

**SECTION C-6**

**PUBLIC EDUCATION**

**PROGRAM EFFECTIVENESS ASSESSMENT  
2011-12**



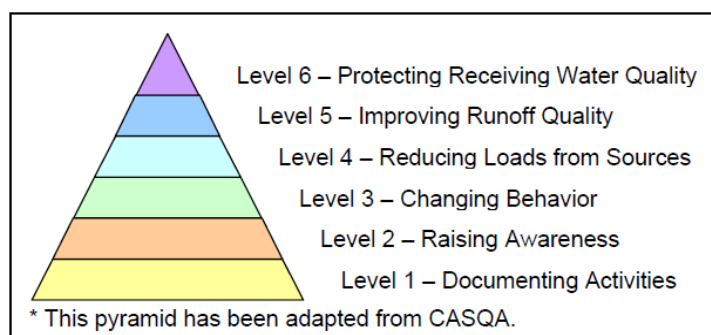


## C-6.0 PUBLIC EDUCATION

### C-6.1 Introduction (LIP Section A-6.1)

Public education is an essential part of the County's Stormwater Program. Developing methods to inform and involve the public can be an effective method for controlling urban runoff and stormwater pollution. Emphasizing the relevant impacts of urban runoff and stormwater pollution to each particular target audience increases the likelihood that the message will be noticed and that the desired outcome of behavior change will be achieved.

As described in detail in **Section C-2.5** of this PEA, 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 (see pyramid below) and for each measure the County reports, the associated Outcome Level (more than one level may apply) is indicated by a colored triangle with a number.



The goal of this program element, Public Education, is to achieve Level 3 Outcomes (Changing Behavior), by raising knowledge and awareness (Level 2 Outcome). Although it is difficult to measure directly, the County believes that success at these levels is leading to improvements in water quality (Outcome Levels 5-6).

### C-6.2 Model Public Education Program (LIP Section A-6.2)

The County has, and continues to support, a strong countywide public education program entitled *Project Pollution Prevention* (see **DAMP, Section 6**). This Program provides the common message and theme, coordinates that message with neighboring counties to ensure that media overflow messages are compatible, and provides combined media buying power that could not be achieved by the County and the other Permittees individually.

### C-6.3 Jurisdictional Education Program (LIP Section A-6.3)

The County supports *Project Pollution Prevention* through its financial contributions, participation in the Public Education Committee and the use of countywide materials. The County also supplements the Program at a local level to address County-specific issues and target constituencies that are best reached through a local rather than a countywide effort.

During the 2011-12 reporting period the County completed the following:



### C-6.3.1 Public Education Material Distribution



Public education materials are commonly distributed to the public via events, spill responses calls, inspections, water districts, schools and the construction industry, and to County agencies for posting and distribution. During the 2011-12 reporting period, approximately 2800 brochures and other outreach items were distributed by the County stormwater program. Countywide advertising, materials and information provided at public events also encourage use of the [www.ocwatersheds.com](http://www.ocwatersheds.com) website for downloading electronic versions of materials. For a complete list of educational materials developed by the Countywide Program and utilized by the County, please see **Table C-6.14** of the Unified Report.

A number of County departments also continued to provide and distribute Program information to the public as summarized in the table below:

Department	Division/Location	Material Distributed
OC Public Works	OC Engineering/ Construction Management	The Ocean Begins At Your Front Door; Help Prevent Ocean Pollution: Tips for Using Concrete and Mortar
	OC Public Works Main Office	The Ocean Begins At Your Front Door; Help Prevent Ocean Pollution: Household Tips; Help Prevent Ocean Pollution: Tips for Pet Care; Help Prevent Ocean Pollution: Responsible Pest Control
	OC Planning (www.ocplanning.net)	Water Quality Management Plan (WQMP) Guidelines Memo; When Is A WQMP Required?; WQMP Template; Construction Runoff Guidance Manual; Erosion and Sediment Control Plan (ESCP) Instruction Manual; Best Management Practices (BMP) Fact Sheets - New Development/Significant Redevelopment, Construction, Industrial/Commercial, Residential NPDES/WQMP Regulations; NPDES Inspection Requirements; Orange County Fourth Term NPDES Stormwater Permits; 2003 Drainage Area Management Plan (DAMP); County of Orange/Orange County Flood Control District Local Implementation Plan (LIP)
	OC Watersheds*	Homeowners Guide to Sustainable Water Use; Help Prevent Ocean Pollution: Tips for Landscape & Gardening (English, Spanish); Help Prevent Ocean Pollution: Proper Disposal of Household Hazardous Waste (English, Spanish, Vietnamese); Help Prevent Ocean Pollution: Responsible Pest Control; Help Prevent Ocean Pollution: Household Tips (English, Spanish); Help Prevent Ocean Pollution: Coloring and Activity Booklet; Help Prevent Ocean Pollution: Tips for Pool Maintenance (English, Spanish)
OC Community Resources	OC Parks (various locations)	The Ocean Begins At Your Front Door; Help Prevent Ocean Pollution: Tips for Pet Care; Help Prevent Ocean Pollution: Tips for Horse Care
	OC Animal Care	Help Prevent Ocean Pollution: Tips for Pet Care



SECTION C-6, Public Education

Health Care Agency - Environmental & Regulatory Health Divisions	Pollution Prevention Program	Help Prevent Ocean Pollution: Proper Disposal of Household Hazardous Waste; materials and information at <a href="http://www.ochealthinfo.com/usedoil">http://www.ochealthinfo.com/usedoil</a>
	Food Protection Program	Help Prevent Ocean Pollution: A Guide for Food Facilities; Sewage Spill Reference Guide; Food Facility poster and BMP stickers
	Hazardous Waste	Good Gas Station Operating Practices BMP poster; Good Operating Practices for the Auto Repair Industry poster
OC Waste & Recycling	Household Waste Collection Centers	Help Prevent Ocean Pollution: Proper Disposal of Household Hazardous Waste

\*The library of materials is maintained on-site; if a member of the public requires a brochure not included in the lobby display, a copy is provided from the library. As a result, all materials are available to the public and other agencies from this location. For a complete listing of brochures and posters available, please visit [www.ocwatersheds.com/publiced](http://www.ocwatersheds.com/publiced).

C-6.3.2 Employee Training and Outreach



The County intends for its employees to lead others by their example through the implementation of pollution prevention methods. The County has developed and implemented internal job-specific training for its employees which is described in further detail in Section 5.9 of this PEA.

The Stormwater Program utilizes several methods to outreach to over 17,600 County employees in the form of articles and notifications; these include the County Connection Newsletter, the OC Public Works portal as well as the [www.ocwatersheds.com](http://www.ocwatersheds.com) website. An example of some of the articles/notifications which appeared in one or all of these outlets during the 2011-12 reporting period include:

- September 2011 - 15<sup>th</sup> Annual Inner-Coastal Clean-up Event
- February 2012 - OC Public Works and OC Waste & Recycling Host Community Clean-up Day
- April 2012 - Lower Santa Ana River Earth Day Clean-up Event
- May 2012 - OC Public Works Holds Open House

Information on County-sponsored events highlight the importance of preventing trash and debris from entering stormdrain channels and what County employees can do to become involved in cleaning up their own watershed. This internal education can then be taken out of the workplace and into their everyday lives.

C-6.3.3 Public Workshops



The County stormwater program participated in and promoted workshops for the following public sectors during the reporting period:



SECTION C-6, Public Education

Sector Reached	Workshop	Date
Residential and Commercial Construction Industry	New Orange County Stormwater Management Requirements for Land Development Projects and LID Best Practices Technology Forum - in Conjunction with OC BIA	September 14, 2011
Residential/Commercial Landscape Construction and Services Industry	University of California Cooperative Extension Landscape Open House - in Conjunction with Project Pollution Prevention	October 1, 2011
Commercial, Distribution and Retail Sales Industry	California Nursery Conference 2011 in Southern California (including nurseries from Orange County)	October 6, 2011
Public Stakeholders	2011 Annual Watershed Workplan Public Review Meeting - South Orange County	December 8, 2011
Residential and Commercial Construction Industry	Stormwater Management & Rainwater Harvesting Technical Seminar - in Conjunction with Contech	February 9, 2012
Residential Sector	Water Quality Initiatives by the County of Orange	March 30, 2012
Residential Sector	Environmental Initiatives by the County of Orange	April 2, 2012
Mobil Service Industry	Where Water Quality Meets the Pavement: A Workshop for Mobile Detailers	June 27, 2012

Public events such as those for residential and community activities above are posted on the County website at <http://www.ocwatersheds.com/publiced/news-events/index.html>.

The goals of these workshops are further described in **LIP Section 6.3.1**.

C-6.3.4 Outreach to Construction Site Contractors/Developers

This information can be found in detail in **Section C-8.7** of this PEA.

C-6.3.5 Outreach to Industrial Site Owners and Operators

This information can be found in detail in **Section C-9.3.9** of this PEA.

C-6.3.6 Outreach to Commercial Site Owners and Operators

This information can be found in detail in **Section C-9.3.9** of this PEA.



C-6.3.7 Outreach to Residential Community, General Public, and School Children

Educating the general public and school children is essential to a successful outreach plan. The County has supplemented the Countywide Program education effort with outreach events, internet outreach, public presentations, and school initiatives which are detailed below.

**Outreach Events**

*Annual California Coastal/Inner-Coastal & Watershed Cleanup Day*



The County participated in the annual Coastal Cleanup Day, hosted by the California Coastal Commission (CCC) and the 15<sup>th</sup> Annual Inner Coastal & Watershed Cleanup Day, which are part of the larger International Coastal Cleanup organized by the Ocean Conservancy. The international cleanup event held on September 17, 2011, included sites all over the world.

The event was promoted by County staff through the posting of event posters and site listings on the OC Watersheds web site as well as the OC Parks web site.

This year the County teamed up with the Newport Beach Chapter of the Surfrider Foundation, Earth Resource Foundation, and the cities of Buena Park, Fullerton and La Palma to co-sponsor the cleanup of three locations: Lower Santa Ana River, San Diego Creek and Fullerton Creek Channel. A total of **212** volunteers cleaned seven miles of creeks/channel and removed approximately 2,500 pounds of trash, debris and recyclable materials from Orange County’s waterways.

*Earth Day 2012 Santa Ana River Clean-up*

On Earth Day, April 21, 2012 the County teamed up once again with the Surfrider Foundation to tackle the upper reach of Lower Santa Ana River. **Ninety-eight** enthusiastic volunteers showed up from all over Orange County for the event which resulted in the removal of over 1,000 pounds of trash and debris before it reached the ocean.

*OC Public Works Open House*



On May 19, 2012, the County stormwater program participated in the annual OC Public Works Open House which highlights the variety of services this department provides to Orange County residents. The Enviroscope® Coastal Model was utilized to teach attendees about sources of pollution, water quality and their role in protecting the environment. Approximately **350** people were in attendance.

*Event Impressions*

During the 2011-12 reporting period the County garnered a total of **660** impressions through their participation in public events such as those mentioned above. The County considers these “high quality” impressions, where the public sees firsthand the consequences of their actions, to be an important part of the Program’s outreach efforts.

## Internet Outreach



The County continues to maintain the [www.ocwatersheds.com](http://www.ocwatersheds.com) website to provide Orange County residents and businesses with improved resources regarding stormwater and water quality information. Specifically, the website includes information on all eleven Orange County watersheds, watershed management, water quality data, TMDL implementation, and the Orange County Stormwater Program.

Though the entire site provides extensive information on Orange County waterways, a portion of the website is dedicated specifically to public education. The Program's public education site, [www.ocwatersheds.com/publiced](http://www.ocwatersheds.com/publiced), includes materials available online or by order, event listings, interactive games, videos on stormwater pollution prevention and pages for Spanish and Vietnamese resources. The site is built to more effectively showcase new marketing campaigns, partnerships and educational information for children, residents, businesses and schools.

### *OC Works Smart Phone Application*

As mentioned in Section 2 of this PEA, the County has developed and implemented an iPhone application to assist smartphone users in reporting water pollution issues as well as other public works maintenance problems. iPhone and iPad users can download this free application by either searching the term "OC Works" or clicking on the following link: <http://itunes.apple.com/us/app/oc-works/id506793584?mt=8>. With this new APP, developed in-house by the County's Information Technology Section, users can easily request pothole repairs, graffiti removal, street sweeping, report incidents of alleged illegal dumping, water pollution, and/or property violations directly to County staff. The application will ask residents to confirm the location of repair or service need by GPS which will assist County staff in locating the specific area and providing more immediate service. Photos of the issue can also be uploaded to assist in an expedited response.





The *OC Public Works* Facebook page currently has 74 likes and the *OC Works* Twitter account currently has 580 followers. Although not in this reporting period, the *OC Works* App also made its debut in August 2012 at the Annual Conference of the American Public Works Association to dozens of industry professionals inspired by this intuitive use of technology. Moving forward, the “*OC Works*” App will continue to be publicized and will soon be added to the recently reorganized and reformatted *OC Watersheds* web site, as well as other outreach material.

#### *Pollution Reporting Hotline*



One of the key functions of the website is to provide mechanisms to the public to facilitate the reporting of water pollution and street drain problems. Therefore, the County’s 24-hour Hotline number (1-877-89SPILL) and an email link to the County’s Stormwater Program Manager are both posted on the website. During the 2011-12 reporting period, the hotline received 84 water pollution calls.

#### *OC Watersheds Web Site Statistics*

Though ‘hits’ are considered a method for tracking traffic to internet web pages ‘page views’ is a more accurate interpretation of utilization of the website. The increasingly more accurate tools now available to analyze the traffic received by the County Stormwater Program web site ([www.ocwatersheds.com](http://www.ocwatersheds.com)) has given the program a more realistic and much more useful understanding of the impact this media has on educating the public. During the 2011-12 reporting period the website experienced 93,937 website page views with an average time of 1 minute 46 seconds spent on each page. The average time a viewer spends on the website is a good indication that the public is interested in finding out more about the program and are educating themselves on its contents. During the reporting period, the County also created a quick response or “QR code” that will take the public directly to the web site simply by scanning it using their smart phone. The QR code has been placed on a variety of documents since its creation and will continue to be added to all public education material into the future, enabling even easier access to information regarding the County’s stormwater program.



In addition, significant redesign of the [www.ocwatersheds.com](http://www.ocwatersheds.com) website is currently taking place which will allow more timely content management by Program staff. Information on the redesign will be presented during the next reporting period.





**Public Presentations**

The following table is a list of presentations made during the reporting period by County staff in which information was presented to other County agencies, the general public and special interest groups.

Date	Group	Presenter	Presentation
8/25/2011	StormCon International Stormwater Conference	Grant Sharp	Dry Weather Monitoring in Orange County to Support Detection of Illegal Discharges and Illicit Connections
09/22/11	Orange County Coastal Coalition	Ted Von Bitner, PhD.	Meeting Today's Water Quality Challenges at Doheny Beach: Combining Old and New Methods of Fecal Source Investigation
1/12/2012	Ocean Institute Kids Watershed Conference	Grant Sharp	Water Pollution Response
01/19/12	OC WDR General Meeting	Grant Sharp	Countywide Area Spill Control (CASC) Program Update
03/22/12	Orange County Coastal Coalition	Jian Peng	The State Water Board Proposed Amendments to the Water Quality

**School Outreach Initiatives**



The following initiatives targeted schools and school aged children:

*2011-12 Watershed Education Program (Watershed Program)*

With the adoption of the Third Term MS4 Permit, the Permittees were required to develop and implement a watershed-based management process to complement the countywide approach. The purpose of this separate watershed-based effort is primarily to provide a local focus on the highest priority water quality issues/pollutants in each watershed. The Watershed Program, implemented by the County, as Principal Permittee, has promoted this effort by supporting school-based watershed and water awareness programs throughout the County into the Fourth Term Permits.

Each aspect of the Watershed Program supports the goal of addressing water pollution on the watershed scale and promoting a sense of public ownership of the watersheds of Orange County. For a full description of the school outreach initiatives and impression numbers garnered for programs supported by *Project Pollution Prevention* (i.e. Discovery Science Center and Inside the Outdoors), please see **Section 6** of the Unified Annual Report for the Orange County Stormwater Program.



SECTION C-6, Public Education

*Ocean Institute Watershed Education Program*

The Ocean Institute was established in 1981 as a community-based 501(c) (3) organization and is known for its unique marine science and maritime history programs. The *Watershed Education Program* carried out at the Ocean Institute is a standards-based program designed to bring 5th grade students in communities not adjacent to the coast to the Ocean Institute to explore the science of their respective watersheds. Each class engages in a project that addresses specific concerns within their respective watershed. At the completion of their project the class presents their findings to their peers and invited guests such as elected officials and representatives of non-profit groups. The goal of this program is train students in self-management of their watersheds and to provide them with the tools to effect change within their communities. County stormwater program staff presented two talks at this year's *Kids' Conferences on Watersheds* in January 2012 to a total of **320** students; overall the conference reached 1140 students from 15 Orange County schools. Orange County schools attending the conference included the following:

<b>School Name</b>	<b>Watershed</b>
Anderson Elementary	Anaheim Bay-Huntington Harbour
Castille	San Juan Creek
Eastshore	Newport Bay
Harbor Day	Newport Bay
Lake View Elementary	Santa Ana River
Landell	San Gabriel River-Coyote Creek
McPherson Magnet	Santa Ana River
Nelson Elementary	Newport Bay
Newland Elementary	Santa Ana River
Plavan	Anaheim Bay - Huntington Harbour
Raymond Elementary	San Gabriel River-Coyote Creek
Rolling Hills	San Gabriel River-Coyote Creek
Saint Callistus	Anaheim Bay-Huntington Harbour
The Pegasus School	Santa Ana River
West Park Elementary	Newport Bay



## SECTION C-6, Public Education

### *March 4<sup>th</sup> Volunteer Cleanup Event*

Members of the County stormwater program teamed up with 6th and 7th grade students from Irvine Unified School District as well as a Girl Scout troop from Yorba Linda to “March Fourth” and remove the trash and debris accumulated at the confluence of the El Modena-Irvine and Peters Canyon Channels. The event included **45** hard-working public volunteers who worked across approximately a half-mile of channel filling over 40 trash bags, including clearing several hundred pounds of debris that was trapped behind the trash booms crossing the channels. The volunteers learned that even the trash left on roads and in gutters as far away as Yorba Linda (North County) can make its way to the Pacific Ocean.

### *The Children's Water Education Festival*

The County participated in the Children's Water Education Festival on March 28 and 29, 2012 at the Richard M. Nixon Library and Birthplace Foundation in Yorba Linda. The festival featured interactive displays led by groundwater and natural resources professionals representing government agencies, environmental organizations, higher education, and private business. The activities were designed to teach children about groundwater, stormwater, and other water resource issues in Orange County. As in years past, the Festival required that all booth activities align with State of California Science Content Standards for 4<sup>th</sup>, 5<sup>th</sup> or 6<sup>th</sup> grade.

The County’s booth, “Stormy Times in Orange County” used the Enviroscape® Coastal Model to teach approximately **413** students and teachers about sources of pollution, water quality and their role in protecting the environment. Each student that participated in the interactive stormwater booth activity received the following educational materials:

- “The Ocean Begins At Your Front Door” brochure
- “My Watershed – Our Ocean” bracelet
- “My Watershed – Our Ocean” pledge form to protect water quality
- Project Pollution Prevention reusable grocery bag
- Project Pollution Prevention sea-life themed temporary tattoos

A total of **778** “high quality” impressions were garnered by the County’s stormwater program through the above initiatives targeted at school-aged children.

### C-6.3.8 Outreach to Quasi-Governmental Agencies/Districts

#### **Orange County Sanitation District (OCSD)**



The County has partnered with the Orange County Sanitation District on the Countywide Area Spill Control (CASC) program, since 2000. Information on this program can be found in detail in **Section C-3.3** of this PEA.



#### **C-6.4 Jurisdictional Public Participation(LIP Section A-6.3)**

Public participation allows the public to be directly involved with the stormwater program. The County has encouraged public participation at the local level by providing opportunities for the public to ask questions and provide comments. When the public asks questions it provides valuable information about their major concerns, effective and ineffective approaches in dealing with their concerns, and fosters a relationship in which the public proactively engage in protecting water quality.

Workshops for several public and business sectors were provided to the public by the Principal Permittee on a regional basis as part of *Project Pollution Prevention*. Workshops are held on behalf of the County and other Permittees in accordance with permit requirements. By virtue of its jurisdiction, the County stormwater program played an integral part in these workshops. See Section 6 of the FY 2011-12 Unified Annual Report for a full description of workshops offered during the reporting period.

##### C-6.4.1 County Website

The County's website located at [www.ocwatersheds.com](http://www.ocwatersheds.com) includes a variety of ways for the public to communicate with municipal staff. Redesigned web resources provide contact information for County staff. Refer to **Section C-6.3.7** of this PEA for more information. Documents available for public reference and review are posted with links to an e-mail contact for comments. Internet use has increased dramatically over the Third and Fourth Term permits; the [www.ocwatersheds.com](http://www.ocwatersheds.com) website is listed on all Program outreach materials to encourage use of the site for garnering information pertaining to water quality.

##### C-6.4.2 Participation in Outreach Events

Participation in outreach events allows for a two-way communication with the public. It is an excellent opportunity to not only disseminate stormwater public education information and materials but also allows the public to respond with questions, comments and/or concerns.

The County has participated in several public outreach events during the reporting period. Refer to **Section C-6.3.7** of this PEA for more information.

##### C-6.4.3 Volunteer Information

Volunteerism not only provides access to Orange County residents and businesses for outreach and education, it is also encourages behavior directly protective of water quality. The County website provides a page devoted exclusively to providing volunteer information at <http://www.ocwatersheds.com/publiced/news-events/index.html>. Organized by both region and by date, the News/Events section of the website allows residents to search for volunteer events in their area and/or on a specific date. Large countywide events such as Cleanup Day and Earth Day are prominently highlighted in this section of the website.



SECTION C-6, Public Education

C-6.4.4 School Programs

Providing children with the tools to actively participation the protection of their local waterways and beaches creates powerful environmental stewards of the future. Refer to **Section C-6.3.7** of this PEA for more information.

C-6.4.5 Public Participation Meetings



The public has a vested interest in stormwater management and needs to be informed of the water quality issues affecting their watershed and encouraged to participate in the process. During the reporting period, the County participated in the following public workshops, seminars, and hearings addressing stormwater management issues.

Date	Group	Presenter	Topic
December 8, 2011	Public Meeting	Jennifer Shook; Ted Von Bitner, PhD.	2011 Annual Watershed Workplan Public Review Meeting - South Orange County

**C-6.5 Program Effectiveness Assessment(LIP Section A-6.5)**



Through its own public education efforts, the County achieved 98,675 impressions during the 2011-12 reporting period.

County Outreach	Impressions
Material Distribution	2,800
Outreach Events	660
School Outreach	778
Website Impressions	93,937
Presentations/Publications	500
Total	98,675

**C-6.6 Public Education Modifications**

The County has evaluated the outcomes for this program element to determine if any program modifications are necessary. Based on results from a county-wide public education/outreach survey that was conducted in 2010, public education has been modified to reflect trends in media used by residents. For example, print media has seen a marked decrease in popularity that coincides with an increase in use of the internet by the general public. As a result, during the 2011-12 reporting period, the [www.ocwatersheds.com](http://www.ocwatersheds.com) website was extensively updated and advertising online became a larger focus of the advertising campaign. A complete summary of the 2010public education/outreach survey results can be found in **Section C-6.4** of the 2010-



## SECTION C-6, Public Education

---

2011 Unified Program Effectiveness Assessment. A subsequent and similar survey was conducted in May 2012. The results of this recent survey are currently being used to guide the County's Public Education program through the next reporting period.