

SECTION C-2

PROGRAM MANAGEMENT

**PROGRAM EFFECTIVENESS ASSESSMENT
2013-14**





C-2.0 PROGRAM MANAGEMENT

C-2.1 Introduction (LIP Section A-2.1)

Program management activities conducted by the County on an annual basis to implement the Stormwater Program involve the following:

- Coordination with the other Permittees on program development through the DAMP; common program implementation (such as monitoring, public education and watershed programs); and a commitment of funding shared budgets under the Implementation Agreement;
- Coordination with internal County departments;
- Preparing, approving and tracking shared and County cost budgets; and,
- Effectiveness assessment of program elements following the *Municipal Stormwater Program Effectiveness Assessment Guidance* document developed by CASQA.

This section describes the County’s implementation of the program management elements of its LIP and the approach taken on effectiveness assessment. The County utilizes the CASQA method of effectiveness assessment in order to demonstrate if program elements, activities, BMPs, etc., are resulting in desired outcomes. CASQA identifies six Outcome Levels and for each measure the County reports, the associated Outcome Level is indicated by a colored triangle with a number (more than one level may apply; see **Section C-2.5** below for detailed discussion on this approach).

C-2.2 Countywide Coordination (LIP Section A-2.2)

Due to its role as Principal Permittee, each General Permittee Committee meeting is attended by several County representatives. For the purpose of coordination as a Permittee, the following contacts represent the County’s Stormwater Program:

Primary Contact	County of Orange - OC Public Works	
Name	Chris Crompton	Kacen Clapper
Service Area/Division	OC Environmental Resources	OC Environmental Resources
Address	2301 N. Glassell St., Orange 92865	2301 N. Glassell St., Orange 92865
E-mail Address	chris.crompton@ocpw.ocgov.com	kacen.clapper@ocpw.ocgov.com
Additional Contacts		
Name	J.T. Yean, Civil Engineer	Greg Yi, Project Manager
Service Area/Division	OC Planning	OC Flood
Address	300 N. Flower St., Santa Ana 92703	300 N. Flower St., Santa Ana 92703
E-mail Address	jung-tsun.yean@ocpw.ocgov.com	greg.yi@ocpw.ocgov.com



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For the purpose of coordination as the Principal Permittee, the following contacts represent the County:

Primary Contacts	County of Orange OC Public Works	
Name	Richard Boon	Chris Crompton
Service Area/Division	OC Environmental Resources	OC Environmental Resources
Address	2301 N. Glassell St., Orange 92865	2301 N. Glassell St., Orange 92865
E-mail Address	richard.boon@ocpw.ocgov.com	chris.crompton@ocpw.ocgov.com

The General Permittee Committee met 7 times during the reporting period. The County had representatives at every meeting during this reporting period:

Meeting Date	Attended
August 22, 2013	X
September 26, 2013	X
October 24, 2013	X
January 23, 2014	X
February 27, 2014	X
March 27, 2014	X
April 24, 2014	X



In addition, County representatives coordinated and participated in the following committees/task forces and watershed committees:

Committee/Task Force	Attended
LIP/PEA	All Meetings
Inspection	All Meetings
Trash & Debris	All Meetings
Legal/Regulatory Authority	All Meetings
Public Education	All Meetings
Water Quality	All Meetings
Aliso Creek*	All Meetings
San Juan Creek/San Clemente Coastal Streams**	All Meetings



* Laguna Coastal Streams watershed Permittees are also part of the Aliso Creek watershed and meet concurrently with that group.

* Dana Point Coastal Streams watershed Permittees meet concurrently with the San Juan Creek/San Clemente Coastal Streams group.



C-2.3 County Internal Coordination (LIP Section A-2.3)



Due to the maturity of the County stormwater program and increased awareness of the program by agencies throughout the County, the need for an NPDES Internal Committee (comprised of designated representatives from County departments) has diminished over the past reporting periods. During the 2013-14 reporting period, managers of the County stormwater program continued to conduct department-specific meetings with Committee members in order to more effectively convey the many and varied components of the current Fourth Term Permits. Information is also routinely distributed throughout the year to Committee members through electronic means including the County web site www.ocwatersheds.com and via email.

Section A-2 of the LIP, Table A- 2.2 details the roles and responsibilities of individual County departments with respect to implementation of the County’s stormwater program.

C-2.4 Fiscal Analysis (LIP Section A-2.4)



The Fiscal Analysis includes the following:

- The County’s expenditures for the previous fiscal year;
- The County’s projected costs for the current fiscal year; and
- A description of the source of funds.

The Fiscal Analysis is intended to depict all NPDES compliance related costs for the County. The tables on the following pages report costs that include both County operations and contracted services and are broken down into the following categories: Capital Costs, Operation and Maintenance Costs, and Funding Sources. Details of the analysis are presented below.

Capital Costs

Capital costs include any capital expenditure for each one of the LIP elements such as the purchase of any land, large equipment or structures; installation of public project BMPs; and construction BMPs for public projects (see table below). The County’s capital costs totaled **\$7,553,148** for the 2013-14 reporting period. Below are the current reporting period and next year’s projected costs.

CAPITAL COSTS
(Land, Large Equipment and Structures)

LIP Program Elements		FY 2013-14 Costs	Projected FY 2014-15 Costs
Public Project - BMPs	BMPs, retrofits, facilities constructed as a component of some other facility	\$6,274,893	\$742,831
Construction BMPs for Public Construction Projects	Cost for water quality BMPs used during construction	\$1,191,755	\$13,328



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Other Capital Projects/Major Equipment Purchases	Capital improvements related to the program that are not strictly BMPs and costs for purchase of major equipment	\$86,500	\$250,000
Totals		\$7,553,148	\$1,006,159

Capital costs may vary greatly from year-to-year due to availability of funding and/or changes in project planning.

Operations and Maintenance Costs

Operations and maintenance costs refer to normal costs to implement the County’s stormwater program including the cost of keeping equipment and facilities in working order (see table below). The County’s operations and maintenance costs totaled **\$18,337,467** for the 2013-14 reporting period.

OPERATIONS AND MAINTENANCE COSTS

LIP Program Elements		FY 2013-14 Costs	Projected FY 2014-15 Costs	
Supportive of Program Administration (LIP Section A-2.0)	Meetings/Committees/Training/Reporting	\$665,848	\$703,947	
Plan Development (LIP Section A-3.0)	New Program Development/BMP Effectiveness Studies	\$699,909	\$734,861	
Municipal Activities (LIP Section A- 5.0)	Trash & Debris Control (OC Public Works O&M) Litter Ordinance, Clean-up Programs, Specialty/bulky Pickups, Public Trash Receptacles	\$1,051,686	\$1,200,000	
	Household Hazardous Waste Collection	\$5,513,759	\$5,490,000	
	Drainage Facility Maintenance (OC Public Works O&M) Includes Catch basin Stenciling	\$393,006	\$400,000	
	Street Sweeping (OC Public Works O&M)	\$592,448	\$595,000	
	Environmental Performance Reporting Program	Litter/Trash Control	\$3,612,841	\$3,507,258
		Parking Lot Sweeping	\$708,995	\$720,387
		Facility Drain Maintenance	\$583,462	\$659,954
		Inspections	\$224,751	\$229,167
	BMP Maintenance	\$678,035	\$696,836	
	Pesticide & Fertilizer Management	\$850,482	\$971,564	



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LIP Program Elements		FY 2013-14 Costs	Projected FY 2014-15 Costs
Public Information (LIP Section A-6.0)	Nonpoint Source Pollution Awareness	\$1,500	\$1,500
	Household Hazardous Waste Collection	\$44,940	\$70,500
New Development/Significant Redevelopment (LIP Section A-7.0)	Requiring New Development BMPs (WQMP review and inspections)	\$189,946	\$220,296
Construction (LIP Section A-8.0)	Requiring Construction BMPs (Plan Check & Inspection) - Private Projects	\$413,495	\$438,208
	Requiring Construction BMPs (Plan Check & Inspection) - Public Projects	\$562,92	\$436,851
Existing Development (LIP Section A-9.0)	Industrial/Commercial/HOA Facility Inspections	\$18,130	\$19,003
Illegal Discharge/Illicit Connection (LIP Section A-10.0)	Illicit Connection Inspections	\$35,000	\$20,000
	Illegal Discharge Investigations, Spill Response	\$192,264	\$203,877
County Contribution to Countywide NPDES Program		\$1,304,059	\$1,369,262
Totals		\$18,337,467	\$18,688,471

Funding Sources

Funding sources describe the origin of the combined capital and operations and maintenance expenditures related to the County's stormwater program.

FUNDING SOURCES

LIP FUNDING SOURCES	FY 2013-14 Costs (% of total)	Projected FY 2014-15 Costs (% of total)
GENERAL FUND	5.6	6.2
SEPARATE UTILITY BILLING ITEM	0.6	0.02
GAS TAX	2.3	3.8
SPECIAL DISTRICT FUND	35.9	38
• Sanitation Fee	30.23	37
• Fleet Maintenance Fund	0.06	0.07



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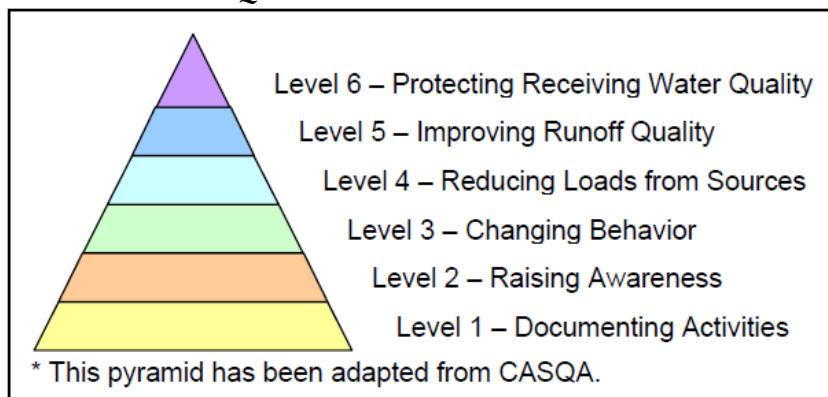
LIP FUNDING SOURCES	FY 2013-14 Costs (% of total)	Projected FY 2014-15 Costs (% of total)
• Grants	15.5	10
• Pollution Response Cost Recovery	6.7	1.5
• Service Fees & Fines	0.17	0.17
• Other	2.94	3.24
TOTALS	100%	100%

C-2.5 Program Effectiveness Assessment Approach

Beginning with the 2004-05 reporting period, the Orange County Stormwater Program Permittees adopted the CASQA approach to program effectiveness assessment first articulated in a white paper entitled *An Introduction to Stormwater Program Effectiveness Assessment, CASQA*, August 2005. In April 2008, the Orange County Stormwater Program became the first municipal stormwater program in the State to receive training directly from CASQA on program effectiveness assessment. The approach is based on outcomes and outcome levels depicted in the figure below and defined in CASQA’s *Municipal Stormwater Program Effectiveness Assessment Guidance Manual* (May, 2007), as follows:

“Outcomes are the results of implementing a stormwater control measure, program element, or overall program. Outcomes are characterized in terms of six Outcome Levels, which can have implementation or water quality endpoints. Outcome Levels help to categorize and describe the desired results or goals of programs and control measures.”

CASQA Classification of Outcome Levels



The six CASQA Outcome Levels are defined as follows:



Level 1 – Documenting Activities

Level 1 Outcomes provide direct feedback to Orange County Stormwater Program management on whether measures are being implemented as planned and scheduled. They include numbers and percentages reported throughout the various sections of this PEA, documenting budget costs, inspections, trainings, meetings attended, etc. Level 1 Outcomes are assumed to be beneficial to water quality and reflect general program implementation and compliance. They are not direct indicators of the impact of implementation on the environment.

Level 2 – Raising Awareness



The County recognizes that an important goal of its stormwater program is to increase the level of knowledge and awareness among residents, businesses, and its own municipal staff. Level 2 Outcomes provide excellent feedback on how effective implementation of the public education program (see Section C-6, **Public Education** for details) has been. For example, during the 2011-12 reporting period, the County developed and implemented an iPhone application to assist smartphone users in reporting water pollution issues as well as other public works maintenance problems (<http://itunes.apple.com/us/app/oc-works/id506793584?mt=8>). Subsequently, the application was developed for Android users as well:

<https://play.google.com/store/apps/details?id=com.ocpw.ocworks>. For more information on this newly developed tool, please see **Section C-6.3.7** of this PEA.

Additionally, the County continues to receive a number of calls to its 24 Hr. Water Pollution Problem Hotline from the public (see Section C-10, **Illegal Discharges/Illicit Connections** for details). The Hotline number is included on the County website www.ocwatersheds.com and on all public education material, providing an increased level of awareness among residents. Similar to Level 1, raising awareness is generally assumed to be beneficial to water quality.

Level 3 – Changing Behavior



One of the goals of increasing knowledge and awareness (Level 2) is that by doing so, you begin to see changes in behavior. Level 3 Outcomes provide feedback on how effective program elements designed to increase knowledge and awareness have been in motivating change in behavior and implementation of BMPs.

Examples of this Outcome can be found in both **Section C-8** (Construction) and **Section C-9** (Existing Development) of this PEA. As awareness has increased that BMPs are required (Level 2), it has in-turn helped operators of construction sites as well as commercial/industrial businesses do a better job of implementing appropriate BMPs (Level 3). The result is that less corrective and enforcement actions need to be taken by County inspection staff. Both quantitative and qualitative methods are used by the County to measure changes in behavior.

Level 4 – Reducing Loads from Sources



Level 4 Outcomes provide feedback regarding reductions at the sources of pollutants resulting from the implementation of BMPs and activities designed to prevent the discharge of pollutants. Changes in behavior (Level 3 Outcomes) can reduce potential loads from pollutant sources, creating a Level 4 Outcome.



Using the construction site example mentioned above, upon changing behavior through the implementation of proper BMPs at a construction site, a Level 4 Outcome will be obtained. That is, proper implementation of BMPs will result in the reduction of source loads.

Level 5 – Improving Runoff Quality



A primary goal of the County’s stormwater program is to reduce pollutants in urban runoff to the maximum extent practicable (MEP) performance standard, and to ensure that discharges from the stormdrain system do not cause or contribute to exceedances of water quality standards in receiving waters. Level 5 Outcomes may reflect a reduction in one or more specific pollutants, and may demonstrate effectiveness on a variety of scales ranging from site-specific to programmatic.

Two site specific examples of Level 5 Outcomes include 1) the Clear Creek System installed at the County’s J01P28 drain at Aliso Creek, which utilizes ultraviolet light to kill bacteria in runoff; and 2) the restoration of approximately 1,000 feet of Narco Channel resulting in a more natural drainage corridor for both water quality improvement and wildlife habitat benefits. (See **Section C-3, Plan Development**, of this PEA for more details).

A programmatic example of a Level 5 Outcome can be seen by the holding of a number of volunteer cleanup events hosted by the County during the reporting period which have resulted in the removal of several thousands of pounds of trash from the County’s waterways (see **Section C-6.3.7** of this report for more information). Examples of both Level 4 and Level 5 Outcomes can also be found in **Section C-10, Illegal Discharges/Illicit Connections**, where the efforts of the County to respond to pollutant discharges throughout the region are detailed.

Level 6 – Protecting Receiving Water Quality



The ultimate goal of a stormwater management program is the protection of receiving water bodies and their designated beneficial uses. Level 6 Outcomes relate to compliance with water quality standards, protection of biological integrity, and beneficial use attainment. These are the most challenging Outcomes to document as measurable changes in receiving water quality sometimes may only be seen over long periods of time that allow the cumulative impacts of multiple program elements to take effect.

A good example of a Level 6 Outcome is the decrease in the number of beach closure days. When bacteria levels exceed the State’s AB411 health standard for recreational contact, it can result in a beach being posted, or in extreme conditions closed. In order to reduce postings or closures, many of the BMPs and program elements implemented by the County through its stormwater program target the reduction of bacteria. One of these programs includes runoff diversions that the County has installed in several of its flood control channels which have helped reduce the number of beach closure days significantly. In its *2013-14 Annual Beach Report Card*, Heal the Bay noted that “A or B grades for summer dry weather in Orange County (99%) were up six percent over the previous year. Beach water quality during winter dry weather was also excellent with 97% A or B grades (up 11% from last year).” Additional



information on this BMP implementation is detailed in **Attachment C-5.1, Traditional Municipal BMP Programs**, of this PEA.

In addition to the Outcome Levels described above, the CASQA *Municipal Stormwater Program Effectiveness Assessment Guidance Manual* differentiates between three types of assessment:

Implementation Assessment (Outcome Levels 1-4)

Implementation assessments typically focus on specific BMPs such as inspections, street sweeping, debris collection, or the development/implementation of BMPs.

Water Quality Assessment (Outcome Levels 5-6)

Water quality assessments use environmental data and related information to characterize the quality of stormwater discharges and the water bodies that receive these discharges. This type of assessment can include a variety of chemical, biological, and physical parameters. Water quality assessments are typically used to draw conclusions about overall program effectiveness, and results are usually general and require extended periods of monitoring and analysis.

Integrated Assessment (Combines both Implementation and Water Quality Assessment)

Integrated assessment is the process of evaluating whether stormwater program implementation is resulting in the protection or improvement of water quality. In this process, relationships between program activities and water quality improvements are explored and refined. The County's 2013-14 PEA reflects a continued effort toward performing a meaningful *Integrated Assessment* of its BMPs and program elements and resultant impacts on water quality.

CASQA will be releasing updated Effectiveness Assessment Guidance in the 2014-15 reporting period; the County will participate in training on the new guidance and will likely incorporate the new guidance into its stormwater program.

C-2.6 Program Management Training



The following is a list of some of the training attended by Program Managers used to assist responsible municipal staff in better understanding program management/effectiveness assessment responsibilities during the 2013-14 reporting period:

- Annual Conference (September 2013) held by the California Stormwater Quality Association (CASQA);
- CASQA quarterly meetings/webcasts;
- Program Manager Training, provided by RBF Consulting and Larry Walker Associates;
- Model WQMP and Technical Guidance Document Training for Program Managers and Planners, provided by CDM and Geosyntec;
- WQMP Training for Managers and Implementation Staff, provided by CDM and Geosyntec;



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- Pre-Wet Season Construction Training, provided by RBF Consulting;
- QSP/QSD Training, provided by RBF Consulting and Larry Walker Associates;
- Stormwater Monitoring Coalition Quarterly Meetings; and
- Selenium TMDL Workshops.

More information on these and other training attended by Program Staff during this reporting period is provided in Section C-5.8.2 of this report.

C-2.7 Program Management Modifications

During the 2013-14 reporting period the County has continued to utilize a web-based, GIS integrated proprietary software system known as CBI MS4 Web in order to improve its data management capabilities. The web-based GIS integrated database system has greatly increased efficiency while allowing broad access in real time to inventories and inspection data associated with various LIP elements of the stormwater program, including the following:

LIP Section	Data
A-5, Municipal Activities	MS4 (drainage facilities)/fixed facilities inventory
A-9, Existing Development	Industrial/commercial facility inventory and inspections
	Post-construction structural control inventory
A-10, Illegal Discharges/Illicit Connections	Pollution complaints/incidents/investigations
A-11, Water Quality Monitoring	Wet and dry weather outfall monitoring

During this reporting period, the County stormwater program has continued to explore GIS-based data management opportunities and has recently begun incorporating the use of mobile monitoring applications such as those available on an application called GIS Cloud (www.giscloud.com). It is believed that use of these mobile data collection capabilities will facilitate greater efficiency and implementation of the County's stormwater program.



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On October 3, 2013, the County of Orange, Orange County Flood Control District and Santa Ana Region Permittees submitted the Report of Waste Discharge (ROWD) to both the US EPA and Santa Ana Regional Water Quality Control Board pursuant to the requirements of Section XXIII of Order No. R8-2009-0030 NPDES No. CAS618030. On May 20, 2014, the County of Orange, Orange County Flood Control District and San Diego Region Permittees submitted the ROWD to both the US EPA and San Diego Regional Water Quality Control Board. In anticipation of the expiration of the Forth Term MS4 Permits, the ROWD constituted the Permittees application for a Fifth NPDES Municipal Stormwater Permit and presented specific recommendations for the continuation and future development of the Orange County Stormwater Program based upon a consideration of the effectiveness of the Program and need for additional pollutant control initiatives.

During the 2014-15 reporting period, the County will focus on those recommendations associated with the program management provided in Sections 6.4 of both the 2013 Santa Ana Region ROWD and the 2014 San Diego Region ROWD. These recommendations include:

- Retain the NPDES Stormwater Permit Implementation Agreement.
- Continue the program management framework, albeit with a reduction in meeting frequencies.
- Complete study of future stormwater compliance costs and funding alternatives.
- Continue collaborative regional studies.

Additional recommendations from the ROWDs are provided as stormwater program modifications throughout the various sections of this report.