SECTION C-10

ILLEGAL DISCHARGES/ILLICIT CONNECTIONS

PROGRAM EFFECTIVENESS ASSESSMENT
2016-17

C-10.0 ILLEGAL DISCHARGES/ILLICIT CONNECTIONS (ID/ICs)

C-10.1 Introduction (LIP Section A-10.1)

ID/ICs can be a significant source of pollutants to the MS4. Consequently, the County's LIP includes a comprehensive program for detecting, responding to, investigating and eliminating these types of discharges/connections in an efficient and timely manner.

As described in detail in **Section C-2.5** of this PEA, the County utilizes the 2007 CASQA method of effectiveness assessment in order to demonstrate if program elements, activities, BMPs, etc., are resulting in desired outcomes.

C-10.2 Illegal Discharges

C-10.2.1 Organization Chart

Through an organization chart, **Figure A-10.1** of the LIP, the County has identified which Departments are responsible for the implementation of the ID/ICs Program.

C-10.2.2 Authorized Inspector Designations

The County's legal authority for addressing ID/ICs is established through the Water Quality Ordinances, which are discussed in detail in **Section C-4.0**. The County's LIP, Water Quality Ordinances, and Enforcement Consistency Guide (**Exhibit 4.I of the 2003 DAMP**) define Authorized Water Quality Ordinance Inspectors (Authorized Inspectors) as those persons designated by the Director of OC Public Works (and Director, John Wayne Airport for County Ordinance) to investigate compliance with, detect violations of, and take actions pursuant to the County and Orange County Flood Control District Water Quality Ordinances.

A list of County Authorized Inspectors and relevant contact information is provided in the following table:

2016-17 List of County Authorized Inspectors

Name	Department	E-mail Address	Phone Number
Duc Nguyen	OC Public Works, OC Environmental Resources	Duc.Nguyen@ocpw.ocgov.com	(714) 955-0676
James Fortuna		James.Fortuna@ocpw.ocgov.com	(714) 955-0680
Jian Peng		Jian.Peng@ocpw.ocgov.com	(714) 955-0650
Robert Rodarte		Robert.Rodarte@ocpw.ocgov.com	(714) 955-0642
Kimberly Buss		Kimberly.Buss@ocpw.ocgov.com	(714) 955-0645

C-10.2.3 Detection of Illegal Discharges and Illicit Connections

The County has a number of programs that proactively facilitate the detection of existing and/or potential sources of ID/ICs including the following:

- Municipal Activities (**Section A-5** of LIP) – OC Public Works Operations & Maintenance staff are trained to assist in the identification of ID/ICs during their daily activities inspecting/repairing/maintaining public infrastructure throughout the County's jurisdiction. OC Public Works Operations & Maintenance staff are trained to refer water quality problems to the County's Authorized Inspectors.
- New Development/Significant Redevelopment Program (**Section A-7** of LIP) – The inspection of projects with approved Project WQMPs assists with the identification of site-specific post-construction structural BMPs that are either not functioning adequately or are not being maintained properly.
- Construction Activities (**Section A-8** of LIP) – County building, grading and public works construction inspectors are trained to assist with the identification of ID/ICs from construction sites.
- Existing Development Programs (**Section A-9** of LIP) – County Authorized Inspectors perform inspections to assess BMP implementation at industrial and commercial businesses in unincorporated County areas. For County residential areas ID/ICs are identified through observations by municipal employees working in or assigned to residential areas.
- Water Quality Monitoring Program (**Section A-11** of LIP) – The collection of water quality monitoring data for various monitoring program elements (e.g. Dry Weather Monitoring, TMDL Monitoring, Mass Emissions Monitoring, and the Transitional Monitoring Program under the San Diego Region Permit) assists in identifying problem areas. As monitoring staff collect samples, any irregular or abnormal conditions detected through field observations and/or measurements are reported for initiation of ID/IC source investigation efforts.

C-10.2.4 Water Pollution Reports/Complaints/Notifications

In addition to the County's proactive programs to detect ID/ICs, another element of a successful ID/IC program is public reporting. The County provides several means, as discussed in **Section C-6.0** of this PEA, for the public to report information about potential or existing problems so that they can be mitigated as quickly as possible. The County established a countywide 24 hour, bilingual (English/Spanish), toll-free water pollution complaint hotline (1-877-89SPILL) to receive water pollution complaints and other related information.

To bolster public reporting and improve on previous mechanisms, in April 2017 the County implemented an application for users to report water pollution issues as well as other public works maintenance problems online or using mobile devices through a new Customer Relationship Management (CRM) system. This online system called "myOCeServices" is available via the new portal https://myoceservices.ocgov.com/ and replaces the previous water pollution reporting website and smart phone apps. It streamlines the method by which

residents, businesses and other municipal agencies submit requests. Service requests can range from sidewalk repair to water pollution complaints. When a water pollution service request is submitted, it is immediately distributed to the County's water pollution response team via email, seven days a week, 24 hours a day for follow up. Residents can also log in to myOCeServices to track the status of their service request. Also, since CRM is part of the GIS-based Land Management System (LMS), it offers robust reporting functions and dashboard features that provide operational and management-level reporting for the purposes of monitoring cases.

Reports of complaints and water pollution incidents have been tabulated and a summary of the sources of all water pollution reports/complaints/notifications received by the County during this reporting period and the previous years during the current Santa Ana permit term is provided below.

Summary of Water Pollution Complaints/Incidents Reported

Source of Report	Number of Complaints/Incidents Reported								
Reporting Period	**2016-17**	**2015-16**	**2014-15**	**2013-14**	**2012-13**	**2011-12**	**2010-11**	**2009-10**	**Totals**
County Staff (O&M, Construction Inspectors, etc.)	59	96	90	100	70	78	54	48	597
Other Cities/Agencies	21	45	42	37	56	62	50	34	352
Water Pollution Hotline & Website	81	80	87	106	86	84	82	107	718
Direct Public Contact (calls, e-mails)	27	19	19	22	18	11	7	15	139
Businesses	3	2	3	3	1	2	1	3	18
Other	5	3	10	13	0	0	1	12	44
Total Number of Reports	196	245	251	281	231	237	195	219	1868

The above data did not reveal significant changes from prior years although a slight downward trend in reporting from County Staff and Other Cities/Agencies has been evident the last three reporting periods.

C-10.2.5 Response Procedures

The County's Authorized Inspectors follow procedures outlined in the Investigative Guidance Manual and Enforcement Consistency Guide (**Exhibit 4.I of the 2003 DAMP**) when responding to and investigating water pollution complaints. In 2010, the Investigative Guidance Manual was updated to the Model Source Identification and Investigative Guidance Manual to provide Authorized Inspectors with methodology to follow-up source investigations.

These Guidance Manuals and Enforcement Consistency Guide establish response procedures which include record keeping, notifications and response requests, response activities, investigations, clean-up activities, reporting, and education/enforcement. The Enforcement Consistency Guide is currently undergoing modifications to ensure conformance with changing permit requirements.

In addition, to ensure that the ID/ICs Program is efficient and effective, the County instituted documentation procedures for its water pollution complaint and spill response activities by developing and implementing a series of forms and guidance materials which are included in **Exhibits A-10.I** and **A-10.II** of **Section A-10** of the LIP. There were no modifications to these forms during the reporting period.

C-10.2.6 Water Pollution Incident Summary

As a part of the ID/ICs Program, the County's Authorized Inspectors receive a variety of water pollution reports and complaints. While every water pollution complaint/report the County receives is treated as a top priority, not all of them require follow-up response or investigation by the County. In order to determine the appropriate action, an incident is categorized by the information received according to the incident categories defined below:

- Notification – Incident reported to the County that does not require any follow up such as an investigation or enforcement. This would include any incidents where the material did not enter the storm drain system and was in the process of being cleaned up or it may have entered the storm drain but was determined to have insignificant impact and did not require further action.
- Complaint - Incident reported to the County that requires a scheduled investigation. This would include where the discharge is alleged to have already occurred but is not posing an immediate threat to human health or the environment. Examples of this may include: oil that has leaked from a vehicle parked on the street and has soaked into the asphalt or a past discharge from a residence or facility.
- Response Request – Incident reported to the County that requires an immediate investigation/response due to the threatened release/impact to human health or the environment.
- Referral to another agency – Incident is outside of the County's jurisdiction and the complaint is referred to another city or agency for investigation and follow-up.

The following table provides the number of water pollution incidents according to the established incident categories.

Summary of Reports Received 2016-17

Type of Report	Number of Reports
Notification	61
Complaint	64
Response request	33
Referral to cities or other agency	38
Total Number of Incidents	196

The following table provides information regarding the water pollution reports that required response/investigation by County staff and the categories of materials involved.

Jurisdictional Summary of Incidents Requiring County Response 2016-17

Categories of Materials	Number of Reports Investigated
Discharge exceptions	3
Hydrocarbons	15
Inorganic compounds	5
Irrigation Runoff*	3
Miscellaneous	13
Metals	1
Nutrient	0
Organic	3
Pathogens/Coliform	19
Pesticides	2
Sediment	9
Trash/debris	5
Wastewater	10
Total Number of Responses	88

* Note: Irrigation runoff is a discharge exception in the Santa Ana Region

The total number of responses for this reporting period is lower at 88 than last year's at 110. In responding to and investigating 88 water pollution incidents during the reporting period, County staff were successful in many instances, in preventing pollutants from impacting the storm drain system or receiving waters (Level 4, 5 and 6 Outcomes).

C-10.2.7 Regional Board and other Agency Notifications

Water pollution incidents determined to pose an actual or potential significant threat to public health or the environment are reported to the appropriate Regional Board. Depending on the nature of the incident, notification to the California Governor's Office Emergency Services (CalOES) is also made. In most instances, Regional Board notifications were relayed through CalOES. The following table summarizes the pollution incidents the County responded to during the reporting period in which notifications were made. Some of the incidents listed in the table involved multiple agencies and jurisdictions and as a result, notifications may have been made by other parties.

Pollution Incidents the County Responded to Requiring Regional Board/CalOES Notification

Incident Description	PNIR* Number	Date of Incident	Regional Board Notified	CalOES Notified (Control No.)
Response to gasoline vehicle fire	17-008760	7/3/2016	-	16-4047
Response to sanitary sewer overflow from private residence	17-008727	8/26/2016	-	16-5209
Response to overturned truck with release of asphalt slurry onto roadway	17-008672	10/3/2016	-	16-6060
Response to fecal waste discharge from illicit connection into Bee Canyon Channel (F17)	17-008615	12/8/2016	Santa Ana	16-7376
Response to sanitary sewer overflow discharge into San Diego Creek during rain event	17-008582	1/22/2017	-	17-0702
Response to truck fire (involving numerous batteries) runoff discharge	17-009883	6/16/2017	-	17-4269

* PNIR stands for Pollution Notification/Investigation Request (Incident Number used by County for record keeping purposes)

C-10.2.8 Enforcement Summary

Water pollution enforcement may be handled administratively or in more serious instances, be prepared for criminal prosecution. As provided for in the Enforcement Consistency Guide, when selecting enforcement options, the County's Authorized Inspectors ensure that violations of a similar nature receive a consistent enforcement action. More severe enforcement options may be utilized depending on variables such as history of non-compliance or failure to take

good faith actions to eliminate continuing violations or to meet a previously imposed compliance schedule. A summary of the enforcement actions taken during the last two reporting periods is provided below.

Summary of Enforcement Actions 2016-17

Enforcement Type	Total
Educational Letter	1
Administrative Enforcement	
Notice of Noncompliance	3
Administrative Compliance Order	0
Cease and Desist Order	0
Criminal Enforcement	
Misdemeanor	1
Infraction	0
Issuance of Citation	0
Criminal prosecution cases	1
Totals:	**6**

Enforcement actions continue to play an important role in increasing knowledge and awareness (Level 2 Outcome) and achieving a desired behavior change leads to compliance and reduced loading (Level 3 and 4 Outcomes).

C-10.2.9 Enforcement Case Summary

During the reporting period, two pollution incident cases were submitted to the Orange County District Attorney's Office. One case was for the illicit connection of a sanitary sewer line to the stormdrain, the other was by the Orange County Sheriff's Harbor Patrol for a water pollution related case in Dana Point Harbor. The prosecution of these cases will contribute to a behavior change to the dischargers (Level 3 Outcome).

C-10.2.10 Countywide Area Spill Control (CASC) Program

The CASC program began in 2000 as a pilot project between the County and the Orange County Sanitation District (OCSD) to proactively prevent and respond to sanitary sewer overflows

(SSOs) in the unincorporated North Tustin area. During the 2009-10 reporting period, in response to Fourth Term Permit requirements, CASC evolved into a countywide program.

The main focus of CASC is the containment and recovery of large sanitary sewer overflows (SSOs) which have the potential to significantly impact receiving waters resulting in beach closures and health advisory postings.

The overall objectives of CASC are to:

- Create broader awareness regarding the causes of SSOs and development of measures that can be implemented in order to prevent them;
- Improve the interagency coordination when responding to SSOs;
- Identify the resources needed when responding and mitigating impacts;
- Develop predictive tools for identifying potential impacts; and
- Protect the beneficial uses of the local water bodies.
- Implement the program throughout the entire Orange County area.

CASC Response on April 18, 2012, Santa Ana River

The CASC Program was not activated during the reporting period.
Since implementation of the program countywide in 2010, CASC has been activated a total of 14 times, resulting in the diversion of over 11.9 million gallons of impacted receiving waters to the sanitary sewer system. These incident responses were successful in removing wastes from the receiving water and reducing downstream impacts (Level 6 Outcome).

C-10.3 Illicit Connections (LIP Section A-10.5)

4 5 6

The County developed a drainage facility inspection and documentation program to identify and eliminate illicit connections to the storm drain system. Illicit connections to the storm drain system are prohibited under County ordinance. During the reporting period, one illicit connection was detected and eliminated.

C-10.4 Source Investigations (LIP Section A-10.4.1)

2 3 4 5 6

Santa Ana Region Dry Weather Non-Stormwater Dry Weather Monitoring Program and Investigations

Source investigations are conducted when an illegal discharge or illicit connection is detected or suspected, and the source is not readily identifiable. The purpose of the investigation is to identify the source so that appropriate action can be taken to protect the stormdrain system and prevent pollutant impacts to receiving waters. Source investigations can be triggered based on factors such as visible observations, odors, water quality data, etc.

The Dry Weather Monitoring Program (**DAMP Exhibit 11.II**) was developed in 2003 and implemented countywide as a proactive program to identify illegal discharges and illicit connections through a field screening program. Notifications are made to the appropriate jurisdiction for follow-up when problems at a drain are detected in the field. In addition, source investigations may be required when data from the dry weather monitoring indicates that a constituent is higher than normal background levels on consecutive screening events. The background levels are calculated on an ongoing basis and are called "tolerance intervals" (the procedure for determining these is described in detail in **Section 3.3** of **DAMP Exhibit 11.II**.)

Figure 3-6 of **DAMP Exhibit 11.II** illustrates the methodology in determining whether or not a source investigation is needed based on dry weather monitoring data. During the reporting period, the County applied the methodology in **Figure 3-6** to dry weather monitoring sites within its jurisdiction in the Santa Ana Region. The following table summarizes the results for unincorporated Orange County:

Summary of 2016-17 Dry Weather Monitoring Results

Drain Designation	Random or Targeted (sampling dates)	Watershed	Location	Tolerance Interval Exceedances during Reporting Period		Source Investigation Conducted During Reporting Period?
				Constituent(s) and Number of Exceedances	Consecutive (If more than one)?	
COF07S01	Targeted (7/6/16, 8/31/16, 9/15/16, 5/25/17, 6/19/17)	Newport Bay	North Tustin	Total Organic Carbon, 2	Yes	Yes
				MBAS (Surfactants), 1	No	
				Chromium, 1	No	
				Nickel, 1	No	
				Copper, 1	No	
				Cadmium, 1	No	
COF13@FH	Random (7/19/16, 8/29/16, 5/31/17,)			Enterococcus, 1	No	No
				Selenium, 1	No	
COC01S03	Random (8/4/16, 9/20/16, 6/6/17)	Anaheim Bay/ Huntington Harbor	Rossmoor	No Exceedances	No	No
COC01S01@MT	Targeted (7/14/16, 8/4/16, 9/20/16, 5/4/17, 6/6/17)			Turbidity, 1	No	No
				Enterococcus, 1	No	
				Pesticide, 1	No	
				Copper, 1	No	

*Source investigations are typically conducted when data from dry weather monitoring indicates that a constituent is higher than normal background levels on consecutive screening events or the constituent of exceedance is indicative of an ID/IC discharge (e.g. MBAS).

Additional dry weather monitoring data is also reported in **Section C-11** of this PEA.

Santa Ana Region Dry Weather Monitoring Source Investigations

COF07S01 (La Colina-Redhill Storm Drain near Redhill Avenue):

On September 15, 2016, a tolerance interval exceedance for MBAS (surfactants) was measured at this outfall. County staff subsequently conducted an investigation of the surrounding tributary drainage area. No definitive source of the exceedance was observed (PNIR 17-008707). Subsequent analytical laboratory analyses of samples collected during the site visit confirmed the MBAS (surfactants) tolerance interval exceedance measured on site.

Laboratory analysis results of samples collected from August 31 and September 15, 2016 exceeded the tolerance interval levels consecutively for Total Organic Carbon (TOC). Outfall discharges were very small, measuring only 0.007 and 0.008 cubic feet per second (cfs) respectively, during these site visits and appeared brown in color. It is likely that accumulated decaying organic matter (leaves, small twigs and grass clippings) inside the storm drains and catch basins in the upstream drainage area contributed to the elevated TOC levels measured at the pipe outlet.

The County has made a concerted effort to increase routine maintenance frequencies in an effort to reduce excessive organic debris accumulation. No additional tolerance interval exceedances for these constituents of concern (MBAS and TOC) were recorded at this outfall from September 15, 2016 to the end of this reporting period.

San Diego Region Transitional Monitoring Programs

The 2015-16 Transitional Monitoring and Assessment Report was submitted to the San Diego Regional Water Quality Control Board on January 31, 2017.

C-10.5 Training and Outreach (LIP Section A-10.7)

The education and training of the County's Authorized Inspectors is key to successful implementation of the ID/IC program. Inspectors need to be highly knowledgeable since they are in the public eye when conducting investigation efforts and proceeding with enforcement actions.

C-10.5.1 Training

One of the primary methods that the County's Authorized Inspectors and other key staff are trained is by attendance at NPDES Inspection Sub-committee meetings. During the reporting period the County's Authorized Inspectors coordinated, conducted and attended these committee meetings. The following is a summary of the training topics and presenters.

2016-17 Summary of NPDES Inspection Sub-committee Training

August 11, 2016	
Investigative Interviewing Techniques	John Fentis, California District Attorney Association
Water Quality Explorer Application - Winner - 2016 California Water Board Data Innovation Challenge	Amanda Iaali, County of Orange
January 12, 2017	
Requirements for MS4 Permittees and RWQCB Emergency Response; MS4 De Minimus Permit Requirements	Barbara Barry and Ryan Harris, Santa Ana RWQCB
Recent Pollution Incidents Within Orange County	Duc Nguyen, County of Orange
Fire Suppression Flushing Discharge	Loriana Hornik, City of Huntington Beach Kim Buss, County of Orange
FY 2015/16 Data Review Existing Development and ID/IC	Matt Tucker, County of Orange
March 30, 2017	
Food Service Establishment Inspection Program and NPDES Coordination	Jenafer Forester, OC Health Care Agency
NPDES Dry Weather Monitoring Program Refresher	Matt Tucker, County of Orange
June 15, 2017	
myOCeServices and Water Pollution Reporting	Duc Nguyen, Robert Rodarte County of Orange
Mobile Business Database Refresher	Matt Tucker, County of Orange
Recent Pollution Incidents Training	Duc Nguyen, County of Orange

In addition, County Authorized Inspectors and trainees attend quarterly incident briefings to discuss and evaluate recent or ongoing water pollution incident responses, investigations and enforcement. Other regional training and workshops attended by staff included:

- Orange County District Attorney Strike Force Meetings
- CalEPA Basic Inspector Academy
- Federal Law Enforcement Training Centers

- CalOES California Specialized Training Institute Hazardous Materials Investigation Training
- CASQA Annual Conference
- California Hazardous Materials Investigators Association (CHMIA) Annual Training Conference
- Orange County Waste Discharge Requirement meetings for sewer collection systems

Finally, all Permittee sponsored training conducted during this reporting period and ID/IC training modules are available in **Section B-10** of **Appendix B** of the DAMP. These training modules have continued to evolve as necessitated by permit requirements. The primary shift has been towards a "hands-on" training approach. For a current list of the training modules (see **Section A-10.7.1** of the County's LIP).

C-10.5.2 Outreach

As a part of response activities, Authorized Inspectors provide outreach materials to businesses and residents who may have been identified as a responsible party for an illegal discharge or illicit connection. These materials can range from BMP fact sheets, manuals, posters, and brochures, to door hangers that can be left at properties where a complaint was reported.

C-10.6 ID/ICs Program Modifications

The County's stormwater program focus over the 2017-18 reporting year will include continuing to address new San Diego Region Fifth Term Permit requirements and their incorporation into existing model programs. Planned program activities include:

- Further development of the CASC program to improve cooperation between stormwater managers and local sanitary sewer agencies in responding to and addressing sanitary sewer overflows that impact the MS4.
- Modification of Enforcement Consistency Guide to ensure conformance with changing permit requirements.

As adoption of a Fifth Term Permit in the Santa Ana Region is on hold no further program modifications are proposed at this time under the Fourth Term Permit.