

Appendix N: Program Effectiveness Evaluation

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Effectiveness Evaluation for the Stormwater Management Program

Introduction

This appendix provides the Overall Program Effectiveness Evaluation. The Effectiveness Evaluation is conducted to determine whether various programs and/or activities are resulting in desired programmatic and/or environmental outcomes.

The components required by the 2012 Permit for an Overall Program Effectiveness Evaluation include the following:

- a) Assessment of program effectiveness in achieving permit requirements and measurable objectives.
- b) Assessment of program effectiveness in protecting and restoring water quality and beneficial uses.
- c) Identification of quantifiable effectiveness measurements for each Best Management Practice (BMP), including measurements that link BMP implementation with improvement of water quality and beneficial use conditions.
- d) Identification of how Caltrans will propose revisions to the Stormwater Management Plan (SWMP) to optimize BMP effectiveness when effectiveness assessments identify BMPs or programs that are ineffective or need improvement.

In future Annual Reports, Caltrans will functionally update its program effectiveness evaluation approach for consistency with the 2012 Permit requirements, the SWMP, and the 2015 California Stormwater Quality Association (CASQA) Guidance Manual.

A summary of the Effectiveness Evaluation that was conducted for fiscal year 2015-2016 is provided below (Table N-1). Caltrans has conducted effectiveness evaluations for each program element at Outcome Levels 1 through 4, as applicable. Outcome Levels 5 and 6 may be assessed as part of future Annual Reports.

Table N-1: Effectiveness Evaluation Summary for the Stormwater Program

Program Element	Effectiveness Evaluation Outcome Levels ¹					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Stormwater Program Activities	Barriers and Bridges to Action	Target Audience Actions	Source Contributions	MS4 Contributions	Receiving Water Conditions
Management and Organization	C	N/A	N/A	N/A	N/A	N/A
Monitoring and Discharge Characterization	C	N/A	N/A	N/A	A	A
BMP Development and Implementation	C	N/A	N/A	C	A	A
Project Planning and Design	C	N/A	C	N/A	N/A	N/A
Construction	C	C	A	N/A	N/A	N/A
Compliance with the Industrial General Permit	N/A	N/A	N/A	N/A	N/A	N/A
Maintenance Program Activities and Facilities Operations	C	C	C	C	N/A	N/A
Non-Departmental Activities	C	N	N/A	N/A	N/A	N/A
Non-Stormwater Activities/Discharges	A	N	N	N/A	N/A	N/A
Training	C	C	A	N/A	N/A	N/A
Public Education and Outreach	C	A	A	C	N/A	N/A
Measurable Objectives	N/A	N/A	N/A	N/A	N/A	N/A
Region-Specific Activities	C	N	N	A	N/A	A
Reporting	C	N	N/A	N/A	N/A	N/A

C – An effectiveness evaluation was conducted during fiscal year 2015-2016

A – It is anticipated that an effectiveness evaluation may be conducted in future Annual Reports

N – An effectiveness evaluation is not currently anticipated

N/A – This outcome level is not applicable

¹ The Effectiveness Evaluation Outcome Levels are defined in Section 14 of the Annual Report.

Goals

During the previous permit term, Caltrans developed goals for the Maintenance Program Activities and Facilities Operations and Training program elements. During the 2015-2016 reporting period, the Draft SWMP was under review by the State Water Quality Control Board. As a result, the goals have not been modified, and/or new goals have not been established. For future Annual Reports, the goals may be modified and will be reported based on the 2012 Permit requirements, the final SWMP (approved July 20, 2016), and the functionally updated Effectiveness Evaluation approach.

During the reporting period, Caltrans met three of the goals and made progress towards meeting its other goals.

Maintenance Program Activities and Facilities Operations

- The Division of Maintenance has an ongoing program to inspect slopes for erosion. The Division has a self-imposed goal to inspect approximately 20% of the slopes in each District annually, depending on weather conditions and work load priorities. Statewide, the program inspected 5,005 miles of 44,971 shoulder miles (11%).
- The enhanced storm drain inlet inspection and cleaning program has a goal to inspect 20% of the drain inlets in San Diego, Orange, and Los Angeles and Ventura Counties (Districts 11, 12 and 7, respectively). Overall, Caltrans inspected 34% of the storm drain inlets in the enhanced program and, of these, cleaned 21%, so **this goal was met**.
- Caltrans is developing a new internal goal for chemical use reduction. In 2015-2016, Caltrans increased its chemical use in seven Districts primarily due to an increased need for noxious weed control, the need for bare strips to mitigate increased wildfire concerns, increased precipitation, or increased area to treat that was previously under construction. In five Districts, chemical use decreased. Caltrans continues to track and record chemical use while investigating better and more effective treatment strategies using the seven elements identified in the Integrated Vegetation Management (IVM) Program.
- The goal of the Maintenance Division compliance monitoring is to inspect 10 activities and 20% of the facilities statewide each year as part of its self-audit program. **Caltrans met the goal** for inspecting activities (an average of 17 in each District) and maintenance facilities (30%) during the fiscal year.

Training

- The training program has a goal to train 20% of the Caltrans staff involved in stormwater activities during each fiscal year. During the reporting period, four functional units met this goal. A total of 31% of National Pollutant Discharge Elimination System (NPDES) staff, 7% of Right-of-Way staff, 30% of Encroachment Permit staff, 7% of Design staff, 44% of Construction staff, and 48% of Maintenance staff were trained.
- The training program also has a long-range goal to train the entire stormwater program staff over a five-year term. Since 2009-2010, Caltrans has trained all staff members, some multiple times; thus, **this goal was met**.

Evaluation of Major Program Elements

The following sections summarize the results of the specific effectiveness evaluations, organized by program element. Since the SWMP was approved on July 20, 2016, the reporting may transition to, or be modified based on, the final Measurable Objectives. This information will be reported in future Annual Reports.

Management and Organization

The table below summarizes the effectiveness evaluation that was conducted for Management and Organization, as well as potential evaluations that may be conducted in future Annual Reports. Additional detail for each component of the evaluation is shown below.

Table N-2: Effectiveness Evaluation Summary for Management and Organization

	Effectiveness Evaluation Outcome Levels					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Stormwater Program Activities	Barriers and Bridges to Action	Target Audience Actions	Source Contributions	MS4 Contributions	Receiving Water Conditions
Municipal Coordination Plan Activities	C – # Meetings Held	N/A	N/A	N/A	N/A	N/A
Fiscal Analysis	C – Expenditures	N/A	N/A	N/A	N/A	N/A

C – An effectiveness evaluation was conducted during fiscal year 2015-2016

A – It is anticipated that an effectiveness evaluation may be conducted in future Annual Reports

N – An effectiveness evaluation is not currently anticipated

N/A – This outcome level is not applicable

Municipal Coordination Plan Activities

Caltrans coordinated with local agencies to effectively and consistently communicate stormwater issues, track key technical issues, and implement the Stormwater Management Program and Total Maximum Daily Loads (TMDLs) [L1].

- There were over 200 meetings attended by District staff with local NPDES programs. The Districts met with municipalities, flood control districts, Regional Water Quality Control Boards (RWQCBs), and/or other entities to discuss issues related to:
 - Construction projects and permit compliance (Districts 3 and 5);
 - Enforcement (Districts 5, 7, 11);
 - Fiscal planning (District 5 and 7);
 - Municipal permit coordination (Districts 3, 5, 6, 7, 8, 9, 11, and 12);
 - Public education and staff training (Districts 3, 5, 6, and 7); and
 - TMDL development and implementation (Districts: 3, 5, 7, 11, and 12).

Fiscal Analysis

Caltrans maintained funding to implement the stormwater program. The fiscal analysis provided information regarding the budget for each program element and the allocation of funds to each District. The historical annual stormwater expenditures are provided in Figure N-1[L1].

- The total expenditures for the 2015-2016 fiscal year were approximately \$102.5 million. Since fiscal year 2003-2004, the funding expenditures have more than tripled in order to implement the growing needs of the stormwater program and meet the increasing requirements of TMDLs. Since 2005, the average expenditures per year have been approximately \$87 million.

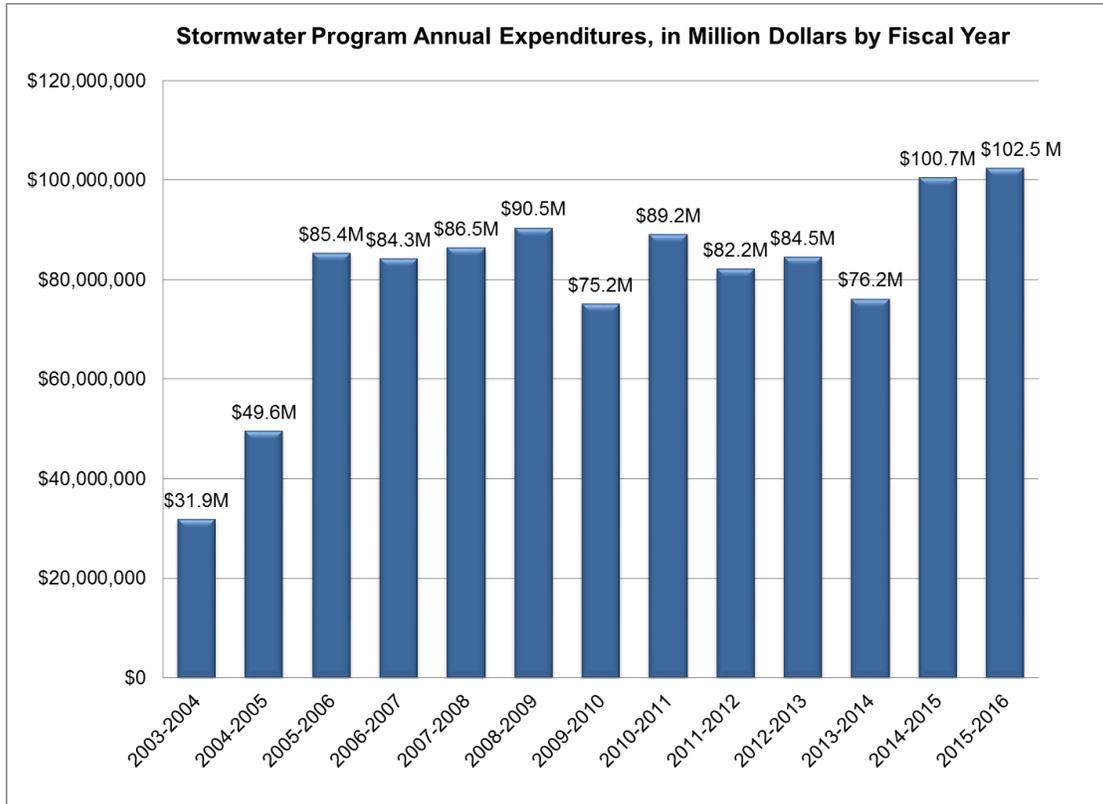


Figure N-1: Stormwater Program Annual Expenditures

Monitoring and Discharge Characterization Program

The table below summarizes the effectiveness evaluation that was conducted for the Monitoring and Discharge Characterization Program, as well as potential evaluations that may be conducted in future Annual Reports. Additional detail for each component of the evaluation is shown below.

Table N-3: Effectiveness Evaluation Summary for Monitoring and Discharge Characterization Program

	Effectiveness Evaluation Outcome Levels					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Stormwater Program Activities	Barriers and Bridges to Action	Target Audience Actions	Source Contributions	MS4 Contributions	Receiving Water Conditions
Tier 1 and 2 Site Monitoring	C – Conducted/ Participated in Studies	N/A	N/A	N/A	A	A
Other Water Quality Monitoring	C – Conducted Monitoring	N/A	N/A	N/A	A	A

C – An effectiveness evaluation was conducted during fiscal year 2015-2016
 A – It is anticipated that an effectiveness evaluation may be conducted in future Annual Reports
 N – An effectiveness evaluation is not currently anticipated
 N/A – This outcome level is not applicable

Caltrans collects information on the performance of stormwater controls and the characterization of discharges from Caltrans’ operations, facilities, and storm drain systems. The information is analyzed to refine the program, assess the effectiveness of the SWMP, and establish the need for new and/or improved BMPs.

Tier 1 and 2 Site Monitoring

Caltrans performed water quality monitoring at 77 Areas of Special Biological Significance (ASBS) core monitoring sites, nine ASBS ocean receiving water sites, and 18 adopted TMDL watersheds (a total of 104 sites) during the 2015-2016 wet season. ASBS project seasonal flow was estimated at all Tier 1 sites. Tier 2 sites need to be monitored when the number of Tier 1 sites is less than 100. Tier 2 sites were not monitored during the reporting period, since Caltrans selected and monitored more than 100 Tier 1 sites [L1].

Other Water Quality Monitoring

Other water quality monitoring efforts include independently funded projects, as well as collaborative efforts with other stakeholders, such as municipalities, the State Water Resources Control Board (SWRCB) and RWQCBs, and stormwater quality researchers. Caltrans also conducted monitoring with other stakeholders under cooperative agreements in four TMDL watersheds [L1].

BMP Development and Implementation

The table below summarizes the effectiveness evaluation that was conducted for BMP Development and Implementation, as well as potential evaluations that may be conducted in future Annual Reports. Additional detail for each component of the evaluation is shown below.

Table N-4: Effectiveness Evaluation Summary for BMP Development and Implementation

	Effectiveness Evaluation Outcome Levels					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Stormwater Program Activities	Barriers and Bridges to Action	Target Audience Actions	Source Contributions	MS4 Contributions	Receiving Water Conditions
Post-Construction Treatment BMPs Tracking System and Maintenance	C – Guidance and Standard Plan Updates; BMPs Tracked and Maintained	N/A	N/A	N/A	N/A	N/A
Evaluate and Investigate New BMPs through Pilot Studies	C – Completed 2 BMP studies during 2015-2016; 5 BMP studies currently on-going.	NA	NA	C – Monitoring Results	A	A

C – An effectiveness evaluation was conducted during fiscal year 2015-2016
 A – It is anticipated that an effectiveness evaluation may be conducted in future Annual Reports
 N – An effectiveness evaluation is not currently anticipated
 N/A – This outcome level is not applicable

Post-Construction Treatment BMPs Tracking System and Maintenance

The Caltrans Stormwater Management Program is nationally recognized as a leader in designing stormwater BMPs for highway and roadway projects. The design guidance includes project plans and specifications for treatment BMPs, pollution prevention BMPs, and construction BMPs. This information is updated on an ongoing basis and disseminated to the staff involved in the incorporation of the BMPs into projects to ensure that all requirements and guidance are followed [L1].

Construction personnel coordinates with maintenance personnel to facilitate transfer of treatment BMPs to the Division of Maintenance using a handoff form. The Division of Maintenance’s Integrated Maintenance Management System (IMMS) tracks maintenance records for treatment BMPs as provided by the Districts. Long-term operation and maintenance activities are maintained according to Caltrans maintenance guidance [L1].

In 2015-2016, the number of BMPs inspected and maintained was tracked in the Caltrans Treatment BMP Database. Out of 3,157 BMPs in the inventory, 1,533 were inspected and/or maintained (49%) in 2015-2016.

Evaluate and Investigate New BMPs through Pilot Studies

Caltrans continued to track new and/or emerging post-construction stormwater treatment technologies. However, during the reporting period, there were no updates to the Stormwater Treatment BMP Technology Report. The *Treatment BMP Technology Report, October 2016*, (CTSW-RT-16-999) is an attachment to this Annual Report (CD attachment).

The *Stormwater Monitoring and BMP Development Status Report: Fiscal Year 2015-16 Update* (CTSW-RT-16-312.01.01) is an attachment to this Annual Report (CD attachment). This report provides an update on the status of stormwater treatment technology studies, source control studies (including erosion control studies), and stormwater quality characterization for the 2015-2016 fiscal year. Caltrans has evaluated and investigated new BMPs through pilot studies, as described below [L1, L4].

- Tahoe Activated Alumina Filter Study: The purpose of this study was to evaluate the pollutant removal effectiveness of activated alumina filters with respect to load reductions for the Tahoe TMDL. Monitoring was conducted in 2003-2004 and 2005-2006 for Highway 50 and State Route 267, respectively. The study found significant load reductions for fine sediment particles, total suspended solids (TSS), turbidity, and nutrients. The estimated life span for activated alumina media is 30 years.
- State Route 73 Bioretention Study: The purpose of this study is to evaluate the pollutant removal effectiveness (for concentration) of a bioretention facility on State Route 73. Monitoring for this study started in 2006-2007, and was discontinued in 2008-2009. Monitoring recommenced in 2013-2014, and is scheduled to continue through 2016-2017. Upon completion of monitoring, Caltrans will develop a study report in 2017-2018.
- San Francisco/Oakland Bay Bridge Bioretention Study: The purpose of this study was to evaluate the pollutant removal effectiveness of two bioretention facilities at the San Francisco/Oakland Bay Bridge. Through this study, additional information on hydrology, maintenance, effects of salinity, vegetation, and mosquito/vector control was also gathered. Monitoring commenced in 2009-2010. Results of the study indicated good removal of many constituents. Removal of some pollutants depended on suspended sediment concentration (SSC). Findings were also specific to this site due to atypical saltwater intrusion. Caltrans submitted the final study report to the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) in November 2014. In June 2016, the San Francisco Bay Regional Water Board concurred that the bioretention monitoring requirements were met.
- Tahoe Sand Vaults Retrofit Pilot Study: The purpose of this on-going study is to determine load reductions of new filter media configurations in Austin-type vaults (horizontal flow through the media as opposed to the traditional vertical flow configuration of media filters). The results of this study will be compared to those predicted by the Tahoe Pollutant Load Reduction Model (PLRM) for potential TMDL compliance. Monitoring commenced in 2012-2013, and is scheduled to continue until 2017-2018. The study report is scheduled to be completed in 2017-2018.
- District 3 Linear Filtration Pilot Study: The purpose of this study is to evaluate the performance of various linear filtration designs in terms of concentration, volume, and load reduction. The project commenced in 2014-2015 and will continue through 2017-2018.
- District 7 Linear Filtration Pilot Study: The purpose of this study is to evaluate the performance of various linear filtration designs in terms of concentration, volume, and load reduction. The project commenced in 2014-2015 and will continue through 2018-2019.
- Chollas Creek BMP Retrofit Project: The purpose of this study is to evaluate the performance of modular infiltration trenches and bio-infiltration swales in terms of reducing pollutant concentrations associated with the Chollas Creek TMDL wasteload allocations (WLAs). The project commenced in 2015-2016. Monitoring will be conducted over the next few years as part of this study. The next steps will depend on the data collected through monitoring.

Project Planning and Design

The table below summarizes the effectiveness evaluation that was conducted for Project Planning and Design, as well as potential evaluations that may be conducted in future Annual Reports. Additional detail for each component of the evaluation is shown below.

Table N-5: Effectiveness Evaluation Summary for Project Planning and Design

	Effectiveness Evaluation Outcome Levels					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Stormwater Program Activities	Barriers and Bridges to Action	Target Audience Actions	Source Contributions	MS4 Contributions	Receiving Water Conditions
Design Best Management Practices	C – Identified Design and Treatment BMPs for Incorporation	N/A	N/A	N/A	N/A	N/A
Treatment BMPs Planned for Projects	C – Treatment BMPs Planned for Incorporation into Projects	N/A	A	N/A	N/A	N/A
Design Self-Audit Program	C – Activities Completed	N/A	C – Evaluation of Storm Water Data Report (SWDR) Completion	N/A	N/A	N/A

C – An effectiveness evaluation was conducted during fiscal year 2015-2016

A – It is anticipated that an effectiveness evaluation may be conducted in future Annual Reports

N – An effectiveness evaluation is not currently anticipated

N/A – This outcome level is not applicable

Design Best Management Practices

Caltrans has identified both design pollution prevention BMPs (design BMPs) and treatment BMPs that need to be considered and incorporated into the design of new highway facilities or the reconstruction and expansion of existing facilities [L1].

Treatment BMPs Planned for Projects

Caltrans staff are aware of the guidance documents and incorporate treatment BMPs into the projects when technically feasible. Treatment BMPs are now consistently built on project sites within the Caltrans right-of-way [L1].

- During the reporting period, 824 treatment BMPs were planned for incorporation into 135 projects. The types of BMPs identified primarily included biofiltration swales, biofiltration strips, infiltration devices, media filters, detention basins, and traction sand traps. Biofiltration swales and biofiltration strips have consistently been some of the most common treatment BMPs, while other types have fluctuated in popularity in past years (Figure N-2).

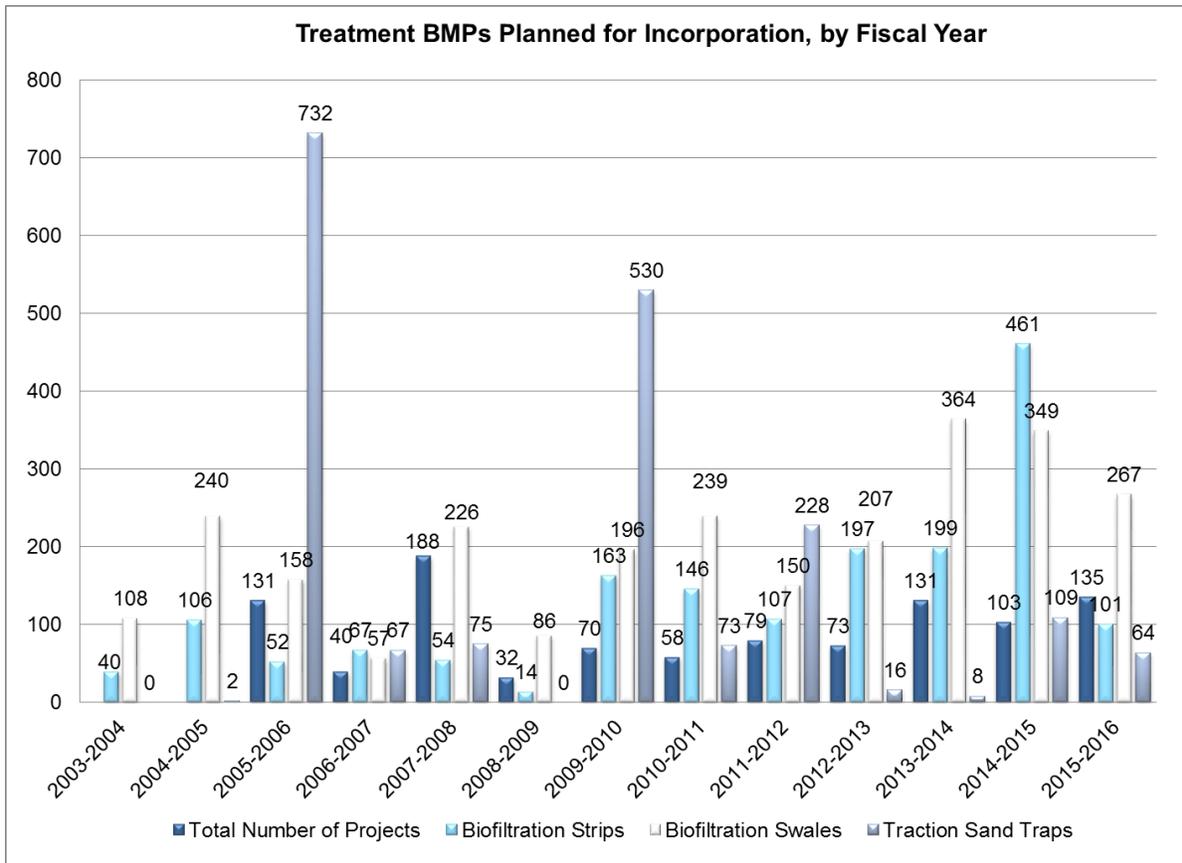


Figure N-2: Treatment BMPs Planned for Incorporation, by Fiscal Year

Design Self-Audit Program

Caltrans developed and implemented a self-audit program of reviews. The Design Compliance Monitoring Program uses the SWDRs as a tool for documenting conformance with the design pollution prevention and treatment BMP requirements of the 2012 Permit and the Draft SWMP. These reviews are used to determine if improvements are needed in the design guidance and training classes. The SWDRs evaluated for this report were prepared during the 2015-2016 fiscal year (Figure N-3) [L1].

A self-audit was performed on 50 SWDRs prepared during the 2015-2016 fiscal year. The audit results stated that the SWDRs reviewed generally indicate that staff are aware of the requirements and guidance available to them and prepare the SWDRs in a manner consistent with the requirements of the 2012 Project Planning and Design Guide (PPDG). [L3].

Overall, the 2015-2016 SWDR reviews indicated the following [L1]:

- Nearly all SWDRs (98%)² were prepared in a manner consistent with the guidance documents and requirements and provided the information in a clear and concise manner with data to substantiate the statements in the narrative.
- In general, most of the SWDRs reviewed were becoming more complete, consistent, and streamlined between Districts, particularly in regards to narratives for the project description, completion of checklists, and consideration of BMPs.

² Those with “Outstanding” or “Acceptable” review results

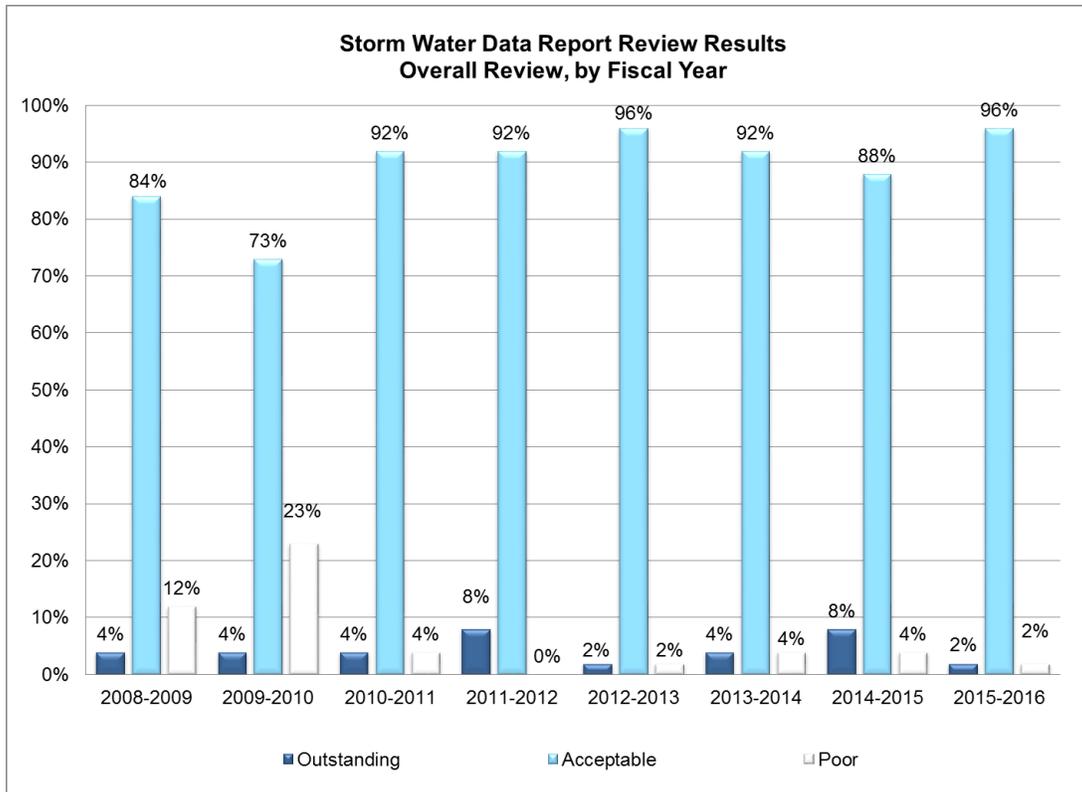


Figure N-3: Storm Water Data Report Review Results, Overall Review, by Fiscal Year

Construction

The table below summarizes the effectiveness evaluation that was conducted for Construction, as well as potential evaluations that may be conducted in future Annual Reports. Additional detail for each component of the evaluation is shown below.

Table N-6: Effectiveness Evaluation Summary for Construction

	Effectiveness Evaluation Outcome Levels					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Stormwater Program Activities	Barriers and Bridges to Action	Target Audience Actions	Source Contributions	MS4 Contributions	Receiving Water Conditions
Implementation of Construction General Permit	C – PRDs filed in SMARTS; SWPPP Onsite	N/A	N/A	N/A	N/A	N/A
Construction Enforcement Actions Response	C – Enforcement Actions Reported	A	A	N/A	N/A	N/A
Construction Self-Audit Compliance Monitoring	C – Compliance Evaluation Completed	A	A	N/A	N/A	N/A
Construction BMPs	C – Forms Modified	A	N	N/A	N/A	N/A

C – An effectiveness evaluation was conducted during fiscal year 2015-2016

A – It is anticipated that an effectiveness evaluation may be conducted in future Annual Reports

N – An effectiveness evaluation is not currently anticipated

N/A – This outcome level is not applicable

Implementation of Construction General Permit

The 2012 Permit defers to the reporting requirements of the Statewide Construction General Permit (CGP) for reporting stormwater discharges associated with construction activities. The CGP requires dischargers, including Caltrans, to electronically file Permit Registration Documents (PRDs) with the SWRCB via the Storm Water Multiple Application and Report Tracking System (SMARTS). All construction projects with one acre or more disturbed soil area fully implemented the CGP requirements by filing PRDs in SMARTS during 2015-2016. Nearly all active construction sites requiring a Stormwater Pollution Prevention Plan (SWPPP) (309 out of 336) had a SWPPP on site during 2015-2016 [L1].

Construction Enforcement Actions Response

The figure below compares the number of active construction projects with the enforcement actions issued during each fiscal year (Figure N-4). Between 2014-2015 and 2015-2016, the number of active construction projects has increased, while the number of enforcement actions has decreased slightly [L1].

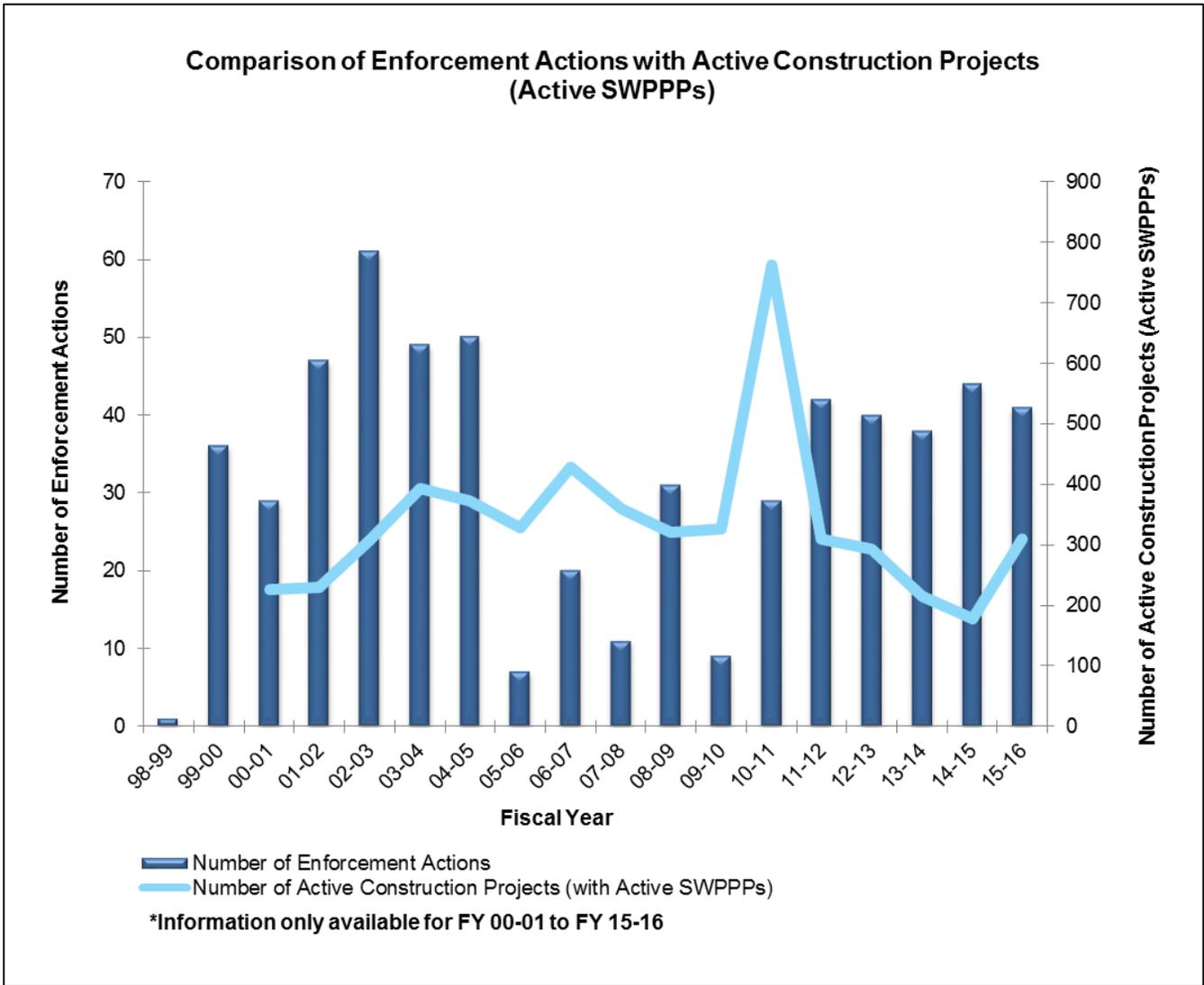


Figure N-4: Comparison of Enforcement Actions to Active Construction Projects

Construction Self-Audit Compliance Monitoring

In April 2015, Caltrans adopted a revised approach to assess the appropriate level of stormwater pollution control at construction projects. This revised approach is described in the *Stormwater Program - Construction Compliance Evaluation Plan CTSW-PL-15-321.03.1* (CCEP). The CCEP process includes the following activities to evaluate the implementation of stormwater pollution prevention measures at construction projects:

- Developing and maintaining a list of construction projects for review;
- Providing 24-hour notification of an Independent Quality Assurance (IQA) site review to the resident engineer (RE), Senior RE, Construction Manager, and District Construction Stormwater Coordinator (DCSWC);
- Conducting the site review;
- Completing the Construction Review Report; and
- Initiating the Corrective Action process.

A total of 236 reviews were conducted statewide during fiscal year 2015-2016 [L1].

For detailed information on the CCEP and IQA review process, consult the *Year-End Performance Report, A Summary of Construction Compliance Reviews – July 1, 2015 – June 30, 2016 (CTSW-RT-16-321.04.2)*, September 2016, included as an attachment on the CD.

A total of 236 reviews were conducted (Figure N-5). Of the reviews conducted, the following was noted:

- The reviews resulted in 136 administrative and 2,272 field BMP findings, for a total of 2,408 findings.
- Very few administrative findings were noted during the IQA reviews, averaging less than one per IQA review. The category with the highest number of administrative findings was training (66.1% of the total).
- Field BMP findings from the IQA reviews averaged approximately 10 per IQA review. The BMP categories with the most field BMP findings were Materials and Waste Management Controls (48.5% of the total BMP findings) and Sediment Control (34.5% of the total BMP findings).
- The four field BMP types that had the most findings were, in descending order, 1) Solid Waste Management, 2) Fiber Rolls, 3) Stockpile Management, and 4) Material Delivery and Storage.
- The four most common observations were, in descending order, 1) Trash and Debris Accumulated On-Site, 2) Perimeter Controls Not Maintained, 3) Stockpile Needs Cover and/or Linear Barrier, and 4) Liquid Materials or Wastes Not in Secondary Containment.
- In general, the types and categories of findings were consistent with those found in the previous three years of the Self-Audit Program.

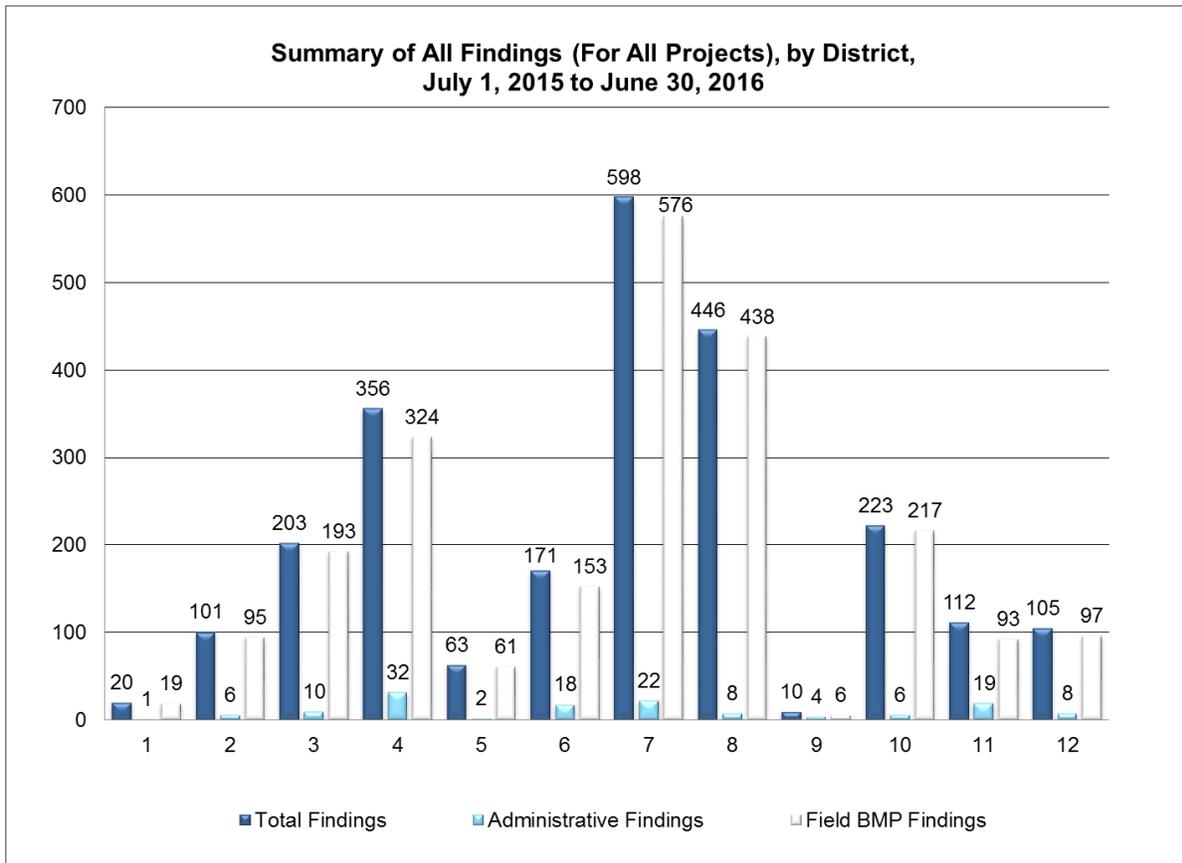


Figure N-5: Summary of Findings for All Projects

Construction BMPs

The Division of Construction modified the stormwater compliance monitoring and inspection forms that were in use since the current Construction General Permit (CGP) went into effect on July 1, 2010, to streamline documentation of contractor inspection and monitoring required for compliance with the CGP, Caltrans Conformed NPDES Permit, and contact specifications [L1].

No new BMPs were approved for use on Caltrans projects during the 2015-2016 reporting period.

Compliance with the Industrial General Permit

Caltrans’ stormwater discharges are regulated by the Caltrans Conformed NPDES Permit, and it is not typically necessary to apply for coverage under the Industrial General Permit (IGP). Caltrans is evaluating the impacts of the new IGP to Caltrans activities and facilities and will be developing policies and procedures if needed to comply with the requirements. Future Annual Reports will discuss the implementation of the policies and procedures to comply with the IGP.

Maintenance Program Activities and Facilities Operations

To determine the effectiveness of the Maintenance Program Activities and Facilities Operations, an effectiveness evaluation of the program data was conducted as a part of the Annual Report.

Program Goals

During the previous permit term, several goals were identified for the Maintenance Program. They include the following:

- The Division of Maintenance has an ongoing program to inspect slopes for erosion. The division has a self-imposed goal to inspect approximately 20% of the slopes in each District annually depending on weather conditions and work load priorities.
- The enhanced storm drain inlet inspection and cleaning program has a goal to inspect 20% of the drain inlets in San Diego, Orange, and Los Angeles and Ventura Counties (Districts 11, 12 and 7, respectively).
- Caltrans is developing a new internal chemical use reduction goal.
- The goal of the Maintenance compliance monitoring is to inspect 10 activities and 20% of the facilities statewide each year. In addition, each activity and facility should be inspected at least once during the current Permit term.

The table below summarizes the effectiveness evaluation that was conducted for Maintenance Program Activities and Facilities Operations, as well as potential evaluations that may be conducted in future Annual Reports. Additional detail for each component of the evaluation is shown below.

Table N-7: Effectiveness Evaluation Summary for Maintenance Program Activities and Facilities Operations

	Effectiveness Evaluation Outcome Levels					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Stormwater Program Activities	Barriers and Bridges to Action	Target Audience Actions	Source Contributions	MS4 Contributions	Receiving Water Conditions
Illegal Connections/ Illicit Discharges (IC/IDs)	C – # Incidents and Results	C – Awareness of Need to Eliminate IC/IDs	C – Resolution of Incidents	N/A	N/A	N/A
Herbicide, Pesticide, and Fertilizer Applications	C – Plans Completed	N	N	A	N/A	N/A
Maintenance Self Audit Compliance Monitoring	C – Evaluation Completed	C – Awareness of BMPs	C – BMP Implementation	N/A	N/A	N/A
Enhanced Storm Drain Inspection and Cleaning Activities	C – # Inlets Inspected and Cleaned	N/A	N/A	A	N/A	N/A
Slope Inspections	C – % Slopes Inspected	N/A	N/A	N/A	N/A	N/A
Trash and Litter Removal Activities	A	A	A	C – Trash and Litter Removed	N/A	N/A

Table N-7: Effectiveness Evaluation Summary for Maintenance Program Activities and Facilities Operations

	Effectiveness Evaluation Outcome Levels					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Stormwater Program Activities	Barriers and Bridges to Action	Target Audience Actions	Source Contributions	MS4 Contributions	Receiving Water Conditions
Drain Inlets/Culverts Inspected and Cleaned	C – Developed Maps and Database; # Inlets Inspected and Cleaned	N/A	N/A	C – Materials Removed	N/A	N/A

C – An effectiveness evaluation was conducted during fiscal year 2015-2016

A – It is anticipated that an effectiveness evaluation may be conducted in future Annual Reports

N – An effectiveness evaluation is not currently anticipated

N/A – This outcome level is not applicable

Illegal Connections/Illicit Discharges

Caltrans continued to implement the illegal connections/illicit discharges (IC/ID) program. The IC/ID tracking system was improved in response to the October 2010 Administrative Order issued by the U.S. EPA. Improvements included updating Detection and Elimination BMPs, revising the tracking of incidents, and developing a system to receive tips and complaints on IC/IDs from the public. Illicit connections and illegal dumping were documented, and notification letters were sent to the responsible parties [L1, L2, L3].

- During the 2015-2016 reporting period, 10 of the 19 IC/ID discharges were resolved (four of which were from the previous reporting period). Issues encountered included a broken septic system line, an oil spill, sediment discharges, and various other IC/IDs.
- Nine incidents are in the process of being resolved. The unresolved incidents are being investigated and monitored, or the property owners have or will obtain a permit from Caltrans to drain the stormwater onto the state right-of-way.
- Three incidents were referred to other agencies that had jurisdiction.

A larger percentage of incidents were resolved during the 2015-2016 fiscal year than average of the previous four years (Figure N-6).

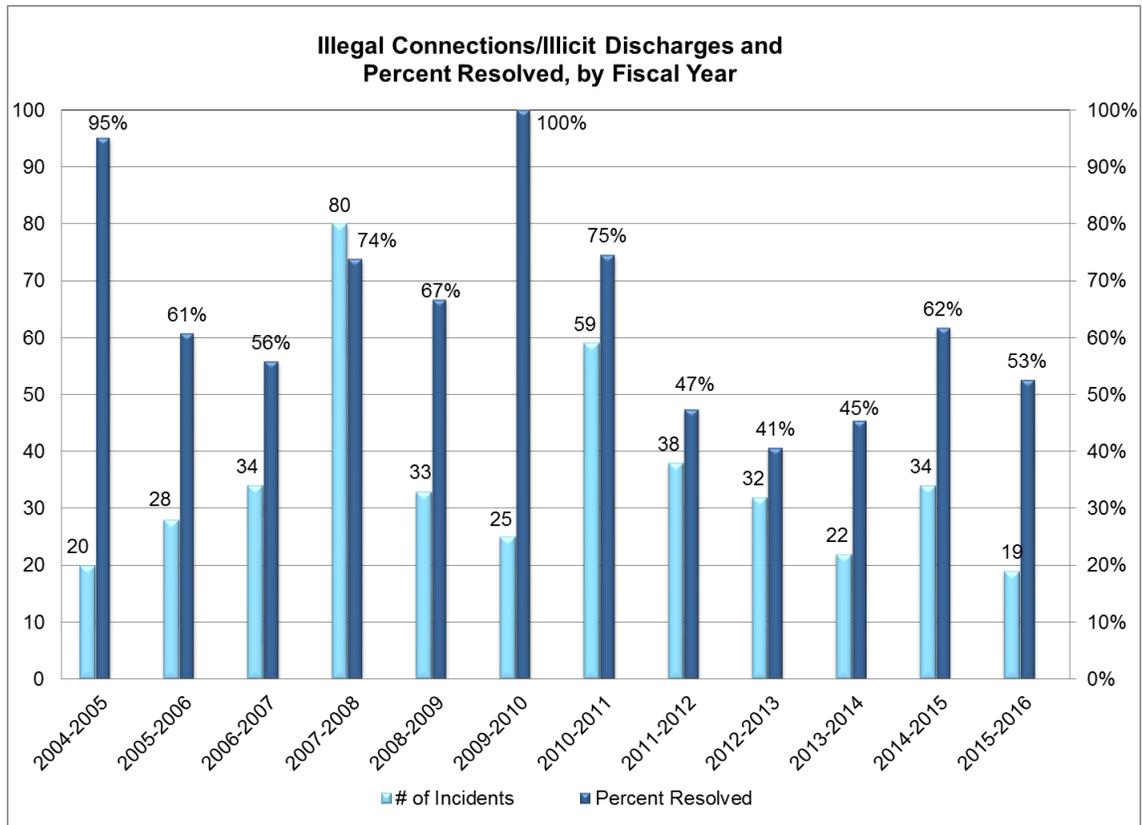


Figure N-6: Illegal Connections/Illicit Discharges and Percent Resolved, by Fiscal Year

Herbicide, Pesticide, and Fertilizer Applications

Each year, the Division of Maintenance prepares, for each District, Vegetation Control Plans that designate the vegetation control methods to be used in right-of-way areas. Caltrans continues to track and record monthly pesticide usage to the California Department of Pesticide Regulation while investigating better and more effective treatment strategies using the seven elements identified in the IVM Program [L1].

A summary of the amount of active ingredient applied by the Landscaping Program in 2015-2016 follows.

- During 2015-2016, Caltrans applied approximately 208,102 pounds of chemical active ingredient to an estimated 58,104 acres. While more total chemical was applied compared to 2014-2015, this is a decrease of 7.5% on a per acre basis compared to the amount applied last year.
- During 2015-2016, five of the twelve Districts (Districts 4, 5, 6, 9, and 10) applied less chemical active ingredient than the previous year (2014-2015). The other Districts increased their application during 2015-2016 primarily due to an increased need for noxious weed control, the need for bare strips to mitigate increased wildfire concerns, increased precipitation, or increased area to treat that was previously under construction (Figure N-7).

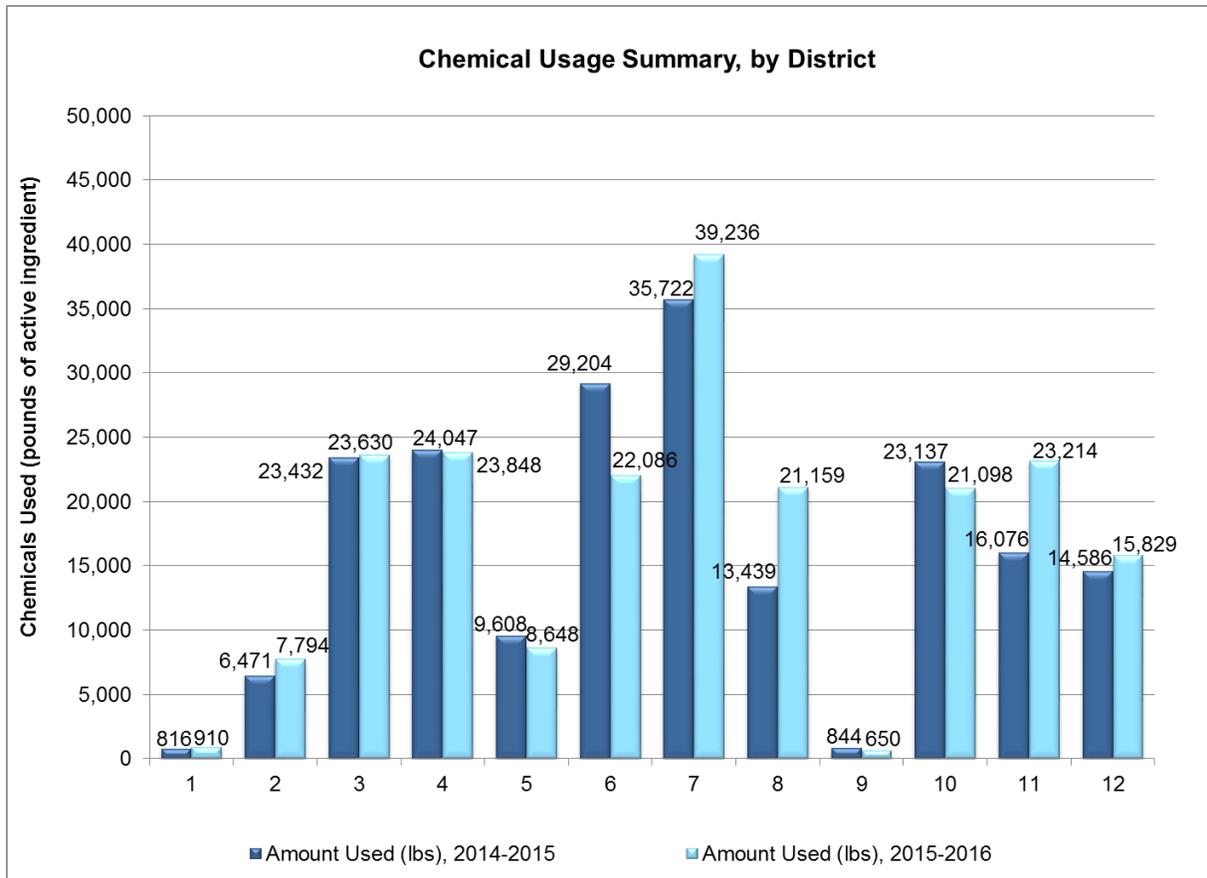


Figure N-7: Chemical Usage Summary, by District

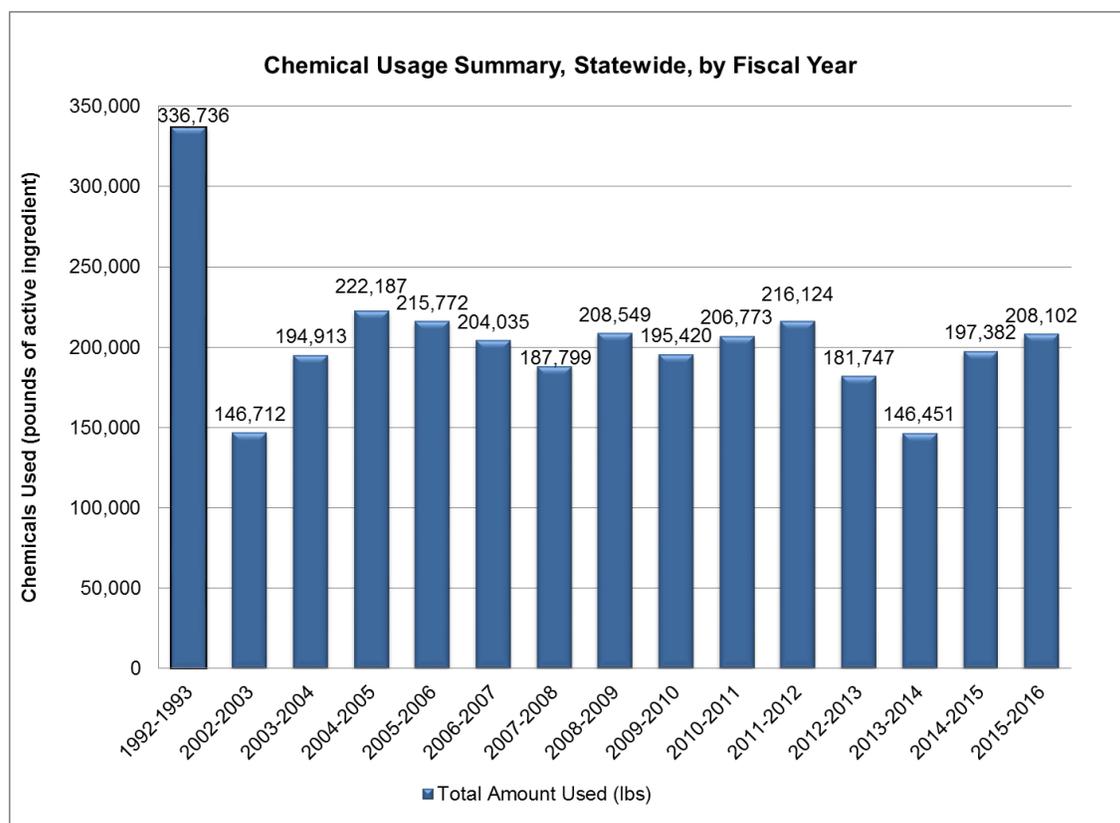


Figure N-8: Chemical Usage Summary, by Fiscal Year

Maintenance Self-Audit Compliance Monitoring

Caltrans developed a self-audit program to serve as a quality assurance mechanism to ensure effective implementation of the Stormwater Pollution Prevention Program. In 2015-2016, a consultant reviewed maintenance facilities and activities for compliance with the requirements of the draft SWMP and Conformed NPDES Permit [L1].

Caltrans’ goal is to inspect a minimum of 10 maintenance activities per district and a minimum of 20% of maintenance facilities per year. The results of the inspections are as follows:

- Caltrans conducted inspections in each District for 198 activities and 262 facilities (30% of the 864 facilities statewide). Thus, the goal of inspecting 20% of the facilities each year was met.

The inspections generally indicated that staff at the facilities are aware of the BMPs that were necessary onsite and are implementing them appropriately [L2, L3].

- The inspections indicated that 85% (223 of 262 facilities inspected) complied with Caltrans’ Maintenance Staff Guide, which resulted in favorable or high ratings (ratings of 1-2). This indicates that staff are aware of how they are supposed to conduct their activities to ensure they comply with the program and that their behavior reflects that awareness.
- Major deficiencies were observed in the implementation of BMPs (rating of 3) in the remaining 15% (39 facilities), and no facilities had critical deficiencies (ratings of 4-5).
- The letter facility rating data indicates that 54% (142 of 262 facilities inspected) were rated “A” (overall implementation of the BMPs was highly effective) and 23% (59 facilities) were rated “B” (BMP implementation is moderately effective). Twenty-three percent (61 facilities) were rated “C” (BMPs were ineffective).

- Since 2002-2003, the number of facilities receiving a “C” rating has remained low (<5%).

Although fluctuations in the “A” rating and “B” rating categories have been reported since 2004-2005, the number of facilities in the “A” and “B” rating categories remains high. The variation between the reporting years is likely the result of snapshot inspections, and the majority of facilities remain in compliance (Figure N-9).

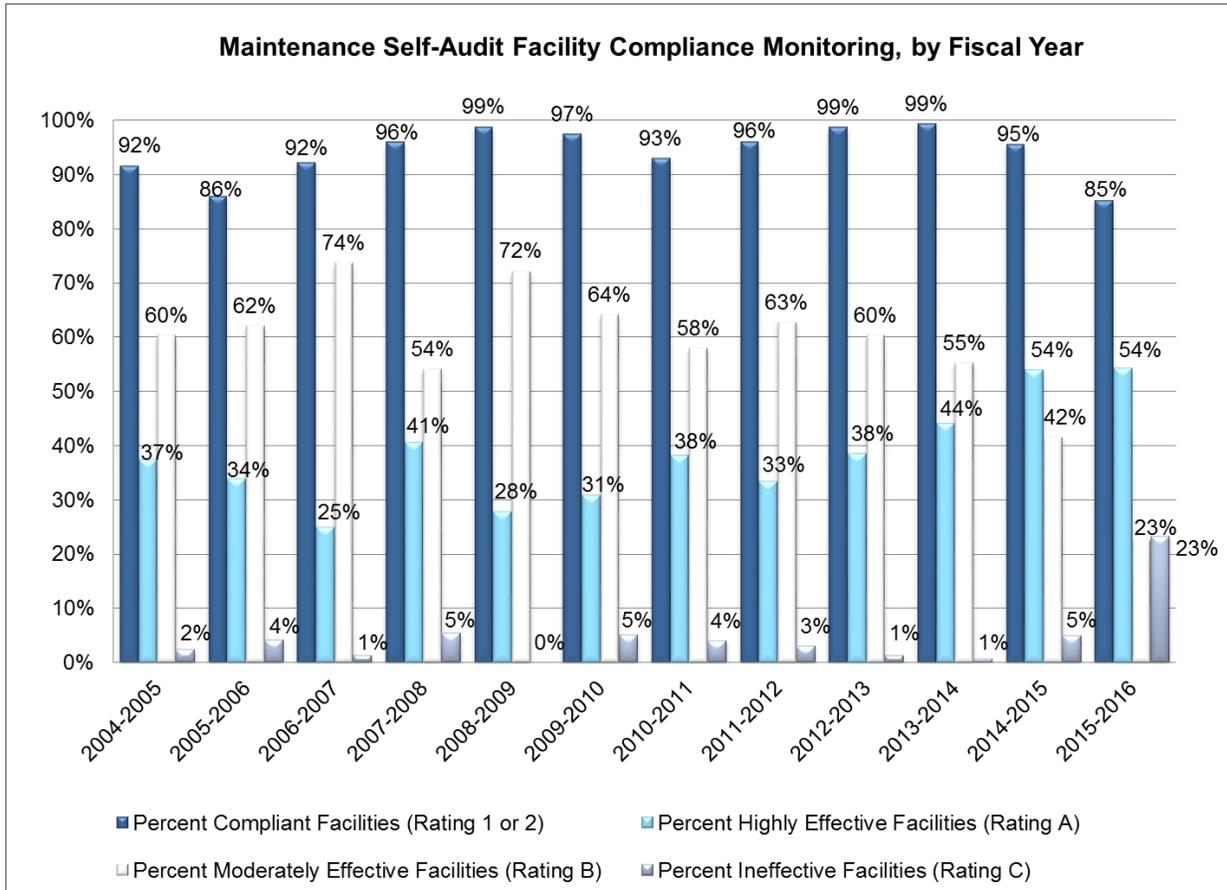


Figure N-9: Maintenance Self-Audit Facility Compliance Results, by Fiscal Year

Compliance inspections were conducted for BMPs that are applied for maintenance activities; 62 maintenance activities are identified within the Maintenance Staff Guide. On average, 17 individual maintenance activities were inspected in each District in 2015-2016, for a total of 198 inspections [L1].

The inspections indicated that staff in the field are generally aware of the BMPs that were necessary and are implementing them appropriately [L2, L3].

- All 198 activities (100%) received a rating of 1 or 2 (no or minor deficiencies).
- No activities received a rating of 3 (major deficiencies), 4 (critical deficiencies), or 5 (discharge to surface water) (Figure N-10).

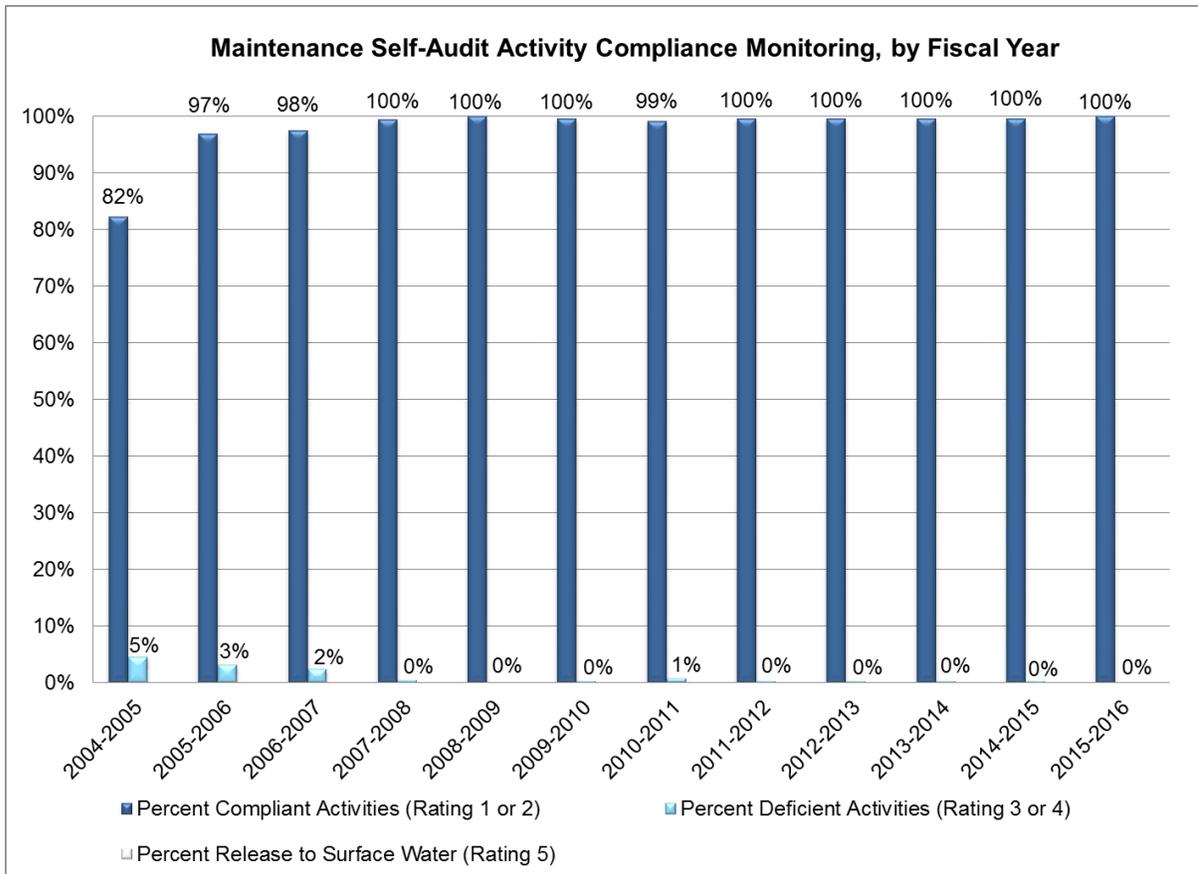


Figure N-10: Maintenance Self-Audit Activity Compliance Results, by Fiscal Year

Enhanced Storm Drain Inspection and Cleaning Activities

Caltrans implemented its enhanced annual storm drain inlet inspection and cleaning program in the Los Angeles and Ventura (District 7), San Diego (District 11), and Orange (District 12) Counties. The goal is to inspect 20% of the storm drain inlets in these counties each year. Overall, in 2015-2016, the enhanced program resulted in 34% of the storm drain inlets being inspected and, of those, about 21% being cleaned; thus, the general goal to inspect 20% of the storm drain inlets was met (Figure N-11, Figure N-12) [L1].

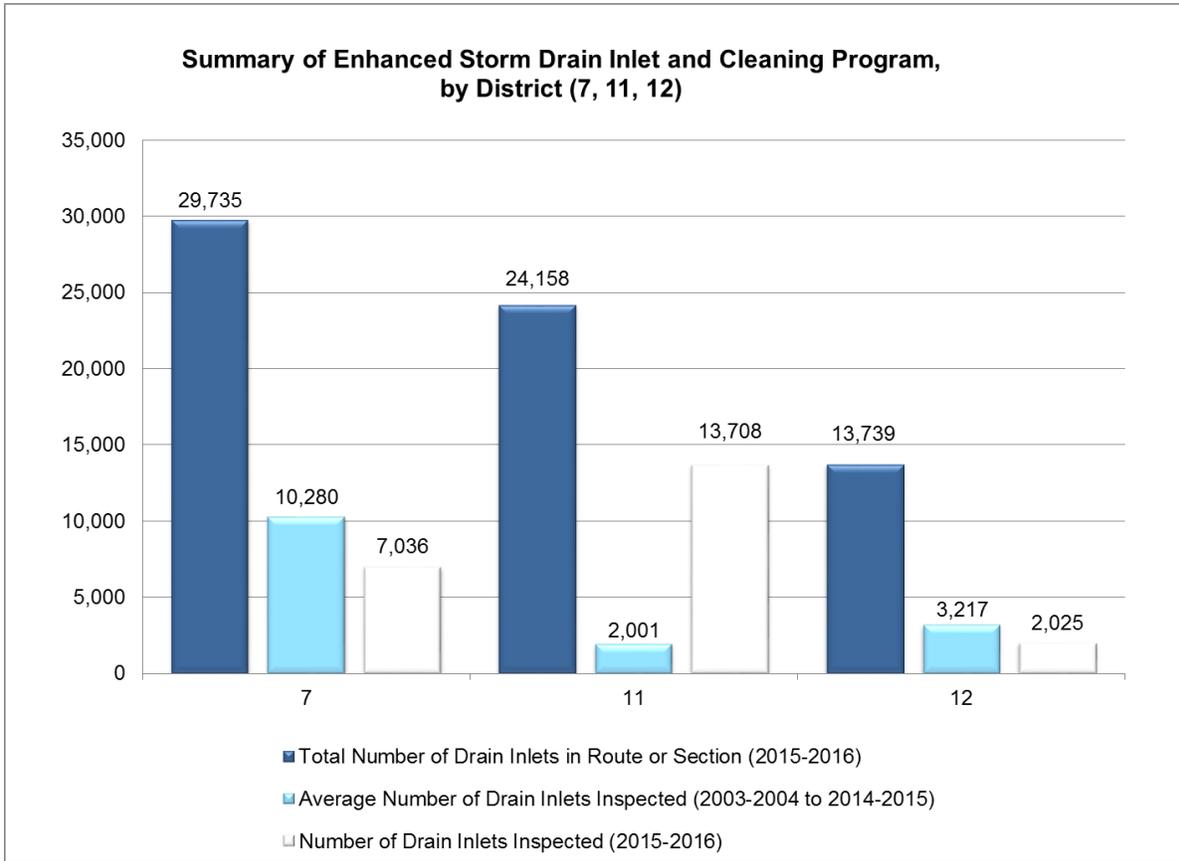


Figure N-11: Summary of Enhanced Storm Drain Inlet and Cleaning Program, by District

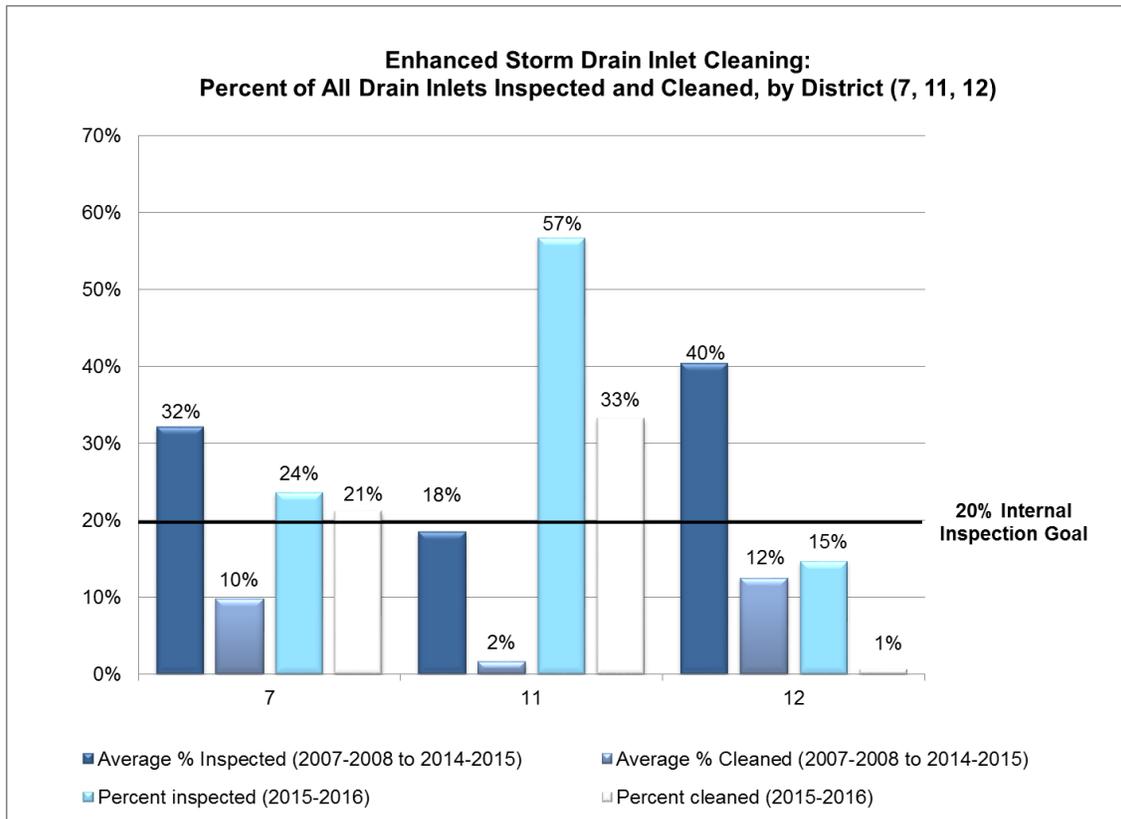


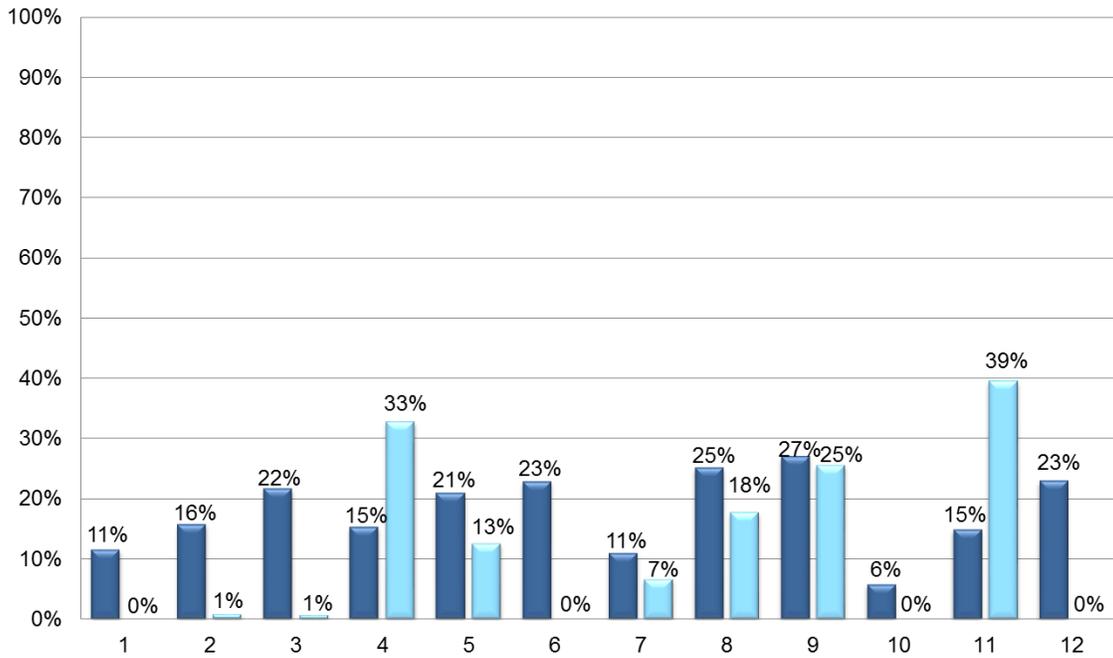
Figure N-12: Enhanced Storm Drain Inlet Cleaning Percent of All Drain Inlets Inspected and Cleaned, by District

Slope Inspections

Caltrans' Division of Maintenance has an ongoing program to inspect slopes for erosion. The division has a self-imposed goal to inspect approximately 20% of the slopes in each District annually, depending on weather conditions and work load priorities. The objective is to meet the SWMP requirement within the five-year period, even though there may be fluctuations in the actual percentage of inspections completed. (Figure N-13, Figure N-12) [L1].

- During the reporting period, 11% of the slopes were inspected. A total of 29 major and 69 minor slope problems were identified along the 5,005 shoulder miles inspected.
- Three Districts (Districts 4, 9, and 11) indicated that more than 20% of the total shoulder miles were inspected.
- Six Districts indicated that less than 20% of the total shoulder miles were inspected.
- For those slopes that had problems, the Districts repaired the problems by installing additional BMPs, lightly grading slopes, backfilling erosion, and clearing the highway.

Slope Inspection: Percent of Shoulder Miles Inspected, by District



Note: 2009-2010 to 2011-2012 fiscal year percentages were calculated using total shoulder miles versus total centerline miles (2007-2008 to 2008-2009).

■ Average % of Total Shoulder Miles Inspected, 2007-2015
 ■ Percent of Total Shoulder Miles Inspected, 2015-2016

Figure N-13: Slope Inspections Percent of Shoulder Miles Inspected, by District

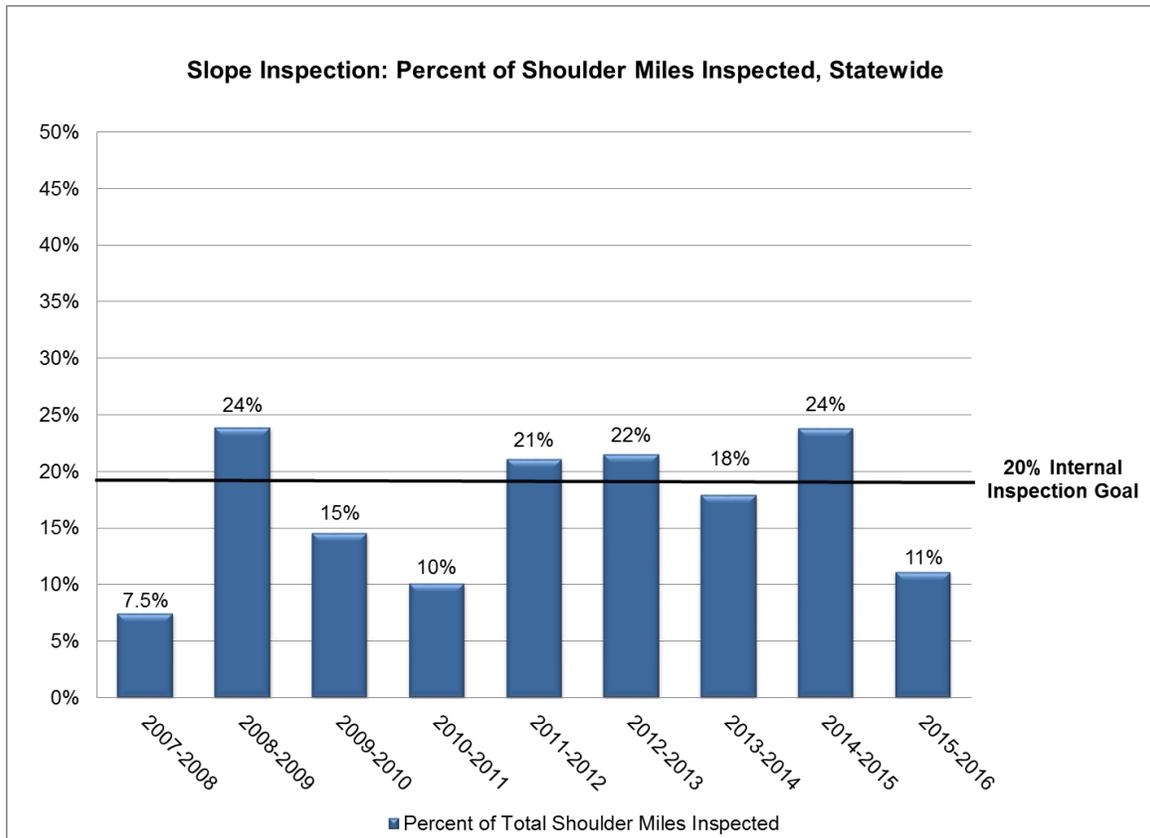


Figure N-14: Slope Inspections Percent of Shoulder Miles Inspected, by Fiscal Year

Trash and Litter Removal Activities

A total of 253,666 cubic yards of trash and litter was removed in 2015-2016 through the following activities (Figure N-15) [L4]:

- Storm Drain Maintenance (33,370 cubic yards)
- Road Sweeping (75,525 cubic yards)
- District Crew/CCC Collection (87,397 cubic yards)
- Caltrans Parolee Program (41,786 cubic yards)
- Caltrans Adopt-A-Highway Program (11,834 cubic yards)
- Public Education (3,754 cubic yards from public participation at events such as the California Statewide Litter Collection, Enforcement and Beautification Day event, the “Keep California Beautiful” campaign, and Caltrans’ “Protect Every Drop” program)

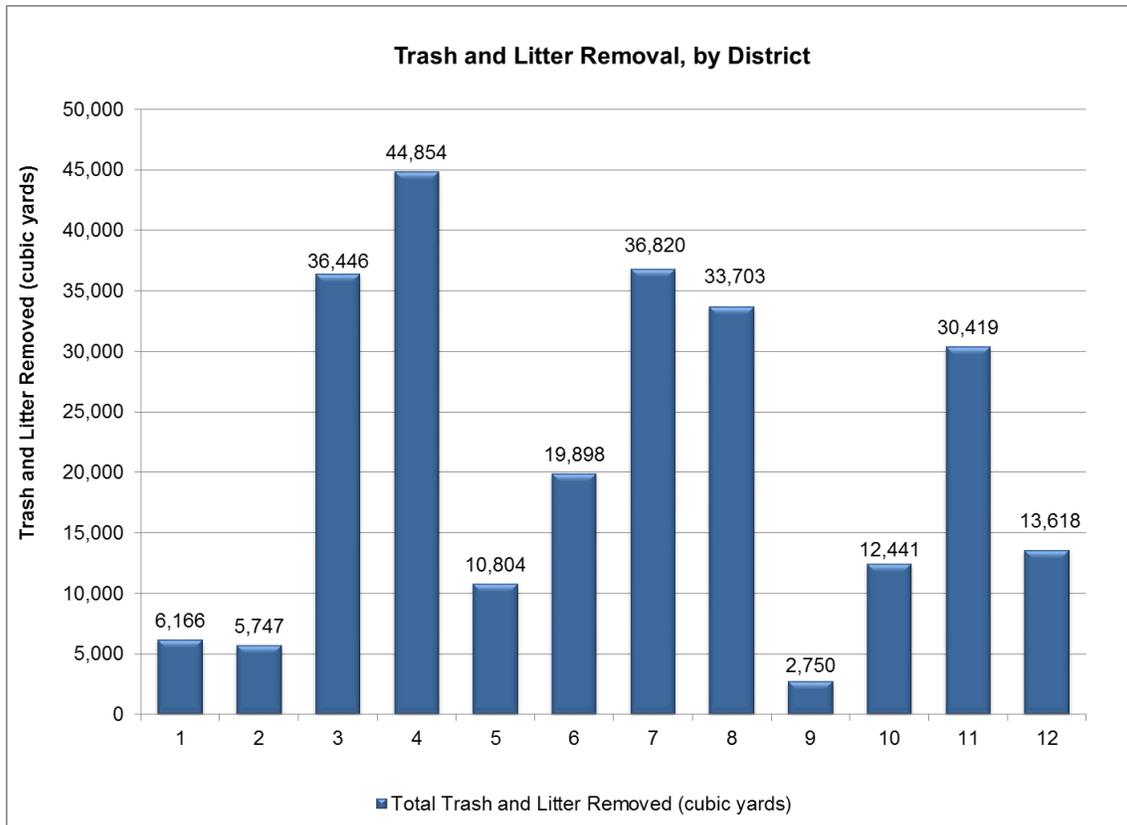


Figure N-15: Trash and Litter Removal, by District

Drain Inlets/Culverts Inspected and Cleaned

Caltrans developed maps and a related route database for each District. As a result, the Maintenance Supervisors were able to review the routes and prioritize the drain inspection and cleaning areas [L1].

Caltrans implemented their baseline drainage facility inspection and cleaning program throughout the state. Statewide, 159,071 of the 396,525 drain inlets were inspected (40% of the total) (Figure N-16, Figure N-17, Figure N-18) [L1].

- All Districts indicated that at least 20% of the drain inlets were inspected.
- With the exception of District 9, all Districts indicated that they inspected more drain inlets than the average of the previous periods (2003-2015).

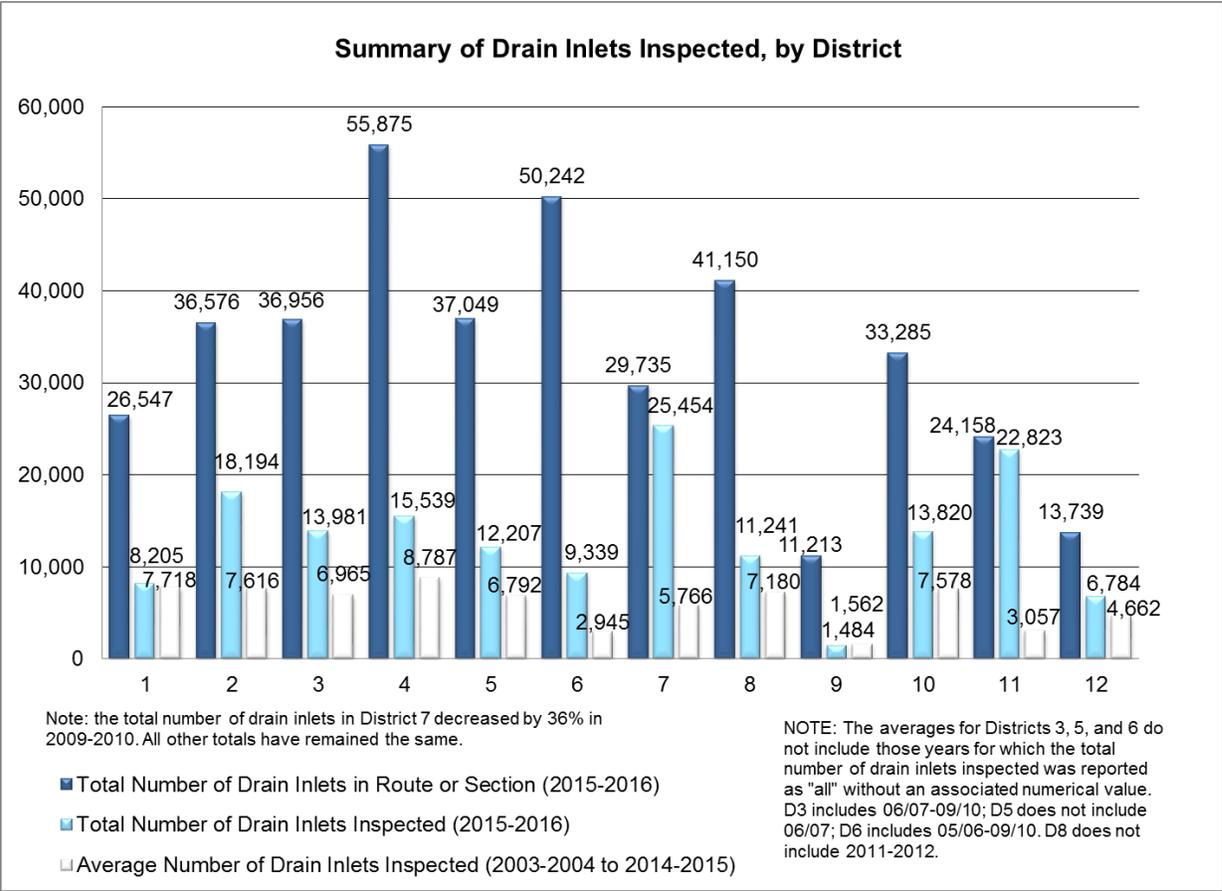


Figure N-16: Summary of Drain Inlets Inspected, by District

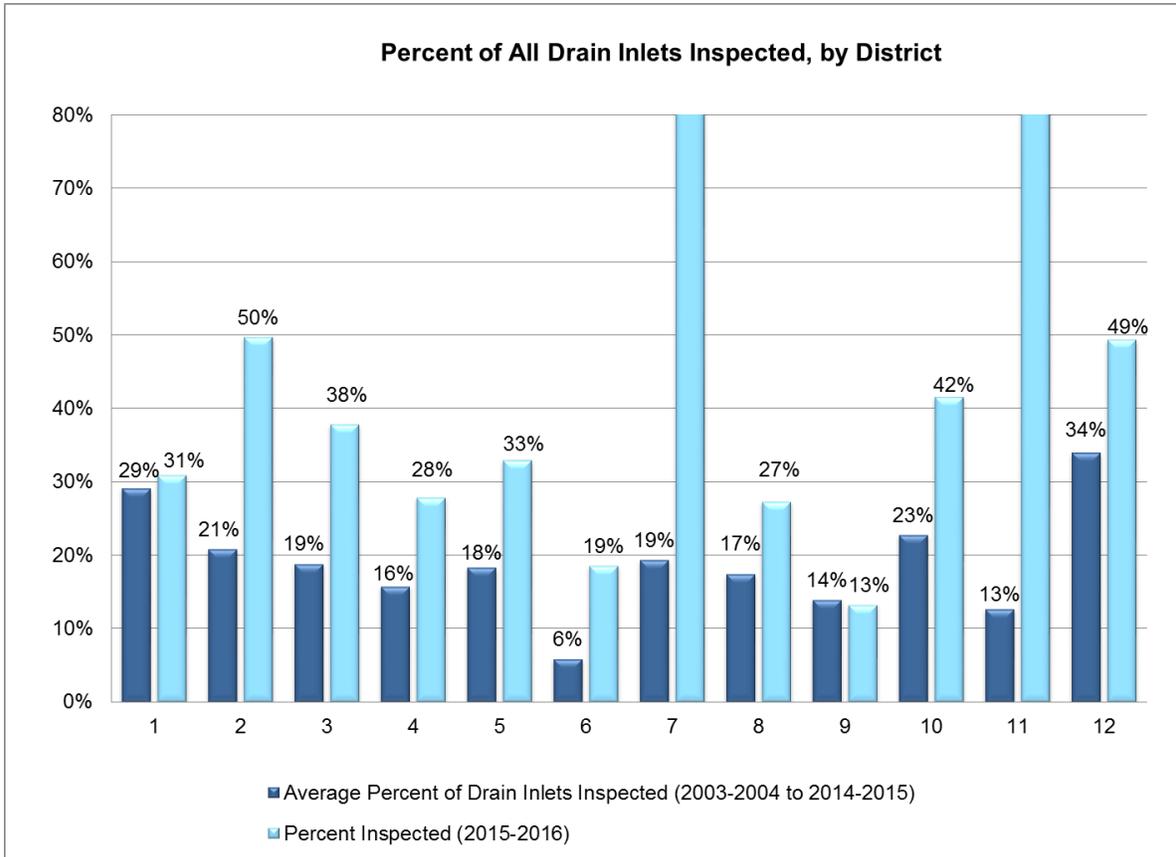


Figure N-17: Percent of Drain Inlets Inspected Over Two Years, by District

Statewide, of the 396,525 total drain inlets, 159,071 (40%) were inspected and 106,260 (27%) had accumulated sediment and were cleaned (Figure N-18). Some of the drain inlets might have been cleaned more than once during the reporting period [L1, L4].

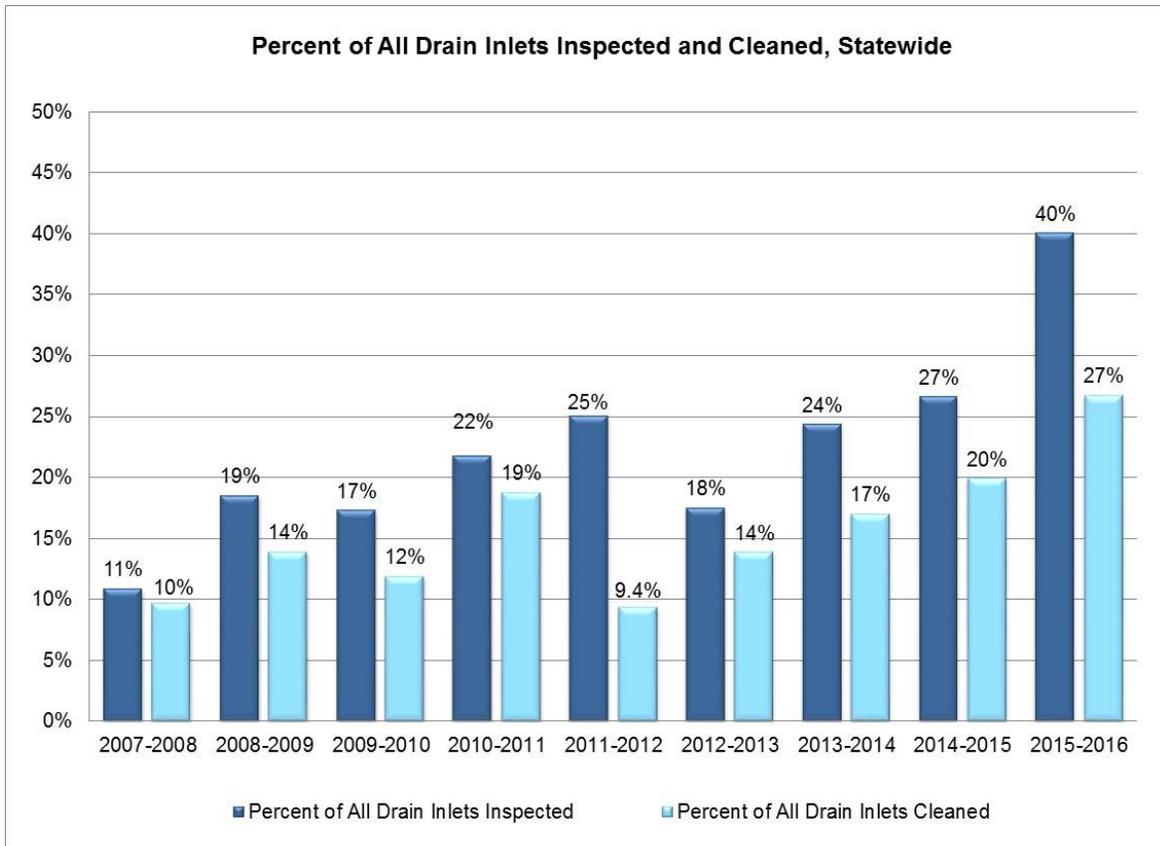


Figure N-18: Percent of All Drain Inlets Inspected and Cleaned, by Fiscal Year

Non-Departmental Activities

The table below summarizes the effectiveness evaluation that was conducted for Non-Departmental Activities, as well as potential evaluations that may be conducted in future Annual Reports. Additional detail for each component of the evaluation is shown below.

Table N-8: Effectiveness Evaluation Summary for Non-Departmental Activities

	Effectiveness Evaluation Outcome Levels					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Stormwater Program Activities	Barriers and Bridges to Action	Target Audience Actions	Source Contributions	MS4 Contributions	Receiving Water Conditions
Airspace Leases	C – # Leases with Stormwater Language	N	N/A	N/A	N/A	N/A

C – An effectiveness evaluation was conducted during fiscal year 2015-2016

A – It is anticipated that an effectiveness evaluation may be conducted in future Annual Reports

N – An effectiveness evaluation is not currently anticipated

N/A – This outcome level is not applicable

Airspace Leases

Airspace leases are legal documents defining areas within the state highway right-of-way that can safely accommodate privately managed uses, and they outline terms agreed upon at the time of their execution. Caltrans ensured that new or renewed airspace leases included the necessary stormwater language for compliance with the SWMP (Figure N-19). In 2015-2016, Caltrans incorporated stormwater language into 75% of the airspace leases statewide (420 out of 560 airspace leases). This is an increase from 50% in 2007-2008 (Figure N-20) [L1].

- District 9 indicated that they have either no or minimal airspace leases.
- Districts 1, 5, and 8 indicated that they have incorporated stormwater language into 100% of their airspace leases.
- Districts 2, 3, 4, and 12 indicated that they have incorporated stormwater language into 75% or more of their airspace leases.
- Districts 6, 7, and 11 indicated that they have incorporated stormwater language into 50% or more of their airspace leases.
- Only District 10 indicated that they have incorporated stormwater language into less than 50% of their airspace leases. Leases with no incorporated stormwater language are long-term leases that were executed before the Stormwater Management Program was established. Caltrans cannot change these leases until they expire, the tenant vacates, a new tenant and lease are established, or the leases are renewed.

Caltrans will continue to revise airspace leases to include stormwater management requirements as the leases are renewed.

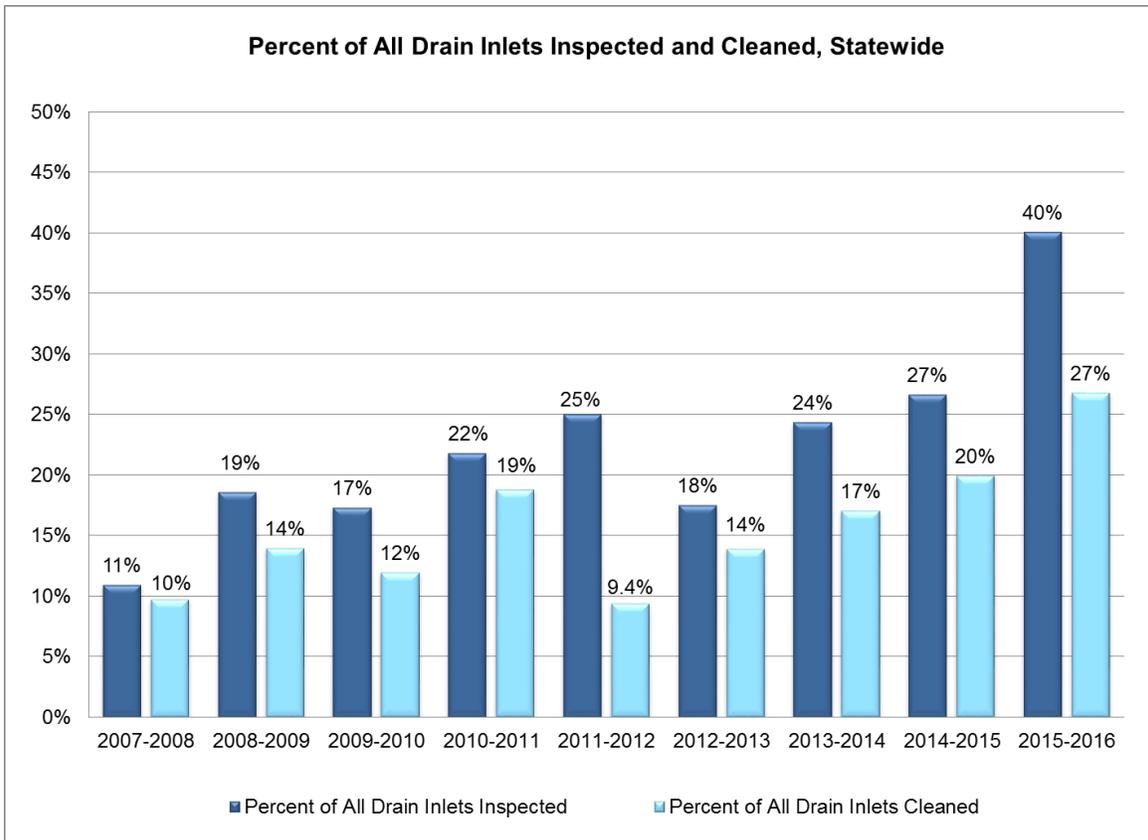


Figure N-19: Percent of Airspace Leases with Stormwater Language, by District

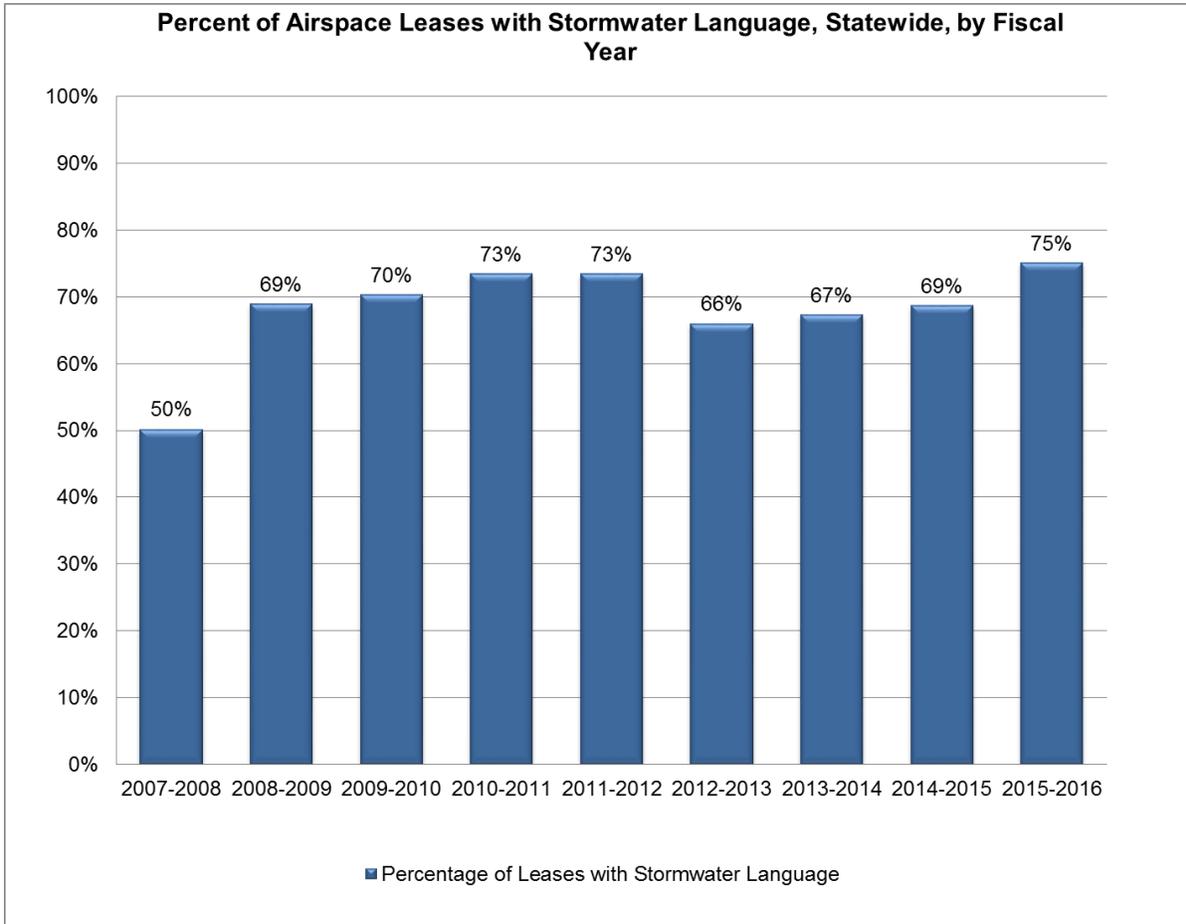


Figure N-20: Percent of Airspace Leases with Stormwater Language, by Fiscal Year

Non-Stormwater Activities/Discharges

The table below summarizes the effectiveness evaluation that was conducted for Non-Stormwater Activities/Discharges, as well as potential evaluations that may be conducted in future Annual Reports. Additional detail for each component of the evaluation is shown below.

Table N-9: Effectiveness Evaluation Summary for Non-Stormwater Activities/Discharges

	Effectiveness Evaluation Outcome Levels					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Stormwater Program Activities	Barriers and Bridges to Action	Target Audience Actions	Source Contributions	MS4 Contributions	Receiving Water Conditions
Exempt and Conditionally Exempt Non-Stormwater Discharges	A	N	N	N/A	N/A	N/A

C – An effectiveness evaluation was conducted during fiscal year 2015-2016

A – It is anticipated that an effectiveness evaluation may be conducted in future Annual Reports

N – An effectiveness evaluation is not currently anticipated

N/A – This outcome level is not applicable

Exempt and Conditionally Exempt Non-Stormwater Discharges

No changes were made to the non-stormwater BMPs used for conditionally exempt discharges during the reporting period.

Training

The table below summarizes the effectiveness evaluation that was conducted for Training, as well as potential evaluations that may be conducted in future Annual Reports. Additional detail for each component of the evaluation is shown below.

Table N-10: Effectiveness Evaluation Summary for Training

	Effectiveness Evaluation Outcome Levels					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Stormwater Program Activities	Barriers and Bridges to Action	Target Audience Actions	Source Contributions	MS4 Contributions	Receiving Water Conditions
Training	C – # Training Courses Held and # Attendees	C – Awareness of Key Issues	A	N/A	N/A	N/A

C – An effectiveness evaluation was conducted during fiscal year 2015-2016

A – It is anticipated that an effectiveness evaluation may be conducted in future Annual Reports

N – An effectiveness evaluation is not currently anticipated

N/A – This outcome level is not applicable

Training

The division-specific training efforts in 2015-2016 include the following [L1, L2]:

NPDES

- A total of 66 training courses were provided to 337 employees (31% of 1,077 staff), including available online courses. See Appendix L for courses provided to NPDES program staff.
- No trainings were reported for NPDES prior to 2013-2014 because the staff in this division were being trained with another division, pending development of division-specific training.

Right-of-Way Program

- Three training courses were given to 21 employees (7% of 304 staff). See Appendix L for courses provided to right-of-way program staff.
- No trainings were reported for this division prior to 2013-2014 because the staff in this division were being trained with another division, pending development of division-specific training.

Encroachment Permit Office

- A total of 22 training courses were provided to 54 employees (30% of 183 staff. Headquarters Encroachment Permits developed a task order for a training class to enhance the stormwater requirements during encroachment permit review and inspection. The new training will also assist the permit writers and inspectors with recognizing, tracking, and reporting non-compliance. See Appendix L for courses provided to encroachment program staff.
- Since 2010-2016, approximately 67% of the employees have been re-trained (some multiple times), targeting 100% by 2017. (Figure N-21).
- No trainings were reported for this division prior to 2011-2012 because the staff in this division were being trained with another division, pending development of division-specific training.

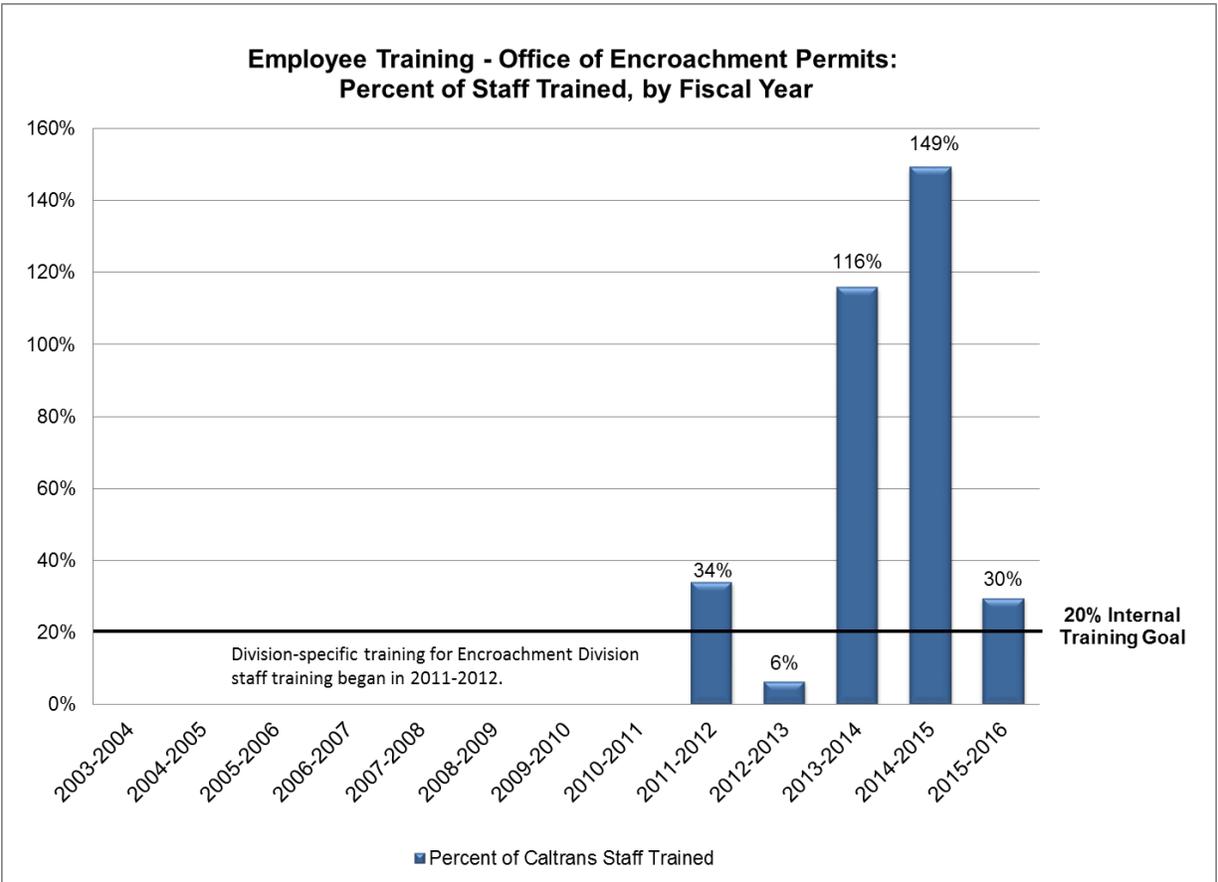


Figure N-21: Employee Training Encroachment: Number of Staff Trained, by Fiscal Year

Design

- Five training courses were provided to 59 employees in the Planning and Design division (approximately 7% of 809 staff) in addition to available online courses (the number of staff trained through online courses was not tracked). See Appendix L for courses provided to design program staff.
- Since 2003-2004, on average, 25% of the employees have been trained each year (some multiple times) (Figure N-22).

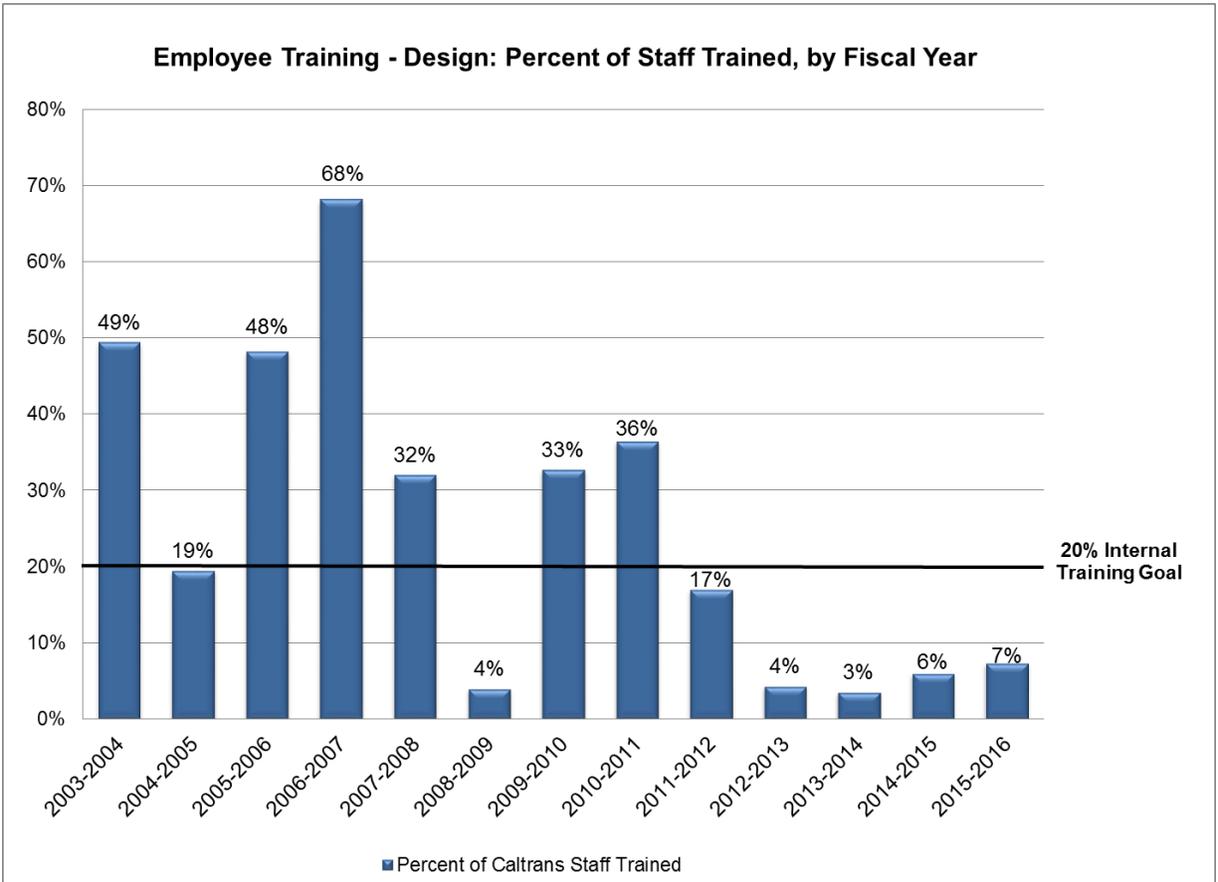


Figure N-22: Employee Training Design: Number of Staff Trained, by Fiscal Year

Construction

- A total of 48 training courses as well as several online courses that are available at all times were provided to 946 employees (44% of 2,136 staff) in addition to available online courses (the number of staff trained through online courses is not tracked). See Appendix L for courses provided to construction program employees.
- Since 2003-2004, on average, 44% of the employees have been trained each year (some multiple times) (Figure N-23).
- Construction contractor training activities were provided for 4,656 contract employees

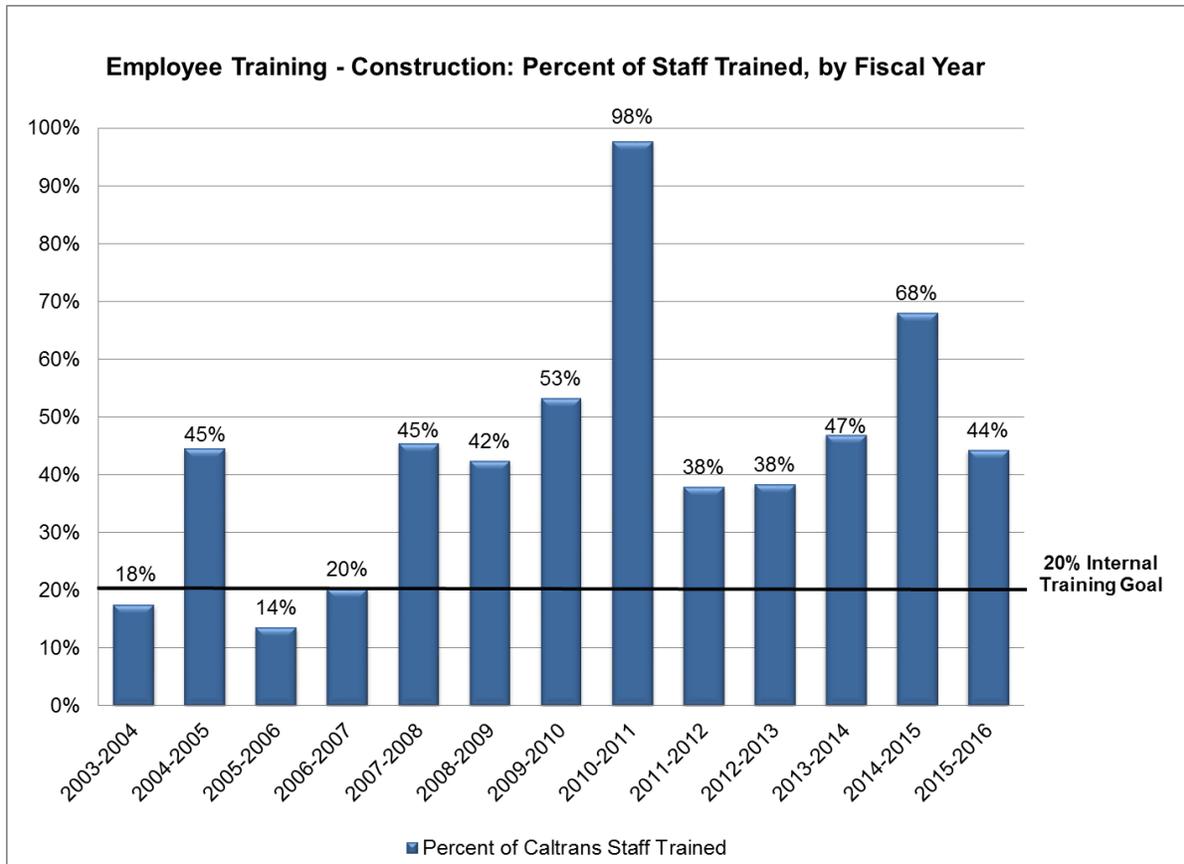


Figure N-23: Employee Training Construction: Number of Staff Trained, by Fiscal Year

Maintenance

- A total of 169 training courses were provided to 1,269 employees (48% of 2,635 staff). See Appendix L for courses provided to maintenance program staff.
- Since 2003-2004, on average, 59% of the employees have been trained each year (some multiple times) (Figure N-24).

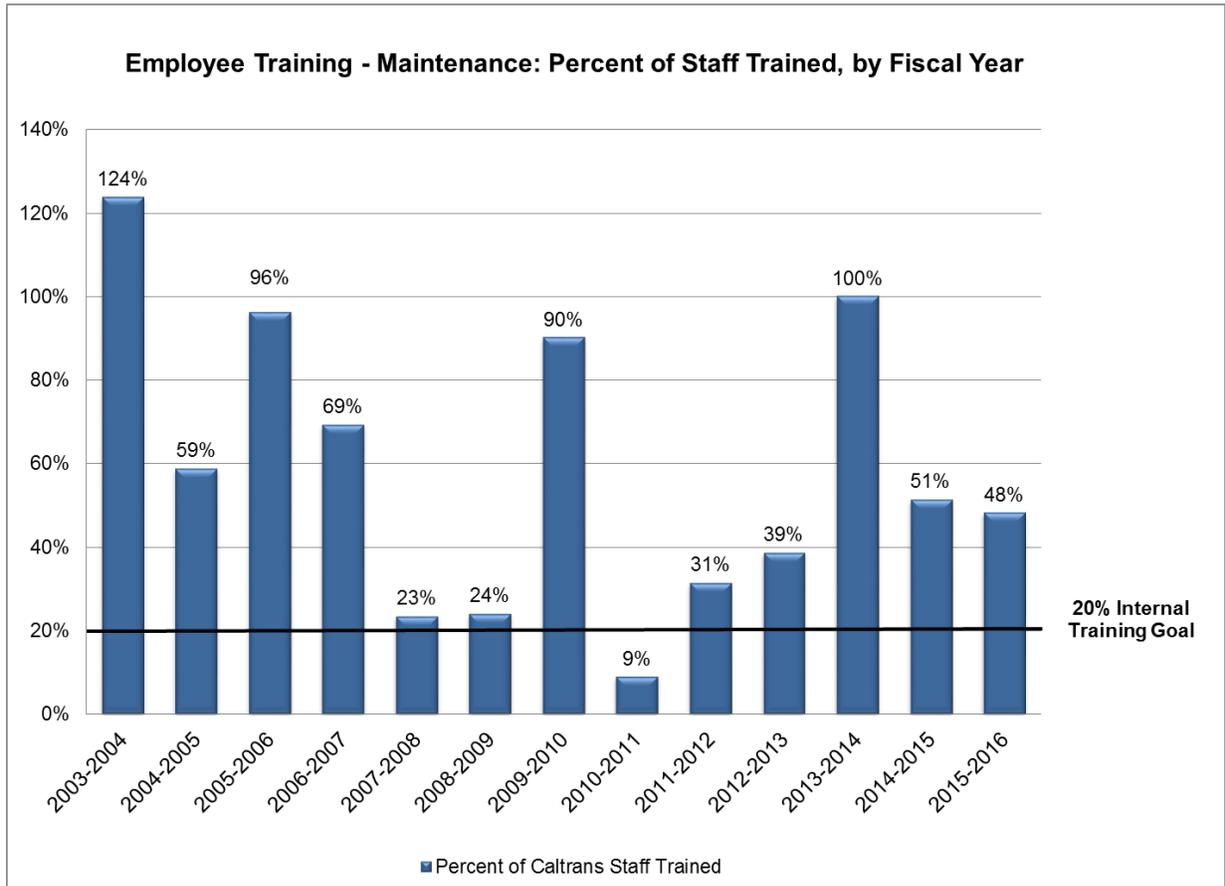


Figure N-24: Employee Training Maintenance: Number of Staff Trained, by Fiscal Year

Public Education and Outreach

The table below summarizes the effectiveness evaluation that was conducted for Public Education and Outreach, as well as potential evaluations that may be conducted in future Annual Reports. Additional detail for each component of the evaluation is shown below.

Table N-11: Effectiveness Evaluation Summary for Public Education and Outreach

	Effectiveness Evaluation Outcome Levels					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Stormwater Program Activities	Barriers and Bridges to Action	Target Audience Actions	Source Contributions	MS4 Contributions	Receiving Water Conditions
Public Education	C – Outreach Conducted and Impressions Made	A	A	C – Materials Removed, Adopt-A-Highway Program	N/A	N/A

C – An effectiveness evaluation was conducted during fiscal year 2015-2016

A – It is anticipated that an effectiveness evaluation may be conducted in future Annual Reports

N – An effectiveness evaluation is not currently anticipated

N/A – This outcome level is not applicable

Public Education

Caltrans has developed and is implementing an effective public education and outreach program that provides key stormwater messages. The efforts include the following [L1]:

- Caltrans coordinated the public education/information outreach efforts with the Districts, as well as other state, federal, county, city, and local agency programs.
- In February 2016, Caltrans initiated its “Protect Every Drop” campaign seeks to educate Californians about the sources and pathways of stormwater pollution and to encourage consumer behavior that reduces pollutants in order to improve water quality in our streams, rivers, lakes, and coastal waters. The campaign addresses three key actions that the public can take, including properly disposing of trash and other items containing pollutants, covering truckloads that may fall or blow off during travel, and performing routine vehicle and tire maintenance to reduce pollution from vehicles. The campaign also addresses other pollutants, such as pesticides and bacteria found in highway stormwater that may originate from non-highway sources. Caltrans developed a website (www.protecteverydrop.com) to provide information on the campaign.

The Districts supplemented the statewide efforts and implemented the program at the local level [L1].

- Nine Districts assisted in implementing the anti-litter campaigns.
- One District distributed a news release, fielded phone calls from the media and members of the public, and used Twitter to promote outreach for the “Protect Every Drop” campaign.
- Ten Districts conducted other outreach on a local level, including outreach to schools, presentations on bring-your-child-to-work days, participation in community events, and/or participation in clean-up days.

A total of 15,588 cubic yards of trash and litter were removed in 2015-2016 by the Caltrans Adopt-A-Highway Program and other public education programs such as the California Statewide Litter Collection, Enforcement, and Beautification Day event, and the “Keep California Beautiful” campaign [L4].

Measurable Objectives

Caltrans developed its Draft SWMP during the reporting period to comply with the 2012 Permit requirements. The Draft SWMP included a total of 68 Measurable Objectives. The revised Draft SWMP was still pending approval during the 2015-2016 reporting period. The State Water Board approved the revised Draft SWMP on July 20, 2016.

Although the Measurable Objectives were not required to be implemented during the reporting period, Caltrans made progress in implementing and/or completing many of the Measurable Objectives. A summary of implementation is provided below.

During the next reporting period, Caltrans will continue to implement the necessary tasks and activities to achieve the Measurable Objectives and will assess its progress in meeting the Measurable Objectives during each reporting period.

“Develop the Program” Measurable Objectives

Caltrans has developed and is implementing the Measurable Objectives to “Develop the Program.” Of the 17 Measurable Objectives to “Develop the Program”:

- Eight (47%) Measurable Objectives were completed
- Three (18%) Measurable Objectives were in progress

“Implement the Program” Measurable Objectives

Caltrans has developed and is implementing the Measurable Objectives to “Implement the Program.” Of the 12 Measurable Objectives to “Implement the Program”:

- Three (25%) Measurable Objectives were completed
- Six (50%) Measurable Objectives were in progress

“Evaluate the Program” Measurable Objectives

Caltrans has developed and is implementing the Measurable Objectives to “Evaluate the Program.” Of the 39 Measurable Objectives to “Implement the Program”:

- 12 (31%) Measurable Objectives were completed
- Six (15%) Measurable Objectives were in progress
- One (3%) Measurable Objective was under development

Region Specific Activities

The table below summarizes the effectiveness evaluation that was conducted for Region Specific Activities, as well as potential evaluations that may be conducted in future Annual Reports. Additional detail for each component of the evaluation is provided below.

Table N-12: Effectiveness Evaluation Summary for Region Specific Activities

	Effectiveness Evaluation Outcome Levels					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Stormwater Program Activities	Barriers and Bridges to Action	Target Audience Actions	Source Contributions	MS4 Contributions	Receiving Water Conditions
TMDL Requirements	C – Participation in the Development and Implementation of TMDLs	N	N	A	N/A	*A

C – An effectiveness evaluation was conducted during fiscal year 2015-2016

A – It is anticipated that an effectiveness evaluation may be conducted in future Annual Reports

N – An effectiveness evaluation is not currently anticipated

N/A – This outcome level is not applicable

* This outcome level may only be assessed using Caltrans’ data in conjunction with other available stakeholder datasets.

TMDL Requirements

On May 20, 2014, the State Board released an amendment to the Caltrans Conformed NPDES Permit focusing on TMDL requirements. The revised sections included the Order, Fact Sheet, and Attachments IV, V, VIII, and IX. In response to comments received, the State Board released a revised amendment on May 9, 2014, followed by a change sheet and subsequent adoption hearing on May 20, 2014, after which all revisions were approved. The Caltrans Conformed NPDES Permit revisions are pending approval at the Office of Administrative Law (OAL).

During the reporting period, Caltrans monitored 16 TMDL sites locations throughout the state to comply with the requirement to monitor water quality at a minimum of 100 Tier-1 sites. Monitoring details and results are included in the Monitoring Results Report due on October 1, 2016.

Caltrans submitted the Comprehensive TMDL Monitoring Plan to the State Board on January 1, 2015. State Board staff provided review and comment within the reporting period, and Caltrans submitted a revised plan to State Board staff in June 2016. Caltrans staff is awaiting further comments and/or final approval of the plan [L1].

North Coast Region

Caltrans prepared an inventory of excess sources of sediment and threatened discharges in the North Coast Region that was submitted to the North Coast Regional Board on September 19, 2014. Field verification was completed and the revised inventory was submitted to the SWRCB in December 2015 [L1].

Caltrans protected and restored riparian vegetation on a project-by-project basis in the North Coast Region. If vegetation removal required a permit from the Regional Board, a permit was obtained and its requirements were implemented [L1].

San Francisco Bay Region

Caltrans developed a Trash Load Reduction work plan and schedule and submitted these to the Regional Board on September 2, 2014. The Regional Board reviewed the Workplan and provided comments on December 5, 2014. Caltrans submitted an updated Workplan on June 1, 2015 with a commitment to complete a field assessment of 475 miles to identify trash generation areas, and work with local permittees to identify opportunities for cooperative implementation. The Trash Load Reduction Workplan was resubmitted to the Regional Board on June 25, 2016. Caltrans and the Regional Board have held several meetings in 2015-2016 to discuss the

Workplan. Caltrans completed a field assessment of over 1,000 miles of highway and approximately 900 ramps identifying very high, high, moderate and low/none trash generation areas. Caltrans has been working with local permittees to identify opportunities for cooperative implementation, including the Ettie Street Pump Station Watershed and San Mateo County regional treatment project. Caltrans has begun a pilot study to investigate the use of netting trash capture devices along the I-880 [L1].

Caltrans has started a five-year program to inspect and monitor pump stations in the San Francisco Bay Region pursuant to Caltrans Conformed NPDES Permit, Attachment V (Region Specific Requirements). During 2014-2015, Caltrans monitored 18 pump stations within Region 4 to collect dissolved oxygen (DO) data. Pump stations with DO levels at or below 3 mg/L will be identified and potential corrective actions considered, such as continuous pumping at a low flow rate, aeration, or other appropriate methods to maintain DO discharge concentrations above 3 mg/L. In 2014-2015, none of the pump stations had DO levels below 3 mg/L and most pumping activities were due to localized ground water discharge. During 2015-2016 (the second year of the program), Caltrans monitored an additional 18 pump stations within the Region to inspect and collect dissolved oxygen (DO) data. None of the pump stations had a DO level below 3 mg/L in the dry weather discharge. Most pumping activities were due to localized ground water discharge. In total, 36 pump stations have been monitored [L1].

Lahontan Region

For projects that met the criteria specified in Provision E.2.d of the permit (Project Planning and Design), the Lahontan Region numeric sizing criteria for stormwater treatment control BMPs in the Truckee River, East Fork Carson River, West Fork Carson River, and Mammoth Creek Hydrologic Units were applicable. This information is discussed in the Stormwater Data Report prepared for the project.

Reporting

The table below summarizes the effectiveness evaluation that was conducted for Reporting, as well as potential evaluations that may be conducted in future Annual Reports. Additional detail for each component of the evaluation is provided in subsequent sections.

Table N-13: Effectiveness Evaluation Summary for Reporting

	Effectiveness Evaluation Outcome Levels					
	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Stormwater Program Activities	Barriers and Bridges to Action	Target Audience Actions	Source Contributions	MS4 Contributions	Receiving Water Conditions
District Work Plans (DWP)	C – DWPs Implemented	N	N/A	N/A	N/A	N/A
Total Maximum Daily Load Status Review Report	C – TMDLs Implemented	N	N/A	N/A	N/A	N/A

C – An effectiveness evaluation was conducted during fiscal year 2015-2016
 A – It is anticipated that an effectiveness evaluation may be conducted in future Annual Reports
 N – An effectiveness evaluation is not currently anticipated
 N/A – This outcome level is not applicable

District Work Plans

Caltrans effectively identifies and addresses regional issues by developing, submitting, and implementing District Work Plans (DWP) on an annual basis [L1].

- In October 2014, the Districts submitted District Work Plans (DWP) describing the activities for the reporting period. During fiscal year 2015-2016, the Districts completed and worked on the activities they had planned for the fiscal year. See Appendix M on the CD for a summary of DWP activities.
- The DWPs, published in October 2015, summarize the activities that each District plans to perform during the next reporting period (fiscal year 2016-2017).

Total Maximum Daily Load Status Review Report

Caltrans participated with local and state agencies on specific TMDL elements in the nine RWQCB jurisdictions. Its participation included conducting stakeholder coordination meetings and workshops, developing and implementing monitoring programs, implementing BMPs, and developing and implementing the TMDL Implementation Plan.

- Caltrans continued its efforts to reduce pollutant discharges to receiving waters through ongoing compliance activities and by implementing a consistent statewide approach to address Attachment IV requirements for the named pollutants. To meet the TMDL and special requirements identified within Caltrans Conformed NPDES Permit Attachment IV, Caltrans implemented a combination of strategies, including capital construction, improvement of current institutional practices, and participation in regional control efforts. In addition, Caltrans maximized opportunities to incorporate treatment control devices as part of capital roadway improvement projects, or standalone retrofit projects. The TMDL Status Review Report is located on the CD as an attachment.