceriodaphnia dubia* mortality, or reduction in *Ceriodaphnia dubia* mortality compared to the laboratory control is observed, a Toxicity Identification Evaluation (TIE) is conducted.

During 2015-2016, water column toxicity was monitored at MS-14R during one storm event and one dry weather event:

- SE58: 2/17/15, and
- DW26: 5/24/16.

During 2015-2016, there was no toxicity reported during either of the two events. The water column toxicity results are included in **Appendix H-4**.

¹² USEPA 2002. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms, 4th Edition. EPA-821-R-02-013. Office of Water. Washington, DC.

8.2 DATA QUALITY EVALUATION

Quality Assurance/Quality Control (QA/QC) refers to the process of reviewing lab and “field” initiated checks on the sampling and analytical process. These checks, which include field blanks, method blanks, field duplicates, lab duplicates and matrix spike/matrix spike duplicates (MS/MSD), and data review are used to confirm that data are of high quality. Lab reports are initially screened by the field monitoring contractor for missing analytical data (both environmental and QA/QC), holding time violations, discrepancies in analytical methods or detection limits, and any apparent out-of-range environmental results. If the analytical work appears to be missing any requested analysis, the lab is asked to complete the missing analysis if it is possible to do so within the specified holding time. Periodically data analyses are requested even if samples exceed the hold time. Data qualifiers are appended to the environmental data points where appropriate by applying the data quality objectives provided by the laboratories.

The QA/QC process identifies isolated incidents of out-of-range lab and sampling performance, but more importantly identifies potential long term trends in lab and sampling performance. An important and ongoing component of the QA/QC program is to report and correct these problems as they arise.

Overall, no significant problems with data quality were identified during 2015-2016. There were isolated instances of constituents detected in field blanks, field duplicates not meeting relative percent difference standards (RPD), and lab QA/QC issues. However, when conducting such a large monitoring and reporting program, it is normal for field, lab, and/or analytical issues to arise for a small number of samples. In general, the data collected and reported are considered of high quality and suitable for data analysis with the qualifications noted in the **Appendix H-1** data report. **Table 8-10** summarizes the main qualifiers used.

Table 8-10. Definitions of Commonly Used QA/QC Qualifiers and Instances of Application

Qualifier	Definition of Qualifier	Data to Which Qualifier Applies
FB	The concentration of a given constituent was detected in the field blank. The associated environmental sample taken at the same site is considered an estimate.	<ul style="list-style-type: none">• A field blank was taken at one site for all constituents during each monitoring event.
FD	The Relative Percent Difference (RPD) between the concentrations of a given constituent in the field duplicate and the associated environmental sample was outside the acceptable limit. This indicates that the duplicability and precision of the results for this constituent may be low.	<ul style="list-style-type: none">• A field duplicate was taken at one site for all constituents during each monitoring event.
J	The concentration of a given constituents is between the MDL and the RL and is therefore an estimate. The J qualifier does not indicate poor data quality because all the RLs used meet permit requirements.	<ul style="list-style-type: none">• The J-flag qualifier is common in all data in the monitoring program.
ND	A given constituent was not detected and is given as < MDL. The ND qualifier does not indicate poor data quality but rather indicates that a constituent was simply not detected.	<ul style="list-style-type: none">• The ND qualifier is common in all data in the monitoring program.

8.3 REPORT OF WATER QUALITY EXCEEDANCES

Pursuant to the MRP and Permit Provision C.3, the Permittees must provide a summary of the monitoring data and recommendations for improvements to the SWMP. To support this effort, all receiving water monitoring data are compared with applicable WQOs contained in:

- The Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan)
- The California Toxics Rule (CTR)
- Title 22 of the California Code of Regulations (Title 22) ¹³

The approach consists of three steps:

Step 1: Measured *receiving water* concentrations were compared against the relevant WQOs from the Basin Plan, the CTR, and/or the Title 22 drinking water Maximum Contaminant Levels (MCLs).

Step 2: When the reported receiving water concentrations exceeded the WQOs, the urban runoff concentrations as monitored from upstream outfalls were compared to the WQOs. Based on these comparisons, the WQO exceedances were classified as “likely caused or contributed to by urban runoff” if both urban discharge and receiving water concentrations exceed the lowest applicable WQO.

Step 3: When water quality exceedances were determined to be “likely caused or contributed to by urban runoff,” upstream receiving water exceedances were reported to characterize any upstream input into the waterways that may also have caused or contributed to the exceedance.

Pursuant to the RWQE Permit requirements, the Permittees must address those constituents that are identified as potentially causing or contributing to an exceedance of a WQO in the receiving water. However, simple comparisons of receiving water constituent concentrations to the WQO do not consider the *duration* or *extent* of exceedances, nor the impact (or lack thereof) on the beneficial uses. The duration of wet weather event exposure depends on the hydrology of the waterbody, which can be very dynamic, and thus, more likely that an acute (instantaneous) exposure to a contaminant would occur. In contrast, an exposure on human health (longer term) timescale is less likely, but, where applicable, human health criteria are used for comparison. Similarly, if the data caught a once in three year exceedance, that level of exceedance is anticipated in the setting of the criteria under the Clean Water Act. As a result of the lack of duration and extent data and the relatively few data points available, the approach used in this Annual Report should be viewed as a planning-level effort to assess potential WQO exceedances. The Permittees presented a long term assessment of potential WQO cause and contribute exceedances in the ROWD.

The number of potential exceedances for each of these constituents is summarized in **Table 8-11**.

¹³ It should be noted that some question exists as to the applicability of all three of these sets of water quality objectives and criteria to stormwater discharges. It is not clear that a proper Water Code section 13241 analysis was performed on the state water quality objectives used herein. In addition, the State Water Resources Control Board (SWRCB) has determined that the federal water quality criteria, such as are contained in the CTR, do “not apply to regulation of stormwater discharges.” See SWRCB Policy for Implementation of Toxics Standards for the Inland Surface Waters, Enclosed Bays, and Estuaries of California at pg. 1, fn 1; see also CTR Preamble, 65 Fed. Reg. 31682 (5/18/00), which does not identify municipal stormwater as a potentially affected entity. Moreover, no indication exists that these objectives and criteria, particularly drinking water standards, were ever intended to be applied to stormwater discharges at the end of pipe. Nevertheless, these objectives and criteria are utilized herein for the purposes of this report.

Table 8-11. Total Number of Potential Exceedances on Each Paired Site during Four Wet Weather Events and Three Dry Weather Events

Constituent	MS-2		MS-14	
	Wet Weather	Dry Weather	Wet Weather	Dry Weather
Aluminum (total)	NA	NA	3	0
Iron (total)	NA	NA	3	2
Dissolved Oxygen	0	0	1	1
Oil & Grease ^a	NA	NA	2	1
<i>E. coli</i>	2	0	4	0
Fecal Coliform	4	0	4	1

Notes:

NA = Not applicable. Constituent is monitored at historic monitoring location.

a. This is compared to a WQO presumed to be 0, which is not necessarily accurate since any concentration can be authorized so long as it meets the narrative objective, which allows any concentration that does not cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

All monitoring data, along with comparisons to WQOs, are presented in **Appendix H-1**. At the end of this section, summaries of all potential “cause or contribute” WQO exceedances for each site are summarized by site:

- Mosher Slough MS-2: **Table 8-12** (wet weather)
- Mosher Slough MS-14: **Table 8-13** (wet weather) and **Table 8-14** (dry weather).

The tables listed above indicate that urban discharges may be causing or contributing to receiving water exceedances for the following constituents:

- Metals (total aluminum, total iron);
- Oil and grease;
- Dissolved oxygen; and
- Pathogen indicators (*E. coli* and fecal coliform).

Table 8-12. Mosher Slough MS-2 Wet Weather Water Quality Objective (WQO) Analysis from 2015-2016

Constituent	Units	WQO	SE57 (11/15/15)		SE58 (2/17/16)		SE59 (3/5/16)		SE60 (4/22/16)	
			Urban Discharge (MS-2)	Receiving Water (MS-2R)	Urban Discharge (MS-2)	Receiving Water (MS-2R)	Urban Discharge (MS-2)	Receiving Water (MS-2R)	Urban Discharge (MS-2)	Receiving Water (MS-2R)
Fecal Coliform	MPN/100 mL	400	490	790	23,000	3,300	7,000	70,000	13,000	3,300
<i>E. coli</i>	MPN/100 mL	235	NE	NE	2,359	2,909	435	866	NE	NE

Notes:

NE: No cause or contribute exceedance for this event

Table 8-13. Mosher Slough MS-14 Wet Weather Water Quality Objective (WQO) Analysis from 2015-2016

Constituent	Units	WQO	SE57 (11/15/15)		SE58 (2/17/16)		SE59 (3/5/16)		SE60 (4/22/16)	
			Urban Discharge (MS-14)	Receiving Water (MS-14R)	Urban Discharge (MS-14)	Receiving Water (MS-14R)	Urban Discharge (MS-14)	Receiving Water (MS-14R)	Urban Discharge (MS-14)	Receiving Water (MS-14R)
Aluminum (total)	mg/L	0.2	NE	NE	0.335	0.425	0.565	0.417	0.912	1.96
Iron (total)	mg/L	0.3	NE	NE	0.476	0.757	0.572	0.487	1.19	2.56
Dissolved Oxygen	mg/L	>6.0	4.02	5.52	NE	NE	NE	NE	NE	NE
Oil & Grease	mg/L	0 ^a	NE	NE	2.80	2.64	3.46	4.30	NE	NE
Fecal Coliform	MPN/100 mL	400	13,000	2,300	7,900	3,300	22,000	3,300	7,000	7,000
<i>E. coli</i>	MPN/100 mL	235	15,531	1,989	2,187	2,909	1,553	261	613	687

Notes:

NE: No cause or contribute exceedance for this event

a. This is not a numeric WQO, but a narrative objective, which states that this can be any concentration that does not cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

Table 8-14. Mosher Slough MS-14 Dry Weather Water Quality Objective (WQO) Analysis from 2015-2016

Constituent	Units	WQO	DW23 (2/9/16)		DW24 (3/1/16)		DW25 (4/21/16)		DW26 (5/24/16)	
			Urban Discharge (MS-14)	Receiving Water (MS-14R)	Urban Discharge (MS-14)	Receiving Water (MS-14R)	Urban Discharge (MS-14)	Receiving Water (MS-14R)	Urban Discharge (MS-14)	Receiving Water (MS-14R)
Iron (total)	mg/L	0.3	346	689	0.312	0.357	NE	NE	NE	NE
Dissolved Oxygen	mg/L	>6.0	4.51	4.49	NE	NE	NE	NE	NE	NE
Oil & Grease	mg/L	0 ^a	NE	NE	NE	NE	2.58	3.48	NE	NE
Fecal Coliform	MPN/100 mL	400	NE	NE	NE	NE	NE	NE	940	1,100

Notes:

NE: No cause or contribute exceedance for this event

a. This is not a numeric WQO, but a narrative objective, which states that this can be any concentration that does not cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

The following sections discuss each constituent with a potential cause or contribute exceedance and indicate how each is being addressed within the stormwater program.

8.3.1 Metals

For most metals, two aquatic life based toxicity criteria exist and depend upon the duration of the exposure: acute and chronic. Chronic criteria refer to long term chronic (4-day average) concentrations while acute criteria refer to the highest concentration to which aquatic life can be exposed for a short period (e.g., 24 hours). Consequently, chronic criteria are typically lower than acute criteria. Due to the dynamic hydrology during wet weather events and because the duration of the metals WQO exceedances in the receiving waters is unknown, it is reasonable to use the acute criterion for assessing the impact of wet weather discharges, and the chronic criterion for assessing dry weather inputs.

For iron, the WQO is based on Title 22 MCLs. Title 22 MCLs are classified as primary or secondary, based on whether they protect long-term human health during consumption of water or simply drinking water taste and odor, respectively. For constituents that have both primary and secondary MCLs, the secondary MCL is often significantly lower. It is highly unlikely that any of the concentrations measured during urban discharge and receiving water monitoring represent levels at which long-term human health exposure occurs since no one should be directly drinking stormwater discharges or from receiving waters without treatment of that water. As a result, human health WQOs should not be used for stormwater quality assessments. Nonetheless, the more conservative approach of comparing iron monitoring results to secondary MCLs was used for both wet and dry weather discharges.

Total Iron

The stormwater program has a number of control measures and BMPs that address erosion and reduce sediment transport, including site design measures, source control, volume reductions and treatment controls. These program elements are designed to control erosion, and therefore also reduce iron concentrations in stormwater. In the 2009 Stormwater Quality Control Criteria Plan (SWQCCP)¹⁴, Low Impact Development (LID) policies and objectives are given for new development and redevelopment sites. For example, the SWQCCP specifically discourages development in areas that are susceptible to erosion and encourages minimization of impervious cover. Reductions in impervious cover increase infiltration and decrease the velocity of runoff thereby preventing erosion. In addition, the Permittees also require BMPs to minimize and/or eliminate the discharge of sediment from construction sites. The Permittees require that all construction sites disturbing one or more acres comply with the State Water Resources Control Board's General Construction Permit, which includes LID provisions. In addition, the City is planning to update the fact sheet provided during construction site inspections of sites less than an acre with additional information on reducing sediment transport. The County has a Small Sites SWPPP program for construction sites smaller than one acre that provides information on reducing sediment transport.

The stormwater program also has control measures and BMPs that address metals in general. These control measures include street sweeping, catch basin cleaning, industrial and commercial inspections, illicit discharge elimination, household hazardous waste collection, and public education.

Aluminum

Aluminum is a common, naturally occurring component of soil.¹⁵ Control of naturally occurring aluminum is difficult and there is currently no specific stormwater program source control program

¹⁴ The SWQCCP is available on the City's website at: <http://www.ci.stockton.ca.us/mud/General/stormwater/SQCCP.cfm> and on the County's website at: <http://www.sjcleanwater.org/PDF%20Documents/2009%20Final%20SWQCCP.pdf>

¹⁵ Hausenbuiller, R. L. *Soil Science: Principles and Practices*. Dubuque, Iowa: WM. C. Brown Company, 1974. Print.

targeted for this constituent. However, the stormwater program has a number of control measures and best management practices (BMPs) that address erosion. In the 2009 SWQCCP, LID policies and objectives are set for new development and redevelopment sites. For example, the 2009 SWQCCP specifically discourages development in areas more susceptible to erosion and encourages minimization of impervious cover. Reductions in impervious cover can increase infiltration and decrease the velocity of runoff, thereby preventing erosion. In addition, the City and County also require BMPs to minimize and/or eliminate the discharge of sediment from construction sites. The City and County require that all construction sites disturbing one or more acres comply with the State Water Resources Control Board's General Construction Permit and Small Site SWPPP for smaller parcel development.

The stormwater program also has control measures and BMPs that address metals in general, as discussed above.

8.3.2 Low Dissolved Oxygen

Low dissolved oxygen (DO) may be a function of shallow water depth, channel geometry, elevated water temperature, and diminished flow. Permit Provision D. 28.b required the Permittees to develop a Low Dissolved Oxygen Plan (DO Plan). This plan was developed and submitted to the Regional Water Board as Appendix I-5 to the 2008-2009 Annual Report. The Permittees have implemented the DO Plan during the past Permit term, focusing specifically on dissolved oxygen in the SUA.

8.3.3 Pathogen Indicators

The currently applicable Basin Plan contains a Bacteria Objective, which states:

In waters designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml.

During epidemiological studies conducted by the USEPA in the early 1980s, total coliform and fecal coliform were deemed unreliable indicators of human health risks. Instead, *E. coli* and enterococcus were recommended as the preferred indicators for fresh and marine waters, respectively. In response to implementation guidance published by USEPA in 2003, a Basin Plan amendment was adopted by the Regional Water Board in 2003, which recommended that for protection of recreational water uses (REC-1), the 10% of total samples maximum objective of 400 MPN/100mL for fecal coliform be replaced with a single sample maximum objective for *E. coli* of 235 MPN/100mL. The amendment has yet to be approved by the State Water Board.

USEPA guidance also recommends the use of geometric mean concentrations, as opposed to single samples, for long-term waterbody assessments. However, the geometric mean is generally calculated with multiple samples collected within a 30-day period. For less frequent sampling, as conducted under the MRP, comparison to single sample WQOs is considered more appropriate. Thus, for the potential cause or contribute analysis herein, measured *E. coli* and fecal coliform concentrations were compared to the current WQO and proposed single sample maximum WQO for protection of recreational waters.

The typical sources of indicator bacteria are:

- Soils
- Birds
- Wildlife
- Pet and livestock waste
- Sewage from leaks, spills, and illicit connections
- Trash and food waste
- Homeless encampments
- Diaper cleaning and disposal
- Regrowth of bacteria in soils and sediments

The stormwater program has in place control strategies that directly address indicator bacteria concentrations in urban runoff. The existing programs include street sweeping, storm drain system cleaning and stenciling, illicit discharges inspection and elimination, and pet waste stations at City and County parks and the Marina. The City and County are also implementing an enhanced public outreach effort to target pet owners, including outreach at dog shows, pet stores, and veterinary clinics. The Permittees' efforts to control indicator bacteria are described in Section 3.

In addition, the State Water Board is currently proposing to adopt new statewide bacteria indicator objectives that allow for some natural source exclusions. Once those objectives are adopted, future monitoring data will need to be assessed to determine if exceedances exist under that regulatory approach.

8.3.4 Oil and Grease

The Basin Plan WQO is a narrative objective that states:

“waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.”

For the purpose of this exceedance analysis, this objective has been interpreted as a very stringent numeric WQO of 0 mg/L, which is not realistic as applied to stormwater, and is much lower than the normal 15 mg/L applied to other discharges such as wastewater treatment plants. The Reporting Limit (RL) for oil and grease is 5 mg/L, but concentrations detected were estimated to be in the range of 1.5 mg/L to 4 mg/L. Therefore, nearly all reported values were below the RL and are only estimates. However, because the Basin Plan WQO is being interpreted in such a stringent manner (narrative WQO of 0 mg/L), this makes urban runoff appear to have the potential to cause or contribute to receiving water WQO exceedances at all sites.

Oil and grease in stormwater may be free floating or attached to sediments, trash and debris. Oil and grease contain a wide variety of hydrocarbon compounds that have an affinity for sediments and much of the hydrocarbon load absorbs to particles that may eventually settle out. The most common source of oil and grease in stormwater is runoff from parking lots, roads, fast food restaurants, and gas stations, including improper disposal of motor oil and oil filters. The City and County's efforts to control oil and grease include promotion of the used oil collection center, household hazardous waste collection, and curbside collection of used oil target residential automotive sources of oil. In addition, BMPs directed at restaurants address restaurant sources of grease and cooking oil.

8.4 DELTA REGIONAL MONITORING PROGRAM

The Delta RMP is a stakeholder-directed project formed to develop a regional water quality monitoring program to improve understanding of water quality issues in the Sacramento-San Joaquin Delta. The goal of this effort is to better coordinate and design current and future monitoring activities in and around the Delta to create a cost effective approach for providing critically needed water quality information to better inform policy and regulatory decisions of the Regional Water Board and other Federal, State and local agencies and organizations.¹⁶ The RMP is focusing the initial monitoring efforts on mercury, pesticides, nutrients, and pathogens. The Permittees are contributing members of the RMP, which began monitoring in 2015.

¹⁶http://www.waterboards.ca.gov/centralvalley/water_issues/delta_water_quality/delta_regional_monitoring/index.shtml

8.5 ADDITIONAL REGULATORY REQUIREMENTS

Mosher Slough is included in the 2012 Clean Water Act 303(d) list for impairments due to chlorpyrifos, diazinon, mercury, low dissolved oxygen, and pathogens (indicator bacteria). Total maximum daily loads (TMDLs) are currently in place to address these impairments.

The General Permit will become effective October 1, 2016, and will require that the Permittees continue implementation of the stormwater monitoring program, which may include assessments related to applicable TMDLs. Upcoming efforts to fulfill TMDL requirements (included in Attachment G of the General Permit) are summarized in the following sections.

8.5.1 Sacramento-San Joaquin Delta Diazinon and Chlorpyrifos TMDL (Resolution R5-2006-0061)

The organophosphate (OP) Pesticide TMDL establishes wasteload allocations (WLAs) for the sum of diazinon and chlorpyrifos concentrations relative to their respective WQOs. Attachment G requires that, within one year of the receipt of the notice of applicability (NOA) under the General Permit, the Permittees submit an assessment to determine the diazinon and chlorpyrifos levels and attainment of WLAs in urban discharge and of WQOs in the receiving water. During 2016-2017, assuming the Permittees have received an NOA, the Permittees (or group of Permittees) will perform this assessment.

8.5.2 Stockton Urban Water Bodies Pathogen TMDL (Resolution No. R5-2009-0030)

The Pathogen TMDL includes WLAs for fecal coliform and *E. coli*. The Permittees are required to continue their monitoring and implementation activities consistent with the Stockton Urban Waterbodies Pathogen Control Program, and document in Mid-Term and End-Term Reports under the General Permit, the implementation of BMPs to control the discharge of pathogens (indicator bacteria) in their urban discharge, as well as submit effectiveness assessments of implemented BMPs. During 2016-2017, the Permittees will monitor for indicator bacteria at the Calaveras River, and continue implementing education and outreach BMPs to control bacteria (described in **Section 3**).

8.5.3 Delta Methylmercury TMDL (Resolution No. R5-2010-0043)

As a part of Phase I of the Sacramento-San Joaquin Delta Methylmercury TMDL,¹⁷ the City and the County are required to conduct a Methylmercury Control Study (Control Study) and participate in the Mercury Exposure Reduction Program (MERP). Progress for the Control Study and MERP participation is reported in the following sections.

Methylmercury Control Study

The Permittees submitted a Control Study Workplan to the Regional Water Board on April 22, 2013, and received feedback from the technical advisory committee and Regional Water Board staff during August 2013. The Permittees submitted a revised Control Study Workplan in October 2013 to address the comments received. The Control Study focuses on evaluating the mercury and methylmercury removal performance of the Airport Business Center detention basin within the SUA, along with examining the potential for methylmercury production in the basin. The Permittees are implementing the Control Study according to the schedule in **Table 8-15**.

¹⁷ Central Valley Regional Water Quality Control Board. 2012. Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for the Control of Methylmercury and Total Mercury in the Sacramento-San Joaquin River Delta Estuary. Rancho Cordova, CA. Available online: www.waterboards.ca.gov/rwqcb5/water_issues/tmdl/central_valley_projects/delta_hg/2011oct20/bpa_20oct2011_final.pdf

Table 8-15. Methylmercury Control Study Schedule

Task	Estimated Completion
Submit Control Study Work Plan to Regional Water Board	April 19, 2013
Regional Water Board and TAC Work Plan Review	May-July 2013
Finalize Work Plan	October 21, 2013
Initiate Control Study Sampling	October 2013
• First Year Monitoring	• Oct 2013 – Sep 2014
• Second Year Monitoring	• Oct 2014 – Sep 2015
• Third Year Monitoring	• Oct 2015 – Sep 2016
Submit Control Study Progress Report	October 2015
Regional Water Board and TAC Progress Report Review	November 2015-January 2016
Complete Control Study Sampling	September 2016
Submit Control Study Final Report to Regional Water Board	October 2018

Notes:

Tasks marked with strikethrough have been completed

The Control Study includes monitoring for mercury and methylmercury using grab samples; along with ancillary constituents (suspended sediment, TSS, TDS, turbidity, phosphorus, sulfate, and iron) using composite samples, and field readings. Samples are collected at the detention basin inlets and outlet. During dry weather events, sediment samples are collected for mercury and methylmercury. Sampling occurs during three wet weather events and one dry weather event for three years.

The Control Study Progress Report was submitted in October 2015, providing a summary of progress through September 2015. The third and final year of Control Study monitoring was completed during 2015-2016. A summary of completed events is shown in **Table 8-16**.

Table 8-16. Summary of Control Study Monitoring Completed during 2015-2016

Event	Date Completed	Inlet 1 (Pock Lane)	Inlet 2 (Industrial Way)	Inlet 3 (Parkside)	Outlet	Sediment ¹	Notes
SE1	1/13/16	G, C	G,C	G,C	G,C		
SE2	2/17/16	G,C	G,C	G,C	G,C		
SE3	3/5/16	G,C	G,C	G,C	G,C		
DW1	6/30/16	G	G	G	G,C	G	Composite samples were not collected from inlet locations. Flow was only present at the Pock location.

Notes:

¹Sediment samples collected during dry weather events only.

G = Grab samples collected

C = Composite samples collected

Delta Mercury Exposure Reduction Program Participation

The Delta Mercury Control Program requires the entities identified in the Basin Plan to develop and implement a mercury exposure reduction program. The Delta MERP Participants include those entities and agencies that have formally submitted a letter describing their intent to participate in the collective exposure reduction program. The Permittees submitted their letter during 2013-2014, and are participating in the Delta MERP.

The Delta MERP is designed to increase understanding of contaminants in fish and reduce exposure to mercury among people who eat fish from the Delta. The Delta MERP is producing educational materials based on fish consumption guidelines, and also focusing on presenting a balanced message including health risks associated with exposure to mercury in fish, ways to reduce exposure, the health benefits of eating fish generally, and low-mercury fish species and areas. The Delta MERP is also focusing efforts on training opportunities for entities involved in the Delta MERP including county agencies, Tribal organizations, community-based organizations, and health care providers.

During 2015-2016 the Permittees contributed funding to the MERP and have been actively tracking its development and progress.

8.5.4 Lower San Joaquin River, Stockton Deep Water Ship Channel Organic Enrichment and Low Dissolved Oxygen TMDL (Resolution No. R5-2005-0005)

The Organic Enrichment and Low Dissolved Oxygen TMDL requires that responsible parties implement BMPs to control and abate the discharge of oxygen-demanding substances. Attachment G of the General Permit requires that the covered Permittees continue implementation of BMPs identified in their SWMP to control oxygen demanding substances in their stormwater discharges. These implementation efforts will be documented in the Mid-Term and End-Term Reports required under the General Permit.

Section 9

Program Implementation, Assessment, and Reporting

9.1 OVERVIEW

The City actively and adaptively manages its SWMP through the implementation, assessment, and reporting of the Program Elements and the related Control Measures and Performance Standards.

9.2 CONTROL MEASURES

The City has developed several Control Measures and accompanying performance standards to ensure that program implementation, assessment, and reporting-related Permit requirements are effectively developed and implemented. Each Control Measure includes accompanying performance standards, which, once accomplished, constitute compliance with the SWMP/Permit.

The Control Measures consist of the following:

Control Measure
Program Implementation
Evaluation/Assessment
Reporting

This section of the Annual Report provides information on the specific tasks initiated and/or completed during the reporting period pursuant to the Performance Standards and implementation schedules.

9.3 PROGRAM IMPLEMENTATION

The SWMP has been structured to identify the specific activities to be implemented, as well as the responsible party for implementing the activities. This has been accomplished through the establishment of Control Measures and Performance Standards. However, 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.

Successful implementation of the SWMP also requires an extensive training effort by the City to ensure that its employees understand the Stormwater Program and conduct their activities in a manner to minimize pollutants from stormwater discharges. The City's proposed training effort is described within each of the SWMP Program Elements.

9.3.1 Annual Work Plan

An Annual Work Plan is submitted to the Regional Water Board by **April 1** of each year. The Annual Work Plan summarizes the proposed activities that the City will undertake during the next fiscal year (July 1 – June 30). The Annual Work Plan generally follows the Control Measures and Performance Standards outlined within the SWMP, but it may also include additional activities that the City has identified as being necessary during the last reported period.

The City submitted the annual work plan for 2016-2017 to the Regional Water Board on March 31, 2016. The work plan identifies the various performance standards that will be initiated and/or completed during the next fiscal year.

9.4 EVALUATION/ASSESSMENT

Paramount to the success of the stormwater program is the need for the City to evaluate the effectiveness of its program by compiling and reviewing program data. As a part of this process and overall effectiveness assessment strategy, the City is currently assessing effectiveness as a part of the annual reporting process (see each of the Program elements). The strategy for assessing effectiveness will continue to build upon the results of the annual reports and initial assessments and will address the stormwater program in terms of achieving both programmatic goals and environmental goals.

By utilizing the iterative process and conducting effectiveness assessments, the City can use the information gained to adapt its programs and ensure that the resources expended are providing commensurate benefit and are protective of water quality. The results of these assessments and proposed modifications to the SWMP will be provided to the Regional Water Board on an annual basis as a part of the reporting process.

9.5 REPORTING

The City will continue to coordinate with the County in developing standardized formats for all reports required pursuant to the Permit. This will include annual reports, fiscal analysis reports, and program effectiveness assessments. Pursuant to the federal regulations, all work plans and reports will be signed and certified.

For this Annual Report, the reporting templates for both the City and the County were updated to ensure that the report would address the performance standards that needed to be initiated and/or completed during the 2015-2016 reporting period. The templates will continue to be updated as needed.

9.5.1 Annual Report

An annual report is submitted to the Regional Water Board by **September 1** of every year. The purpose of the Annual Report is to document the status of the SWMP 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 SWMP. Updates, improvements, or revisions to the SWMP are also identified in the Annual Report.

This report covers the period from July 1, 2015 through June 30, 2016.

9.5.2 Report of Waste Discharge

The City submitted a ROWD and Proposed SWMP to the RWQCB 180 days prior to the previous permit's expiration (June 6, 2012). The previous permit expired on December 6, 2012 and was renewed by the limited term Permit, Order R5-2015-0024, on April 17, 2015. The City was not required to submit another ROWD prior to the adoption of the General Permit on June 23, 2016.