

STORM 
 WATER
MANAGEMENT 
CITY OF LONG BEACH

Annual Storm Water Permit & Assessment Report
Order No. 99-060/CAS004003 (CI8052)

December 1, 2013

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ACRONYMS

AAUW-American Association of University Women
APWA-American Public Works Association
ARS-Automatic Retractable Screens
BMP-Best Management Practices
CCTV-Close Circuit Televising
CEQA-California Environmental Quality
CIP-Capital Improvement Program
CPS-Connector Pipe Screen
CSTF-Contaminated Sediments Task Force
CTR-California Toxics Rule
CWA-Clean Water Act
DWAC-Dominguez Watershed Advisory Council
EAC-Executive Advisory Committee
ESB-Environmental Services Bureau
EWMP-Enhanced Watershed Management Program
FCSA-Federal Cost Share Agreement
FIB-Fecal Indicator Bacteria
FOG-Fats, Oils, Grease
GCCOG-Gateway Cities Council of Governments
Haz Mat-Hazardous Materials
IPM-Integrated Pest Management
KLI-Kinnetic Laboratories, Inc.
LAR-Los Angeles River
LARMP-Los Angeles River Master Plan
LARWQCB-Los Angeles Regional Water Quality Control Board
LASGRWC-Los Angeles and San Gabriel Rivers Watershed Council
LBSWMP-Long Beach Storm Water Management Program
LFD-Low Flow Diversion
MEP-Maximum Extent Practicable
MOA-Memorandum of Agreement
MOU-Memorandum of Understanding
MS4s-Municipal Separate Storm Sewer Systems
NOI-Notice of Intent
NOT-Notice of Termination
NPDES-National Pollutant Discharge Elimination System
OC-Organochlorine Pesticides
PAH-Polycyclic Aromatic Hydrocarbons
PCA-Pest Control Advisors

PCBs-Polychlorinated Biphenyls
POLB-Port of Long Beach
RMC-Rivers and Mountains Conservancy
ROWD-Report of Waste Discharge
S.A.F.E.-Solvents Automotive Flammable Electronics
SCAG-Southern California Association of Governments
SCN-Secret Code Number
SDLAC-Sanitation Districts of Los Angeles County
SGRMP-San Gabriel River Master Plan
SMC-Storm Water Monitoring Coalition
SMARTS-Storm Water Multi-Application & Reporting System
SSO-Sanitary Sewer Overflows
SSO-Site Specific Objectives
SUSMP-Standard Urban Storm Water Mitigation Plan
SWEC-Storm Water Environmental Compliance
SWM-Storm Water Management
SWPPP-Storm Water Pollution Prevention Plan
SWRCB-State Water Resources Control Board
TIE-Toxicity Identification Evaluation
TMDL-Total Maximum Daily Load
TREC-Traveling Recycling Center
USACE-United States Army Corps of Engineers
UST-Underground Storage Tank
WMA-Watershed Management Area
WMP-Watershed Management Plan
WMP-Watershed Management Program
WRAP-Water Resources Action Plan

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INTRODUCTION

The City of Long Beach Storm Water Management Program (LBSWMP), is in its 14th year of operation. The LBSWMP continues to be fully implemented in compliance with its National Pollutant Discharge Elimination System (NPDES) permit, the Federal Clean Water Act (CWA) and subsequent CWA amendments. The NPDES Permit, CWA and CWA Amendments were adopted to protect receiving waters such as rivers, lakes, and oceans from contamination by preventing pollutants from entering the City's municipal separate storm sewer systems (MS4s). The City of Long Beach (City) complies with CWA guidelines through its NPDES permit and is committed to preserving and maintaining the quality of our beaches and waterways while improving marine habitat and the quality of life for our residents.

The City is currently operating under the requirements of NPDES No. CAS004003, Order No. 99-060, issued by the Los Angeles Regional Water Quality Control Board (LARWQCB) on June 30, 1999.

On December 26, 2003, the City submitted its Report of Waste Discharge (ROWD) in accordance with Title 23, California Code of Regulations. The City's ROWD consisted of a statement of accomplishments, the Long Beach Storm Water Management Plan, the Water Quality Monitoring Plan, the draft permit, challenges, and future goals. In September 2010, the City began discussions with the LARWQCB regarding the renewal of the City's NPDES Permit. Additional meetings with the LARWQCB in November 2011, lead to discussion about the City continuing its own permit, which would be watershed, based similar to the Los Angeles County Permit. It was further discussed that the LARWQCB would not begin work on the City's Permit until the Los Angeles County NPDES Permit was completed, adopted and underway with the implementation of the permit. On November 8, 2012, the Los Angeles County NPDES Permit was reissued.

In June 2013, a meeting between the City of Long Beach Permit Review Team (COLBPRT) and the LARWQCB Staff was held in the City of Long Beach. Using the newly adopted LA County Permit as a template, comments regarding the Long Beach Permit were discussed. Work on the Long Beach Permit was underway. The first Long Beach NPDES Permit Draft Tentative Order (DTO) was released on November 25, 2013. This released of the DTO initiates the start of the review period. Persons wishing to comment on the DTO or submit evidence for the LARWQCB to consider are invited submit all written comments by 5:00 PM on January 3, 2014.

A Public Workshop to discuss the DTO will be held at the LARWQCB's regular

scheduled meeting on December 5, 2013. The LARWQCB is scheduled to hold a public hearing to reissue the Long Beach NPDES Permit at its regular scheduled meeting on February 6, 2014 at 9 AM.

PROGRAM MANAGEMENT

The Storm Water/Environmental Compliance Division (SWEC) manages the LBSWMP. Its management staff consists of the SWEC Officer, the Division Analyst and the Division Clerk Typist. The SWEC Officer also manages support provided by the following Divisions: 1) the Engineering Bureau provides Engineering support, 2) the Construction Services Division provides storm water related field inspections and compliance enforcement and 3) the Street Operations Division handles the operations and maintenance of all City stormwater facilities such as a) the City's Storm Drain Pump Stations, b) open channels and ditches, c) storm drain catch basins and d) outfalls. The Street Operations Division also inspects, maintains and operates stormwater related Best Management Practices Devices such as e) Low Flow Diversion systems, f) Vortex Separation System Devices, g) trash extruder screens at catch basins etc.

The SWEC's major responsibilities include and is not limited to continual development and implementation of the goals and objectives of the LBSWMP and ensuring compliance with the requirements of the City's MS4 NPDES Permit.

The Annual Storm Water Permit Report and Assessment details the City's storm water management accomplishments and expenditures for the period of October 1, 2012 through September 30, 2013.

Program Management major highlights for this reporting year include:

- The SWEC Officer participates as the Chair and/or Co-Chairperson and Member for the Following TMDL Regional Participation Groups and Watershed Groups
 - Harbor Toxic Sediment TMDL Regional Monitoring Committee - Chair
 - Los Cerritos Channel Watershed Group –Co-chairperson.
 - Lower Los Angeles River Watershed Group – Member
 - Lower San Gabriel River/Coyote Creek Watershed Group Member
- Directs Capital Improvement Projects for the following work:

- Appian Way Low Flow Diversion: The design of the Appian Way Low Flow Diversion (LFD) system was delayed due to additional comments by the Los Angeles County Department of Public Works that required revisions to the drawings. The Design work is scheduled for completion in December 2013. Advertisement of the project is scheduled for Spring of 2013 with construction planned for Summer 2014. The diversion system will divert dry weather “nuisance” run-off from entering the adjacent Marine Stadium Bay and discharge it to the sanitary sewer nearby.
- Pump Station SD-7 Repairs/Upgrade: The repair work at SD-7 consisted of the replacement/upgrade of the sump pump from 7.5-HP to a 10-HP sump pump, an overhaul and rebuilt of the 200-HP main pump, removal of plant overgrowth in the downstream channel, regrading of the same channel to re-establish the slope for drainage and the installation of connector pipe screens on all inlet pipe leading to the pump stations.
- The AQMD Permitting of Natural Gas Pumps and Motors at City Storm Drain Pump Stations: The City worked with representatives from the Air Quality Management District to inspect and permit the natural gas pumps and motors in three of City’s storm drain pump stations. The Storm Drain Pump Stations affected were SD-14, SD-15 and SD-23. Evaluations were conducted in the past fiscal year regard the remaining life and efficiency of these early 1960’s dated pumps. Further evaluation on the condition of these pumps and motors are being conducted with the goal to replace the pumps and motors and/or to consider conversion to electric pumps and motors.
- The City of Long Beach was featured or mentioned in the following media:
 - LB Press-Telegram Article, 10/09/13, Featuring: L.A. River cleaner than thought. A new study coming from the Council for Watershed Health finds that parts of the L.A. River long thought of teeming with bacteria and industrial runoff, are less contaminated with E. coli bacteria and toxic metals than some mountain streams (Appendix B-1).
 - LB Press-Telegram Article, 05/24/13, Featuring: Local beaches get high marks. After years of poor water quality, Long Beach shoreline has less pollution (Appendix B-2).
 - LB Press-Telegram Article, 09/05/13, Featuring: Long Beach spends \$13M to clean waterway trash. California communities are spending \$428 million a year to keep plastic and other trash off the streets and away from polluting waterways and beaches-with Long Beach alone spending about

\$13 million annually and an environmental group said in a new report (Appendix B-3).

- City of Long Beach Press Release, 09/05/13, Featuring: Beach Water Quality in Long Beach Continues to Steadily Improve (Appendix B-4).
- City of Long Beach Press Release, 07/16/13, Featuring: Long Beach Awarded \$4.9 million Clean Beaches Initiative (CBI) Grant (Appendix B-5).
- NBC News, Aired 09/03/13, featuring: LA County Beaches Get Cleaner (Appendix B-6).

PUBLIC AGENCY ACTIVITIES

In addition to increased code enforcement, distribution of public construction guidelines, and maintenance of streets, storm drains, and landscapes, the LBSWMP has emphasized community outreach efforts designed to reduce littering throughout the City. The City's Environmental Services Bureau has continued to implement a Citywide Litter Abatement and Awareness Campaign. This campaign and the City's other public agency activities are both numerous and extensive. Other notable Public Agency Activities can be viewed in Appendix A-3.

DEVELOPMENT PLANNING AND CONSTRUCTION

In FY 13, there were 5,064 investigations with no enforcement actions required. The City's plan review process focuses on the impacts of development on storm water quality as early as possible during a project. The City mandates that storm water quality impacts must be fully addressed by the developer prior to issuance of any permits, which safeguards against the discharge of pollutants into the storm drain system and/or receiving waters. Chapter 18.95 of the Long Beach Municipal Code details the City's NPDES and Standard Urban Storm Water Mitigation Plan (SUSMP) regulations.

ENFORCEMENT OF THE CONSTRUCTION GENERAL PERMIT

Storm Water Management continues with its enforcement of the Construction General Permit by requiring all current construction projects to be updated electronically through the Storm Water Multi-Application & Reporting System (SMARTS). This requires the submittal of the Storm Water Pollution Prevention Plan (SWPPP) with the submission of Notice of Intent (NOI). Upon notification by the State Water Resources Control Board

(SWRCB), the Storm Water Management Team contacts the party identified on the notice and works with them to bring them into compliance.

ILLCIT DISCHARGES AND ILLICIT CONNECTIONS

Within the City limits, there are an estimated 383 miles of active storm water carriers, which include pipes, open channels, ditches, culverts, connector pipes and drains. Of those carriers, 180 miles are City-owned, 142 miles are Los Angeles County-owned, and 40 miles are Caltrans-owned with various other owners making up the remaining 21 miles. The City maintains 5.5 miles of channels and ditches. Los Angeles County has 32 miles of open flood control channels, i.e., Los Angeles River, San Gabriel River, Los Cerritos Channel, etc. Caltrans has 11 miles of channels and ditches. Inspectors and field staff from the Fire, Harbor, Health and Human Services, Development Services, Public Works, and Water Departments receive annual training on how to identify, report, and eliminate illicit discharges and play a vital role in prohibiting illicit discharges and eliminating illicit connections. If an illicit connection is detected, an advanced system of communication and follow-up is in place to ensure the removal of the connection. During this reporting period no illicit connections were found.

PUBLIC INFORMATION AND EMPLOYEE TRAINING

Communicating information about storm water and urban runoff pollution to residents, school children, commercial and industrial establishments, and City employees is a priority for the City. In FY 13, the SWEC made use of the Southern California NBC Network News, the Long Beach Press-telegram and the Grunion Gazette community newspapers ran various articles, as well as communicating this information via the City's various social networks. Through these media events and programs such as Heal the Bay's Key to the Sea program, the Traveling Recycling Education Center (TREC), and various community events, the City made well over the permit required 1.5 million impressions related to storm water pollution prevention issues and their solutions through the use of various media. New outreach materials and methods are constantly being explored while proven techniques are carried on.

Public information and employee training are fundamental to changing people's behaviors and stopping pollution at its source. The more people are aware that their actions have a specific effect on storm water quality and the environment in general, the more they will be the solution to pollution, rather than its cause.

CHALLENGES

The City of Long Beach will be undertaking a new style of Permit that is based on three Watershed Management Areas (WMA) that covers the City. The Challenge will involve the preparation of a Watershed Management Plans (WMP) for the WMAs as well as Reasonable Assurance Assessment (RAA) Modeling and Coordinated Integrated Monitoring Plans. Funding is always an issue to support this work.

In addition the challenges above there remains the follow challenges that carry over to each new fiscal year:

- Sanitary Sewer Overflows (SSO) and associated discharges into the Los Angeles River, Colorado Lagoon and Marine Stadium. This year, there were 27 SSOs, fortunately 8,602 gallons of discharge were recovered and returned to the Sanitary Sewer System
- Uncertainty of cost associated with requirements with the preparation and requirements for the new NPDES Permit.
- Workload and staffing shortages at local, state, and federal levels.
- Increasing SWEC Staff to accomplish additional work as required in the new MS4 NPDES Permit.
- Lack of General Fund dollars available for grants with matching fund requirements, Capital Improvement Program (CIP) projects, and special studies aimed at improving water quality.
- Surcharge cost for new Low-flow Diversion Devices installed at the Appian Way and Belmont Los Angeles County Flood Control Pump Stations, and the Termino Avenue Drain LFD station.
- Continued maintenance cost for the structural BMPs at catch basins leading to the LA River as a result of the LA Gateway Cities Catch Basin Project.
- Cost replacement of AB-Tech sponges.
- Implementation cost for current and future TMDLs.
- Gateway Cities Council of Governments (GCCOG) participation fees

In FY 12, the Long Beach Storm Water Management Plan was implemented at an estimated cost of \$xx,xxx,xxx, which equates to an investment equivalent to \$xxx per capita.

CURRENT PROJECTS

In FY 13, the Long Beach SWEC managed and monitored several capital improvement projects aimed at reducing pollution throughout the City. The following projects were made possible through various grant awards and special revenue sources.

RESTORATION OF THE TERMINO AVENUE GREENBELT PROJECT



This area, known as the Greenbelt, was cleared to make way for the construction of the Termino Avenue Storm Drain Project, which was completed in September 2011. The restoration primarily consisted of restoring trees, California native landscape planting, and automatic irrigation system. Completion of the Greenbelt Restoration scheduled for Spring 2014.

APPIAN WAY LOW-FLOW DIVERSION

The design of the Appian Way Low Flow Diversion (LFD) system was delayed due to additional comments by the Los Angeles County Department of Public Works that required revisions to the drawings. The Design work is scheduled for completion in December 2013. Advertisement of the project is scheduled for Spring of 2013 with construction planned for Summer 2014. The diversion system will divert dry weather “nuisance” run-off from entering the adjacent Marine Stadium Bay and discharge it to the sanitary sewer nearby. This project will



consist of the installation of a new mechanical pump, new pipelines, electrical equipment and controls, new utility vaults, new sanitary sewer mains and manholes. The diversion system will divert non-stormwater runoff into the sanitary sewer system there by preventing it from entering the adjacent Alamitos Bay.

VSS BMPs AND LOW FLOW DIVERSIONS OF STORM DRAINS DISCHARGING TO SAN PEDRO BAY BEACHES AND THE LA RIVER ESTUARY

The City of Long Beach has received approval for a Clean Beaches Initiative Grant for the construction of three (3) Low Flow Diversion (LFD) Systems and two (2) Vortex Separation System (VSS) pre-filter devices in order to begin compliance with the reduction and elimination of bacteria as required by the Long Beach Beaches and Los Angeles River Estuary Bacteria TMDL, adopted on March 2012. The cost for the work is estimated at \$4,967,362.

The proposed structural BMPs will be constructed in the storm drain mains that discharge to the following beach outfalls:

1. Shoreline Ave at Golden Ave (construct 1-LFD)
2. 9th Place south of Ocean (construct 1-LFD and 1-VSS)
3. Redondo Ave, south of Ocean (construct 1-LFD and 1-VSS)

The City of Long Beach and the State Water Resources Control Board are working on the preparation of MOU. It is hoped that the design work can begin by Spring 2014 with a tentative construction start of Spring 2015.

WATER QUALITY REPORTING

The City of Long Beach has made significant efforts to locate pollution sources and improve water quality. As a result of the City's efforts, the Colorado Lagoon dropped off the Beach Bummer list. Colorado Lagoon's two monitoring locations received A grades from Heal The Bay's Report during winter dry weather. Overall, Long Beach's summer dry weather A and B grades were 15% higher than the five-year average for Long Beach. Winter dry weather grades were remarkable with 100% of locations earning A grades, 53% higher than the City's five-year average. Please see Appendix B-7

SECTION 1

1.0 PROGRAM MANAGEMENT

In this past reporting year, the City of Long Beach has been in a unique situation where it has had to deal with compliance requirements of the current LA County MS 4 NPDES Permit, enforcing its current NPDES Permit and working to develop the new Long Beach MS4 NPDES Permit for a possible Spring 2014 Adoption. Section 1 details the City's strategy, to accomplish the work identified above. This work will consist of regional participation in the preparation of Watershed Management Programs (WMP), continued enforcement of the Long Beach Storm Water Management Program (LBSWMP) and the strategy to integrate the additional requirements of the New Long Beach NPDES Permit into the LBSWMP.

The Department of Public Works Storm Water/Environmental Compliance (SWEC) Division administers this citywide program. The objective of the LBSWMP is to improve the quality of storm water runoff by effectively prohibiting non-storm water discharges, implementation of the new Low Impact Development Practice as per the new City Municipal code, 18.74, promoting water conservation to reduce water runoff and by reducing the discharge of pollutants to the maximum extent practicable (MEP). While it is the SWEC's responsibility to coordinate the development, implementation, and revision of the LBSWMP, all City Departments are involved in the cooperative effort to implement the LBSWMP.

1.1 IMPLEMENTATION STRATEGY

The challenge in strategy for Long Beach is to participate in Regional Watershed Groups in the preparation of Water Management Programs (WMP) as describe LA Permit while keeping the City in compliance with the City's current NPDES Permit and to adapt to the new Long Beach Permit under development. This strategy can be summed up by the three following bullets:

- Regional Participation
- Continued Compliance with current Permit
- Changes as Affected by the New Permit .

SECTION 1

1.2 REGIONAL PARTICIPATION

The City of Long Beach is situated in three watersheds, the Lower Los Angeles River Watershed, the Los Cerritos Channel Watershed, and the Lower San Gabriel River Watershed resulting in the storm drain system that services the City draining to all three watersheds. The operation of this system is regulated through a Municipal Separate Storm Sewer System (MS4) Permit that is issued by the LARWQCB. This MS4 Permit is renewed approximately every five years by the LARWQCB with each subsequent permit becoming more stringent and costly to implement.

Purpose: The current MS4 Permit for the Los Angeles Region and the City of Long Beach MS4 permit, currently under negotiations with the LARWQCB, requires that Long Beach along with other participating cities located within the Lower Los Angeles River, the Los Cerritos Channel, and the Lower San Gabriel watersheds, develop watershed management programs (WMP) for each of these watershed tributaries. The MS4 permits mandate stringent storm water quality regulatory requirements and the primary goal of the watershed groups is to reduce the overall cost of compliance through a multi-agency cooperative effort as opposed to each city addressing these mandated regulatory requirements separately at a much greater cost. Participating cities in each watershed are assessed costs based on cost sharing formulas among all the participating cities.

Benefit: The WMPs developed for each watershed will provide a comprehensive analysis of pollutant sources within the watershed areas, strategies for reducing or treating pollutants from those sources, and computer modeling to substantiate the strategies. These WMPs must be completed and approved by the LARWQCB prior to June 20, 2014.

The Lower Los Angeles River, Reach 1, Watershed Group –

PURPOSE: This Group is responsible for the preparation of a Watershed Management Program which includes a Reasonable Assurance Analysis (RAA) and a Coordinated Integrated Monitoring Plan (CIMP) as required by the current Los Angeles NPDES Permit and the new Long Beach NPDES Permit under development.

BENEFIT: The WMP will layout the a program to reach compliance of all TMDLs associated the Watershed as well as practices to assure compliance with the Clean Water Act as designated in the NPDES Permits.

The Lower Los Angeles River, Reach 1, Watershed Group replaces the “Los Angeles River, Reach 1, Metals TMDL Committee”. Long Beach has been an active member

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involved with the participation of Regional meetings, planning, selection of consultants for the WMP, RAA and CIMP.

The Los Cerritos Channel Watershed Group –

PURPOSE: The Group is responsible for the preparation of a Watershed Management Program which includes a Reasonable Assurance Analysis (RAA) and a Coordinated Integrated Monitoring Plan (CIMP) as required by the current Los Angeles NPDES Permit and the new Long Beach NPDES Permit under development.

BENEFIT: The WMP will layout the a program to reach compliance of all TMDLs associated the Watershed as well as practices to assure compliance with the Clean Water Act as designated in the NPDES Permits.

The Los Cerritos Channel Watershed Group (LCCWG) replaces the “*The Los Cerritos Channel Technical Committee*”. Long Beach has been an active member involved with the participation of Regional meetings, planning, selection of consultants for the WMP, RAA and CIMP.

The Lower San Gabriel/Coyote Creek Watershed Group –

PURPOSE: The Group is responsible for the preparation of a Watershed Management Program which includes a Reasonable Assurance Analysis (RAA) and a Coordinated Integrated Monitoring Plan (CIMP) as required by the current Los Angeles NPDES Permit and the new Long Beach NPDES Permit under development.

BENEFIT: The WMP will layout the a program to reach compliance of all TMDLs associated the Watershed as well as practices to assure compliance with the Clean Water Act as designated in the NPDES Permits.

The Lower San Gabriel River/Coyote Creek Watershed Group (LSGRCCWG) replaces the “*The San Gabriel River Master Plan (SGRMP)*” Long Beach has been an active member involved with the participation of Regional meetings, planning, selection of consultants for the WMP, RAA and CIMP.

In addition to the Regional activities described above the SWEC participates in other regional activities ranging from Watershed Groups throughout the Los Angeles County, Advisory Committees/Sub-Committees dealing with Reasonable Assurance Analysis Modeling to Monitoring Coalitions working in cooperation with other Municipalities and Agencies to further Water Quality and Clean Water Act improvements. These activities are described below

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The Harbor Regional Monitoring Coalition (RMC) –

This monitoring coalition was formed to facilitate compliance objectives for the Dominguez Channel and Greater Los Angeles and Long Beach Harbors Waters Toxic Pollutant TMDL in the areas of the Inner and outer harbors and San Pedro Bay. The coalition would provide regional participation of cost and resources for the preparation of a Coordinated Compliance Monitoring and Reporting Plan (CCMRP)

Los Angeles County MS4 Permit – WMP/EWMP TAC –

Purpose: This committee was formed as a requirement of the LA NPDES Permit of which City of Long Beach was invited to join in order to have a voice and participate in discussion that lead to decisions involving Reasonable Assurance Analysis Modeling Work, Monitoring plans and Watershed Management Programs

Benefit: The work achieved will bring consistent results involving work on RAA modeling and a Coordinated Integrated Monitoring Plan (CIMP) as required by the current Los Angeles NPDES Permit and the new Long Beach NPDES Permit under development.

1.3 CONTINUED COMPLIANCE WITH CURRENT PERMIT

The SWEC will maintain continued responsibility for the development, enhancement and implementation of the City's comprehensive Long Beach Storm Water Management Program (LBSWMP). The Division works extensively with an internal NPDES Task Force, composed of City personnel from various City departments, to share information and responsibilities, collaborate on storm water and environmental projects and resolve NPDES issues on a real time basis.

SWEC work consist of but is not limited to:

1. Proactively pursuing grant funding for Structural Best Management Practice (BMP) project development/implementation;
2. Innovative financing for Storm Water/Environmental Public Education/Outreach programs;
3. Coordinates the management of the City's contract for maintenance of the city-owned storm drain system;
4. Coordinates the management of the City's contract for the maintenance, operations and surveillance of the City's 24 storm drain pump stations;
5. Assist and supports the Port of Long Beach (POLB) and City's Airport on their Industrial NPDES Permits;

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6. Serves as the City liaison for the Los Angeles Gateway Region, Integrated Regional Water Management Joint Powers Authority (LA Gateway Authority) catch basin maintenance program, Los Angeles County Flood Control District;
7. Conduct legislative analysis and make recommendations to senior management and elected;

In addition to the work above, the SWEC Officer will continue to actively participate in regional task forces, councils, organizations, and committees related to storm water/environmental activities. This ongoing involvement has proven to be an excellent avenue for exchanging information and collaborating on joint projects. These groups are identified as follows:

The Southern California Association of Governments (SCAG) - promotes economic growth, personal well-being, and livable communities through leadership, vision, and progress. The City of Long Beach continues to be a member of SCAG.

The Storm Water Monitoring Coalition (SMC) of Southern California - a collaborative working relationship of storm water regulators and municipal storm water management agencies, works to develop the technical information and tools needed to improve storm water decision-making. The City of Long Beach, a founding member and the only municipal representative, continues to be an active member. The City actively and financially participates as a member of the SMC.

The NPDES Municipal Stormwater Permit Executive Advisory Committee (EAC) - actively addresses storm water issues among its stakeholders and with representatives from the Los Angeles Regional Water Quality Control Board. Long Beach SWEC Staff attends these meetings as well as the TMDL subcommittee meetings.

The Los Angeles River Watershed and County Best Management Practice (BMP) Task Forces - are ongoing forums to facilitate the selection, implementation, and financing of effective BMPs. Long Beach SWEC Staff attend and present applicable projects at these meetings to assist the BMP Task Force with achieving its goals and objectives.

The Water Resources Action Plan (WRAP) - The SWEC Officer continues to work with staff at the Ports of Long Beach and Los Angeles to support the Water Resources Action Plan (WRAP). The plan was developed to address water quality concerns in harbor waters, in order to assist with TMDLS and NPDES permit development. The FY 12 final report was published in October 2012 and can be found in Appendix A-2.

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Council of Governments Participation - The City of Long Beach continues with its participation with the Gateway Cities Council of Governments (GCCOG) in the development of coordinated implementation plans to address TMDLs. The goal of this participation is to take part in cost sharing agreements between Regional participants and to develop programs which include special studies to address scientific and technical issues resulting from establishment of the TMDL. The SWEC Officer represents the City in all the committees GCCOG..

1.4 CHANGES AS AFFECTED BY THE NEW PERMIT

The SWEC Division will need to evolve in order to adopt the added requirements and changes found in the new Long Beach Permit. Some of the changes would include:

- Increases to Division Personnel in the areas of administration, inspections, compliance enforcement, stormwater engineering and stormwater operations and maintenance will need to be done.
- Funding strategies will need to be developed to pay for cost associated with Watershed Management Plans, RAA Modeling and Monitoring Work.
- As a result of new BMPs Structural and Non Structural develop from the RAA modeling findings, funding will be needed to implement them.
- More field inspections and compliance enforcement work will need to be conducted as identified in the new permit.
- The format of the Annual Report will change to better reflect the addition and changes to the new permit.

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**2.0 MANAGEMENT PROGRAM FOR PUBLIC AGENCY
ACTIVITIES**

The City of Long Beach puts into practice public agency activities that reduce the discharge of pollutants into the storm sewers and local receiving waters to the maximum extent practicable. In order to effectively improve the quality of storm water, the City has the following in place:

- Storm Drain System Operations and Maintenance
- Trash and Greenwaste Control
- Code Enforcement
- Street Maintenance
- Street Sweeping Brush Adjustment
- Refuse Collection Adjustments
- Public Construction Activities
- Landscape Maintenance
- Training
- Water Conservation
- Low-Flow Diversion Devices
- Vortex Separation Systems (VSS)

**2.1 STORM DRAIN SYSTEM OPERATIONS AND
MAINTENANCE**

Within the City limits, there are about 383 miles of active storm water carriers, which include pipes, open channels, ditches, culverts, connector pipes, and drains. Of those carriers, 180 miles are City-owned, 142 miles are owned by Los Angeles County, and 40 miles are Caltrans-owned, with various other owners making up the remaining 21 miles. The City maintains 5.5 miles of channels and ditches, Los Angeles County has 32 miles of open flood control channels, and Caltrans has 11 miles of channels and ditches.

In addition, the City owns 23 pump stations, 4 Low Flow Diversion Devices, 5 beach outfall structures, approximately 3,800 catch basins, and is responsible for approximately 1,875 LA County owned catch basins, all of which are cleaned repeatedly throughout the year. The related maintenance costs for FY 13 were an estimate \$1,035,448

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Waste characterization shows that the predominant types of debris include trash (a combination of plastics, polystyrene-foam, glass, and paper) and green waste. The most likely source of the trash is littering, whereas the most likely source of the green waste is a combination of non-anthropogenic sources and individuals who sweep, hose, or blow material into the storm drain.

Selected areas in the MS4 have been designated as high priority based on the amount of trash and debris normally collected. A Rain-Emergency Checklist identifies catch basins, grates, ARS devices, culverts/ditches, storm water pipes and cross drains that are checked immediately prior to a forecasted rain event. These areas are cleaned of any trash and debris prior to a storm event to ensure that these pollutants are not washed into the receiving waters. To ensure that no clogged systems contribute to flooding, a separate list is maintained of areas to be checked while it is raining. In addition, City staff is prepared to respond to reports of flooding and other concerns during rain events.

The Water Department operates and maintains the City's sanitary sewer system, as detailed in the Public Agency Activities section of the LBSWMP. Procedures are implemented to keep sewage from entering the storm drain system. Methods may include education, inspection, covering or blocking storm drain inlets and catch basins, or containing and diverting the sewage away from open channels and other storm drain facilities. One way the City is trying to prevent sewer overflows is through a joint outreach effort by the Storm Water/Environmental Compliance Division and the Water Department to educate restaurant owners and residents about the negative effects of pouring fats, oils, and grease (FOG) down kitchen sinks. FY13 there were 27 Sanitary Sewer Overflows (SSO), which included 1- Category 1 SSO with a loss of 250 gallons, 2 - Category 2 SSOs with 4,455 gallons fully recovered, and 24 – Category 3 SSOs with 4,147 gallons fully recovered and both category 2 and 3 returned to the Sanitary Sewer System.

Additionally, Public Works and the Health Department maintain a Vector Control & Trauma Scene Waste Cleanup Memorandum of Understanding (MOU). In FY13, MOU related expenses amounted to \$69,081.98.

2.2 TRASH AND GREENWASTE CONTROL

Trash and green waste are controlled through various operations across several departments. These include:

- Litter Receptacles

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- Neighborhood Cleanup Assistance
- Household Recycling
- Greenwaste Disposal
- Special Collection
- Used Oil Recycling
- Household Hazardous Waste Collection
- Trash Collection on the Beach and Along Water Bodies
- Automatic Retractable Screen (ARS) and Connector Pipe Screen (CPS) BPMs install through the Gateway Authority Catch Basin Project
- Trash net and VSS installations at selected stormwater pump stations
- Educational flyers and brochures distributed to the Public through payment billings mailed

The Environmental Services Bureau (ESB) provides various refuse, recycling, litter abatement and street sweeping programs. In fiscal year 2013 (FY 13), ESB added several programs to its existing ones, including the following:

- The new Household Hazardous Waste facility opened its doors in March. This facility allows residents of LA County to drop off household hazardous waste items for proper recycling or disposal. Items that are accepted at this facility include (but are not limited to): batteries, chemicals, pharmaceuticals, and fluorescent light bulbs (Appendix C-1).

Refuse/Recycling

During FY 13, ESB continued to provide a number of refuse and recycling services that included curbside collections, the new Household Hazardous Waste facility and special item pick-ups. In addition, ESB played an active role in the community through various outreach and educational programs. In FY 13, ESB:

- Collected approximately 187,146 tons of waste from City managed routes and beaches.
- Provided all City serviced refuse accounts with two free bulky item collections per year, with any additional collections at a cost of \$5.92 per item (Appendix C-2).
- Staff attended 20 neighborhood meetings and community events promoting recycling and litter abatement, with 1000 residents attending.

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- 90% of Long Beach's public schools, 70 total, are currently participating in the recycling program. Additionally, 6 private schools are participating in the recycling program.
- Conducted 13 composting workshops and special event composting demonstrations for a total of approximately 1,000 participants, and distributed approximately 250 composting bins to residents and schools throughout the City (Appendix C-3).
- Received a \$124,162 block grant from the Department of Conservation (DOC) that was used to support litter abatement programs and various activities related to beverage container recycling. In addition, the DOC funds assisted the City's curbside residential program in collecting nearly 26,299 tons of recyclable material (Appendix C-4).
- Working together with EDCO and LA County, the new Household Hazardous Waste facility at 2755 California Avenue in Signal Hill opened its doors to Los Angeles County residents in March of 2013. Since its grand opening 3,257 cars have dropped off their hazardous waste which include, but are not limited to: aerosols, batteries, e-waste, fluorescent light bulbs, motor oil, filters, paint, and sharps (Appendix C-5).
- Collected nearly 3,000 gallons of motor oil and 800 motor oil filters as part of the City's curbside motor oil recycling program.
- Received a block grant from CalRecycle (formerly known as the California Integrated Waste Management Board) for over \$131,102 that was used to support the City's used motor oil recycling program. The program consists of curbside collection, 35 Used Oil Certified Collection Centers and various public outreach materials (Appendix C-6).
- Produced brochures to inform residents about the importance of recycling used motor oil and promote clean and healthy streets (Appendix C-7).
- ESB continued its Marina Recycling program, providing approximately 135 recycling bins to Alamitos and Shoreline Marinas, and a 2-yard recycling bin to Rainbow Marina.
- A multifamily recycling ordinance was implemented in FY 2009, requiring the City's private waste haulers to provide the option of recycling to multifamily units with ten or more units (Appendix C-8).
- The City continued its partnership with Recyclebank for a recycling incentive program. Once registered, residents are awarded points for recycling, which can then be redeemed for discounts and deals from local businesses and national brands.
- LB Exchange is a program that is designed to promote materials reuse by creating a link between local businesses and Long Beach non-profits and

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schools. Businesses can donate items such as furniture and appliances to these non-profit organizations.

- The City continued its mandatory commercial recycling, which requires all businesses in Long Beach to recycle.

Litter Abatement Campaign

In 2005 ESB established a Litter Abatement and Awareness Campaign program (Litter-Free Long Beach) that is still in existence. Below is a description of Campaign programs conducted during FY 13:

- Conducted 29 community and business corridor clean-ups.
- Involved 873 volunteer participants at neighborhood and business clean-up events.
- Collected 106 tons of litter from community and business corridor clean-up efforts.
- Promoted the “No Litter Zone” program through door-to-door efforts with 340 businesses participating in the program receiving a free 20-gallon trash can, liners, broom and dust pan for use to help keep their store fronts clean.
- Collected 1,317 tons of litter from alleys throughout the city through the “Alley Clean-Up” program, which involved 1,830 community service workers.
- Provided 1,334 litter and recycling containers at Special Events throughout the City.
- Maintained sponsorship of 17 street locations through the “Adopt-a-Street” program.
- Continued a program for residents to contact and report businesses that leave unwanted handbills on residential property and create litter in Long Beach neighborhoods.
- Issued nearly 1,900 citations through the Long Beach Police Department.
- Produced and distributed a “No Junk Mail” brochure to enable residents to remove themselves from ‘junk mail’ advertising lists and pre-screened offer directories (Appendix 9 and 10).
- Printed customized posters and distributed flyers promoting neighborhood clean-up events (English, Spanish, Khmer).
- Provided a series of informational brochures and flyers on litter abatement, recycling, hazardous waste and composting (Appendix 11).
- Produced promotional car decals, baseball caps, coasters, pencils, water bottles, reusable grocery bags, and rulers.

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- Monitor compliance of the plastic bag ban implemented in FY11, which prohibits the use of plastic bags at grocery stores throughout the City. Residents are encouraged to bring reusable tote bags, or can purchase paper bags for \$0.10 each.

Appendix C-12 contains a copy of the 2012-2013 LB EcoGuide, which was mailed out to Long Beach residents.

2.2.1 LITTER RECEPTACLES

Keeping refuse from entering the storm drain system takes an enormous effort. Placing trash receptacles in convenient locations and servicing them on a regular basis is a consuming task. To ensure that people have an alternative to littering, the City has placed 93 litter receptacles along residential streets and 831 litter receptacles along commercial streets. A total of 44 tons of trash and debris were collected from litter receptacles on residential streets, and 393 tons were collected from commercial street receptacles.

The Beach Maintenance and Queensway Bay divisions service approximately 434 litter and trash receptacles on our beaches, marinas and the park areas of the Greater Queensway Bay. The beach receptacles (approx. 374) are emptied 7 times weekly during the summer and twice weekly in winter. Marina trash receptacles (approx. 85) are emptied 6 days per week. Queensway Bay litter receptacles (approx. 214) are emptied seven days a week and a Landscape contractor performs this task. Rainbow Harbor Grounds and Esplanade areas are emptied 1,095 times a year. Rainbow Lagoon and South Shore Launch Ramp are emptied 730 times a year. Shoreline Marina and Golden Shore areas are emptied 365 days a year. Our ocean front beaches are raked 5-6 days per week depending on conditions. Floating debris is removed from the waters of Rainbow Harbor on a daily basis. Special events are provided with additional litter containers on an as needed basis and are collected on the day of the event. Beach trash is collected seven days a week.

2.2.2 NEIGHBORHOOD CLEANUP ASSISTANCE

The City's Department of Development Services assists resident volunteers by conducting Neighborhood Cleanup events. In FY 13, 927 tons of trash was removed during cleanup events at a cost of \$33,240. The Department provides free trash dumpsters, trash bags, and gloves and lends tools for use during the cleanup events. Neighborhood groups are also given free use of community computers and

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photocopiers to produce flyers for the event. For further information, please visit the web site at: www.longbeach.gov/cd/neighborhood_services/clean_up_programs.asp.

2.2.3 HOUSEHOLD RECYCLING

The City’s Environmental Services Bureau continues to improve the household recycling program. Residents are provided with 32-gallon, 64-gallon, or 96-gallon carts for commingled collection of recyclables in the categories of newspaper, cardboard, mixed paper, plastic, cans (aluminum, steel, and tin), glass, and empty paint and aerosol cans. In FY 13, 26,299 tons of recyclable material was collected through the curbside recycling program. Table 2-1 shows recyclables collected in FY 13. The multifamily recycling ordinance requires the City’s private waste haulers to provide the option of recycling to multifamily units with ten or more units.

Table 2-1: CURBSIDE RECYCLING

WM Recycling Collection	26,299	Tons of recyclables collected from Curbside Recycling Program.
	16,543	Tons of newspaper collected.
	3,539	Tons of corrugated cardboard collected.
	2,625	Tons of commingled containers collected.
	2,826	Gallons of used motor oil.
	788	Number of oil filters.
	3,534	Tons of mixed paper collected.

2.2.4 GREENWASTE DISPOSAL

The City of Long Beach has joined forces with other Cities to encourage and produce educational material on Grass-cycling. Grass-cycling is the natural process of recycling grass clippings by encouraging residents to leave their grass clippings on their lawn after mowing (Appendix 13).

The City continues to require residents to tie tree limbs, shrubs, and trimmings into bundles and securely wrap materials for proper disposal. The Special Collection Program provides pickup for these materials. In FY 13, there were 910 requests for green-waste pick up. The Environmental Services Bureau also offers tree cycling of holiday trees. Residents may take trees to any of the several drop-off locations or put the tree out for free pickup on the specified date (Appendix 14). As an added incentive

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to residents, the City offers seminars on composting and distributes literature that explains methods of green waste composting.

The Departments of Parks, Recreation, and Marine and Public Works recycle grass and tree limbs from City grounds. In FY 13, the Public Works Street Maintenance Division recycled 5,316 tons of grass and tree limbs. City departments minimize the amount of green waste collected from City facilities by reuse. Grass clippings are evenly distributed over the areas that are being mowed (grass-cycling). Green waste from trimming, pruning, and clearing is chipped or shredded and kept on site as mulch.

Green waste generated from our grounds and landscape maintenance operations in our parks is the responsibility of the contractors, and is disposed of at a legally permitted off-site location, most green waste from the trimmers and landscape contractor is chipped and kept on site. The City receives diversion credits for this green waste. Contractors maintain logs identifying its disposal activities, which are available to the City for inspection upon request. It should be noted that all grass clippings in our parks are not collected, all mowers used by contractors use recycling or mulching decks.

Green waste from our tree trimming operation is taken (by City vehicle) to a local transfer station for recycling. BMP's, such as surrounding the base of bulk materials with sand bags and covering with plastic tarps, are utilized to assure that exposed materials will not migrate from their temporary storage locations. Our Accounting Office maintains the disposal records.

Green waste generated from our grounds and landscape maintenance operations in the Queensway Bay Area is the City's responsibility, and is collected by the contractor and deposited in a container in the Golden Yard. A green waste contractor then removes the waste for recycling, leaving an empty container. City staff headquartered in the Golden Yard maintains the disposal records.

2.2.5 SPECIAL COLLECTION

Two well-publicized special item collection programs, the Oversized Items Pickup and Dumped Items Pickup, are designed to reduce bulky items from alleys and vacant lots throughout the City. The Environmental Services Bureau (ESB) distributes a trilingual (English, Spanish, and Khmer) promotional flyer to inform residents about the Oversized Items Pickup program. City-serviced refuse accounts receive two free bulky item collections per year, and additional collections are available at a cost of \$5.92 per item. Table 2-2 shows the number of collection requests for special item pickups.

Table 2-2: SPECIAL ITEM PICKUPS

Special Collections	11,227 request, 1,293 tons	# of requests and tons from Special Item Pick-up Program.
	7,790 request, N/A tons	# of requests and tons of furniture.
	168 request, N/A tons	# of requests and tons of tires.
	910 request, N/A tons	# of requests and tons of yard waste/tree clippings.
	190 containers	# of request for trash bin replacement.
	2,831 request	# of requests of Out Lates (missed collections).
	582 request	# of requests of E-waste.
	97 request	# of requests of appliances.
	3,460 request	# of requests of other.

2.2.6 USED OIL RECYCLING

The City continues to operate a curbside residential recycling program that includes collection of used motor oil and oil filters. Residents are provided with free used motor oil recycling containers at their request. Waste Management, Inc., the City’s recycling contractor, collects the containers and leaves empty replacement containers. ESB staff attended numerous community events throughout the year to promote the Used Motor Oil Recycling program and distribute motor oil containers and funnels. ESB also gave away litterbags and shop towels that have information about recycling motor oil. In FY 13, approximately 2,826 gallons of used motor oil was collected along with approximately 788 used oil filters through the curbside-recycling program and at the Los Angeles County Household Hazardous Waste Roundup (Appendix C-15).

In addition, drop-off locations throughout the City, such as gas stations and auto parts stores, are posted on the Environmental Services Bureau Web site and listed in ancillary promotional materials. These certified drop-off centers are managed and maintained by the business owners and supplement the City’s efforts.

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2.2.7 HOUSEHOLD HAZARDOUS WASTE COLLECTION

Long Beach residents now have a more convenient way of disposing of their hazardous and electronic waste with the opening of an Environmental Collection Center. The City of Long Beach partnered with public/private agencies to open a local and permanent E-waste Environmental Collection Center, where residents in and around Long Beach can drop off waste. The new Environmental Collections Center, which will be open the 2nd Saturday of every month, will enable residents to properly manage and recycle, rather than stockpile their hazardous waste, electronic waste, household sharps and unused/expired medications.

Since its opening in March of 2013, the center has successfully collected several types of hazardous materials detailed in table 2-3.

Table 2-3: HOUSEHOLD HAZARDOUS WASTE COLLECTION

HHW Collection Facility	3,257	Number of cars serviced
	3,111	Pounds of aerosols
	3,200	Pounds of alkaline batteries
	2,500	Pounds of antifreeze
	2,850	Pounds of corrosive liquid
	5,559	Pounds of e-waste, CRT
	56,991	Pounds of e-waste, debris
	23,900	Pounds of flammable liquids
	38,800	Pounds of flammable solids
	2,000	Pounds of fluorescent light tubes
	3,400	Pounds of lead acid batteries
	380	Pounds of nickel cadmium batteries
	5,740	Pounds of motor oil (1 gal = 7 lbs)
	99,100	Pounds of paint – latex
	20,800	Pounds of paint – oil base
	850	Pounds of propane
	1,100	Pounds of sharps
	2,600	Pounds of toxic solid

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2.2.8 TRASH COLLECTION ON THE BEACH AND ALONG WATER BODIES

The Department of Parks, Recreation, and Marine is responsible for the maintenance of recreation water bodies at Heartwell, Scherer, and El Dorado Parks, the Colorado Lagoon and Rainbow Lagoon. Maintenance functions at Heartwell and Scherer Parks are performed by contract maintenance. Maintenance functions at El Dorado Park and Rainbow Lagoon are performed by both contract maintenance and by City staff. Maintenance functions at Colorado lagoon are performed by City Staff. At all locations, the contractor is required to remove trash, including floating and submerged debris from the lakes on a daily basis. All cleaning is required to be completed in accordance with the requirements of the CA Department of Fish and Game and the Regional Water Quality Control Board. The landscape contractors responsible for trash removal are not required per their contract to keep records of the amount of trash that is removed from the lakes or from the parks. However, City staff is required to inspect and document the daily removal of all trash and debris from the lakes. In addition to trash removal, the contractors or City staff are required to make periodic treatments for control of algae and aquatic growth, except for Rainbow Lagoon and Colorado Lagoon, which are ocean/tidal water. Staff monitors the lake activity and authorizes the use of treatment on an as-needed basis. Treatments are applied in accordance with manufacturer's instructions and best maintenance practices.

In addition to the park lakes and Rainbow Lagoon, the City actively maintains Rainbow Harbor (Queensway Bay), the Downtown Marina, and the beaches. A combination of contracted and City staff remove debris by a dip net and a skimmer system in the Greater Queensway Bay area which includes; Rainbow Lagoon, Shoreline Marina, Rainbow Harbor and Marina and South Shore Launch Ramp.

The Long Beach Water Department, along with the Department of Parks, Recreation, and Marine, participate in beach cleanups to promote environmental stewardship and education. Quarterly events are organized at Bluff Park (Ocean Blvd) that are geared towards high school and college students, Scout members, and the general public. The Departments provide free giveaways, trash bags, gloves, bottled water, volunteer service verification forms, and official recognition from the Long Beach Board of Water Commissioners. The largest event took place in September, with roughly 1,500 pounds of trash and debris collected by over 750 volunteers. Organizers were pleased to see that the message of "Bring Your Own" continues to be a success. Approximately 30-35% of the volunteers came with bags and buckets of their own. The main goal is that people take what they have learned at Coastal Cleanup Day and make positive changes throughout the year.

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2.3 CODE ENFORCEMENT

The City conducts several code enforcement activities that assist with controlling the discharge of pollutants into the storm drains and reduce the discharge of pollutants into Long Beach receiving waters to the maximum extent practicable. These include:

- Property Maintenance
- Oil Code Enforcement

2.3.1 PROPERTY MAINTENANCE

Property maintenance activities deal with eliminating unsightly conditions and governing the maintenance of buildings and surrounding property. Complaints of trash and debris in yards, overgrown vegetation, inoperative or abandoned vehicles, etc., are investigated and Municipal Code violation notices or citations are issued where warranted. Failure to comply may result in referral to the City Prosecutor or in a cleanup by City staff at the owner's expense. In FY 13, the Department of Development Services opened 7,695 cases and closed 8,857 cases.

2.3.2 OIL CODE ENFORCEMENT

In the 1970s, four islands were constructed in the Long Beach Harbor for the purpose of accessing oil under the harbor. Strict procedures continue to be in place for preventing and dealing with oil spills. Monthly field inspections cover housekeeping practices, potential safety hazards, security, and a number of other issues. Employees are trained annually, and the department stays abreast of new technologies and industry progress by attending various committees and focus groups. All rainwater on the islands is captured and used to irrigate vegetation.

The Inspection Services Division of the Long Beach Development Services Department is responsible for enforcing City regulations governing the drilling of new wells and the maintenance of existing production sites. Annual permits are issued, and investigations are conducted to ensure compliance. In FY 13, there were 5,064 investigations related to oil operations, resulting in 0 enforcement actions.

2.4 STREET MAINTENANCE

The City's street sweeping service is one of the largest and most effective programs supporting storm water pollution prevention. The majority of streets and street medians

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in Long Beach are swept on a weekly basis, which greatly exceeds the permit requirement of twice per month. To increase the effectiveness of street sweeping, signs are posted and citations are issued so that vehicle owners leave streets vacant on street sweeping days. In addition, street sweeping and refuse collection routes have been better coordinated to provide more efficient service, such as having street sweeping occur after refuse collection on a given street. During FY 13, the Street Sweeping Division swept 150,804 miles and picked up 10,489 tons of material.

Though not typically allowed to be reported as a NPDES compliance measure and expense, during this reporting period thousands of tons of waste from City managed routes and beaches were collected at a cost of \$48,860,774 (Appendix C-16).

A number of parking lots and structures are also routinely swept and degreased to prevent trash and hazardous materials from entering the storm drain system. The Department of Parks, Recreation, and Marine sweeps 36 lots five times each week at an estimated annual cost of \$70,096. The Department of Public Works, Parking Operations Division, maintains another 7 parking structures consisting of 5,165 parking stalls and 13 parking lots consisting of 1,510 parking spaces. The majority is swept either once or twice each week at an annual cost of \$90,200. In addition, the Department of Library Services contracts with a custodial company for parking lot cleaning services. The department has ten branches/locations that are swept four times per week and one branch/location that is swept six times per week. Litter control at all library locations is accomplished by sweeping and picking up litter using manual labor, with an estimated annual cost in FY 13 of \$5,589. Storm Water filtration maintenance and materials for the Mark Twain, LEED certified library, is done quarterly at an annual cost of \$2,160.

2.4.1 STREET SWEEPING BRUSH ADJUSTMENTS

The SWEC continues to work with the Street Sweeping Division in finding a solution for its Street Sweeping Vehicle brushes to reach depressed pavement landings in front of catch basin to avoid the build up of trash debris piling up from the lack of contact of the brushes during sweeping.

2.4.2 REFUSE COLLECTIONS ADJUSTMENTS

The City's catch basins are cleaned and maintained through the City's annual contract with United Storm Water, Inc. SWEC continues to work with the City's Refuse Division and the Street Operation Division to develop plans and work methods to assist in the collection of debris from the Automatic Retractable Screen (ARS) devices in catch

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basins on a more frequent program. Examples of this program would included but not be limited to the raking of debris from the face of the ARS screens during trash pick up runs (once a week). Educational flyers will also be used to instruct the public about the function of the ARS devices and how a resident can help out their community by raking the face of the ARS screen at a catch basin near their property.

2.5 PUBLIC CONSTRUCTION ACTIVITIES

All departments involved in construction-type activities implement good housekeeping practices. They ensure that properly managed wastes are disposed of during street, road, and other maintenance activities. Employees who conduct maintenance activities are given appropriate BMP training about the potential pollutants that may be released as a result of street repair.

Public construction activities focus on City projects whose construction contracts are administered by one of many City departments. City design staff and consultants have the responsibility to prepare plans and specifications that include appropriate BMPs. The BMPs selected are based on rational criteria including magnitude and type of potential pollutant.

The Department of Public Works Construction Management Division insures that the Best Management Practices specified in the project specifications are implemented as defined in the City's permit. During October 1 through April 1 of each year, the project inspectors conduct site inspections and complete the City inspector construction site checklist on a weekly basis. Between the months of April 1st through September 30th, construction inspectors monitor the City for any violations while driving from project to project. When a project is not in compliance with the contract documents or Public Works permit, the Public Works inspectors have the authority to enforce the contract or permit by issuing verbal warnings, written notices, withholding progress payments, or suspending the work. In FY 13, Public Works inspectors filed 232 NPDES Inspection Reports.

During this reporting period, the following public right-of-way projects were inspected:

- ❑ 2011 Fiscal Year Annual Citywide Sidewalk Improvements.
- ❑ 2011 Fiscal Year Annual Citywide Street Improvements.
- ❑ 2012 Fiscal Year Annual Citywide Street Improvements.

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- ❑ 2012 Fiscal Year Annual Citywide Street Improvements.
- ❑ 2012 Fiscal Year Annual Bus Stop Improvements.
- ❑ Improvements to Wardlow Road between Cherry Avenue and Long Beach Boulevard.
- ❑ Traffic signal Improvements at Various Locations
- ❑ Improvements to 10th Street Redondo to Park Avenue.
- ❑ Improvements to Park Avenue 10th Street to Anaheim.
- ❑ Improvements to Livingston Drive Between Termino and 2nd Street.
- ❑ Improvement to Air carrier ramp phase III
- ❑ Improvements to Taxiway Delta and Alpha.
- ❑ Improvements to Pacific Between Willow Street and Spring Street.
- ❑ Improvements to Pacific Between 7th Street and Anaheim Street.
- ❑ Improvements to 2nd and PCH.
- ❑ Atherton Street Enhancement.
- ❑ Shoreline Advance Traffic Mitigation.
- ❑ Westside pump station phase II
- ❑ Improvements to Storm drain Pump Station 13.
- ❑ Fiscal Year 2012 ADA Ramps.
- ❑ RSA Improvements 7L-25R.
- ❑ Atlantic Avenue Advance Traffic Mitigation

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2.6 LANDSCAPE MAINTENANCE

City Staff and Contractors use chemical and non-chemical management practices to control invasive non-native plants when maintaining City grounds. The Department of Parks, Recreation and Marine uses California native plant species for new plantings to help conserve water. This informs and demonstrates to the general public about the use of drought tolerant native plants, as well as non-chemical solutions for weed and pest control for their home gardens.

Mulch continues to be used at the nature center to help abate the use of herbicide on the grounds. Staff and contractors continue to remove non-native and invasive plants, and any replacements are all California native species.

City staff and contractors continue to use best management practices, which include integrated pest management using the least toxic chemicals to get the best result possible. Staff prepares reports for submittal to the County on pesticide use and all of our applicators are certified through the Department of Pesticide Regulation.

2.6.1 PESTICIDE, HERBICIDE, AND FERTILIZER USAGE

Both City staff and contractor staff are responsible for the management of pesticides, herbicides, and fertilizers. The Department of Parks, Recreation, and Marine has one Certified Pest Control Advisor (PCA) and two Qualified Applicators Certified (QAC) staff to ensure the appropriate procedures and policies for pesticide, herbicide and fertilizer management. Additionally, the department possesses a Restricted Material Permit for those herbicides and pesticides that are on the State Agricultural Commissioner's restricted list, and routinely passes annual state inspections. The QAC staff purchases, stores, and distributes pesticides and herbicides to staff that are either Pest Control Applicators, or staff that has received annual training in the proper use and handling of pesticides and fertilizers. The PCA follows required state law that incorporates best management practices (BMP) for the application of chemicals. This practice is called Integrated Pest Management (IPM). In addition, the QAC insures that the manufacturer's instructions are followed for storage and application. The PCA is required to keep accurate records of the quantities and use of specific chemicals that are required by the state and the County of Los Angeles and sends a monthly report to the Agricultural Commission of Los Angeles that documents chemical usage. Staff is trained annually in the laws governing the use of pesticides and herbicides, in the BMP related to the storage and use of such substances (such as restricted uses around lakes and waterways or prohibition of spraying when rain is forecast).

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All of the Department of Parks, Recreation and Marine grounds and landscape maintenance contractors must also possess a Pest Control Advisors License and have certified Pest Control Applicators on staff. Additionally, they must possess a Los Angeles County Agricultural Permit. The contractors must adhere to the same requirements identified above for City staff.

In addition, both City staff and contractors employ IPM practices to minimize the necessity for pesticide applications. Alternative measures include: cultural practices and biologically applications.

2.6.2 NATIVE VEGETATION PRACTICES

Native plant materials continue to be of particular concern in several locations – El Dorado Nature Center, 34th Street & Orange Park, the Queensway Bay Area (which includes Golden Shore Marine Reserve), the Jack Dunster Marine Biological Reserve, 7th St. Greenbelt, Colorado Lagoon, and Sims Pond. Azteca, the grounds maintenance contractor, is responsible for the maintenance of the landscaping at El Dorado Nature Center and a full-time city staff gardener monitors the work. In addition, volunteers from the Habitat Stewards program assist with grounds maintenance. The Nature Center is a mixture of native and non-native plant material that was originally planted over 40 years ago. It is department policy to use native or drought tolerant plants only for any new plantings and also to replace any material that must be removed (for various reasons such as disease or general decline). The 17-acre expansion site at the Nature Center is exclusively native plant material. The PRM Maintenance and El Dorado Nature Center staff ensures that plant material selections are appropriate and sustainable. The plant material, once established, is irrigated on a 10-week rotation. Maintenance and Nature Center staff schedules more frequent irrigation during the summer and fire season when grasses are dry and the Santa Ana winds are present. Herbicides and pesticides are minimally used to eliminate invasive weeds and aquatic vegetation. Volunteers and staff use the practice of mulching as an alternative to chemical weed abatement. The Nature Center has instituted a volunteer Habitat Stewards program that has trained over 80 volunteers to help plant and care for native plants, which are installed according to the Center's Master plan.

In the Queensway Bay Area, native species have been planted in Shoreline Park (Lighthouse Point and Beach Garden) and in the restored wetland area commonly referred to as the "Golden Shore Marine Reserve". The selection of native species, which include perennials, grasses, and aquatic species, has been done with input from consultants and from qualified in-house staff. All invasive weeds are removed by hand,

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with no herbicides or pesticides. Removal of trash from Golden Shore Marine Reserve is done by hand with great care on a limited or as needed basis to prevent any human impact on the site. Staff from the Golden Yard performs the record keeping. Golden Shore, Sims Pond, 7th St. Greenbelt, and Jack Dunster Marine Biological Reserve is maintained by the Los Cerritos Wetland Stewards, who are experienced in maintaining delicate habitats. Only native and non-invasive plants from the appropriate plant community are used when replacing plants at these sites. Most invasive and non-native plants are removed by hand; chemicals are used at a minimum. Mulch is then applied to the site to prevent weeds from returning until the native plants are established, which also helps with water conservation. In the last 7 years, 37 new sites have been developed that were designed with low volume irrigation systems, drought tolerant and native plants, bio swales, and other features to minimize any negative environmental impacts. Less trimming means it generates less green waste.

City staff, as well as, City contractors keeps maintenance practices, pesticide records and schedules for these sites.

Landscape contractors and contracted tree trimmers: green waste or biomass generated from trimming, pruning, and clearing is either chipped or shredded and kept on site as mulch.

Furthermore, the Los Cerritos Wetland Stewardship, who is experienced in maintaining delicate habitats, maintains Jack Dunster Marine Biological Reserve, Sims Pond, and the greenbelt. Only native non-invasive plants on the original approved plant pallet are used. All invasive plants are removed by hand, minimal herbicides or machinery. Mulch is then applied to the site to prevent plants from returning until the native plants have colonized.

2.6.3 MUNICIPAL SWIMMING POOL MAINTENANCE

The Belmont Plaza Pool is comprised of an indoor and outdoor tank. The indoor pool is currently closed and a new pool is under construction. The outdoor pool is back-washed weekly or bi-weekly depending on the season. The discharge volume for backwash is approximately 250 to 500 gallons for the outdoor pool. Two sets of records are kept: one in the pool office and the other in the pool filter room basement.

The King Park and Silverado Park Pools continue to be back-washed according to need. During the summer months, both pools are back-washed approximately two times per week. During the winter months, the pools are back-washed approximately every 10-20 days. During back-washed, approximately 5,000 gallons of water are discharged

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into the sewer lines. Records and information are kept and maintained at the individual pool sites.

2.7 TRAINING

All City staff whose job activities directly affect storm water quality, and those who respond to questions from the public related to storm water pollution prevention and education, receive a mandatory annual refresher training regarding the requirements of the storm water management program, BMP implementation, and identifying and reporting illicit connections and discharges. The majority of training is now conducted via the City's intranet and internet, giving employees easy access to professional training material. NPDES is also a quarterly topic of discussion at the Construction Division staff meetings. In FY 13, the construction inspection staff received 16 hours of training. The Storm Water/Environmental Compliance Division staff also routinely sent out Rain Alerts to appropriate City personnel regarding BMPs and NPDES requirements, especially before anticipated rain events (Appendix C-17).

2.8 WATER CONSERVATION

The Long Beach Water Department has had an active Water Conservation program for over 20 years (Appendix C-18). While its main purpose is to conserve the use of water so that its residents and businesses can be sustained during drought years, the practice and the LBWD enforcement of water conservation practices benefits the Storm Water/Environmental Compliance Division's efforts to limit dry weather runoff. For example LBWD limits irrigation of lawns, driveway wash downs and encourages car washing businesses to recycling water thereby reducing dry weather runoff, to name just a few of their water conservation practices.

The Urban Water Management Plan (UWMP) is a comprehensive planning document that estimate water supplies and demand for water 25 years into the future. The plan also describe efforts to promote the efficient use and management of our limited water resources in normal and dry years.

The Long Beach Board of Water Commissioners adopted the latest UWMP in 2010 and can be obtained at <http://www.lbwater.org/2010-urban-water-management-plan> .

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2.9 LOW-FLOW DIVERSION DEVICES

Long Beach is working in coordination with the Los Angeles County Department of Public Works (LACDPW) on the installation of Low Flow Diversion devices at its storm water pump stations in critical locations throughout the City. These devices divert the flow of dry weather water runoff into the sanitary sewer thereby preventing this flow of water from entering the City's receiving waters. This helps reduce the transport of trash, sediment and bacteria. Currently these devices can be found at three LACDPW facilities located in Long Beach, the Belmont Pump Station, the Alamitos Bay Pump Station, and the Colorado Lagoon. An upgrade to the LFD at Appian Way is in design and scheduled to go out for bid in the spring of 2014. Construction is planned for summer of 2014. A new LFD unlike the existing LFDs was installed in custom constructed manhole structures to divert flow from the newly constructed Termino Avenue storm drain system. In August 2013, the City of Long Beach was awarded a \$4.4 million Clean Beaches Initiative Grant. This grant will allow the City to install low-flow diversion devices at beach outfalls and make an enormous improvement to the water quality along the City's beaches.

2.9.1 VORTEX SEPERATION SYSTEMS (VSS)

VSS units are gravity separators, and in principle are essentially wet vaults. The difference from wet vaults, however, is that the vortex separator is round, rather than rectangular, and the water moves in a centrifugal fashion before exiting. By having the water move in a circular fashion, rather than a straight line as is the case with a standard wet vault, it is possible to obtain significant removal of suspended sediments and attached pollutants with less space. Some of the advantages of VSS units include: provide desired performance in less space and therefore less cost, are more cost-effective pre-treatment devices than traditional wet or dry basins, and mosquito control is less of an issue than with traditional wet basins. The City of Long Beach currently has 2 VSS units installed at pump station XX and (emailed Tony)

3.0 MANAGEMENT PROGRAM FOR DEVELOPMENT PLANNING AND CONSTRUCTION

BACKGROUND

Local, regional, and national research programs have identified urban runoff discharged from municipal Separate Storm Sewer Systems (MS4) as one of the principal causes of water quality impacts in most urban areas. Urban runoff potentially contains a host of pollutants such as trash and debris, bacteria and viruses, oil and grease, sediments, nutrients, metals, and toxic chemicals.

These contaminants can adversely affect receiving and coastal waters, associated biota, and public health. Land development and construction activities significantly alter drainage patterns and contribute pollutants to urban runoff primarily through erosion and removal or change of existing natural vegetation. When homes, shops, work places, recreational areas, roads, parking lots, and structures are built, increased flows are discharged into local waterways. As the amount of impervious surface increases, water that once percolated into the soil now flows over the land surface. Accordingly, increases in impervious surfaces can increase the frequency and intensity of storm water flows through a watershed. Flow from rainstorms and other water uses wash rapidly across the impervious landscape, scouring the surface of various kinds of urban pollutants such as automotive fluids, cleaning solvents, toxic or hazardous chemicals, detergents, sediment, metals, bacteria, pesticides, oil and grease, and food wastes. These pollutants, unfiltered and unfettered, flow through the MS4 infrastructure and ultimately contaminate receiving waters.

MANAGEMENT PROGRAM FOR DEVELOPMENT AND CONSTRUCTION

The Development Planning and Construction program is in place for developers and property owners to consider storm water quality management during the planning phase of their projects and implement appropriate controls during construction. This program applies equally to privately and publicly owned property. Projects within the public right of way are addressed in the Public Agency Activities Section (2.0). Applying this

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program to applicable development projects effectively prohibits non-storm water discharges and reduces the quantity of pollutants into the MS4 infrastructure. To achieve this objective, the City has implemented the following:

- The Development of the LID Best Management Practices Handbook
- California Environmental Quality Act (CEQA) guidelines
- General Plan considerations for watershed and storm water management
- Sustainable City Action Plan
- Chapter 18.95, “NPDES and SUSMP Regulations,” of the Long Beach Municipal Code
- Training

3.1 Low Impact Development Best Management Practices (BMP) Hand-Book

HANDBOOK DEVELOPMENT

The 1st edition handbook was created by the Department of Development Services, Department of Public Works, and the Office of Sustainability. The LID Best Management Practices (“BMP”) Handbook was developed as part of the LID regulation adopted by the City of Long Beach on November 16, 2010 as Chapter 18.74 of the Long Beach Municipal Code approved by Ordinance No. ORD-10-0035.

PURPOSE

The purpose of this handbook is to assist developers in complying with the requirements of the LID ordinance. This handbook summarizes the City’s project review and permitting process, identifies prescriptive or design measures, and references source and treatment control BMP information. It provides guidance for individuals involved in new development and redevelopment projects. The target audience for this handbook includes developers, designers, contractors, homeowners, and City staffs that are engaged in plan-checking, permitting, and inspections related to land development activities. This handbook also contains the necessary forms and worksheets required to be completed by the developers, designers, consultants, contractors, and homeowners for approval.

LID regulations, under Ordinance No. ORD-10-0035, have a stated purpose of:

- Requiring the use of LID standards and practices in future developments and redevelopments to encourage the beneficial use of rainwater and urban runoff;
- Reducing storm water/urban runoff while improving water quality;

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- Promoting rainwater harvesting;
- Reducing offsite runoff and providing increased groundwater recharge;
- Reducing erosion and hydrologic impacts downstream; and
- Enhancing the recreational and aesthetic values in our communities.

3.2 CEQA

Under the CEQA Act of 1970, the City of Long Beach is required to consider the potential environmental impacts of proposed developments. Long Beach Development Services' Environmental Planner conducts this review. Environmental review is required for projects that cause a public official or body to take "discretionary" action in approving or denying a project. The environmental review documents serve as guide to the person or persons who must make a decision about the project. Projects may be processed as a Categorical Exemption (exempt from CEQA Act), a Negative Declaration (declares that there are no impacts or that impacts can be mitigated), or an Environmental Impact Report (done for large projects that are likely to have significant effects on the environment). The outcome of the environmental review is included in Council reports, and documents are attached in the case of Negative Declarations and Environmental Impact Reports.

3.3 GENERAL PLAN

The Mobility Element was adopted on October 15, 2013. This element provides the policy framework to reduce the impact of our transportation system has on the environment. In particular, the Element encourages storm water management techniques to reduce urban runoff in to oceans and rivers. The new Mobility Element is part of a larger comprehensive general plan update known as Long Beach 2030. This new general plan will integrate land use, mobility, economic development, and urban design to create a physical framework for the City.

The Department of Development Services conducted public workshops to identify and prioritize policies and programs in anticipation of the update. Through these planning activities, staff has coalesced ten principles and incorporated them into the complete streets and active living programs. The principles are:

- Balance the needs of all modes of travel
- Be a bicycle friendly city

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- Promote walking
- Promote transit
- Create dynamic and context-sensitive streets
- Protect and enhance the environment
- Create healthy and active neighborhoods
- Create transit-oriented developments along transit routes
- Ensure connectivity to activity centers and other modes
- Maximize public return on mobility investments

3.4 SUSTAINABLE CITY ACTION PLAN

The Office of Sustainability in the City Manager's Office developed a Sustainable City Action Plan in 2010 and is still in effect. The plan contains a section on water that is of particular importance in the City's NPDES efforts. It contains the following four water actions outlined in the 2013-2014 work plan:

- **Low Impact Development Policy:** Implementation of the low impact development ordinance that is in effect as of February 2013, and incorporated this policy in the City's new draft MS4 permit.
- **Low Impact Development Municipal Projects:** Work with Public Works to identify and develop municipal LID projects throughout the City.
- **Rain Catchment Program:** Identify funding to facilitate another round of the City's Rain Barrel Program and identify City facilities for rain catchment system installations.
- **Gray Water Pilot Project:** Completion of 33 laundry to landscape gray water systems in residential homes throughout the City. Residential training workshops will be developed to educate homeowners on how to install and maintain gray water systems.

Specifically, the sustainability goals are to reduce the per capita use of potable water, exceeding the State mandate to achieve a demand reduction of 20 percent in per capita water use by the year 2020 and facilitate the development of 50 green roofs communitywide by 2016. Through the efforts of the Water Department, Long Beach has already made considerable progress in reducing water consumption. In addition, the ongoing efforts to revitalize and restore the wetlands and habitat at Willow Springs Park will further the goals of reducing storm water runoff and water conservation efforts.

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3.5 CHAPTER 18.61, “NPDES AND SUSMP REGULATIONS,” OF THE LONG BEACH MUNICIPAL CODE

The Long Beach Municipal Code includes a chapter specifically for NPDES / SUSMP requirements. This addresses requirements for BMPs, Storm Water Pollution Prevention Plans, and Standard Urban Storm Water Mitigation Plans. In FY 13, the Department of Development Services issued 4,930 permits requiring NPDES compliance, of which 10 permits required further SUSMP compliance and 10 permits required SWPPP compliance.

3.6 STATE CONSTRUCTION GENERAL PERMIT

All Projects enrolled in the State Construction General Permit (CGP) for Discharges of Stormwater Associated with Construction Activity, State Water Resources Control Board (State Water Board) have met the requirement to recertify their active projects as mandated on September 2, 2009. The State Water Board adopted Order 2009-0009 DWQ (new CGP), which took effect on July 1, 2010.

To certify a new NOI, the applicant must register and access the State Water Board's Storm Water Multi-Application & Reporting (SMARTS) and enter the WDID number and the Secret Code Number (SCN) provided by the State Water Board. As part of the Public Reporting Document (PRD) process the applicant will need to upload an electronic copy of the Stormwater Pollution Prevention Plan (SWPPP) onto SMARTS.

The SMARTS program regulates storm water discharges from locations such as industrial facilities, construction sites, and small linear projects. The SMARTS program is also responsible for processing, reviewing, updating, terminating Notices of Intent (NOIs), annual reports, and maintaining the billing status of each discharger.

SMARTS has been developed to provide an online tool to assist dischargers in submitting their NOIs, NECs, NOTs, and Annual Reports, as well as, viewing/printing receipt letters, monitoring the status of submitted documents, and viewing their application/renewal fee statements. The system will also allow the Regional Board and State Board staff to process and track the discharger submitted documents.

3.7 TRAINING

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All City staff whose job activities directly affect storm water quality, and those who respond to questions from the public related to storm water pollution prevention and education, receive a mandatory annual refresher training regarding the requirements of the storm water management program, BMP implementation, and identifying and reporting illicit connections and discharges. The majority of training is now conducted via the City's intranet and internet, giving employees easy access to professional training material. NPDES is also a quarterly topic of discussion at the Construction Division staff meetings. In FY 13, the construction inspection staff received 16 hours of training. The SWEC Staff routinely sends out Rain Alerts to appropriate City personnel regarding BMPs and NPDES requirements, especially before anticipated rain events.

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4.0 MANAGEMENT PROGRAM FOR ILLICIT DISCHARGES AND ILLICIT CONNECTIONS

The general objective of this program is to improve the quality of storm water by reducing the pollutants entering the storm drain system that may negatively affect receiving water quality by effectively eliminating illicit discharges and prohibiting illicit connections.

Departments such as Fire, Harbor, Health and Human Services, Development Services, Public Works Street Operations and Construction Services, and Water play important roles in investigating possible illicit connections and discharges. They communicate their findings to the SWEC and other appropriate parties; oversee cleanups, and follow-up as needed. Incident documentation is recorded and maintained by the responsible department. Reports of suspected illicit connections and discharges might also come from the public via the Storm Water Management Program hotline, 562-570-DUMP (3867) and Web site, www.lbstormwater.org.

4.1 ILLICIT DISCHARGES

The Fire Department is the lead responder when the City is informed of an alleged illicit discharge. The Fire Department evaluates the situation and, when necessary, will dispatch the Hazardous Materials (Haz Mat) unit of the Department of Health and Human Services. The Haz Mat unit will then verify the magnitude of the spill, identify the responsible party, and give instructions on how to proceed with the cleanup. The responsible party is then required to have the area cleaned up. Haz Mat will oversee the cleanup and decide when the situation has been adequately remedied. If the responsible party does not have an established account with a cleanup contractor, the City's contractor is used and the expense is charged to the responsible party. The responsible party may choose to do the cleanup personally if the amount is small. In this case, the responsible party may dispose of materials at a household hazardous waste roundup. These disposals must be verified by presenting a receipt to the Haz Mat Specialist. If no responsible party can be identified, the City will pay for the cleanup through a contractor, or if the discarded amount is small, the Haz Mat Specialist will personally conduct the cleanup.

Calls coming in from the public to report illicit discharges expedite the response that may have otherwise gone undiscovered. Calls and e-mails are responded to immediately through the SWEC and Public Service Street Operations. If a site

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investigation is warranted Street Operations will dispatch a storm water investigator to assess the problem and take action. Most issues are resolved within one business day.

Annual refresher training for inspectors and field workers is conducted through the use of instructional videos and guest lecturers used in conjunction with a review of Department/Division procedures. This training specifically addresses how to identify and report illicit discharges. The SWEC Officer will also conduct training and review courses.

4.2 ILLICIT CONNECTIONS

An illicit connection is any man-made conveyance that is connected to the storm drain system through which prohibited flows are discharged. The City of Long Beach rarely issues permits for storm drain connections. The Public Works Construction Division maintains a database of permitted connections. Historically, the City has encouraged through-curb connections rather than direct pipe connections because these are the easiest and least expensive to survey for illicit connections and discharges. They are located above ground and can be easily observed by City staff. In addition, City staff checks the inside of catch basins and the sides of open channels during regular maintenance activities for any illicit connections. All open channels and catch basins owned by the City have been inspected for illicit connections and none were found for FY 13.

Historically, Close Circuit Televising (CCTV) investigation of underground pipes for pipe-to-pipe illicit connections has been the most expensive and least effective means for illicit connection inspection. The City's storm drain maintenance contractor is required to perform CCTV inspections on 1/5th of the storm drain system pipes that are 36 inches in diameter or greater. Any suspected or confirmed illicit connections must be reported to the SWEC Officer. If the presence of an illicit connection is suspected, the storm drain is investigated and the necessary action is taken to eliminate the connection. Inspection of system pipes between 15 and 36 inches are being considered for future inspection of illicit connection. Funding must first be acquired by grants and/or other sources.

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5.0 MANAGEMENT PROGRAM FOR PUBLIC INFORMATION AND EMPLOYEE TRAINING

The City of Long Beach takes a comprehensive approach to storm water and urban runoff educational outreach. The goal is to provide information about the impacts of storm water and urban runoff pollution and to encourage behavioral changes that will lead to reducing pollutants at the source. The four-targeted groups include:

- General public / city residents,
- Commercial / industrial establishments,
- School children, and
- City employees.

This effort is lead by the City's SWEC; however, many City departments are also active in educational outreach. Most outreach campaigns include urban runoff pollution prevention messages in their materials. Throughout the year, City staff participates in numerous activities to deliver the storm water message and supply the tools and guidance on how to be the solution to pollution.

The SWEC continues to develop materials that are applicable to more than one targeted audience or pollutant and explain the nature of non-point source pollution and its significant contribution to water quality impairment.

5.1 GENERAL PUBLIC / CITY RESIDENTS

The Long Beach SWEC continues to be the principal player in educating the public on ways to modify behavior that will lead to improved water quality. The information and reporting hotline, 562-570-DUMP (3867), and Web site, www.lbstormwater.org, are excellent educational tools that give the public a way to become active participants in the fight against pollution by being able to easily report illegal dumping via telephone or e-mail 24 hours a day, seven days a week.

The City prioritizes inter-agency cooperation when dealing with storm water issues. On a regular basis, the SWEC staff resolves issues with members of other City departments, especially Health and Human Services, Development Services, Public Works Construction Management Division, Water, Public Service-Street Operations, and Fire. On other occasions, the Division staff join forces with other government agencies, in particular the Los Angeles County Department of Public Works and the Sanitation Districts of Los Angeles County.

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During special events, such as community meetings and watershed cleanups, the SWEC Staff is present to listen to constituent concerns and answer storm water related questions from the attendees. In FY 13, Storm Water/Environmental Compliance Division staff reached out to over 15,122 people and distributed approximately 15,122 educational giveaways at the 4th District's Snow Day, Free Aquarium of the Pacific Night, Boeing Earth Day, Cambodian Festival, the Long Beach Unified School District (LBUSD) Science Fair, California Coastal Cleanup, 7th District Safety Summit, The Good Neighbor Festival, Environmental Fair, and the Back To School Fair (Appendices F-1, F-2, F-3, F-4, F-5, F-6, F-7, F-8, and F-9). In addition, the City's Stormwater Program's Web site is a great vehicle for educating the public and announcing important information about storm water projects.

Table 5-1: STORMWATER/ENVIRONMENTAL COMPLIANCE OUTREACH

Event	Attendees	Giveaways
4 th District Snow Day	2,500	2,500
Free Aquarium of the Pacific Night	1,500	1,500
Boeing Earth Day	1,000	1,000
Cambodian Festival	2,500	2,500
LBUSD Science Fair	4,000	4,000
California Coastal Cleanup	750	750
7 th District Safety Summit	150	150
Good Neighbor Festival	1,200	1,200
Environmental Fair	500	500
Back to School Fair	1,022	1,022
Total	15,122	15,122

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Boeing Earth Day



Free Aquarium of the Pacific Night



Cambodian Festival

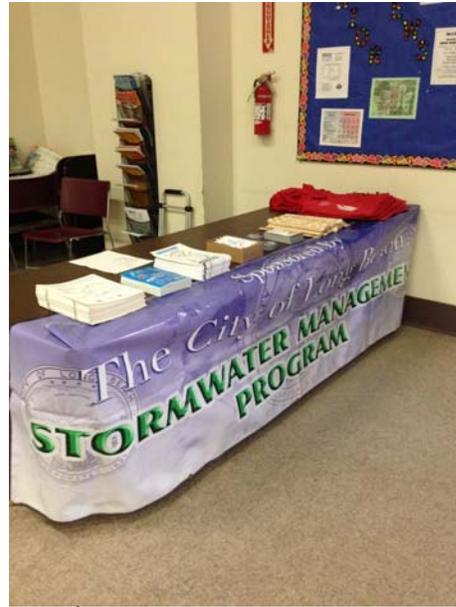


Good Neighbor Festival

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LBUSD Science Fair



7th District Safety Summit



Snow Day



Environmental Fair

The City of Long Beach's diverse population creates a unique challenge for conveying storm water information to recipients of outreach and public education efforts. The SWEC is always looking for new opportunities to deliver the message. Promotional items such as reusable bags, magnets, pencils, stickers, rulers, and pamphlets are made available and informational literature is printed in several different languages (English, Spanish and Khmer).

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The Environmental Services Bureau (ESB) staff participated in 42 events and meetings to promote environmental programs in FY 13. These included neighborhood association meetings; safety, community, and environmental fairs; and composting workshops.

Table 5-2: ENVIRONMENTAL SERVICES BUREAU OUTREACH

Outreach and Education	20	# of Community, Safety, and Environmental Fairs attended.
	2	# of schools starting a recycling program.
	7	Neighborhood Association Meeting attended.
	13	Composting Workshop given.

ESB advertises in local newspapers and has numerous flyers, posters, and campaign giveaways. In addition, ESB has an informational and reporting hotline, 562-570-2876, which is staffed by five employees (2 non-career and 3 full time), Monday through Friday. After-hours callers are advised to use the website at; www.longbeach-recycles.org but also have the option to leave a message in the hotline voicemail box, which has a next business day response time.

Long Beach Development Services continues to educate contractors, developers, and homeowners regarding Storm Water Best Management Practices that can significantly reduce pollution from construction activity and help make compliance with storm water regulations easier. In addition, permit applicants have access to staff and various brochures, pamphlets, and handouts relating to permit requirements at the Permit Center, located on the fourth floor of City Hall and via the City’s website.

Water Conservation continues to be a priority of the Long Beach Water Department (LBWD) and its governing body, the City of Long Beach Board of Water Commissioners, because it is a cost-effective means of enhancing the City’s supply reliability (Appendix F-10). Enhancing these supplies is essential because water supplies into Southern California have been permanently reduced; yet an unreliable supply has the potential to harm the community and its economy. The good news is water conservation provides multiple benefits: reducing water bills, yard maintenance and the urban runoff polluting our Long Beach coastal waters, protecting up-stream rivers and wildlife habitats.

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The primary conservation programs include substantial amounts of public outreach and education, prohibiting certain uses of water and enforcement of those prohibitions, rebates for water-conserving devices, and a very successful turf-elimination program.

In addition to enhancing the reliability of the City's supplies, these programs continue to produce important secondary benefits, one of which is a reduction in urban runoff. For example, the emphasis of the public education program is reducing landscape irrigation, which necessarily means a reduction in runoff; among the uses of water that are prohibited at all times are excessive landscape irrigation and hosing off hardscape such as driveways and sidewalks; rebates have increased and continue to be available for water-conserving devices which significantly reduce urban runoff such as weather-based irrigation controllers and rotating sprinkler nozzles; and, finally, "Lawn-to-Garden" provides \$3.00 for each square foot of grass lawn that is removed and replaced with beautiful landscape designed to thrive in our semi-arid region, eliminating turf significantly reduces not just runoff, but the harmful constituents of the runoff such as fertilizers, pesticides and herbicides. Promotional efforts, such as, advertising the increased amount of the rebates for these programs are included in the Long Beach 90H20, a publication mailed to all City residents in their monthly utility bill. (Appendix F-11)

Implementation of conservation BMPs is ongoing and a variety of educational outreach programs are integral parts of the Water Department's master plan. Landscape/gardening education classes, which address issues such as water conservation and fertilizer/pesticide use, are sponsored by the Water Department. These are examples of how the City of Long Beach exceeds its NPDES permit requirement (Part 3,I, A, 2,f, Water Conservation Practices).

El Dorado Nature Center, through the Long Beach Department of Parks, Recreation and Marine, serves as an important arm of the City's public information and education program for NPDES. The following are brief descriptions of educational, outreach and volunteer programs that address issues of non-point source pollution and storm water management as defined by our permit.

The City of Long Beach's Adopt-A-Beach program is an ongoing conservation and volunteer plan that works in conjunction with the California Coastal Commission. The program allows schools, clubs, businesses, churches, community associations and other groups to partner with the City by agreeing to clean up a quarter mile section of the Long Beach shoreline at least three times annually. People of all ages and diverse backgrounds have become part of the solution to ocean pollution, increasing public awareness that trash on the land inevitably becomes trash on the beach and in the

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ocean. During the 2012-2013 fiscal year, the Adopt-A-Beach program saw 25 regular volunteer groups holding regular monthly cleanups for not only their members, but the general community as well. This year approximately 5,000 volunteers donated over 10,000 hours of service removing nearly 11,000 lbs of debris from the coastline.

In addition to the on-going Adopt-A-Beach program, El Dorado Nature Center continues to hold two special event cleanups in 2013. The first was the annual Earth Day Cleanup held on April 20, 2013. Over 125 volunteers came out to give back to the environment, and help remove over 500 pounds of trash from the beach. The second was the 29th Annual California Coastal Cleanup Day held on September 21st. This year in Long Beach, 750 volunteers helped to remove over 3,500 pounds of debris from local shores and waterways. The City of Long Beach hosted cleanups at six beach sites, including participating in this year's Red Bull Flutag by hosting an educational booth about marine debris for the over 150,000 visitors enjoying the event.

During the 2012-2013 year, El Dorado Nature Center continued to maintain and educate volunteers about the value of wetland habitats, and the dangers of storm water runoff to these fragile ecosystems. Through the monthly wetland cleanups held at Golden Shore Marine Reserve over 175 volunteers this year removed approximately 1,400 pounds of debris that flowed directly into the wetland via the Los Angeles River. Volunteers were also given first hand educational experience on the dangers of storm water runoff by helping to control the debris that entered the waterways during the rainy season.

El Dorado Nature Center continues to provide its Movable Museum program, "Protect Our Watery World" (POWW). This year volunteers educated 300 students for local area elementary schools on non-point source pollution, the durability of trash in the marine environment and the harmful effects of trash on ocean animals.

Finally, El Dorado Nature Center continues to promote and implement the Discovery Tour "Explore the Shore" held at two Long Beach shore locations. Created to align with the 5th grade California Science and Math standards, participants in these programs not only get hands-on inquiry based lessons, but an opportunity to use the scientific method to calculate approximately how much debris is on the coast of Long Beach. Students and teachers also participate in a debris removal and brainstorm solutions for ocean pollution. During the 2012-2013 fiscal year staff educated 300 students from local elementary schools.

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5.2 COMMERCIAL / INDUSTRIAL ESTABLISHMENTS

The City's Department of Health and Human Services (DHHS) conducted educational site visits to distribute and discuss applicable BMP and educational materials to business owners/facility operators during FY 13. The visits include information about the City's Municipal NPDES permit and requirements regarding Notices of Intent (NOI) and Storm Water Pollution Prevention Plans (SWPPP). DHHS has enhanced its database that is used to track visits and other information. Additionally, we have continued our outreach to local businesses, especially in areas where the potential for illicit discharge is greater, e.g. areas with a high concentration of restaurants and other food facilities.

5.3 SCHOOL CHILDREN



The Storm Water/Environmental Compliance Division contributed \$5,000 in FY 13 to support **Heal the Bay's Key to the Sea** marine education program (Appendix F-12). The program provides students, teachers, and informal educators with access to environmental education curriculum and hands-on learning opportunities. The program offers professional development workshops for educators, field trips, and bus stipends for field trips. The two the main content and learning objectives of the program are 1) inspire a curiosity and burgeoning understanding of the beach environment, and 2) connect the students and their daily lives to the impact that they have on the environment,

encouraging stewardship behaviors over negative impacts. This year, the program was successful in reaching 86% of students in Title I schools.

The Storm Water Environmental/Compliance Division donates educational material, as well as, rulers, pencils, and reusable bags to the Annual S.T.E.M. Career Conference sponsored by the **American Association of University Women** (AAUW). The mission of the AAUM is to advance equity for women and girls through, advocacy, education, philanthropy and research (Appendix F-9).

The City of Long Beach continued to support the **Aquarium Scholarship Fund** in FY 13. The Aquarium scholarship provides complimentary visits and education lessons aligned with science standards to underprivileged schools, which lack access to cultural and scientific resources. The 40 interactive classroom and auditorium programs

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available to scholarship recipients emphasize hands-on, inquiry-based teaching by engaging students in activities that inspire learning in fun and creative ways. Props and animations are used to introduce participants to an array of science topics and stimulate curiosity and wonder about the ocean, its inhabitants, and the environment around them. The \$5,000 grant provided an extraordinary educational field trip experience to approximately 200 students from the City of Long Beach. Funds provided Aquarium admission and education program fees, bussing costs, and evaluation. (Appendix F-13)

The overall goal of the *Aquarium Scholarship* is to provide extraordinary learning experiences that promote science and environmental literacy by using creative informal teaching strategies. Specifically, the goals of the program are to 1) increase student interest in and enthusiasm for science and the environment; 2) increase student access to natural environments and interactions with nature; 3) increase opportunities for students to learn through hands-on techniques; and 4) increase student access to live animals. These goals are achieved through the following specific objectives by providing:



- Free Aquarium admission and transportation to the Aquarium.
- An introduction to marine life and habitats of three contrasting regions of the Pacific Ocean--Tropical Pacific, Northern Pacific and Southern California/Baja.
- An age-appropriate 50-minute classroom program or auditorium program led by a professionally trained Aquarium educator.
- Opportunities to touch and interact with a variety of marine life including sharks, rays, sea anemones, sea stars, and abalone.
- Chaperone field trip guides, scavenger hunts, and follow-up lesson plans for teachers to further connect the field trip experience with their classroom curriculum.
- One-on-one interactions with Aquarium staff through various interpretation stations, such as the Shark Cart, located throughout the Aquarium's exhibits.

5.4 CITY EMPLOYEES

City employees are educated about storm water issues through web-based trainings, flyers, displays, internet, the City's LBTv8 programs, and other viable means. Many Departments incorporate NPDES training into their regular training and safety meetings.

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The Storm Water/Environmental Compliance Division pays to send employees to appropriate external training workshops.

5.5 STORM WATER/ENVIRONMENTAL COMPLIANCE DIVISION WEBSITE

The SWEC is in the process of reconstructing its Website with an opening launch date tentatively planned for the summer of 2014. The website will be used as an educational tool, an informational reference site for the City residence and businesses providing the City's NPDES requirements and finally to be used by other Departments, such as, Development Services for guidance and enforcement of the Clean Water Act and a reference for the Municipal Code and other City use.

5.6 Port of Long Beach Litter Control Program

Long Beach Harbor continues to support a complex ecosystem that operates in balance with the heavy industrial use from the Port of Long Beach. Unfortunately, this ecosystem is negatively impacted from litter, trash and debris generated from the intensive use of the area. Trash that enters the harbor accumulates in dead end slips, on the harbor bottom, or floats out to sea, negatively impacting navigation, marine life, local beaches, and human recreation. Large volumes of litter can contribute to a negative public perception of the harbor complex, and may also attract the unwanted attention of regulatory agencies.

The POLB developed a three-tiered approach to the Program. Tier I will address the local source of trash and debris in harbor waters with a multi-media anti-litter education and outreach campaign. The campaign's objective is to prevent litter from accumulating in the harbor by changing behavior patterns. Tier II's objective is to prevent trash and debris from entering the harbor by supplying a greater number of innovative trash receptacles on port terminals and retrofitting storm water catch basins to prevent trash from entering POLB's storm water infrastructure. Tier III's objective is to increase litter removal efforts in the harbor waters and includes a pilot project installing a marine trash skimmer to collect litter and debris from the harbor and potential operational and structural upgrades to the Port's vessel used for litter collection, the "Big Dipper". The Program is envisioned to be department wide, with individual POLB divisions taking responsibility for certain aspects of the program. Each division would adjust its budget according to the level of effort required to meet its obligations under the Program.

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In 2013, the Port began the initial roll-out of the campaign and installed 147 ARS screens at POLB curb inlet catch basins. The Port and its' campaign partners continue to put into effect and implement the main elements of the Port of Long Beach Litter Control Program.



MANAGEMENT PROGRAM FOR PUBLIC INFORMATION AND EMPLOYEE TRAINING

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6 ASSESSMENT

The Long Beach Storm Water Management Program (LBSWMP) continues to be implemented, revised, and expanded as needed to ensure the effective reduction of urban and storm water pollution. The effectiveness of these efforts, as detailed in this report, is confirmed by qualitative and quantitative methods. The methods include surveys, pre and post assessment, feedback received via hotlines and Internet sites, a hands-on interactive NPDES Task Force, one-on-one interaction with Nine (9) Council members and their staff, and dry and wet weather monitoring. Four major reporting and informational hotlines remain available to the public 24 hours per day: 570-DUMP (Storm water), 570-2700 (Street Operations), 570-2876 (Refuse), and 570-4199 (Beach Advisory). Despite large fiscal deficits in FY13, the City spent \$22,211,322 (\$48 per capita) on NPDES-related expenditures.

The successes of the Long Beach Storm Water Programs are directly attributable to the fully implemented LBSWMP and the level of commitment from the City Manager (Appendix A-1), City Council, the Mayor and all City staff. The full implementation of the requirements of the municipal MS4 permit is a prime example of how City Employees are “Working Together To Serve.” The programs highlighted in this report demonstrate a consistent effort to perform at a level above and beyond what’s required.

6.1 ASSESSMENT OF MANAGEMENT PROGRAM FOR PUBLIC AGENCY ACTIVITIES

Overall, the City spent \$13,111,131 (59 percent of LBSWMP expenditures) for expenses associated with Public Agency Activities.

This year a household hazardous waste roundup was conducted and the collection results reflected the efforts of educating the public on the importance of hazardous waste. There was an increase of certain types of materials collected compared to last year. For example, there were 62,550 pounds of e-waste collected and 3,200 pounds of batteries collected. In addition, participants turned in 2,826 gallons of used motor oil, 119,900 gallons of paint. People’s habits continue to change and are mindful of not being wasteful which in turn helps to reduce potential waste.

The Department of Parks, Recreation, and Marine and the Long Beach Water Department continues to be vital components in preventing storm water pollution. These Departments helped make the 29th Annual Coastal Cleanup a great success with approximately 750 volunteers that collected 1,500 pounds of trash.

In FY 13, street sweeping continued to prove itself as an effective BMP with the collection of 10,489 tons of materials. Although, "Refuse Collection" is not recognized as a direct "NPDES" expense or measure, it deserves recognition. In FY 13, a total of 150,804 miles were swept.

Public Works inspectors are assigned to active construction sites and are routinely in the field to make sure construction work is conducted as specified in the contract or Public Works permit and take enforcement action as needed. In FY 13, Public Works inspectors filed 232 NPDES Inspection Reports.

6.2 ASSESSMENT OF MANAGEMENT PROGRAM FOR DEVELOPMENT PLANNING AND CONSTRUCTION

Development Planning and Construction costs for FY 13 were \$313,856. These cost included: reviewing Standard Urban Stormwater Mitigation Plans (SUSMP), reviewing CEQA Stormwater documents, and construction inspections.

6.3 ASSESSMENT OF MANAGEMENT PROGRAM FOR ILLICIT DISCHARGES AND ILLICIT CONNECTIONS

The expenditures associated with Illicit Connections and Illicit Discharges detection decreased in FY 13 compared to FY 10. City departments remain committed to investigating, and if found, eliminating illicit discharges and connections. Notice of suspected illicit discharges and connections come from many sources, including the public through the 570-DUMP hotline, www.lbstormwater.org website, and by directly reporting to City employees. Calls and e-mails are responded to immediately with collaboration among departments.

6.4 ASSESSMENT OF MANAGEMENT PROGRAM FOR EDUCATION AND PUBLIC INFORMATION

Expenditures related to this program element remain consistent to those of FY 11. This minimal variance can be a result of good educational programs that were put in place

over the past several years that does not incur start up cost of new programs but a continuation of good effective programs at lower cost to the City. As an example, the Water Department continues to record less water usage, which results in less runoff reduction.

This program element is one of the most important components of the LBSWMP because its goals include awareness and behavioral changes leading to tangible improvements in our local environment.

6.5 ASSESSMENT OF WATER QUALITY MONITORING

CITY OF LONG BEACH STORMWATER MONITORING REPORT 2012/2013

This report provides a summary of the results of the thirteenth year of monitoring conducted under the terms of Order No. 99-060 National Pollutant Discharge Elimination Systems Municipal Permit No. CAS004003 (CI 8052) for City of Long Beach. Included in this report is a synthesis of key elements of the entire data set. The following section provides a summary of the background and purpose of the monitoring program. This is followed by a summary of key findings based upon the full duration of monitoring starting in early 2000 and going through May, 2013.

BACKGROUND AND PURPOSE

Under the terms of Order No. 99-060, the City of Long Beach was required to conduct a water quality monitoring program for storm water and dry weather discharges through the City's municipal separate storm sewer system (MS4) beginning in the 1999/2000 wet weather season. The permit was initially issued for the term of five years. At the end of the initial five years the City was directed by the Regional Board to continue operating under the 1999 permit until further notice. The City has started discussions with Regional Board staff to develop a new permit that is expected to be issued by late 2013 or early 2014. It is expected that the new permit will be similar to the latest Los Angeles County MS4 permit (Order No. R4-2012-0175, NPDES permit CAS004001) that was issued in December 2012.

Major elements incorporated in the current monitoring and reporting program include 1) mass emission monitoring during storm events, 2) monitoring of dry weather discharges at each mass emission site, and 3) special studies. Special studies were included in the original permit to provide the flexibility necessary to allow the program to respond to new issues or concerns that might arise in the course of routine monitoring or as the result of emerging topics in storm water science. Special studies were generally

intended to improve assessment of impacts on receiving water, identify sources and sinks for contaminants, and assess compliance with TMDL targets and water quality objectives. The City has been very proactive in the development of a variety of special studies during the past 13 years. In addition, the City has incorporated analysis of additional pollutants of concern based upon changes that have occurred with respect to pesticides that are available for residential use. Data from the monitoring program is intended to support decisions necessary to refine BMPs for the reduction of pollutant loading and the protection and enhancement of beneficial use of the receiving waters.

Mass emission monitoring is specified to be conducted at four sites during four wet weather storm events each year. Monitoring sites specified in the permit are as follows:

- Dominguez Gap Pump Station
- Bouton Creek
- Belmont Pump Station
- Los Cerritos Channel

Mass emission monitoring program is intended to characterize storm water discharges, identify contaminants of concern and develop pollutant load estimates for each major watershed. Monitoring is required to be conducted during the first significant rainfall event of the season. Flow-rated, whole storm composite samples are obtained at each site and analyzed for major constituents of concern which include conventional constituents, total and dissolved metals, organochlorine pesticides, organophosphate pesticides and, in the past three years, pyrethroid pesticides. Toxicity testing using sea urchin fertilization tests and water flea survival and reproduction is conducted on composite storm samples from three of the four mass emission sites. Phase 1 Toxicity Identification Evaluations (TIEs) are required to be performed on all samples that exhibit toxicity in excess of predetermined trigger values. The TIE process is used to determine the likely contaminants contributing to the observed toxicity.

Dry weather monitoring consists of inspections conducted at each mass emission site and the collection and analysis of dry weather discharges over 24-hour periods. Monitoring is required to be conducted twice during each dry season. Sampling is typically conducted in September just prior to the storm season and in May after several weeks of no rain. This element of the program is intended to assist in identification of pollutants of concern, assess the impacts that these pollutants might have on biological communities in the receiving waters and identify the sources of these contaminants such that they can be effectively controlled or eliminated. Dry weather discharge samples are subjected to the same chemical analysis and toxicity testing procedures as used for storm water monitoring.

The purpose of this report is to transmit the results of the monitoring conducted in accordance with the City of Long Beach's NPDES permit. Results are summarized for both the current monitoring season (2012/2013) and over the life of the permit to assist in the evaluation of spatial and temporal trends.

SUMMARY OF RESULTS

The 2012/2013 season was characterized by extremely low rainfall. Only 5.97 inches of rain were recorded at the Long Beach Daugherty Airport. This site typically receives slightly higher rainfall totals than other areas of Long Beach due to geographical features and the typical pathways taken as low pressure areas pass through the region. Rainfall at the four monitoring sites ranged from just 4.17 inches at the Dominguez Gap Pump Station to 5.69 inches at the Los Cerritos Channel monitoring site at Stearns Street. This season, predicted rainfall frequently did not meet the minimum criteria established to mobilize field crews for monitoring. Either the forecasted rainfall was less than 0.25 inches within 12 to 24 hours before the event or wet weather conditions preceded the event that prevented monitoring. Regional Board staff had previously requested that monitoring events were preceded by at least seven days of dry weather as defined by less than 0.1 inches. During dry seasons such as experienced this year, we have often used antecedent dry weather criteria of 72 hours with less than 0.1 inches of rainfall as was initially established by EPA and commonly used in storm water programs throughout the country but rainfall patterns were still not often conducive to monitoring when using these alternative criteria. Overall, this was the third driest year since the inception of the program in 1999.

Two dry weather inspections/monitoring events were conducted during the 2012/2013 monitoring year. These surveys are conducted during the summer dry weather period at each of three mass emission stations. This is the fourth year that dry weather flows have been monitored at the Dominguez Gap Pump Station. Prior to completion of the wetland treatment system dry weather flows were fully infiltrated near the point where the storm drain entered the infiltration basin. Dry weather discharges from the Dominguez Pump Station now consist primarily of treated water that is drawn from the Los Angeles River and passed through the constructed wetlands to provide both treatment and to enhance the constructed wetland habitat. Due to the methods of operation, dry weather flows are not consistent at this site due to challenges in balancing flows being diverted from the Los Angeles River with the pumps that direct treated water back into the River.

When crews arrived to configure the monitoring equipment for the second of the two dry weather surveys at the Dominguez Gap Pump Station, water levels in the sump of the Dominguez Gap Pump Station were found to be very low and the summer pump was

not operating. As a result, the equipment was not set up to take a 24-hour composite. Upon returning to the site the next day, the one of the large natural gas pumps were found to be running again. Since the site was discharging, a single grab sample was taken to allow characterization of the water being discharged. Although it is preferred conditions for maintaining the best quality of discharge waters, it was considered to provide a good characterization of the range of discharge conditions that occur at this site.

Due to the low seasonal rainfall, only a single storm event was successfully monitored at three of the four stations this season. Runoff was not sufficient to cause a discharge from the Dominguez Gap Pump Station. Another storm event was sampled at the Belmont Pump Station, Bouton Creek and the Los Cerritos Channel for just TSS. This was a case where rain did not meet expectations of the forecast. Total rainfall did not exceed the 0.25 inch criterion and did not yield sufficient runoff to produce water necessary for all required chemical analyses and toxicity testing.

WET WEATHER CHEMICAL AND BACTERIAL RESULTS

Benchmark reference values have been often exceeded for dissolved forms of copper, lead and zinc throughout the life of the permit (Kinnetic Laboratories, Inc., 2012). For storm water discharges, the CTR freshwater acute criteria are the most applicable benchmarks for all sites. Copper and zinc have often exceeded benchmark criteria at all but the Dominguez Gap Pump Station site. This year dissolved copper exceeded the CTR chronic freshwater and saltwater criteria at each site but the CTR chronic freshwater criterion for dissolved zinc was only exceeded in runoff from the Los Cerritos Channel site. Although dissolved zinc concentrations were lowest at the Los Cerritos Channel site, this site was also characterized by very low hardness (16 mg/L) which contributed to the exceedance.

Benchmarks for total metals are available in the Basin Plan for potential municipal water sources and in the California Ocean Plan. Concentrations of aluminum commonly exceed the criteria in the Basin Plan due to the high sediment content in storm water runoff. Aluminum is the most abundant metal measured in California soils. Concentrations range from 5.9 to 10.6 percent which is roughly twice as high as that of iron. Due to the abundance of both aluminum and iron in soils, these metals are often used to normalize other trace metal concentrations to help interpret whether they are present at background levels or whether concentrations are enhanced by anthropogenic sources. Ocean Plan Criteria were exceeded for copper, lead, and zinc. Although anthropogenic sources of these three metals are significant, background levels associated with sediment loads are also substantial.

Other than bacteria, few other constituents have exceeded benchmark values. This year an unusually high pH (10.16) measured in runoff from the Belmont Pump Station was the only other water quality criterion exceeded. Although such a high level of pH is suspect, measurements associated with the other two sites were well within normal ranges. Other conventional constituents such as conductivity, chloride, and TDS were also elevated in water from the Belmont Pump Station. This suggests the possibility of an illicit discharge occurring during the storm event. Historically, all previous pH measurements at this site were less than 9.0 pH units.

Chlorinated pesticides are typically not measured at high concentrations in storm water due to both strong associations with sediment and the fact that most have been banned for over 20 years. Despite this fact, chlordane compounds are still detected in a large percentage of the samples. Discharges from the Belmont Pump Station have most commonly had the highest levels of these compounds. This year chlordane was again detected in the storm water sample from the Belmont Pump but the concentration did not exceed the acute CTR criterion. The consistency of chlorinated compounds in discharges from this watershed remains a concern. The continued detection of low concentrations of chlordane compounds suggest that either some limited use of chlordane may be occurring or the degradation of legacy applications of chlordane has not occurred at rates that one would expect. These low levels may also be continuing to contribute loads to the receiving water sediments. One of the primary components of technical chlordane, alpha-chlordane, is one of the compounds that is incorporated into the chemical testing conducted for California's Sediment Quality Objectives. Low levels of gamma-chlordane (0.01 ug/L) were also detected in runoff from the Los Cerritos Channel. Although this is just twice the reporting limit, repeated detection of chlordane compounds are a concern since a 303(d) listing is still in effect for sediments within the estuary of the Los Cerritos Channel.

Wet weather flows in the Los Cerritos Channel are subject to TMDL limits for total recoverable copper, lead and zinc. Lead remained well below TMDL limits but both copper and zinc continue to exceed TMDL limits during storm events. Over the past two years, copper loads have exceeded Waste Load Allocations (WLA) by a factor of 1.9 to 8. Similarly, zinc loads have exceeded wet weather WLAs by a factor of 1.4 to 5.9.

DRY WEATHER CHEMICAL AND BACTERIAL RESULTS

The City's NPDES Permit requires two dry weather inspections and sampling events to be conducted at each of the four mass emission stations during the summer dry weather period.

Site inspections are conducted at all monitoring locations to determine if water is present and whether water is flowing or just ponded. If flowing water is evident at any one of the mass emission sites, *in situ* water quality measurements, flow estimates, and composite water samples are taken along with general observations of site conditions.

Belmont Pump Station dry weather flows have been diverted to the sanitary sewer system since December 2009. Inspections are conducted at this site during the dry weather surveys but no sampling has been conducted since the Low Flow Diversion (LFD) was activated. At approximately the same time, the Dominguez Gap infiltration basin was modified into a wetland treatment system designed to provide a range of both environmental and recreational benefits. Since construction was completed, the Dominguez Gap Pump Station has been discharging water to the Los Angeles River during dry weather periods. This discharge consists primarily of water that has been diverted from the River and passed through the wetland treatment system. Flow through the wetlands is intended to be maintained by a summer/sump pump at the Dominguez Pump Station that is intended to balance flows being diverted into the wetlands from the Los Angeles River.

Dry weather flows in Bouton Creek and the Los Cerritos Channel notably declined in recent years. The dry weather flows at both of these sites appear to have stabilized at these lower levels. Prior to the 2009/2010 monitoring season, dry weather flows in Bouton Creek were not sufficient to flush seawater from the creek for three consecutive events. As a result, the location for dry weather monitoring was relocated 1,250 feet upstream from the primary site location at the LADPW Alamitos Yard. Field observations and measurements taken at the new site indicate that this new location will be permanently maintained for purposes of the dry season measurements. Outfalls located along the creek from Alamitos Yard to CSULB were observed to determine if any major dry weather discharges were missed by moving the site upstream. No discharges were identified from downstream storm drains during these tests.

Copper measured in dry weather flows from the Los Cerritos Channel were found to be well within the established dry weather TMDL limits. Although the concentration of total recoverable copper was near the TMDL limit, loads were far below the TMDL limitation due to the much reduced dry weather flows in the Los Cerritos Channel.

Overall, data continue to demonstrate consistent, high quality discharges from the Dominguez Gap Pump Station. Both the wetlands and detention provided by this site are credited with providing storm water treatment that allows discharges to the Los Angeles River to meet acceptable water quality standards under most conditions. In fact, dry weather discharges from the Dominguez Gap Pump Station are consistently shown to improve water quality in the Los Angeles River water that is passed through the wetlands during the dry season. Metals in these discharges meet the receiving

water quality criteria and are consistently better than water quality measurements taken at the Los Angeles River Wardlow monitoring site by the Coordinated Monitoring Program.

The treatment provided by the wetlands and detention of dry weather discharges has also resulted in water that has frequently met bacterial water quality standards. This year fecal coliform exceeded Basin Plan and Ocean Plan limits during the first survey and enterococcus concentrations exceeded Basin Plan and Ocean Plan limits during the second survey. The elevated levels of enterococcus bacteria present during the second dry weather survey occurred in association with use of the larger natural gas pumps that greatly increase discharge rates and may have contributed to the atypical enterococcus measurement. The overall dry weather water quality discharges tended to meet all applicable standards including trace metal concentrations required by the Los Angeles River metals TMDL.

TMDLS

The Los Cerritos Channel Metals TMDL established WLAs for total copper, lead and zinc during wet weather and total copper during dry weather. Total lead limits were based upon maintenance of historical concentrations. Total lead concentrations and loads remain compliant with the TMDL limits. Total copper exceeds existing targets by a factors ranging from 1.9 to 8. Total zinc exceeds target levels by factors of 1.4 to 5.9. Both total lead and total zinc concentrations show evidence of steady decreases in concentration over the past 13 years. During dry weather periods, both concentrations and loads of total copper are declining. The combination of these factors has resulted in dry weather copper loads within the Los Cerritos Channel declining to levels that are less than 20% of the WLA.

The Dominguez Gap Pump Station discharges both wet and dry weather flows to the Los Angeles River. Metals TMDLs are established for copper and lead during both wet and dry weather. Metals TMDLs exist for cadmium and zinc during weather only. In a total of 37 monitored storm events concentrations of total cadmium have never exceeded 0.55 mg/L and the median concentration has been 0.26 mg/L. Thus cadmium limits are currently being met with the median concentrations running an order of magnitude below the WLA of 3.1 ug/L. A review of time-series plots for both lead and zinc concentrations in storm water runoff indicates that both these metals are exhibiting a general decline over the past 13 years and both are consistently within the established TMDL goals. Concentrations of copper remain near the TMDL WLA of 17 ug/L. In recent years, concentrations of total copper met the WLA for the Los Angeles River at Wardlow in discharges associated with two out of four storm events.

The Los Angeles River Nitrogen TMDL has set limits for Ammonia-N for both 1-hour averages (8.7 ug/L) and 30-day averages (2.4 mg/L) for MS4 discharges with Reach 1. In addition, nitrate-N and nitrate/nitrite-N limits were both established at 8.0 mg/L for a 30-day average. Median concentrations of ammonia are 0.18 mg/L during dry weather and 0.38 mg/L during wet weather discharges. Concentrations of nitrate-N in dry weather discharges have never exceeded 1.9 mg/L and all wet weather discharges have had concentrations of less than 1.4 mg/L. Thus all discharges from the Dominguez Gap Pump Station continue to achieve the WLAs established for nitrogen compounds. Furthermore, total nitrogen (TKN plus nitrate/nitrite-N) concentrations typically range between 2.0 and 3.0 mg/L with the highest measured concentration being reported at 5.02 mg/L during a wet weather discharge.

TOXICITY RESULTS

A general trend of reduced toxicity had been observed in recent years at all sites. Although no significant daphnid mortality was observed at any of the three sites, toxicity was evident in 100% of the tests conducted using the sea urchin fertilization test during the storm season. The magnitude of the toxicity was sufficient to trigger a Toxicity Identification Evaluation (TIE) on all the samples taken from the single storm event. Results of the TIE indicated that toxicity was most likely caused by cationic metals.

Comparisons of the actual toxicity versus expected toxicity calculated from the concentrations of key toxicants provided conflicting evidence. Concentrations of dissolved metals, particularly zinc, measured in storm water samples during the event were not present in concentrations that would be expected to cause toxicity.

Dry weather samples continue to show a lack of toxicity based upon both the daphnid and sea urchin fertilization test

Dry weather samples continue to show a lack of toxicity based upon both the daphnid and sea urchin fertilization test.

6.6 THE FUTURE

The transition of the current permit to a watershed base permit will require the format of the report to be changed in order to meet the additional work accomplished and information produced.

The City of Long Beach will continue to work on the following items in the future:

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- Continue work on the City's New NPDES Permit with the LARWQCB, for a reissuance date of February 6, 2013.
- Conversion of the of the Low Flow Diversion facilities at the 8th and Roswell location to a biofiltration system.
- Continue implementation of the USEPA TMDLS for,
 - The Dominguez Channel and Greater Los Angeles and Long Beach Harbors Waters Toxic Pollutants TMDL
 - The Long Beach Beaches and Los Angeles River Estuary Bacteria TMDL
 - The Lower Los Angeles River, Reach 1 Trash and Metals TMDL
 - The Los Cerritos Channel Metals TMDL
 - The Lower San Gabriel River/Coyote Creek Metals TMDL
- Preparation of Watershed Management Plans for the Lower LA River, Reach 1 Watershed, the Los Cerritos Channel Watershed and the Lower San Gabriel/Coyote Creek Watershed.
- Continue to work with LA River Watershed cities on the LA River Metals TMDL (Coordinated Monitoring Plan – Ambient Monitoring and the LA River Bacteria TMDL –Development)
- Continued assessment of Ab-Tech Sponge performance and development of a replacement program funding source.
- Solicitation of RFPs to conduct a feasibility study for the possible construction of an Urban Runoff and Recover Facility similar to the City of Santa Monica Urban Runoff and Recovery Facility at a City Storm drain Pump Station, SD-2 located at the south Reach 1 of the Los Angeles River.
- Construction of the Dominguez Gap Wetlands
- Continued review, evaluation and contribution of Clean Water concerns and actions involving the 710 Freeway Expansion Project.

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APPENDICES