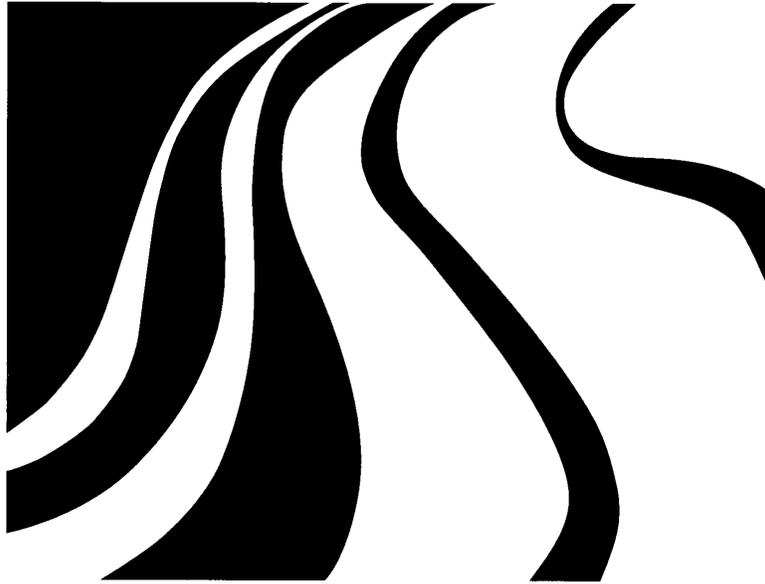


STORM WATER



MANAGEMENT
CITY *of* LONG BEACH

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

December 1, 2006



CITY OF LONG BEACH

DEPARTMENT OF PUBLIC WORKS

333 West Ocean Boulevard • Long Beach, CA 90802

December 1, 2006

Jonathan Bishop, P.E., Executive Officer
California Environmental Protection Agency
Los Angeles Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Subject: Annual Storm Water Permit Report and Assessment for 2005-2006

Dear Mr. Bishop:

The City of Long Beach is pleased to submit its "Annual Storm Water Permit Report and Assessment 2005-2006" in compliance with Order No. 99-060, for the Municipal National Pollutant Discharge Elimination System (NPDES) Permit No. CAS0040003 (CI8052).

Should you have any questions in regard to this report, please contact Tom Leary, Stormwater Management Division Officer, at (562) 570-6023.

Sincerely,

Mark Christoffels
City Engineer

MC:js

Enclosure

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CITY OF LONG BEACH

DEPARTMENT OF PUBLIC WORKS

333 West Ocean Boulevard • Long Beach, CA 90802

CITY OF LONG BEACH MUNICIPAL STORM WATER PERMIT ORDER NO. 99-060

Permittee Annual Program Report Form Permit Year 2005 - 2006

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility, of a fine and imprisonment for knowing violations.

Executed on the 1st day of December, 2006."

Mark Christoffels
City Engineer

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INTRODUCTION

The City of Long Beach Stormwater Management Program (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, all of which were adopted to protect receiving waters such as rivers, lakes, and oceans from contamination by controlling pollutants from entering municipal storm drain 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 Regional Water Quality Control Board 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, Long Beach Stormwater Management Plan, Water Quality Monitoring Plan, draft permit, challenges, and future goals.

The Stormwater Management Division of the Department of Public Works includes two Administrative Analysts in addition to the Stormwater Management Division Officer. This team implements the goals and objectives of the LBSWMP and ensures compliance with the requirements of the City's Municipal NPDES Permit. Additionally, this team works with the Port of Long Beach and Long Beach Airport to administer their respective industrial permits.

The Annual Storm Water Permit Report and Assessment details the City's storm water management accomplishments and expenditures for the period of October 1, 2005, through September 30, 2006.

PROGRAM MANAGEMENT

The Citywide NPDES Task Force continues to develop and enhance the comprehensive LBSWMP. Task Force members, representing numerous departments, oversee timely implementation of the LBSWMP and are essential in providing Stormwater Management Division staff with critical data and information. (See Appendix A for Citywide Task Force Matrix.)



Stormwater Management Division staff participates in regional task forces, councils, organizations, and committees related to storm water activities. (See Appendix B for a list of collaborating regional agencies.) This ongoing involvement has proved to be an excellent avenue for exchanging information and collaborating on joint projects.

PUBLIC AGENCY ACTIVITIES

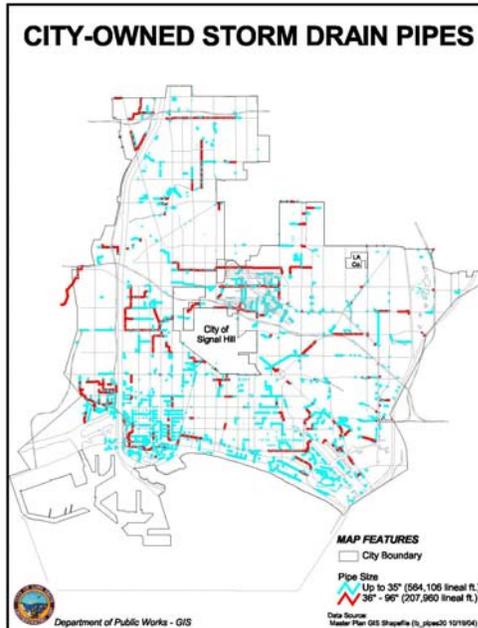
In addition to increased code enforcement, distribution of public construction guidelines, and the maintenance of streets, storm drains, and landscapes, the City has emphasized community outreach efforts designed to reduce littering throughout the city. The City's Environmental Services Bureau has continued to implement a Citywide Litter Abatement and Awareness Campaign. This campaign and the City's other public agency activities are both numerous and extensive. For example, 100 percent of the household recycling program has been converted to automated collection bins. Other notable Public Agency Activities include:

- Implemented the new Lunch with a Lizard program that teaches children the importance of not littering,
- Conducted 31 community and business corridor cleanups (more than double the number in FY 05) that engaged 1,109 volunteers (nearly five times the number in FY 05) and collected approximately 93 tons of trash and debris (three times the amount collected in FY 05),
- Collected 31,413 tons of material through the curbside recycling program (approximately a 10 percent increase from FY 05), and
- Issued 739 citations and made 124 arrests for littering and dumping-related offenses (nearly double the number of citations and seven times the arrests in FY 05).

DEVELOPMENT PLANNING AND CONSTRUCTION

In FY 06, there were 12 development projects for which SUSMPs were completed. The City's plan review process focuses on the impacts of development on storm water quality as early as possible during the planning phase of 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 SUSMP regulations.

ILLICIT DISCHARGES AND ILLICIT CONNECTIONS



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 Los Angeles County-owned, and 40 miles are Caltrans-owned with various other owners making up the difference. 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, Planning and Building, 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. For example, the Water Department uses special equipment to inspect storm drain pipes 36-inches or greater in diameter. If an illicit connection is detected, an advanced system of communication and follow-up is in place to ensure the removal of the connection.

PUBLIC INFORMATION AND EMPLOYEE TRAINING

Communicating information to residents, school children, commercial and industrial establishments, and City employees about storm water and urban runoff pollution is a priority for the City. In FY 06, the Stormwater Management Division made use of the Adopt-A-Waterway program, Junior Health Inspector program, Windows-On-Our-Waters *Tidepool Cruiser*, and a host of El Dorado Nature Center programs, just to name a few. With a permit requirement of 1.5 million impressions, the City made well over 100 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. Additionally, the Adopt-A-Waterway program, now EcoZone, continues to be successful at raising non-taxpayer funds to enhance programs aimed at educating the public about pollution prevention. In



FY 06, the program generated \$28,914 for the City and relayed Best Management Practices through the 17 installed signs throughout Long Beach.

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 continues to face a difficult financial situation. Despite funding shortages in many City programs, the Long Beach Storm Water Management Plan was implemented at a cost of \$24,498,544, which is an increase of 13 percent and \$2,861,247 more than the amount spent in FY 05.

In this uncertain environment, the program continues to face a number of new challenges:

- Uncertainty and difficulties in planning and implementation as a result of the City's Report of Waste Discharge (ROWD) submitted on December 26, 2003, not yet being approved.
- Workload and staffing shortages at local, State, and Federal levels.
- Implementation of Total Maximum Daily Load requirements (TMDLs).
- Lack of General Fund dollars, including grant match monies, for Capital Improvement Program (CIP) projects and special studies aimed at improving water quality.
- Significant cost increases in energy, construction raw materials, and labor.
- Significant and unpredictable cost increases from terrorism and gang prevention programs.
- Permit required programs that are proving not to be cost effective (\$562,740 for Water Quality Monitoring Program).



1.0 PROGRAM MANAGEMENT

Section One explains the City's strategy, regional efforts, and projects related to implementing the Long Beach Storm Water Management Program (LBSWMP). The Department of Public Works Stormwater Management 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 and by reducing the discharge of pollutants to the maximum extent practicable (MEP). All City departments are involved in the cooperative effort to implement the LBSWMP, while it is the Stormwater Management Division's responsibility to coordinate the development, implementation, and revision of the LBSWMP.

1.1 IMPLEMENTATION STRATEGY

The Citywide NPDES Task Force (Task Force) guides and supports the implementation of the LBSWMP. The Task Force is made up of representatives from multiple city departments. Because it has become increasingly difficult to find a mutually convenient time when all Task Force members are able to attend meetings, the Stormwater Management Division has emphasized using electronic communications to disseminate information, receive feedback, provide guidance, and discuss pertinent issues related to NPDES. Using electronic communication has also facilitated an increase in dialog among Task Force members from quarterly meetings to daily interaction. As always, Task Force members concentrate on integrating the LBSWMP elements into the City's guidelines and standards. The Task Force addresses training, public education, public agency activities, development planning and construction, legal authority, industrial and commercial site visits, and procedures to detect and remove illicit connections and improper disposal into the storm drain system. Also included in this program is a process to identify the appropriate City department(s) to respond to storm water pollution issues. (See Appendix C for NPDES First Responders Call List.)

The department representatives serving as Task Force members oversee proper and timely implementation of the LBSWMP. These contacts are responsible for coordinating the annual report preparation, training, and revisions to policies and procedures within their departments. The Task Force members are essential in providing two-way communication that keeps the appropriate staff up to date with NPDES matters. (See Appendix A for Citywide Task Force Matrix.)



1.2 REGIONAL PARTICIPATION

The Stormwater Management Division staff and other staff within the City are actively involved in a great number of task forces, councils, organizations, and committees that focus on storm water, pollution prevention, education, and watershed activities. Some of these efforts have been ongoing for some time; however, the Integrated Regional Water Management Plan (IRWMP) for the Greater Los Angeles County Region is relatively new.

After coordination and preparation, the IRWMP development began with the first regionwide workshop in February 2006. Local agencies, cities, and county government are working together on a plan that is inclusive and provides opportunities for cost-effective solutions to address the water resource needs of the region. One of the plan's draft goals is to improve the quality of urban runoff, storm water, and wastewater. The Stormwater Management Division staff attends the regional workshops, and the General Manager of the Long Beach Water Department, Kevin Wattier, is on the Lower San Gabriel and Los Angeles Rivers Steering Committee. The plan is expected to be adopted by the end of December 2006 in order to be eligible for implementation grant funds.

The Los Angeles River Master Plan (LARMP) Advisory Committee works to continue the implementation of improvement projects within the Los Angeles River Master Plan, which was approved in 1996. These meetings focus on efforts and issues related to the Los Angeles River, such as maintenance, signage, and landscaping guidelines. Long Beach Stormwater Management Division staff and the Department of Parks, Recreation, and Marine staff attend these meetings to assist the LARMP Advisory Committee in meeting the goals and objectives of the LARMP.

The San Gabriel River Master Plan (SGRMP) is in an implementation phase now that the County Board of Supervisors has adopted both the master plan and EIR. Staff from the Department of Parks, Recreation, and Marine and the Stormwater Management Division attend these meetings to assist the SGRMP stakeholders in meeting the goals and objectives of the SGRMP.

The Los Angeles and San Gabriel Rivers Watershed Council (LASGRWC) is a nonprofit organization that engages stakeholders in dialogue promoting watershed health and resolving environmental and regulatory issues. The Water Augmentation Study is one of the LASGRWC's current projects, which will explore the potential for increasing local water supplies and reducing urban runoff pollution by increasing infiltration of storm



water runoff. The Stormwater Management Division and the Department of Parks, Recreation, and Marine continue to work with Dr. Suzanne Dallman of the LASGRWC on one of the demonstration project's monitoring locations for this study, which is located at Veterans Park in Long Beach. The LASGRWC holds regular stakeholder meetings that not only cover organization business but also include informative workshops. Staff from the Department of Parks, Recreation, and Marine and Stormwater Management Division attend these meetings to participate in the LASGRWC.

The Dominguez Watershed Advisory Council (DWAC) created and supports implementation of a comprehensive Watershed Management Master Plan (WMMP) for the Dominguez Watershed. Staff from the Harbor Department and the Stormwater Management Division attend these meetings to assist the DWAC in meeting its goals and objects for the WMMP.

The Los Angeles Contaminated Sediments Task Force (CSTF) works to identify contaminated sediment in Los Angeles County and develop viable disposal options. The City of Long Beach Harbor Department (Port of Long Beach) helps fund this task force and special studies related to disposal and reuse. Staff from the Harbor Department and the Department of Parks, Recreation, and Marine attend these meetings to assist the CSTF with its goals and objectives.

The San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) is one of seven conservancies within the California Resources Agency. It works to preserve urban open space and habitat and undertakes projects that provide low-impact recreation, education, wildlife and habitat restoration, and watershed improvements. Former Third District Councilmember Frank Colonna worked with state legislators and local cities on legislation to create the RMC and was Board Chair of the RMC for some time. Frank O'Donnell, the current Third District Councilmember, now serves on the Board of Directors for the RMC. Staff from the Department of Parks, Recreation, and Marine and Stormwater Management Division attend the RMC's public meetings.

The California Stormwater Quality Association (CASQA) assists those entities charged with storm water quality management responsibilities with the development and implementation of storm water quality goals and programs. CASQA also maintains and distributes a Stormwater Best Management Practice Handbook set, which has separate handbooks for Construction, New Development and Redevelopment, Industrial and Commercial, and Municipal operations. Long Beach Stormwater Management Division staff attends the meetings held by CASQA, including the BMP Handbook training.



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 Stormwater 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 municipality representative, continues to be an active member.

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 Stormwater Management Division staff attends these meetings and the TMDL subcommittee meetings to assist the EAC with achieving its goals and objectives.

The Los Angeles County Best Management Practice (BMP) Task Force is an ongoing forum to facilitate the selection, implementation, and financing of effective BMPs. Long Beach Stormwater Management Division staff attends these meetings to assist the BMP Task Force with achieving its goals and objectives. In addition, Long Beach Stormwater Management Division staff participates in the Los Angeles and San Gabriel Rivers Joint Watershed NPDES Permittee meetings and Public Education and Outreach meetings.

1.3 CURRENT PROJECTS

The Long Beach Stormwater Management Division is currently managing and monitoring several grant-funded capital improvement projects aimed at reducing pollution throughout the city. The following are made possible through various grant awards.

1.3.1 ABTECH SMART SPONGE CATCH BASIN INSERTS (\$841,100)



This BMP assists with bacteria TMDL compliance. The project includes installation and monitoring of Ultra-Urban® Filters with Smart Sponge® Plus antimicrobial technology. AbTech Industries, Inc., manufactures these catch basin inserts, which are designed to encapsulate and successfully remove harmful substances, including hydrocarbons, oil,



grease, and other toxins, before they enter local waterways. The antimicrobial technology adds the capability to destroy dangerous disease causing microorganisms, such as *Staphylococcus aureus*, E. coli, and fecal coliform. The fully recyclable filters can be installed very quickly. If they are needed more critically in a different area, they can easily be relocated. After the filters reach saturation, they can simply be replaced.

To date, approximately 1,847 inserts have been installed. In FY 05, \$600,000 was spent on this project from 2000 Water Bond funding. Another \$241,100 was spent in FY 06 to purchase 529 additional inserts for 175 catch basins thanks to a grant from the US Environmental Protection Agency.

1.3.2 PUMP STATION TRASH NET INSTALLATION (\$2,334,403)

This BMP assists with Los Angeles River Trash TMDL compliance. These trap nets are designed to capture trash and debris prior to its entering City-owned pump station pumps, thereby significantly reducing contaminants discharged directly into the Los Angeles River. The project involved removing existing trash racks, installing storm drain pollution trap nets, and constructing a hoist-crane structure and low flow channel steel screens at pump stations SD-1, SD-3, SD-4, SD-5, and SD-6.

The nets were in place prior to the 2004-2005 storm season, and the project included a two-year trash-monitoring program. During the 2005-2006 storm season, the trash nets captured and prevented 142,320 lbs of trash and debris from entering the Los Angeles River. The two-year total of trash and debris collected is 467,065 lbs. This picture shows the trash nets at pump station SD-6. These have been so successful that the City is planning to install another trash net system at a sixth pump station.



1.3.3 ADDITIONAL LOS ANGELES RIVER PUMP STATION TRASH NET INSTALLATION (\$566,000)

On June 9, 2006, the Department of Public Works submitted a grant application to the State Water Resources Control Board for funding from the Urban Stormwater Program Prop 40 grant program to significantly reduce trash and debris entering the Los Angeles River. On October 2, 2006, the City was notified that it had been approved to receive grant funding in the total amount of \$566,000 for installation of a full capture trash net

SECTION 1

system at a City-owned pump station. Pump station SD-11 will be the site of the new trash net system unless this is not a feasible location based on the engineering study. This trash net system is similar to ones located at other City pump stations that have proved to be effective at capturing trash, sediment, and green waste. An agreement is scheduled to be in place by the end of December 2006.

1.3.4 LOS ANGELES RIVER PUMP STATION 12 VSS UNIT (\$383,848)

This BMP assists with Los Angeles River Trash TMDL compliance. Recognizing that treatment and drainage of storm water from the 91 and 710 freeways was a necessity, the City of Long Beach joined with the State Department of Transportation (Caltrans) to install a vortex separation system (VSS) unit at pump station SD-12. This VSS unit has been so successful that the City is planning to install a second unit on a different pipe at the same pump station.



1.3.5 ADDITIONAL LOS ANGELES RIVER VSS UNIT (\$605,000)

On June 9, 2006, the Department of Public Works submitted a grant application to the State Water Resources Control Board for funding from the Urban Stormwater Program Prop 40 grant program to significantly reduce pollution entering the Los Angeles River. On October 2, 2006, the City was notified that it had been approved to receive grant funding in the total amount of \$605,000 for installation of a vortex separation system (VSS) unit at a City-owned pump station. Pump station SD-12 will be the site of the new VSS unit unless this is not a feasible location based on the engineering study.

This pollution trap device is similar to ones located on other City storm drains that have proved to be effective at capturing trash, debris, and sediment. An agreement is scheduled to be in place by the end of December 2006.



1.3.6 20th & WALNUT VSS UNIT (\$661,755)

This BMP assists with Los Angeles River Trash TMDL compliance. Project expenditures for this VSS unit totaled \$661,755 with funding by the State Budget Act Appropriation of



FY 2000-2001. Construction was completed in September 2004. The unit is placed on a 42-inch pipe at the intersection of E. 20th Street and Walnut Avenue, which drains into Hamilton Bowl. This picture, taken after the first storm in October 2005, shows that this BMP technology continues to be extremely successful at capturing trash and debris. During the 2005-2006 storm season, 8.6 cubic yards of trash and debris was removed from this VSS unit.

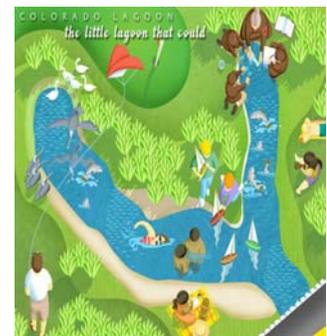
1.3.7 HAMILTON BOWL TRASH REDUCTION (\$783,000 / Grantee - Signal Hill)

This project assists with BMP evaluation. In 2002, the City of Signal Hill, Los Angeles County Department of Public Works, and the City of Long Beach partnered on a grant application to reduce trash deposited into Hamilton Bowl via the storm drain system. This facility is a combination detention basin / pump station system that is owned by Los Angeles County and leased to the City of Long Beach for recreational purposes. John L. Hunter and Associates, Inc., serves as project manager. The project was delayed considerably due to the State canceling and then reinstating the grant to Signal Hill.

Construction of the structural BMPs began during the summer of 2006 with a Fresh Creek Technologies, Inc., Netting TrashTrap® being installed on one outfall. A small Netting TrashTrap® is in progress for another outfall, and two more are scheduled for installation within the next few weeks. As recently as the week of November 13, 2006, linear radial units, a product of the Roscoe Moss Company, were installed on two outfalls. These trash filtration screens prevent debris from flowing through while allowing water to pass freely. Ultra-Urban® Filters, a catch basin insert series manufactured by AbTech Industries, Inc., are planned for an additional outfall.

1.3.8 COLORADO LAGOON RESTORATION FEASIBILITY STUDY (\$200,000)

In April 2003, the City of Long Beach entered into an agreement with the California State Coastal Conservancy to receive \$200,000 in grant funds for a Colorado Lagoon





Feasibility Study. The Feasibility Study was completed by Moffatt & Nichol Engineers and submitted to the California Coastal Conservancy in February 2005. The Feasibility Study enumerates a 17-point plan for restoring the Lagoon's estuarine ecosystem. The Colorado Lagoon Restoration Feasibility Study can be found on the City's Web site at www.longbeach.gov/pw.

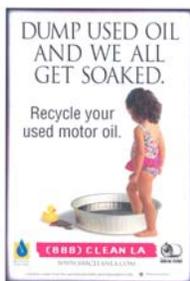
1.3.9 COLORADO LAGOON RESTORATION

Based on the recommendations from the Feasibility Study, the City's Stormwater Management Division is working with the US Army Corps of Engineers (USACE) to develop a Project Cooperation Agreement for restoration of Colorado Lagoon. This project will involve excavating the west arm of the Lagoon, re-contouring slopes, and replacing vegetation. The USACE will contribute up to 65 percent or \$900,000 of the total project costs, which have not yet been determined.

1.3.10 COLORADO LAGOON REMEDIATION IMPLEMENTATION (\$3,823,868)

Another outcome of the Feasibility Study was the application for a Clean Beaches Initiative (CBI) grant by the City's Stormwater Management Division. This project will modify the existing culvert, install low storm water flow diversions to the sanitary sewer system, and build several bioswales. In October 2005, the City was given final approval by the State Water Resources Control Board for its CBI grant, and an agreement in the amount of \$3,823,868 is scheduled to be in place by the end of December 2006.

1.3.11 CALIFORNIA INTERGRATED WASTE MANAGEMENT BOARD – USED OIL OPPORTUNITY GRANT (\$281,588)



The purpose of this program is to 1) identify the root causes of illegal dumping and barriers to recycling oil, and 2) determine the most effective outreach strategies for preventing pollution. The program is being implemented in partnership with the cities of Carson, Compton, Huntington Park, Lynwood, and South Gate and will tackle the growing problem of illegal dumping in the southern Los Angeles River Watershed. The ultimate goal of the program is to establish effective outreach and education techniques aimed at "do-it-yourselfers," newcomers, and people practicing improper waste oil disposal. This will be done through identifying barriers, conducting surveys, and evaluating outreach efforts. The City's consultant, S. Groner and Associates, Inc., began the study in June 2004 and will continue through April 2007.



MANAGEMENT PROGRAM FOR PUBLIC AGENCY ACTIVITIES

SECTION 2

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,
- Public Construction Activities,
- Landscape Maintenance, and
- Training.

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 difference. 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 3,872 catch basins and 23 pump stations, all of which are cleaned annually. During FY 06, the total amount of trash and debris collected from the catch basins was 388.7 cubic yards, while the trash and debris collected from the pump stations in FY 06 amounted to 5 cubic yards.

Waste characterization shows that the predominant types of debris include trash (a combination of plastics, polystyrene-foam, glass, and paper) and greenwaste. The most likely source of the trash is littering, whereas the most likely source of the greenwaste is a combination of non-anthropogenic sources, individuals and landscapers sweeping, hosing, or blowing this material into the storm drain. The Water Department maintains a storm sewer cleaning database that includes the number of catch basins, cross drains, and grates cleaned for each date as well as categories and quantities of the debris removed for each date.



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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, 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 actually raining.

The Water Department also 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. In FY 06, the Water Department responded to 20 sewer overflows totaling 8,750 gallons. This is approximately a 55 percent increase compared to 14 overflows totaling 5,650 gallons in FY 05. One way the City is trying to prevent sewer overflows is through a Stormwater Management Division and Water Department joint outreach effort to enlighten residents about the negative effects of pouring fats, oils, and grease down the kitchen sink.

2.2 TRASH AND GREENWASTE CONTROL

The Public Works Department Environmental Services Bureau (ESB) oversees numerous programs including street sweeping, refuse collection, and household recycling collection. In FY 06, ESB staff attended 14 neighborhood meetings and community events promoting recycling and litter abatement.

ESB developed a Litter Abatement and Awareness Campaign last year (FY 05). Details of the campaign can be found at www.litterfreelb.org. This outreach program accomplished the following activities in FY 06:

- Conducted 31 community and business corridor cleanups;
- Involved 1,109 volunteers at neighborhood cleanup events;
- Collected approximately 93 tons of trash and debris from cleanups;
- Displayed street pole banners with the "Litter Free Long Beach" slogan;
- Gave away 1,400 litter bags at events and outreach efforts;
- Promoted the "No Litter Zone" program through door-to-door efforts with 125 businesses participating in the program receiving a free 20 gallon trash can, liners, broom, and dust pan to use to help keep their store fronts clean;





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- Presented the campaign at various community meetings;
- Advertised the campaign in the *Long Beach Press-Telegram*, *Grunion Gazette* and *Downtown Gazette* newspapers;
- Advertised the campaign on Long Beach utility bill envelopes and in the *Wave*, a publication mailed along with utility bills;
- Issued a series of press releases to coincide with local newspaper print advertising;
- Distributed flyers promoting the neighborhood cleanup events (English, Spanish, and Khmer);
- Printed customized posters for cleanup events;
- Distributed campaign bumper stickers and baseball caps;
- Visited five schools with the new Lunch with a Lizard program that teaches children the importance of not littering.

Two other programs the City emphasizes are Adopt-A-Street and Adopt-A-Gutter. **Adopt-A-Street**, which is carried out by the Public Works Environmental Services Bureau, is a program that allows local businesses the opportunity to adopt portions of streets that will be serviced by special litter cleanup crews on a monthly basis. The City of Long Beach adopted six miles of streets. In FY 06, 207 bags of trash were collected along 14 half-mile stretches. The **Adopt-A-Gutter** curriculum, provided by the Department of Parks, Recreation, and Marine, engages students and teaches them about basic storm drain education, including the effects of trash along the street and curb. The program now includes student monitoring and characterizing trash in gutters around each student's home. Students received magnets, rulers, pencils, and literature to remind them that they are the solution to ocean pollution.

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

- Litter Receptacles,
- Neighborhood Cleanup Assistance,
- Household Recycling,
- Greenwaste Disposal,
- Special Collection,
- Used Oil Recycling,
- Household Hazardous Waste Collection, and
- Trash Collection on the Beach and Along Water Bodies.



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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 206 litter receptacles along residential streets and 822 litter receptacles along commercial streets, each of which is emptied weekly. A total of 72 tons of trash and debris was collected from litter receptacles on residential streets, and 286 tons was collected from commercial street receptacles. In addition, 216,725 tons of waste and recyclables was collected along City-managed routes in FY 06.

The Department of Parks, Recreation, and Marine maintains another 145 beach receptacles. This number may fluctuate as needed throughout the year, and they are emptied five times per week during the summer and three times per week during the winter. The Department also maintains 86 marina trash receptacles. These are emptied six times per week. The Queensway Bay area has 30 litter receptacles, which are emptied daily. In City parks, there are 555 receptacles with a capacity of 55 gallons that are emptied daily for a total of 6.65 tons collected in FY 06. The 20 receptacles in City parks that have a capacity of 3 cubic yards are emptied twice each week for a total of 390 cubic yards collected in FY 06. Furthermore, special events are provided with additional litter containers on an as-needed basis. These are collected on the day of the event.

2.2.2 NEIGHBORHOOD CLEANUP ASSISTANCE

The City's Department of Community Development assists resident volunteers by conducting Neighborhood Cleanup events. In FY 06, there were 146 cleanup events, which resulted in 1,575 tons of waste being collected at a cost of \$54,445. 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 photocopiers to produce flyers for the event. Please visit the Web site at www.longbeach.gov/cd/neighborhood_services/clean_up_programs.asp.



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2.2.3 HOUSEHOLD RECYCLING

The City's Environmental Services Bureau continues to improve the household recycling program. All manual collection of open bins has been converted to automated collection of covered carts. 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 06, 31,413 tons of material was collected through the curbside recycling program. This is approximately a 10 percent increase from the 28,372 tons collected in FY 05. Table 2-1 shows recyclables collected in FY 06.

Table 2-1: CURBSIDE RECYCLING

Category	Tons Collected
Newspaper	19,803
Corrugated Cardboard	7,237
Commingled Containers	3,988
Mixed Paper	385
TOTAL	31,413

2.2.4 GREENWASTE DISPOSAL

The City requires 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 06, there were 611 requests for pickup of yard waste. The Environmental Services Bureau also offers treecycling 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. As an added incentive to residents, the City offers seminars on composting and distributes literature that explains methods of greenwaste composting.

The Departments of Parks, Recreation, and Marine and Public Works recycle grass and tree limbs from City grounds. In FY 06, the Public Works Street Maintenance Division recycled 3,322 tons of grass and tree limbs. City departments minimize the amount of greenwaste collected from City facilities by reuse. Grass clippings are evenly distributed over the areas that are being mowed (grasscycling). Greenwaste from trimming, pruning, and clearing is chipped or shredded and kept on site as mulch. BMPs, such as surrounding the base of bulk materials with sand bags and covering with plastic tarps,



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are utilized to assure that exposed materials will not migrate from their temporary storage locations.

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. (See Appendix D for full view of flyer.) City-serviced refuse accounts receive two free bulky item collections per year, and additional collections are available for a small fee. Table 2-2 shows the number of collection requests for special item pickups.



Table 2-2: SPECIAL ITEM PICKUPS

Category	Number of collection requests
Furniture	10,208
Tires	180
City-provided recycling bins (old)	2,079
Out lates (missed collections)	267
Yard waste	611
E-Waste	1,417
Appliances	1,070
Other:	6,521
TOTAL	22,353

The Dumped Item Pickup program allows residents to report illegally dumped items for collection. ESB staff collected 1,872 tons of illegally dumped items in FY 06, which is approximately a 39 percent increase from the 1,351 tons collected in FY 05. A contributing factor to the increased tonnage of illegally dumped items collected is a policy implemented by ESB whereby Refuse Operators are required to collect dumped items along their regularly scheduled routes. ESB works closely with the Police Department to help enforce laws against illegal dumping. Additionally, surveillance cameras have been installed in some alleys to detect this behavior. The Police Department issued 739 citations and made 124 arrests for littering and dumping-related



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issues in FY 06. Citations nearly doubled and arrests increased by almost 600 percent compared to FY 05.

2.2.6 USED OIL RECYCLING

The City operates 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. Additional promotional efforts include advertising in the *Wave*, a publication mailed with Long Beach utility bills, and displaying tri-lingual street pole banners encouraging motor oil recycling as a method of supporting clean beaches and waterways. In FY 06, 11,004 gallons of used motor oil was collected through the curbside recycling program.



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 programs.

2.2.7 HOUSEHOLD HAZARDOUS WASTE COLLECTION

ESB staff, in partnership with the Los Angeles County Department of Public Works and the Sanitation District of the County of Los Angeles, held a very successful Household Hazardous Waste (HHW) Roundup at Veterans Stadium in Long Beach. Table 2-3 shows the amounts of hazardous waste collected at the April 1, 2006 event. Approximately 3,050 cars were served by this collection event.



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Table 2-3: HOUSEHOLD HAZARDOUS WASTE COLLECTION

Category	Number collected
Computers	918 each
E-Waste	74,704 pounds
Batteries	2,850 pounds
Car Batteries	21,000 pounds
Oil Filters	500 pounds
Motor Oil	1,400 gallons
Antifreeze	360 gallons
Paint	26,700 gallons
Misc Waste (pesticides, pool chemicals, etc)	11,200 gallons

2.2.8 TRASH COLLECTION ON THE BEACH AND ALONG WATER BODIES

In FY 06, the Department of Parks, Recreation, and Marine collected 2,443 tons of storm debris from City beaches at a cost of \$91,874. Several miles of ocean front beaches are raked five to six days per week, depending on conditions. Other tools for collecting floating debris from the water are a skimmer boat, known as the “Predator,” and a stationary skimmer box.

In addition, the Department of Parks, Recreation, and Marine is responsible for the maintenance of recreation water bodies at Heartwell, Scherer, and El Dorado Parks; Colorado Lagoon; and Rainbow Lagoon. At all locations, the contractor is required to remove trash, including floating and submerged debris from the lakes on a daily basis. Trash removal from the restored wetland area of Queensway Bay is done by hand, usually from a boat, with great care. The Department of Parks, Recreation, and Marine has contracted and City staff who remove trash and debris in the marinas by dip net and clean filters.

Furthermore, the Port of Long Beach Maintenance Department operates a boat, called the “Big Dipper,” which patrols the waters throughout the Port picking up debris that has fallen into the water. The Big Dipper is operated by a two-person crew approximately three days a week and picks up wood piles, industrial debris, construction debris, plastics, etc.

The Department of Parks, Recreation, and Marine coordinates several cleanup efforts that occur during the year.



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- During the year, more than 1,500 volunteers donated over 1,300 hours to collect non-point source pollution during several special volunteer cleanups that took place on City beaches through the Adopt-A-Beach program.
- On New Year's Eve morning, hardy volunteers braved rain showers to do a "Take Pride in America" beach cleanup. El Dorado Nature Center spearheaded this event in partnership with the Department of the Interior (DOI) and the Clean Beaches Council, headquartered in Washington D.C. Representatives from DOI and the Council were on hand at El Dorado Nature Center (Nature Center) with a "Take Pride in America" award in recognition of the Nature Center's efforts with the Adopt-A-Beach program.
- In celebration of Earth Day, the Nature Center organized "Rolling Down the River," a volunteer cleanup and aquatic birder event. People met at the Nature Center then bicycled down the adjoining San Gabriel River to where the birds gather to feed.
- The City of Long Beach declared its first "Independence from Litter" Day devoting July 5 to cleaning the beach and educating adults and children about marine pollution and positive actions to protect our watersheds. This happened in conjunction with the Sea Festival and attracted the support of Mayor Beverly O'Neill and Councilman Patrick O'Donnell. Hundreds of children grooved to "eco-rock" of the Banana Slug String Band, visited educational booths and exhibits, and enjoyed a healthful lunch.
- At the 22nd Annual International Coastal Cleanup in September, 1,675 people cleaned 14 sites along the City's beaches, Pierpoint Landing, Rainbow Harbor, Mothers' Beach, Marine Stadium and the DeForest Nature Area, the San Gabriel River, and the Los Angeles River. They collected 5,780 pounds of trash and debris and 362 pounds of recyclables.
- Adopt-A-Wetland activities in FY 06 included monthly cleanups at Colorado Lagoon, Sims Pond, Jack Dunster Marine Reserve, and Golden Shore Marine Reserve.
- The El Dorado Nature Center joined forces with Friends of the Los Angeles River in La Gran Limpieza, the Great Los Angeles River Cleanup.



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Long Beach sites included Alamitos Beach, Golden Shore Marine Reserve, and Willow Street Estuary.

The Long Beach Water Department also participates in beach cleanups to promote environmental stewardship and education. The Department organizes quarterly events at Bluff Park (Ocean Blvd) that are geared towards high school and college students, Scout members, and the general public. The Department provides free giveaways, trash bags, gloves, bottled water, volunteer service verification forms, and official recognition from the Long Beach Board of Water Commissioners. (See Appendix E for cleanup flyer.)

2.3 CODE ENFORCEMENT

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

- Property Maintenance,
- Weed Abatement,
- Abandoned / Inoperative Vehicle Abatement, and
- 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 issued where warranted. Failure to comply may result in a referral to the City Prosecutor or in a cleanup by City staff at the owner's expense. In FY 06, the Department of Planning and Building conducted 700 investigations into issues related to Property Maintenance.

2.3.2 WEED ABATEMENT

Weed abatement enforcement activity is closely related to Property Maintenance but strictly focuses on prohibiting overgrown vegetation on vacant lots or in yards. Notices to Clean are issued where warranted. Failure to comply may result in a referral to the City Prosecutor or in a cleanup by City staff at the owner's expense. In FY 06, there were 309 investigations conducted.



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2.3.3 ABANDONED / INOPERATIVE VEHICLE

This activity is directed toward the removal of abandoned and inoperative vehicles (including unlicensed) located in vacant lots or visible yard areas. Code Enforcement conducted 43 investigations last year.

2.3.4 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 are 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, including some specifically related to storm water.

The Code Enforcement Division of the Department of Planning and Building 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 06, there were 2,726 inspections conducted. These investigations resulted in six 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 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 issued to encourage vehicle owners to leave certain 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. The Public Works Environmental Services Bureau collected 12,282 tons of material from sweeping 150,288 street and alley miles last year.

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 thirty lots five times each week at an annual cost of \$265,674. The Department of Community Development Parking



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Operations Division maintains nine parking structures and lots that are swept one to two times each week and degreased one to two times each month at an annual cost of \$53,368. In addition, the Neighborhood Services Bureau of the Department of Community Development maintains another six lots. Of these six, four are swept daily and two weekly.

The Public Works Street Maintenance Division is also an important component to keeping trash out of the storm drain system. In FY 06, the Division collected 961 tons of trash and debris from streets and alleys.

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.

2.5 PUBLIC CONSTRUCTION ACTIVITIES

Public construction activities are focused toward 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 to be based on rational criteria including magnitude and type of potential pollutant.

Public Works inspectors routinely verify that construction work is in compliance with the contract documents or Public Works permit, including the use of appropriate BMPs. This effort nearly doubles during the wet weather season. 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 06, Public Works inspectors filed 226 NPDES Inspection Reports. Of those, 21 were in response to complaints or concerns received by the Stormwater Management Division and other departments.

2.6 LANDSCAPE MAINTENANCE

Landscape maintenance activities are a contributing factor in the deterioration of storm water quality. The City is concerned when these activities are being conducted. These include



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- pesticide, herbicide, and fertilizer usage,
- native vegetation practices, and
- municipal swimming pools maintenance.

2.6.1 Pesticide, Herbicide, and Fertilizer Usage

Pest Control Advisors licensed by the State Department of Agriculture supervise the use of pesticides, herbicides, and fertilizers for street medians and parks. These products are applied only “as needed” and never just before or during a rain event. All grounds and landscape maintenance contractors with the Department of Parks, Recreation, and Marine must possess a Pest Control Advisors License, have certified Pest Control Applicators on staff, and possess a Los Angeles County Agricultural Permit. All Staff receive annual updates in the laws governing the use and storage of these chemicals and applicable BMPs, such as restricted use around waterways and prohibition of spraying when rain is forecasted.

City staff employs Integrated Pest Management (IPM) practices to minimize the necessity for pesticide applications at Cesar Chavez Park and Queensway Bay. It should also be noted that a state-of-the-art BMP, known as “fertigation,” which is a system that applies fertilizer efficiently and with a minimal amount of run-off is employed at Cesar Chavez Park. The fertigation system at Chavez Park applies liquid fertilizer to approximately 25 acres of turf and landscaped areas (23 acres for Chavez Park and the remainder is the acreage for other small greenbelts in the area). This system consists of pumps, timers, flow meters, and several underground tanks that are tied in to the Cal Sense irrigation system on the site. A valuable feature for water conservation efforts and NPDES compliance is that the irrigation system has a master valve function that acts in case of an emergency. In the case of a large break after hours, the system will read that an excess of gallons per minute are flowing through the regulator and will automatically shut the system down.

2.6.2 Native Vegetation Practices

Native plant materials are of particular concern in three locations – the El Dorado Nature Center, the Queensway Bay Area (which includes Golden Shore Marine Reserve), and the Jack Dunster Marine Biological Reserve. Azteca Landscape is the contractor responsible for landscape maintenance at the El Dorado Nature Center (Nature Center). The Nature Center is a mixture of native and non-native plant material that was originally planted over thirty years ago. It is Department policy to replace any material that must be removed (for various reasons such as disease or general decline)



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with native plants. In addition, any new plantings are designed with native plants only. El Dorado Nature Center staff ensure that plant material selections are appropriate and sustainable. The plant material is irrigated only on an as-needed basis as determined by the Nature Center staff. Herbicides and pesticides are minimally used to eliminate invasive weeds. The Nature Center has instituted a volunteer Habitat Stewards program that has trained over 60 volunteers in monthly classes to plant and care for native plants, with the help of the Adopt-A-Wetland program, according to the Nature Center's master plan. In addition, the Nature Center hosts an annual Native Plant Sale that attracts hundreds of area residents who learn to appreciate natives and add them to their landscaping. Many volunteers assist Nature Center staff with this event, which places approximately 1,200 water-wise native plants into community gardens each year.

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 MBC Applied Environmental Science consultants and from qualified in-house staff. All invasive weeds are removed by hand, without the use herbicides or pesticides. Removal of trash from Golden Shore Marine Reserve is done by hand and with great care to prevent any human impact on the site.

Los Cerritos Wetland Stewards, Inc., who is experienced in maintaining delicate habitats, performs most of the maintenance at the Jack Dunster Marine Biological Reserve with help from the Adopt-A-Wetland program. Only native non-invasive plants that are on the original approved plant pallet are used. All invasive and non-native plants are removed by hand without the use of herbicides or machinery. Mulch is then applied to the site to prevent unwanted plants from returning until the native plants have colonized.

Chapter 18.95, "NPDES and SUSMP Regulations," of the Long Beach Municipal Code requires that during subdivision design, native vegetation clearing should be limited to the minimum needed to build lots, allow access, and comply with fire protection regulations.

2.6.3 Municipal Swimming Pool Maintenance

The City owns four municipal swimming pools: one at King Park, one at Silverado Park, and two at Belmont Plaza. Two of these pools, including the one at Silverado Park that has recently been reconstructed, discharge water directly into the sanitary sewer. The



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two at Belmont Plaza are dechlorinated by evaporative loss (all pump and chemical systems shut down) for a period of 72 hours prior to discharging into the storm drain system.

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, giving employees easy access to professional training material, but NPDES is a quarterly topic of discussion at Construction Division staff meetings. In addition, the Stormwater Management Division staff conducted refresher training for the Public Works Engineering Bureau in November 2005. During this training, the *Storm Watch: Municipal Storm Water Pollution Prevention* video training program was used. The Stormwater Management Division staff also routinely e-mails reminders to appropriate City personnel regarding BMPs and NPDES requirements.



MANAGEMENT PROGRAM FOR DEVELOPMENT PLANNING AND CONSTRUCTION

SECTION 3

3.0 MANAGEMENT PROGRAM FOR DEVELOPMENT PLANNING AND CONSTRUCTION

The Development Planning and Construction program is in place to have developers and owners 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 program to applicable development projects will effectively prohibit non-storm water discharges and reduce the discharge of pollutants into the storm drain system. To achieve this objective, the City has implemented the following:

- California Environmental Quality Act (CEQA) guidelines,
- General Plan considerations for watershed and storm water management,
- Chapter 18.95, "NPDES and SUSMP Regulations," of the Long Beach Municipal Code, and
- Training.

3.1 CEQA

Under the CEQA Act of 1970, the City of Long Beach is required to consider the potential environmental impacts of proposed developments. The Planning and Building Department's 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 guidance and informational documents provided 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.

3.2 GENERAL PLAN

The Land Use and Mobility elements are in the process of being rewritten and are scheduled for completion in 2008. With a new Director of Planning and Building coming on board in April 2005 and input from community cluster groups, the composition of



MANAGEMENT PROGRAM FOR DEVELOPMENT PLANNING AND CONSTRUCTION

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these elements has been changed, resulting in the postponed completion date. Urban Design and Economic Development components are being added to the Land Use element. A new element, Historic Preservation, will also be added to the General Plan at a later date.

3.3 CHAPTER 18.95, “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. Enforcement actions are currently not documented separately from inspections. Table 3-1 shows FY 06 statistics for Development Planning and Construction.

Table 3-1: DEVELOPMENT PLANNING AND CONSTRUCTION STATISTICS

Number of projects requiring a SWPPP	13
Number of Inspections	*4,907
Number of development projects for which SUSMPs were completed	12
Number of development projects for which SUSMPs were completed since the permit was adopted	115

*This includes enforcement actions. One site may have several inspections done during one visit. Checking each BMP is considered a separate inspection.

3.4 TRAINING

Development planning, construction, and inspection staffs receive training on storm water management requirements and BMP implementation. The Developer Information Handbook remains current and is available online. The City continues to use the handbook in conjunction with existing training materials.



MANAGEMENT PROGRAM FOR ILLICIT DISCHARGES AND ILLICIT CONNECTIONS

SECTION 4

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, Planning and Building, Public Works, and Water play important roles in investigating possible illicit connections and discharges. They communicate their findings to the Stormwater Management Division 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 may also come from the public via the Stormwater Management Program hotline, 562-570-DUMP (3867) and Web site, www.lbstormwater.org.

4.1 ILLICIT DISCHARGES

When the City is informed of an alleged illicit discharge, the Fire Department is the lead responder. 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 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 the presentation of 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.

Education and maintenance procedures serve as preventive measures for future illicit discharges. The Department of Health and Human Services responded to and provided cleanup oversight to 301 hazardous material release incidents and 151 non-hazardous waste spills in FY 06.



MANAGEMENT PROGRAM FOR ILLICIT DISCHARGES AND ILLICIT CONNECTIONS

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It is important to note that calls coming in from the public expedite the response to illicit discharges that may have otherwise gone undiscovered. Calls and e-mails are responded to immediately, and 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.

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.

Historically, investigating underground pipes for pipe-to-pipe illicit connections has been the most expensive and least effective means for illicit connection inspection. If the presence of an illicit connection is suspected, the storm drain is investigated and the necessary action is taken to eliminate the connection. The Water Department spent \$6,300 last year thoroughly investigating illicit connections but found none.



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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 Stormwater Management Division; 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 Stormwater Management Division 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 Stormwater Management Division 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.

On May 3, 2005, the City Council joined other coastal communities by passing an ordinance banning smoking on the City's beaches. The goals of passing this ordinance are to (1) reduce the number of cigarette butts left on the beaches, (2) reduce exposure to second-hand smoke, (3) reduce the amount of carcinogens from cigarette butts leaching into the ocean, and (4) reduce the potential health impact on wildlife.



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The City prioritizes inter-agency cooperation when dealing with storm water issues. On a regular basis, the Stormwater Management Division staff resolves issues with members of other City departments, especially Health and Human Services, Planning and Building, Public Works Construction, Water, 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 Los Angeles County Sanitation District.

The Stormwater Management Division Officer participated in Assemblywoman Betty Karnette's public awareness meeting on environmental issues held on April 29, 2006, by presenting storm water and pollution prevention information. (See Appendix F for thank-you letter.)

During special events, such as community meetings and watershed cleanups, the Stormwater Management Division staff is present to listen to constituent concerns and answer storm water related questions from the attendees. In FY 06, Stormwater Management Division staff reached out to over 10,000 constituents through the Port of Long Beach Green Port Exposition, the Long Beach Unified School District (LBUSD) Science Fair, and the National League of Cities Showcase. (See Appendix G for thank-you letter from the Port and Appendix H for thank-you letter from LBUSD.) 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. For example, the Colorado Lagoon Feasibility Study has been posted on the site.

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 Stormwater Management Division is always looking for new opportunities to deliver the message. Promotional items such as magnets, pencils, and rulers are made available and informational literature is printed in several different languages.





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Advertising in a variety of publications is paramount to this public education effort. Some of the publications the program advertised in include the Parks, Recreation and Marine Winter schedule of classes (186,000 impressions), *Long Beach Sample Ballot and Voter Information Pamphlet* (187,185 impressions), and *Eco-Link* insert of the *Long Beach Press-Telegram* newspaper (over 298,000 print and 1 million Web site impressions).

A half-hour segment of *In Your Backyard*, which aired several times on Charter Communications, was devoted to the Stormwater Management Division in FY 06. The Stormwater Management Division Officer took this opportunity to explain the Division's infrastructure improvements that are underway. The local cable channel, LBTv8, has also been a great way to get information to the public about storm water. Viewers of programs such as *Snapshot Long Beach*, *Heart of the City*, and recorded City Council presentations are educated about pollution prevention, current projects, and environmental awareness.

The Stormwater Management Division continues to take advantage of the Adopt-A-Waterway program, which has expanded to become the EcoZone program of EcoMedia, LLC. The new EcoZone program is no longer limited to water quality but now also includes air quality, energy conservation, and preservation of parks and greenspace. EcoZone held its inaugural West Coast launch event in Long Beach on October 4, 2006. At this event, Mayor Bob Foster announced that Long Beach is implementing the state's first EcoZone program. Like Adopt-A-Waterway, EcoZone brings together city and state governments with corporate partners to address critical environmental challenges. This national public-private partnership helps cities support ongoing and new environmental projects and initiatives at no additional cost to taxpayers. The program brings revenue into the City specifically for storm water pollution prevention and education but also educates the public with its signs. There are currently 17 signs installed, and each has an environmental message, such as "Please Do Not Litter," displayed below the corporate sponsor's information. These signs are placed in high traffic areas and account for approximately 100,085,920 annual impressions.

The Environmental Services Bureau (ESB) staff participated in 26 events and meetings to promote environmental programs in FY 06. These included neighborhood association meetings; safety, community, and environmental fairs; and composting workshops. As mentioned in the Public Agency Activities Section, ESB displays street pole banners with the "Litter Free Long Beach" slogan and banners promoting motor oil recycling as a behavior that will lead to cleaner beaches and waterways. ESB made use of the *Wave* publication by getting an environmental tip or slogan in nine of the eleven volumes in FY



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06. The *Wave* is printed in Spanish and Khmer in addition to English and is mailed with utility bills to approximately 170,000 residents. ESB also 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 full-time employees (FTEs) Monday through Friday and one FTE for a half day on Saturdays. After-hours callers have the option to leave a message in the hotline voicemail box, which is then responded to the next business day.

The **Developer Information Program** continues to be used by the Planning and Building Department to educate contractors, developers, and “do-it-yourselfers.” In addition, during normal business hours, permit applicants have access to staff at the Development Services Center. Information about storm water management, applicable BMPs, various brochures, pamphlets, handouts, and related permit requirements are made available in the Development Services Center on the 4th floor of City Hall and via the City’s Web site.

Water Conservation is a top priority of the Water Department, especially the Long Beach Board of Water Commissioners. Implementation of conservation BMPs and a variety of educational outreach programs are integral parts of their master plan. This is another example of how the City of Long Beach exceeds its NPDES permit requirement (Part 3, I, A, 2, f, Water Conservation Practices). The “Water Ambassador” volunteers of the Water Department routinely attend events throughout the year to promote water conservation and water quality issues. The Department continues to make use of a mobile, interactive water conservation kiosk, which rotates among different City buildings for display and use in the lobby area. Landscape/gardening education classes, which address issues such as water conservation and fertilizer and pesticide use, are sponsored by the Water Department. The January 6, 2006, edition of the *Wave*, a publication included with Long Beach utility bills, featured an article by the Water Department entitled “California Friendly Landscapes.” This article discussed reasons for incorporating California-friendly landscapes on property and mentioned its free landscape classes.

The **El Dorado Nature Center** (Nature Center), which is part of the Department of Parks, Recreation, and Marine, provides programs and services that are critical to the success of the City’s public information and education efforts for storm water. The Nature Center is a 102.5-acre wildlife habitat with two lakes, a stream, two miles of dirt trail, and a ¼-mile paved access trail. The site is near the mouth of the San Gabriel River, one of the largest conveyers of storm water in the City. All of this makes the Nature Center the perfect setting for NPDES education. Following are brief descriptions of the Nature Center’s educational outreach programs and events that address issues



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of non-point source pollution and storm water management and are geared towards the general public.

Adopt-A-Beach is an innovative conservation program that allows school clubs, businesses, community associations, and other groups to get involved, agreeing to clean up a quarter mile section of the Long Beach shoreline four 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 in the ocean. As mentioned in the Public Agency Activities Section, more than 1,500 volunteers from 14 community groups contributed more than 1,300 hours to collecting non-point source pollution on City beaches this past fiscal year.

Adopt-A-Wetland cleanup events took place monthly at Golden Shore Marine Reserve, Jack Dunster Marine Reserve, Sims Pond, and Colorado Lagoon. Students from local high schools, California State University Long Beach, and Long Beach City College received education about non-point source pollution and native plant restoration while removing litter from these sensitive areas.



The opening of the **Colorado Lagoon Wetland and Marine Science Center** on January 28 brought out hundreds of people to celebrate this significant step forward in the restoration of the Lagoon. Displays, science demonstrations, and information tables were provided by the Nature Center, the Department of Public Works, and several other community organizations. The Wetland and Marine Science Center is the result of a long collaboration among the Nature Center, the

Stormwater Management Division, former Councilmember Frank Colonna's office, Friends of the Colorado Lagoon, the Aquarium of the Pacific, and staff and faculty of Long Beach Polytechnic High School and Milliken High School. The Wetland and Marine Science Center will provide education opportunities for area residents, visitors, and students on such concepts as the watershed, non-point source pollution, water quality, and wetland ecology.

Partners of the Wetland and Marine Science Center spent eight days with trainees from the nationally acclaimed Adopt-A-Watershed program and developed a high school program focusing on the Los Angeles and San Gabriel River watersheds and the effects of non-point source pollution on aquatic and human life. Students from Long Beach Polytechnic High School visited the Lagoon four times to study the flora and fauna, to learn some techniques of water quality testing, and to practice bioregional mapping. Their work culminated in a Lagoon cleanup and the planting of an experimental plot in



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preparation for the Lagoon's restoration. Key students then summarized their experiences at the Lagoon on-air, putting together a television show promoting the Lagoon as an educational resource. Additional programs at the Marine Education Center included

- a) an educator's workshop on the role of the Lagoon in the watershed and on non-point source pollution attended by Long Beach high school and college instructors,
- b) ten "Summer Fun Days" hosted by Nature Center staff to help families have a good time while learning about Lagoon plants and animals, and
- c) two week-long Super Science programs for elementary students called "Water Wizards" and "Acorn, Sea and Sage."

The 22nd Annual International Coastal Cleanup, mentioned in the Public Agency Activities Section, was the best event yet. The success of this cleanup was made possible by collaboration among several community organizations. This cleanup was not only about removing 5,780 pounds of debris and 362 pounds of recyclables from coastal areas, but it was also a prime opportunity to educate the public about pollution prevention.

Parades are another way to reach out to the community. The El Dorado Nature Center staff marched in the Daisy Lane, Belmont Shore, and Martin Luther King holiday parades, increasing the Nature Center's profile and sharing the message of renewal, restoration, and stewardship. Staff handed out "You're the Solution to Ocean Pollution" pencils and rulers to thousands of parade-goers.

5.2 COMMERCIAL / INDUSTRIAL ESTABLISHMENTS

The City's Department of Health and Human Services (DHHS) conducts educational site visits to distribute and discuss applicable BMP and educational materials to business owners/facility operators, including 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. In FY 06, DHHS conducted 41 educational site visits. Staff also checks for applicable Notices of Intent and Storm Water Pollution Prevention Plans at Phase I industrial facilities.



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5.3 SCHOOL CHILDREN



Getting the storm water message and materials into the Long Beach Unified School District (LBUSD) continues to be an extremely important goal and several different programs are in place or being created to specifically target this very important audience. At outreach events open to the general public, school children are often enticed by the Stormwater Management Division's promotional items and are undoubtedly being influenced by their messages. In addition, Stormwater Management Division staff go out to schools to give presentations and answer questions about storm water quality issues, the storm drain system, the effects of pollution, and behavioral changes that children can make to keep the ocean and other waterways clean.

As mentioned previously in this section, staff from the Stormwater Management Division participated in the Long Beach Unified School District (LBUSD) Science Fair on April 29. This allowed the Division's message to reach the 1,200 students who took part in the fair and a total of 3,000 attendees including families and other students. (See Appendix H for thank-you letter from LBUSD.)



The City found through surveys and direct contact that the **Window-On-Our-Waters Tidepool Cruiser** used for LBUSD outreach efforts was so well received that continued funding of \$20,000 in FY 06 was more than justified. This mobile educational vehicle addresses many of the critical issues of non-point source pollution and its effect on the marine environment in an exciting, innovative, and hands-on way. Participants are given the tools they need to decide for themselves the type of impact they will have on the beaches and coastal waters. In FY 06, the *Tidepool Cruiser* brought its message to 2,937 students in 23 Long Beach Unified School District (LBUSD) elementary schools. More than 30,000 people had the opportunity to experience the *Tidepool Cruiser* when it made an appearance at the California State University Long Beach Kaleidoscope Festival. The *Tidepool Cruiser* also appeared at the City's "Independence from Litter" Day and the Long Beach Public Library's One-Book Campaign kick-off event, which brings the grand total outreach number to 33,687 for FY 06. (See Appendix I for *Tidepool Cruiser* Outreach spreadsheet.)



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The Stormwater Management Division was once again able to contribute \$4,000 to support *Heal the Bay's Key to the Sea* marine education program. This donation allowed 922 LBUSD students to participate in the program, which helps instill in students a sense of social responsibility toward their environmental choices. Key to the Sea also supports teachers with multi-disciplinary marine science curricula. (See Appendix J for Key to the Sea Annual Report.)

TREC, the Traveling Recycling Education Center, is used by the Environmental Services Bureau (ESB) staff to spread the recycling and anti-littering message to the Long Beach community at public events and to students of LBUSD. During FY 06, the TREC mobile classroom made a total of 42 visits to LBUSD schools, making 45-minute presentations to 2,437 students. In addition, ESB has assisted 20 LBUSD schools to establish recycling programs in FY 06.

The El Dorado Nature Center's Moveable Museum program, "Protect Our Watery World" (POWW), visited many third and fourth grade school classrooms to spread the word on non-point source pollution, the durability of trash in the marine environment, and the harmful effects of trash on ocean animals. POWW volunteers appeared at four special events, spreading the message that people are the problem and that people are also the "Solution to Ocean Pollution."

The Long Beach Health and Human Services Department's Bureau of Environmental Health has developed a curriculum entitled *The Junior Health Inspector Program* that teaches children to recognize the benefits of living in a healthy and safe home and ways to improve the environment in their community. Upon completion of the program, students will be able to use techniques to reduce and eliminate hazards in the home. The health hazards include mold contamination, lead poisoning, storm water pollution, vector, household hazardous waste and unintentional injuries. The program began in March 2004 and reached 1,232 students in FY 06.

The *Environmental Defenders* is a program of the Los Angeles County Department of Public Works. It is a free assembly geared for children in grades K-6. Two professional actors present the interactive 30-minute program. Through animated and live action video segments, role-playing, an action-packed game and educational giveaways, students are taught about important environmental concepts. Topics covered in the assembly include the Three R's (Reduce, Reuse and Recycle), storm water pollution, household hazardous waste, illegal dumping and water conservation. In FY 06, the



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Environmental Defenders program reached 9,015 students by visiting 16 Long Beach schools.

5.4 CITY EMPLOYEES

City employees are educated about storm water issues through web-based trainings, flyers, displays, and other viable means. The Stormwater Management Division has paid for and will send employees to appropriate external training workshops. Past workshops have included the BIA Construction Storm Water Compliance Training Seminar, the State Water Resources Control Board's Clean Beaches Conference, and the Plastic Debris Rivers to Sea Conference.

Many Departments incorporate NPDES training into their regular training and safety meetings. Here are the links to the City's new web-based Stormwater Training Material.

Storm Water Division

Training Videos:

Storm Watch is a video training program that describes the fundamental concepts and practices of storm water pollution prevention for municipal operations. The video describes storm water pollution and its negative effects on people, wild life and the environment. The primary focus of the video is on operational Best Management Practices (BMPs).

[Storm Water Pollution Prevention for Municipalities: Storm Watch Training Quiz](#)



6.0 ASSESSMENT

The Long Beach Stormwater Management Program (LBSWMP) continues to be implemented, revised, and expanded as needed to ensure effective reduction in 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, and monitoring. Three major reporting and informational hotlines remain available to the public 24 hours per day: 570-DUMP (Storm water), 570-2876 (Refuse), and 570-4199 (Beach Advisory). Despite large fiscal deficits, in FY 06, the City spent \$24,498,544 (\$53 per capita) on NPDES expenditures. This is \$2,861,247 more than the amount spent in FY 05, which is a 13 percent increase. (See Appendix K for the FY 06 Stormwater Management Program Expenditures.)

Proof that the LBSWMP implementation is working effectively is demonstrated by the following: an increase of 3,041 tons collected in the curbside recycling program, 521 ton increase in collection of illegally dumped items from the improved Dumped Item Program, 94 percent increase in citations by the Long Beach Police Department, and over 100 million storm water impressions.

The successes of the Long Beach Stormwater Programs are directly attributable to the well-defined and fully implemented LBSWMP and the level of commitment from the City Manager, City Council, and the City staff. On a scale of 1 to 10, the City of Long Beach should once again receive a 10 based on its commitment to the full implementation of the requirements of its municipal MS4 permit.

6.1 ASSESSMENT OF MANAGEMENT PROGRAM FOR PUBLIC AGENCY ACTIVITIES

Overall, the City spent \$16,351,060 (68 percent of LBSWMP expenditures) for expenses associated with Public Agency Activities, which is an increase of 8 percent compared to FY 05. The Litter Abatement and Awareness Campaign, targeted towards changing residents' behavior, continues to be successful. Neighborhood cleanup events are held as part of this campaign. In FY 06, there were 882 more volunteers involved in these cleanup events compared to FY 05. The campaign also sponsored 16 additional community and business corridor cleanups this past year compared to the year before. Other achievements include collecting 62 more tons of trash and debris from cleanup efforts, engaging 29 more businesses in the "No Litter Zone" program, and launching a new program called Lunch with a Lizard that uses a lizard mascot to educate young students about the hazards of littering.



The household hazardous waste roundups are also still going strong. In FY 06, the Long Beach event served approximately 250 additional cars compared to FY 05. This resulted in collection increases for some categories, such as 4,372 pounds of e-waste and 6,485 pounds of car batteries beyond what was collected the previous year.

The Department of Parks, Recreation, and Marine continues to be a vital component in preventing storm water pollution. The Department organized some new cleanup events in FY 06 and made the Annual International Coastal Cleanup the best yet with more volunteers, more sites, and more trash collected.

Street sweeping is still a key BMP for keeping trash out of the storm drain system. In FY 06, there was a decrease of 1,147 tons of debris collected from street sweeping activities, which may be attributable to effective public education.

Public Works inspectors 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 06, Public Works inspectors filed 191 additional NPDES Inspection Reports than in FY 05.

6.2 ASSESSMENT OF MANAGEMENT PROGRAM FOR DEVELOPMENT PLANNING AND CONSTRUCTION

Development Planning and Construction costs increased by approximately \$2.5 million from FY 05 to FY 06. This is mostly due to the Department of Parks, Recreation, and Marine reviewing Standard Urban Stormwater Mitigation Plans.

There were fewer construction projects in Long Beach during the past year compared to the previous year that required a Storm Water Pollution Prevention Plan or Standard Urban Stormwater Mitigation Plans as reported by the Department of Planning and Building. However, there were 4,738 more inspections.

6.3 ASSESSMENT OF MANAGEMENT PROGRAM FOR ILLICIT DISCHARGES AND ILLICIT CONNECTIONS

The expenditures associated with Illicit Connections and Illicit Discharges increased by 7 percent compared to FY 05. Several City departments are involved in investigating possible illicit discharges and connections and taking appropriate action. Notice of suspected illicit discharges and connections come from many sources, including the public through the program hotline and Web site. Calls and e-mails are responded to immediately with collaboration among departments. In FY 06, the Department of Health



and Human Services responded to 151 non-hazardous waste spills and 301 hazardous material release incidents, providing cleanup oversight as needed. The Water Department found no illicit connections.

6.4 ASSESSMENT OF MANAGEMENT PROGRAM FOR EDUCATION AND PUBLIC INFORMATION

This program element is probably the most important component of the LBSWMP because it leads to behavior changes and tangible improvements. Well over 100 million impressions were made in FY 06 through ads in publications, Adopt-A-Waterway signs, and other media. This far exceeds the permit required 1.5 million annual impressions. The beach cleanups are being expanded into the inland community and occur at several water bodies, not just beaches. This helps to reinforce our overarching messages that "The Ocean Begins At Your Front Door" and "Storm Drains Lead Directly to the Ocean." Approximately 9,015 elementary school students received environmental awareness education as part of Los Angeles County's "Environmental Defenders and Rock the Planet" program. The Department of Health and Human Services brought the Junior Health Inspector Program to 1,232 LBUSD students. In addition, LBTv8, the local cable channel, has been an excellent medium for disseminating information. Shows such as *Snapshot Long Beach*, *Heart of the City*, and recorded City Council presentations have provided avenues for storm water education to a vast and very diverse audience. There was also a half-hour segment of *In Your Backyard* devoted to the Stormwater Management Division in FY 06. Two exemplary educational outreach programs that are contracted out are the *Tidepool Cruiser* (Windows-On-Our-Waters) and Key to the Sea (Heal The Bay). The *Tidepool Cruiser* delivered its message to 33,687 people, mostly LBUSD and CSULB students, in FY 06, and the Key to the Sea program reached 922 LBUSD students.

6.5 ASSESSMENT OF WATER QUALITY MONITORING

The City of Long Beach's water quality monitoring program continues for the seventh year under the terms of Order No. 99-060 National Pollutant Discharge Elimination Systems Municipal Permit No. CAS004003 (CI 8052).

During the 2005/2006 season, 7.76 inches of rainfall was recorded, which is 60 percent of normal precipitation. Eight storm events were monitored, and dry weather monitoring took place once prior to the rainy season and once after the winter rains had subsided.

The following is a summary of the City's wet weather chemical and bacterial results, as stated in the 2005/2006 Stormwater Monitoring Report.



- All storm water samples taken in the past two years exceeded the single sample criteria for indicator bacteria (total coliform, fecal coliform, and *Enterococcus*).
- Concentrations of total recoverable copper, lead, zinc, and aluminum exceeded benchmark reference values at the Belmont Pump Station, Bouton Creek, and Los Cerritos Channel. However, storm water runoff from the two events monitored at Dominguez Pump Station indicated that concentrations of copper, lead, and zinc were below the Ocean Plan criteria.
- Runoff from the Los Cerritos Channel revealed that total nickel exceeded the Ocean Plan criteria during the final event of the wet season. This was associated with the storm water containing high concentrations of suspended solids.
- Dissolved copper exceeded both CTR freshwater and saltwater criteria, and 75 percent of the storm water samples exceeded the CTR freshwater criteria for dissolved lead.
- Very low levels of a few chlorinated pesticides, including various chlordane compounds and 4-4' DDE, were detected in the storm water samples.
- Regarding organic compounds, neither diazinon nor chlorpyrifos turned up in measurable levels. In addition, triazine pesticides continue to be detected at only low concentrations.
- Total metals loading rates increased in runoff from the Belmont Pump Station but were substantially lower in the Los Cerritos Channel. The highest were total copper, lead, and zinc.

The City's dry weather chemical and bacterial results found in the 2005/2006 Stormwater Monitoring Report are recapped below.

- Trace metals are predominantly in dissolved form and tend to be mitigated by the consistently high hardness; therefore, most trace metals were below CTR freshwater criteria during both dry weather sampling events. Suspended particulates and total recoverable metal concentrations are generally low in dry weather runoff.
- Dissolved copper exceeded the CTR freshwater criterion in one of the six dry weather samples and exceeded the CTR saltwater criterion in two-thirds of the



samples. Los Cerritos Channel had the highest concentrations in dry weather flows and was the only site in which water samples exceeded the Ocean Plan criterion.

- Concentrations of indicator bacteria are often slightly less in dry weather compared to wet weather, but fecal indicator bacteria typically exceed Ocean Plan/Basin Plan criteria during both wet and dry weather monitoring.
- No dry weather discharges were observed from the Dominguez Gap Pump Station as in previous years.

Trends in constituents of concern continue to be examined each year, and most patterns persist. The major observations extracted from the 2005/2006 Stormwater Monitoring Report are listed below.

- Dissolved zinc concentrations are usually higher during storm events, but dissolved concentrations of cadmium, copper, nickel, and lead are comparable during wet and dry weather.
- Concentrations of trace metals are higher in storm flows. However, the seasonal differences are more pronounced in concentrations of total copper, lead, and zinc than in total cadmium and nickel.
- Unlike previous year, diazinon and chlorpyrifos were not detected in storm water during the 2005/2006 season. It is likely that these compounds will not commonly show up in measurable levels in storm water now that residential use of both diazinon and chlorpyrifos has been phased out.
- Concentrations of total recoverable metals (copper, lead, nickel, and zinc) in storm water discharges from the Dominguez gap Pump Station were among the lowest in the past seven years. This is correlated with very low concentrations of total suspended solids. However, concentrations of dissolved copper exceeded CTR freshwater and saltwater criteria during each of the two storm events at this site.

The following is a synopsis of the City's Alamitos Bay Receiving Water Program results, as stated in the 2005/2006 Stormwater Monitoring Report.

- Surveys have been conducted following both large and small storm events since the 2002/2003 season, and there continues to be no evidence of widespread toxicity in storm water plumes within Alamitos Bay.



- In this year's plume study, concentrations of total suspended solids were very low, and concentrations of trace metals were mostly in dissolved form. Concentrations of dissolved copper and zinc exceeded CTR saltwater criteria, but samples from each of the Receiving Water stations showed negligible toxicity.

During the 2005/2006 monitoring season, a Pilot Watershed Source Identification study focusing on sediments was conducted for the northwestern arm of Colorado Lagoon. The results of this study are detailed in the 2005/2006 Stormwater Monitoring Report and summarized below.

- Trace metals, organochlorine pesticides, and PCBs are the constituents of concern in Colorado Lagoon.
- Samples of the eroding sediments from the old railroad right-of-way did not show elevated levels of the target contaminants.
- Two of the three storm drains entering the studied section of Colorado Lagoon will be further investigated based upon initial survey results.
- Samples of sediment from the storm drain entering at the north end of this portion of Colorado Lagoon were compared to sediments from the Lagoon. All measured metals except lead were present in greater concentrations in the storm drain sediments than in the Lagoon sediments.
- Elevated levels of cis-nonachlor and total chlordane were also found in sediment samples from the storm drain entering at the north end of the studied section of Colorado Lagoon.
- Of the two storm drains entering Colorado Lagoon from the west, the southernmost one may be a significant source of lead, other metals, and organochlorine pesticides based upon initial investigations. Sediments from this location contained no clay and were 97.5 percent sand.



6.6 SPECIFIC HIGHLIGHTS AND ACCOMPLISHMENTS DURING THIS REPORTING PERIOD

- Installation of 529 additional inserts for 175 catch basins at a cost of \$241,100 made possible by a grant from the USEPA. The total number of units installed to date is approximately 1,847 with an investment of \$840,000.
- Significant progress on the Hamilton Bowl Trash Reduction project with the construction of structural BMPs.
- Successful grant applications for Los Angeles River Trash Nets, Los Angeles River VSS Unit, and Colorado Lagoon restoration and remediation projects. Grant monies awarded in FY 06 total \$5,894,868, which brings the total amount awarded for Los Angeles River pump station BMPs and Colorado Lagoon to \$8,813,119.
- Continued implementation of the City Manager's "Litter Abatement and Awareness Campaign" to provide a cleaner and safer community.
- Launch of EcoZone, which expands upon the established Adopt-A-Waterway program.

6.7 SUGGESTIONS TO IMPROVE LBSWMP

Once again, despite dramatic increases in program compliance costs and equally dramatic decreases in revenue offsets, the City's program remains strong, dynamic and effective. However, the program data and achievements to date indicate that improvements to this program would come from a reallocation of resources within the Stormwater budget and replacement of the current Water Quality Monitoring Program with a Regional Water Quality Monitoring Program.

Each year over \$500,000 is spent on water quality monitoring with little or no return on this costly investment. Throughout the region water quality data collected from Municipal, Industrial, and Construction permit programs is not correlated. It is our recommendation that the City's Water Quality Monitoring Program be replaced with a Regional Water Quality Monitoring Program (RWQMP). The RWQMP's primary objective would be to integrate all water quality monitoring data collected and to develop a new, focused, and comprehensive program. The LBSWMP budget should be reallocated so that up to 20 percent (\$100,000) be dedicated to Regional Studies, up to 20 percent (\$100,000) be used to supplement a Regional/Countywide monitoring program, and the balance of the funds (\$300,000) be redistributed by the City to enhance those LBSWMP elements that tangibly reduce and/or eliminate pollutants from entering the storm drain system.

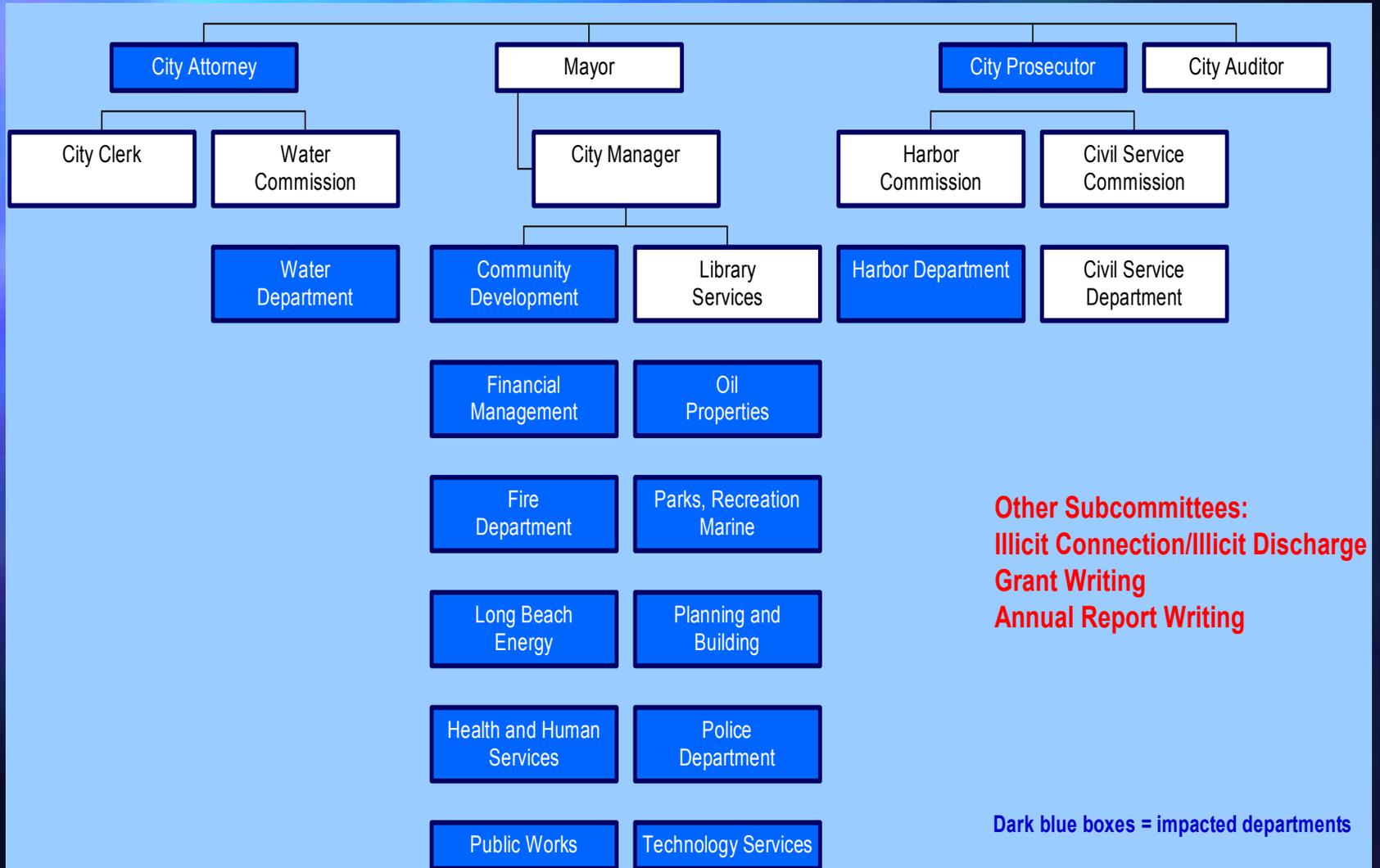


6.8 THE FUTURE

- Enhance Web-based Internet training and upgrade the storm water Web site.
- Assess the effectiveness of structural BMPs recently installed and continue to monitor all structural BMPs.
- Proceed with the following grant construction projects: Hamilton Bowl trash reduction, Colorado Lagoon restoration and remediation, Los Angeles River VSS unit, and Los Angeles River trash net system.
- Continue education efforts for all target groups and finalize the used oil pollution prevention outreach project made possible by a California Integrated Waste Management Board grant.
- Remain active in collaborative programs including regional task forces, councils, organizations, and committees
- Develop and implement programs to compliment the ROWD's enhanced LBSWMP and permit once the ROWD is approved.

Program Implementation

Citywide Task Force



List of Regional Agencies that Collaborate with the City of Long Beach Stormwater Division
Agency

Los Angeles River Master Plan (LARMP) Advisory Committee
San Gabriel River Master Plan (SGRMP) Advisory Committee
Los Angeles and San Gabriel Rivers Watershed Council (LASGRWC)
Dominguez Watershed Advisory Council (DWAC)
Los Angeles Contaminated Sediments Task Force (CSTF)
Rivers and Mountains Conservancy (RMC)
California Stormwater Quality Association (CASQA)
Stormwater Monitoring Coalition (SMC)
NPDES Municipal Stormwater Permit Executive Advisory Committee (EAC)
Los Angeles County Best Management Practices Task Force (LADPW/BMP TF)
Los Angeles and San Gabriel Rivers Watershed Subcommittees, LA Dept of Public Works
Colorado Lagoon Advisory Group (FOCL)
LADPW Public Education Task Force
Joint NPDES Permittees (including LACSD)
SWAT (Principle Permittees - LADPW, COLA, LACSD, Ventura & CalTrans)
California Integrated Waste Management Used/Recycled Oil Task Force
South Coast Air Quality Management District (AQMD)
Southern California Association of Governments (SCAG)
Water Environmental Research Foundation (WERF)
Integrated Regional Water Management Plan (IRWMP) for the Greater Los Angeles County Region

562-570 - DUMP (3867) Storm Water Hotline

Call 911 immediately to report dumping of hazardous materials (oil, grease, paint, etc.) into storm drain

FIRE	HARBOR	HEALTH	PLANNING & BUILDING	WATER	PUBLIC WORKS	PUBLIC WORKS
911 (24hrs/7days/wk)	590-4185 (24hrs/7days/wk)	570-4129 (>4:30 pm call 911)	570-6651 (> 4:30pm leave msg)	570-2390 (24 hours)	570-2876 (24hrs)	570-2700 (24hrs)
<p>911 Any release (dynamic or static) that actively threatens people or property EXAMPLES: Chemicals 911</p> <ul style="list-style-type: none"> - paint - motor oil - degreasing solvents - lead based paint - fuel <p>If immediate danger of entering the storm drain system</p> <p>Hazardous materials left in or near storm drain - call 911</p> <p>Unknown Discharges Pipelines/leaks/ abandoned drums</p> <p>Suspected Oil Company Discharge</p>	<p>Area South of Anaheim, West of L.A. River</p> <p>Harbor Security # (24/7) 562-590-4185</p>	<p>West Nile Virus 562-570-4132</p> <p>Food</p> <ul style="list-style-type: none"> - waste - mats - dumpsters <p>Sewage/Waste Water</p> <ul style="list-style-type: none"> - graywater - dirty water - RV waste - raw sewage - pool water - pond water - vehicle washing at commercial site <p>Medical Waste Medical Waste/Facilities</p> <p>Medical Facilities</p> <p>Apt. Housing</p> <ul style="list-style-type: none"> - dumpsters <p>Commercial Car Wash</p> <ul style="list-style-type: none"> - stationary business <p>Commercial/Industrial</p> <ul style="list-style-type: none"> - chemical storage/ housekeeping 	<p>Commercial Facilities</p> <ul style="list-style-type: none"> - dumpsters <p>Single Family Homes</p> <ul style="list-style-type: none"> - trash - roof wash <p>Commercial Car Wash</p> <ul style="list-style-type: none"> - mobile - carpet cleaning on private property <p>Commercial Housekeeping (non food businesses)</p> <ul style="list-style-type: none"> - trash - debris <p>Minor Offenses Permit/ Code related-no immediate action necessary ie: car repair</p> <p>Discharges from Construction Sites</p> <p>Developer Planning and Construction Information 86565 (SUSMPs > 2/15/01)</p>	<p>Storm Drains</p> <ul style="list-style-type: none"> - catch basins <p>Sewer *</p> <ul style="list-style-type: none"> - to report spills into sewer system (ie: spills that may enter via a manhole) <p style="text-align: right;">*Water will contact Health Dept</p>	<p>Stormwater Management Division 562-570-5938</p> <p>Environmental Services 570-2876 (> 4:30pm call 435-6711)</p> <p>Trash 570-2870</p> <ul style="list-style-type: none"> - street - alley - large items - dumped items - special pickups <p>Recycling 570-2850</p> <p>Street Sweeping 570-2890</p> <p>Shopping Carts 800-252-4613</p>	<p>Sediment 570-2700 Mud</p> <p>Large items blocking street or alley 570-2700</p> <p>Public Works Permits 85161 (Right of Way)</p> <p>TO REPORT NON-HAZARDOUS MATERIALS: EXAMPLES: GRASS CLIPPINGS LEAVES/GREEN WASTE PET WASTE 570-DUMP(3867)</p>
				HOTLINES	HOTLINES	HOTLINES
				Hotline: 562-570-4199 Beach "Advisory" and "Closing" Info Line	Environmental Services Bureau 570-2876	Hotline/General Storm Water Information 570-DUMP 570-3867
Los Angeles Regional Board RB4 @ www.waterboards.ca.gov/losangeles/ :						November 26, 2006 Revision date
Municipal/Phase II		Carlos Urrunaga	(213) 620-2083	email		
Industrial/CLB Municipal		Ivar Ridgeway	(213) 620-2150	stormwater@waterboards.gov		
Construction		Tracy Woods	(213) 620-2095	gov		
State Board Contact Information @ http://www.waterboards.ca.gov						
General Inquiry	(916) 341-5536	Phase II Inquiries	(916) 341-5539			
Construction Inquiry	(916) 341-5537	Fax #	(916) 341-5543			
Industrial Inquiry	(916) 341-5538	SPILL RESPONSE				

<http://www.lbstormwater.org>

1-888-CLEAN-LA (Countywide)

Additions/Deletions/Corrections

Call Tom Leary @ 86023

Tom_Leary@longbeach.gov

2006NPDES Referral Numbers Color.xls

OVERSIZED ITEMS ARE NO BIG DEAL...

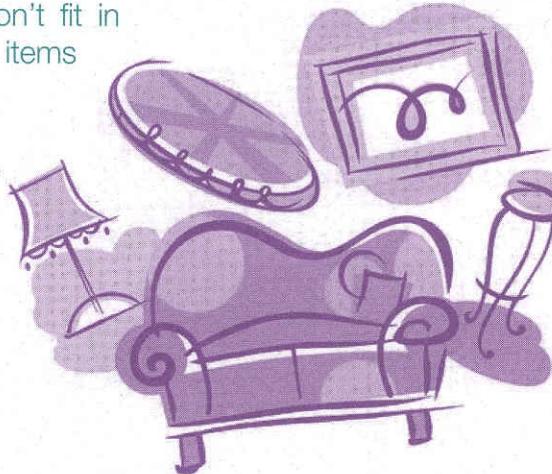
What do you do with an old sofa or refrigerator?

First, consider donating items to a re-sale organization or thrift shop (visit www.longbeach-recycles.org for re-use opportunities in Long Beach). But what do you do with those oversized or odd-sized items that you have left? No problem...

The City of Long Beach provides each residential account two **FREE*** "Special Collections" annually. Just call the Environmental Services Hotline at 570-2876, and we'll schedule a pickup of bulky items that won't fit in your trash container or other items that require special handling.

Restrictions apply.

**A regulatory fee may be charged for items requiring special handling.*



**ENVIRONMENTAL SERVICES
HOTLINE
570-2876**

✓ Please have your account number available when calling the Hotline.

SPECIAL COLLECTION ITEMS INCLUDE:

- **Furniture**
- **Appliances**
(for safety, refrigerators and freezers must have doors removed)
- **Computers and monitors**
- **Televisions**
- **Tires**
(no rims, maximum size 16")
- **Tree branches, yard debris**
(4-ft, 40-lb tied bundles)
- **Other odd items**

Preparing items for a Special Collection:

- 1. Bundles & Bags:** Please bundle smaller items together. Items and bundles can be at most 40 pounds (25 pounds if in bags) and a maximum of 72" x 48". Bundles should be no longer than 4 feet. To ensure safe handling of items by City Crews, please do not place sharp objects such as branches, sticks, broken glass, etc. in plastic bags. All bags and bundles must be securely tied. All branches must be bundled and all yard waste must be contained (bagged).
- 2. Oversized items:** If you want an oversized item collected (such as a sofa or any item that exceeds the maximum size), please let us know when you schedule the pickup.
- 3. Special handling:** Appliances, televisions, computer monitors, and tires will be picked up by a special truck and should be kept separate from other items. If you have any of these for collection, let us know when you schedule the pickup. A fee might be charged for items requiring special handling.
- 4. Quantity:** A maximum of five large items will be allowed for each scheduled pickup. A fee will be charged for additional items.
- 5. Time:** On your scheduled special collection day, place all items at your normal weekly refuse collection location no later than 6:00 a.m.

If you have questions concerning acceptability of items and to schedule a special collection, call the Environmental Services Hotline at (562) 570-2876.

Please note: Construction and demolition debris and hazardous waste are not eligible. Additional special collections are available for a fee.



www.longbeach-recycles.org



Beautiful Long Beach

Be a part of something special. Join the Long Beach Water Department for an all-out assault on the trash that pollutes the city's longest stretch of beach. Help make Long Beach a more Beautiful place to live.

What:

Saturday Morning Beach Cleanup

December 10, 2005

9:00 a.m. to 12:00 p.m.

Where:

Bluff Park - The city's window to the Pacific
Coronado Avenue at Ocean Blvd.

- High School students receive service learning credits necessary for graduation
- Cub Scouts, Boy Scouts and Girl Scouts receive credit toward merit badges
- All participants receive official public service acknowledgement from the Long Beach Board of Water Commissioners
- Trash bags, gloves and water are provided.

For more information on this event call Juan Garza at (562) 570-2311 or email juan_garza@lbwater.org



RECYCLE! KEEP THE BOTTLE OFF THE BEACH

www.lbwater.org

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0054
(916) 319-2054
FAX (916) 319-2154
DISTRICT OFFICE
3711 LONG BEACH BOULEVARD
SUITE 801
LONG BEACH, CA 90807
(562) 997-0794
FAX (562) 997-0799

Assembly
California Legislature



BETTY KARNETTE
ASSEMBLYMEMBER, FIFTY-FOURTH DISTRICT

COMMITTEES:
CHAIR
SELECT COMMITTEE
ON PORTS
MEMBER
APPROPRIATIONS
ARTS, ENTERTAINMENT,
SPORTS, TOURISM,
AND INTERNET MEDIA
INSURANCE
RULES
TRANSPORTATION

May 2, 2006

Mr. Tom Leary
Stormwater Management Officer
City of Long Beach
333 W. Ocean Blvd., 9th Floor
Long Beach, CA 90802

Dear Mr. Leary:

I would like to extend my sincere appreciation for your participation in the 54th District public awareness meeting on environmental issues on Saturday, April 29. As anticipated, your presentation was exceptional.

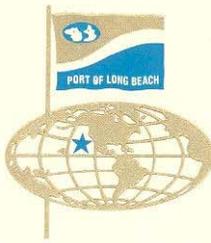
Once again, I found the information that you provided in your presentation to be insightful and valuable. I am confident that the members of the community that attended the meeting would agree.

Should I be of assistance to you in the future, please do not hesitate to contact my office.

Sincerely,

A handwritten signature in black ink that reads "Betty Karnette".

BETTY KARNETTE
Assemblymember, 54th District



The Port of Long Beach

P. O. BOX 570 · LONG BEACH, CA 90801-0570 · TELEPHONE (562) 437-0041 · FAX (562) 901-1725

October 10, 2005

Tom Leary
Department of Public Works
City Hall, 9th floor
333 W. Ocean Blvd.
Long Beach, CA 90802

Dear Mr. Leary,

On behalf of the Port of Long Beach, we want to thank you for contributing your time, participation and resources to our first annual Green Port Open House on October 1.

Because of partners such as you, we were able to showcase our environmental efforts to more than 2,000 community members. Attendees learned about Port programs to reduce air emissions, curb freeway traffic, and maintain clean waters. In addition, they enjoyed environmental harbor cruises, homegrown entertainment, and children's games, making the Green Port Open House a truly successful—and educational—community event.

With your help, we were able to give Long Beach residents a far better understanding of the Port's ground-breaking efforts to improve the environment and to change the very way it does business.

We thank you again for your generosity, and we look forward to working with you in the future.

Sincerely,

Doris Topsy-Elvord
President
Harbor Commission

Richard D. Steinke
Executive Director
Port of Long Beach





CURRICULUM INSTRUCTION & PROFESSIONAL DEVELOPMENT

Science Curriculum Office

Teacher Resource Center, Room 7

1299 E. 32nd Street, Long Beach, CA 90807

(562) 997-8000 Ext. 2963 ■ FAX: (562) 426-8448

May 30, 2006

Ms. Deborah Welsh
Stormwater Management Division
City of Long Beach Department of Public Works
333 West Ocean Blvd.
Long Beach, CA 90802



RE: **11th Annual, Long Beach Unified School District K-12 Science Fair, Interactive Science Sessions Saturday, April 29, 2006 Cabrillo High School, 2001 Santa Fe Ave, Long Beach, California**

Dear Ms. Welsh:

On behalf of the Long Beach Unified School District (LBUSD) K-12 Science Fair Steering Committee, I would like to thank you and your organization for participating in our Interactive Science Sessions at our 11th Annual, Science Fair held Saturday, April 29, 2006. Thank you for making our interactive sessions a resounding success. I have attached photographs of you and your organization actively engaged with our students. I believe your interactive session was an asset to our program and hope you will consider joining us in 2007. The fair is typically held on a Saturday during the month of April at Cabrillo High School from 8:30 a.m. to 12:30 p.m. I will send you a "save the date" reminder, once the District has finalized its master calendar.

This year, we had over 1,200 students participate in the fair and an attendance of families and other students brought that number to over 3,000 attendees. We had fifteen Interactive Science Sessions, of which your organization was a participant. I received excellent comments from parents and excited students who truly enjoyed the day. I hope you do consider keeping us as an annual event, which your organization participates.

Please do not hesitate to contact me if you have questions, or would like electronic copies of the photographs I took (562/234-4055 or ssgarcia55@verizon.net). Take care and I look forward to your participation at our 12th Annual, K-12 Science Fair in 2007.

Sincerely,

Susan Garcia
LBUSD K-12 Science Fair Steering Committee,
Interactive Session Chairperson

Cc: Scott Lines
✓ Tom Leary



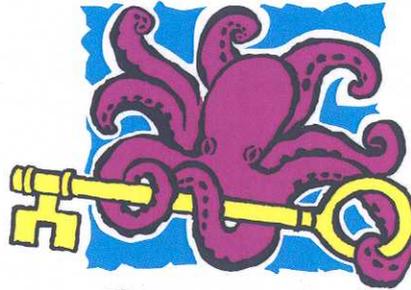
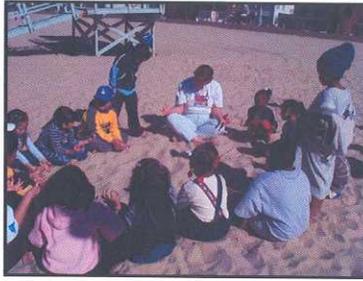
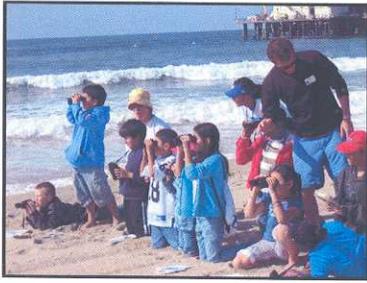
TIDEPOOL CRUISER OUTREACH

DATE	EVENT	LOCATION	SCHOOL DISTRICT	CITY	COUNTY	AUDIENCE	NUMBER
10/12/05	Presentations	Longfellow Elementary	Long Beach Unified	Long Beach	Los Angeles	3rd Grade	162
10/17/05	Presentations	Kettering Elementary	Long Beach Unified	Long Beach	Los Angeles	3rd -5th Grades	170
11/18/05	Presentations	Garfield Elementary	Long Beach Unified	Long Beach	Los Angeles	3rd Grade	80
11/21/05	Presentations	Garfield Elementary	Long Beach Unified	Long Beach	Los Angeles	3rd Grade	80
11/22/05	Presentations	Holmes Elementary	Long Beach Unified	Lakewood	Los Angeles	2nd Grade	100
11/23/05	Presentations	Holmes Elementary	Long Beach Unified	Lakewood	Los Angeles	3rd Grade	100
12/6/05	Presentations	Harte Elementary	Long Beach Unified	Long Beach	Los Angeles	3rd Grade	135
12/9/05	Presentations	Los Cerritos Elementary	Long Beach Unified	Long Beach	Los Angeles	3rd-4th Grades	185
12/14/05	Presentations	Cubberly Elementary	Long Beach Unified	Long Beach	Los Angeles	3rd Grade	117
12/16/06	Presentations	Buffum Elementary	Long Beach Unified	Long Beach	Los Angeles	3rd-5th Grades	167
12/21/05	Presentations	Mann Elementary	Long Beach Unified	Long Beach	Los Angeles	2nd-3rd Grades	135
1/13/06	Presentations	Burroughs Elementary	Long Beach Unified	Signal Hill	Los Angeles	2nd-3rd Grades	112
1/17/06	Presentations	Starr-King Elementary	Long Beach Unified	Long Beach	Los Angeles	3rd Grade	0
1/18/06	Presentations	Starr-King Elementary	Long Beach Unified	Long Beach	Los Angeles	3rd Grade	0
1/27/06	Presentations	Cleveland Elementary	Long Beach Unified	Lakewood	Los Angeles	5th Grade	132
1/31/06	Presentations	MacArthur Elementary	Long Beach Unified	Lakewood	Los Angeles	5th Grade	132
2/1/06	Presentations	Starr-King Elementary	Long Beach Unified	Long Beach	Los Angeles	3rd Grade	96
2/2/06	Presentations	Starr-King Elementary	Long Beach Unified	Long Beach	Los Angeles	3rd Grade	88
2/21/06	Presentations	Prisk Elementary	Long Beach Unified	Long Beach	Los Angeles	2nd Grade	78
3/12/06	One Book Kick-Off	Long Beach Pub. Library	N/A	Long Beach	Los Angeles	General Public	500
3/14/06	Presentations	Gant Elementary	Long Beach Unified	Long Beach	Los Angeles	4th Grade	126
3/21/06	Presentations	Barton Elementary	Long Beach Unified	Long Beach	Los Angeles	3rd Grade	134
3/31/06	Presentations	McKinley Elementary	Long Beach Unified	Long Beach	Los Angeles	2nd Grade	142
4/28/06	Academic Kaleidoscope	CSULB	N/A	Long Beach	Los Angeles	1st-8th Grades	154
4/29/06	Kaleidoscope	CSULB	N/A	Long Beach	Los Angeles	General Public	30,000
5/19/06	Presentations	New City Charter	Long Beach Unified	Long Beach	Los Angeles	K-6th Grades	72
7/5/06	Ind. From Litter Day	Cherry Beach	N/A	Long Beach	Los Angeles	K-8th Grades	250
8/15/06	Presentations	Lincoln Elementary	Long Beach Unified	Long Beach	Los Angeles	3rd Grade	145
9/28/06	Presentations	Gompers Elementary	LBUSD	Long Beach	Los Angeles	2nd Grade	95

33,687

Total Students 2,937
Total Gen Public 30,750

33,687



Key to the Sea.

Annual Report 2005-2006

Mission Statement

In the spirit of openness, and through collaboration, communication and resource sharing, Key to the Sea strives to provide teachers with supportive professional development and multi-disciplinary, marine science curricula, which meets state and national science standards. Key to the Sea endeavors to promote environmental stewardship in students by stimulating their sense of wonder, learning and empowerment through key experiences in the environment.





Heal the Bay's

Key to the Sea

2005-2006 Annual Report

Accomplishments for 2005-2006 School Year

Heal the Bay and our program partners would like to offer our gratitude and appreciation for your support of the elementary environmental education program Key to the Sea. Our seventh year was a very successful school year and it is a direct reflection of the great importance of, and need for, this program in our elementary school classrooms.

Your funding aided in educating 270 teachers at our professional development workshops where teachers learn how to integrate interdisciplinary, standards-based environmental education curricula into their classrooms. Also, this year we welcomed 103 teachers back to the program as veteran teachers who already attended both of the workshops but continue to participate in the program. Therefore, this year we had a total of 404 teachers participate in the Key to the Sea program in some aspect.

Your funding and support also enabled us to teach approximately 8,332 students during a total of 166 field trips to our four participating field trip sites at Cabrillo Marine Aquarium-San Pedro, SEA Laboratory-Redondo Beach, Roundhouse Marine Studies Lab and Aquarium-Manhattan Beach, and the Santa Monica Pier Aquarium -Santa Monica. Furthermore, with some of the grant money we were able to fund 81 buses to provide transportation to the field trip for approximately 3,800 students. This year we reached 112 different elementary schools and students from 24 school districts or private schools within Los Angeles and Long Beach County. Out of the 112 schools, 88 were Title 1 schools reaching 7,059 students from low income areas, that's 85% of the students that participated in Key to the Sea.

As we look to the 2006-2007 school year we know we will face many challenges as school district budgets continue to be cut however Heal the Bay is working hard on getting students out to the beach and to encourage teachers to further their education through our professional development workshops. Key to the Sea will continue to update its curriculum and add any necessary materials that will help teachers and students to learn about our environment.

On behalf of Heal the Bay, our program partners, teachers and students, we thank you for providing support to this important and much needed environmental education program.

Catie Farias Boarts
Education Manager
Heal the Bay

Joelle Warren-Lane
Director of Programs and Education
Heal the Bay

Key to the Sea 2005-2006 Totals	
Workshop I Teachers	176
Workshop II Teachers	90
Workshop III Teachers	4
Veteran Teachers	103
Non-workshop Teachers	31
Total Teachers	404
Students Attended	8332
Schools Participated	112
Title One Schools Participated	88
Title One Teachers Participated	342
Title One Students Participated	7059
Districts Reached	24
Free Buses Provided	81
# of Field Trips	166

Key to the Sea 2005-2006 School Participation in Los Angeles County

#	SCHOOL NAME	CITY	DISTRICT	TITLE 1	# TEACHERS	# OF STUDENTS	# BUSES PROVIDED
1	24th Street	Los Angeles	Los Angeles USD	Y	3	60	1
2	28th Street	Los Angeles	Los Angeles USD	Y	3	55	
3	61st Street	Los Angeles	Los Angeles USD	Y	7	156	3
4	93rd Street	Los Angeles	Los Angeles USD	Y	2	40	
5	Addams	Lawndale	Lawndale USD	Y	6	121	
6	Allendale	Pasadena	Pasadena USD	Y	3	47	
7	Alpine	Little Rock	Keppel USD	Y	6	91	2
8	Alvarado	Long Beach	Long Beach USD	Y	2	68	1
9	American Martyrs	Manhattan Beach	Private	N	1	30	
10	Amestoy	LAUSD	Los Angeles USD	Y	5	85	2
11	Anderson	Lawndale	Lawndale USD	Y	3	60	
12	Annandale	Los Angeles	Los Angeles USD	Y	3	60	
13	Arlington	Torrance	Torrance USD	Y	3	48	
14	Balboa Magnet	Northridge	Los Angeles USD	N	3	60	
15	Baldwin Hills	Los Angeles	Los Angeles USD	Y	3	64	2
16	Beryl Heights	Redondo Beach	Redondo Beach USD	Y	2	51	
17	Billy Mitchell	Lawndale	Lawndale USD	Y	7	130	1
18	Bitely	Rosemead	Garvey USD	Y	3	57	
19	Blythe Street	Reseda	Los Angeles USD	Y	1	30	
20	Bret Harte	Burbank	Burbank USD	N	6	106	
21	Brightwood	Monterey Park	Alhambra USD	Y	3	56	
22	Bryant	Long Beach	Long Beach USD	Y	2	67	1
23	Camellia Ave	North Hollywood	Los Angeles USD	Y	3	53	1
24	Camino Nuevo Charter Academy	Los Angeles	Los Angeles USD	Y	1	25	1
25	Carr	Torrance	Torrance USD	Y	4	78	
26	Carson	Lawndale	Lawndale USD	Y	1	20	
27	Cesar Chavez	Bell Gardens	Montebello USD	Y	2	60	
28	Clara Barton	Long Beach	Long Beach USD	Y	2	32	
29	Darby Avenue	Northridge	Los Angeles USD	Y	1	28	
30	Dearborn	Northridge	Los Angeles USD	Y	9	203	4
31	Desert Rose	Palmdale	Palmdale USD	Y	2	55	
32	Dixie Canyon	Sherman Oaks	Los Angeles USD	Y	9	203	1
33	Eastside	Lancaster	Eastside USD	Y	9	137	
34	Euclid Avenue	Los Angeles	Los Angeles USD	Y	3	58	1
35	Fenton Avenue	Lake View Terrace	Los Angeles USD	Y	8	142	
36	Fletcher Drive	Los Angeles	Los Angeles USD	Y	3	53	1
37	Franklin	Santa Monica	Santa Monica-Malibu USD	N	3	68	
38	Franklin	Altadena	Pasadena USD	Y	3	60	
39	Gardena	Gardena	Los Angeles USD	Y	2	60	2
40	Garden Grove	Reseda	Los Angeles USD	Y	3	47	
41	Gault	Van Nuys	Los Angeles USD	Y	1	25	
42	Granada Hills Baptist	Granada Hills	Private	N	1	30	
43	Grant	Santa Monica	Santa Monica-Malibu USD	Y	4	75	1
44	Gulf Avenue	Wilmington	Los Angeles USD	Y	3	60	
45	Harmony	Los Angeles	Los Angeles USD	Y	2	60	1
46	Hillcrest Drive	Los Angeles	Los Angeles USD	Y	6	109	2
47	Hollingworth	West Covina	Rowland USD	Y	3	120	
48	Hoover	Los Angeles	Los Angeles USD	Y	4	79	1
49	Huntington Drive	Los Angeles	Los Angeles USD	Y	2	52	1
50	Janson	Rosemead	Rosemead USD	Y	1	20	
51	John Adams	Torrance	Torrance USD	Y	3	70	
52	John Muir	Santa Monica	Santa Monica-Malibu USD	Y	2	34	1
53	Joshua Hills	Palmdale	Palmdale USD	Y	10	256	5
54	Kadima Hebrew Academy	Woodland Hills	Private	N	1	21	
55	Lincoln	Redondo Beach	Redondo Beach USD	Y	4	80	
56	Lockhurst	Woodland Hills	Los Angeles USD	N	1	18	
57	Logan Street	Los Angeles	Los Angeles USD	Y	6	111	
58	Lorena Street	Los Angeles	Los Angeles USD	Y	8	169	1
59	Lorne Street	Northridge	Los Angeles USD	Y	3	85	2
60	Los Angeles/ Common Wealth	Los Angeles	Los Angeles USD	Y	3	60	
61	Magnolia	Los Angeles	Los Angeles USD	Y	2	40	
62	Main Street	Los Angeles	Los Angeles USD	Y	2	60	
63	Mar Vista	Los Angeles	Los Angeles USD	N	2	37	
64	Mark Twain	Lawndale	Lawndale USD	Y	3	60	1
65	Mark Twain	Long Beach	Long Beach USD	N	7	140	

Key to the Sea
2005-2006 Annual Report

#	SCHOOL NAME	CITY	DISTRICT	TITLE 1	# TEACHERS	# OF STUDENTS	# BUSES PROVIDED
66	Meadows	Manhattan Beach	Manhattan Beach USD	N	2	40	
67	Mesa	Covina Vallet	Covina Valley USD	N	6	120	
68	Multicultural Learning Center	Canoga Park	Los Angeles USD	Y	5	91	2
69	Multnomah St	Los Angeles	Los Angeles USD	Y	3	60	1
70	Nevin Avenue	Los Angeles	Los Angeles USD	Y	3	60	1
71	New Academy	Conoga Park	Los Angeles USD	N	3	60	
72	Normont Ave	Harbor City	Los Angeles USD	Y	4	68	2
73	Open Charter	Los Angeles	Los Angeles USD	N	2	37	
74	Our Lady of Guadalupe	Hermosa Beach	LA Archdiocese	N	1	25	
75	Paseo del Rey Natural Science Mag	Playa del Rey	Los Angeles USD	Y	5	100	2
76	Patrick Henry	Long Beach	Long Beach USD	Y	4	67	
77	Payne	Inglewood	Inglewood USD	Y	1	17	
78	Pennekamp	Manhattan Beach	Manhattan Beach USD	N	4	90	1
79	Pio Pico	Pico Rivera	EI Rancho USD	Y	2	55	
80	Pleasant View	Baldwin Park	Baldwin Park USD	Y	8	165	2
81	Reseda Elementary	Reseda	Los Angeles USD	Y	1	32	1
82	Rice	Rosemead	Garvey USD	Y	2	55	
83	Riley	Lakewood	Long Beach USD	Y	6	137	3
84	Roosevelt	Burbank	Burbank USD	Y	2	47	
85	Roosevelt	Lawndale	Lawndale USD	Y	6	120	
86	Roosevelt	Long Beach	Long Beach USD	Y	9	161	3
87	Rowan Ave	Los Angeles	Los Angeles USD	Y	3	65	2
88	San Antonio	Huntington Park	Los Angeles USD	Y	6	101	2
89	San Fernando Elementary	San Fernando	Los Angeles USD	Y	7	132	3
90	San Gabriel	South Gate	Los Angeles USD	Y	2	57	
91	Santa Monica Community Charter	Santa Monica	Santa Monica-Malibu USD	Y	2	43	1
92	Short Ave	Los Angeles	Los Angeles USD	Y	3	56	
93	St. Augustine School	Culver City	LA Archdiocese	N	2	57	
94	St. Joseph School	Hawthorne	LA Archdiocese	N	4	111	
95	St. Marks Episcopal	Downey	LA Archdiocese	N	3	31	
96	St. Patricks	North Hollywood	Private	N	2	43	
97	Strathern	North Hollywood	Los Angeles USD	Y	3	51	1
98	US Grant	Long Beach	Long Beach USD	Y	6	133	2
99	Valerio Primary Center	Van Nuys	Los Angeles USD	Y	3	60	1
100	Van Deene	Torrance	Los Angeles USD	Y	1	30	
101	Venice High School	Venice	Los Angeles USD	Y	1	21	1
102	Verdugo Woodlands	Glendale	Glendale USD	N	6	115	
103	Victor Elementary	Torrance	Torrance USD	Y	2	40	
104	Victory Blvd	North Hollywood	Los Angeles USD	Y	2	24	1
105	Wallgrove Ave	Los Angeles	Los Angeles USD	Y	2	61	1
106	Webster	Long Beach	Long Beach USD	Y	5	117	1
107	Webster	Malibu	Santa Monica-Malibu USD	N	2	34	
108	Westminster	Venice	Los Angeles USD	Y	6	111	2
109	Will Rogers	Santa Monica	Santa Monica-Malibu USD	Y	10	193	4
110	William Green	Lawndale	Lawndale USD	Y	5	100	1
111	Windsor Hills magnet	Los Angeles	Los Angeles USD	Y	2	44	
112	Woodlawn Avenue	Bell	Los Angeles USD	Y	6	100	
TOTALS :					404	8332	81

**Los Angeles Counties Unified School District Student Participation in the
2005-2006 Key to the Sea Program**

#	DISTRICT	# STUDENTS	# TEACHERS
1	Alhambra USD	56	3
2	Baldwin Park USD	165	8
3	Burbank USD	153	8
4	Covina Valley USD	120	6
5	Eastside USD	137	9
6	El Rancho USD	55	2
7	Garvey USD	112	5
8	Glendale USD	115	6
9	Inglewood USD	17	1
10	Keppel USD	91	6
11	LA Archdiocese	224	10
12	Los Angeles USD	3868	190
13	Lawndale USD	611	31
14	Long Beach USD	922	43
15	Manhattan Beach USD	130	6
16	Montebello USD	60	2
17	Palmdale USD	311	12
18	Pasadena USD	107	6
19	Private	124	5
20	Redondo Beach USD	131	6
21	Rosemead USD	20	1
22	Rowland USD	120	3
23	Santa Monica-Malibu USD	447	23
24	Torrance USD	236	12
TOTAL # OF STUDENTS :		8332	404

Program Evaluation Summaries & Teacher Evaluations



**Key to the Sea 2005-2006
Teacher Professional Development Workshop Evaluation Summary**

TEACHER WORKSHOP 1 EVALUATION

	<u>1 (negative)</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5 (positive)</u>
Expectations of Workshop #1:			1	13	124
Percentage:			0.71%	9.29%	88.57%
Overall program will be students:				5	125
Percentage:			0.00%	3.57%	89.29%
TOTAL EVALS 2005-2006:	140 (some not filled out)				

TEACHER WORKSHOP 2 EVALUATION

	<u>1 (negative)</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5 (positive)</u>
Expectations of Workshop #2:			3	8	64
Percentage:		0.00%	3.95%	10.53%	84.21%
Overall:			2	8	62
Percentage:		0.00%	2.63%	10.53%	81.58%
TOTAL EVALS 2005-2006:	76 (some not filled out)				

**Key to the Sea 2005-2006
Teacher Professional Development Workshop Evaluation Summary**

TEACHER WORKSHOP 3 EVALUATION

	1 (negative)	2	3	4	5 (positive)
Expectations of Workshop #1: Percentage:				1 20.00%	4 80.00%
Water Everywhere Percentage:				1 20.00%	4 80.00%
Sewage Treatment Percentage:			2 40.00%		3 60.00%
Storm Drains Percentage:				1 20.00%	4 80.00%
Habitat Loss Percentage:				1 20.00%	4 80.00%
Fish Contamination Percentage:			2 40.00%		3 60.00%
Seafood Watch Percentage:				0.00%	3 60.00%
Overall program will be effective for students: Percentage:			1 20.00%	1 20.00%	3 60.00%
TOTAL EVALS 2005-2006:	5 (some not filled out)				

Key to the Sea 2005-2006 Post program Teacher Evaluation Summary

Post Program Evaluation

After teachers have taken their students on the field trip and have had time to utilize the Key to the Sea curriculum, they then fill out and send in the post program evaluation form which is recorded to help assess the effectiveness of the overall program.

LOGISTICS:

	1 (negative)	2	3	4	5 (positive)
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Reservations at Centers Percentage:			1 3.57%	5 17.86%	22 78.57%
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Reservation of Wkshop Percentage:				3 10.71%	24 85.71%
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Convenience of dates: Percentage:			2 7.14%	6 21.43%	19 67.86%
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Convenience of times: Percentage:			1 3.57%	5 17.86%	20 71.43%
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BEACH EXPL.

	1 (negative)	2	3	4	5 (positive)
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Overall field trip Percentage:				6 21.43%	22 78.57%
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How well was Power of Observation taught? Percentage:	0%	0.00%	2 7.14%	9 32.14%	17 60.71%
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Zonation Study Percentage:	0%	0%	2 7.14%	7 25.00%	17 60.71%
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Naturalists Percentage:				3 10.71%	24 85.71%
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CURRICULUM

	1 (negative)	2	3	4	5 (positive)
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Easy to understand and implement? Percentage:			2 7.14%	3 10.71%	22 78.57%
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Standards easy to understand? Percentage:	0%	0%	0.00%	4 14.29%	23 82.14%
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Overall? Percentage:				5 17.86%	22 78.57%
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IMPACT

	1 (negative)	2	3	4	5 (positive)
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Effect on student's behavior? Percentage:	0%	0%	3 10.71%	9 32%	16 57.14%
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TOTAL EVALS 2005-2006: 28

Teacher Professional Development Workshop Evaluation

Name: Janique Rattliff Grade Taught: 1st
Date: May 6, 2006 Location of training: Santa Monica Pier Aquarium

Thank you for your participation in today's *Key to the Sea* workshop! The following evaluation is intended to help us continue to offer a high quality workshop that meets the needs of teachers. Your feedback is greatly appreciated.

1. Were your expectations met for today's workshop?

(negative) 1 2 3 4 5 (positive)

Comments: Great Workshop! Looking forward to taking
the lessons and information back to my classroom.
The fieldtrip will be a great experience for my
students

2. Please share any comments you have regarding each of the sections of the curriculum below:

Introduction & Assessment: Intro very informative, good background info.

WOW: Wonders of the Watershed: Graphics were helpful during presentation.
Resources were excellent

Environmental Science Tools: Great use of things not difficult to find
ie. hangers, pasta

Know Before You Go!: Good details, great things to know, like
the confusion with facilities.

Take it Home: Family Connections to the Sea: Fab idea, the students have
memories + the teacher does not have to pay! GREAT!

Community Involvement: Service Learning: Great ideas to get myself or
my students involved.

The Big Picture: Connect & Protect: Great idea for closing so it is apart
of their everyday thinking, not just for the moment.

3. Overall, how effective do you feel the Key to the Sea program will be for your students?

(negative) 1 2 3 4 5 (positive)

Comments: This workshop covered all of its bases. There is nothing
I have to worry about for the field trip. All questions covered
before they were asked

Teacher Professional Development Workshop II Evaluation

Name: Tina Woo Grade Taught: 2
Workshop Date: 5/6/06 Location of Workshop: Santa Monica Pier Ag.

Thank you for your participation in today's Key to the Sea workshop! The following evaluation is intended to help us continue to offer a high quality workshop that meets the needs of teachers. Your feedback is greatly appreciated.

1. Were your expectations met for today's workshop?
(negative) 1 2 3 4 5 (positive)

Comments: Nick and Taryn were both wonderful. They kept things light and fun and yet were very informative. Giving up a Saturday was never easier.

2. Please share any comments you have regarding each of the sections of the curriculum below:

Tools of the Trade: ?

Octopus Tag/Crabby Says: N/A
Good activities to introduce + then reinforce some of the info the field trip will provide.

Birds of a Feather Flock Together: _____

Beach Wrack/Bean Clam/Sand Crab Investigation: It is amazing the variety of creatures that live in the sand. It is also disgusting how much trash we leave behind.

Hang Ten Dude!: I love learning new things. The info was presented in an easy to remember + share w/ the kids way.

3. Please offer an evaluation of the Beach Naturalists that assisted in training today.

Name and Comments: Nick has the perfect personality for his job. He is full of energy + extremely upbeat + positive.

4. Overall, ?
1 2 3 4 5

Suggestions for improvement:
None. It was perfect.

Teacher Professional Development Workshop III Evaluation

Name: Millie Weber Grade Taught: 3

Workshop Date: 5-16-05 Location of Workshop: Redondo Bch Sea Lab

Thank you for your participation in today's Key to the Sea workshop! The following evaluation is intended to help us continue to offer a high quality workshop that meets the needs of teachers and may be used to secure further grant funding. Your feedback is greatly appreciated.

1. Were your expectations met for today's workshop?

(negative) 1 2 3 4 5 (positive)

Comments: My expectations were met. The folder
filled with information and aligned to state
standards

2. Please comment on the information provided and teaching tools created regarding each section of the curriculum below:

Habitat Loss (negative) 1 2 3 4 5 (positive)

Comments:

Habitat game was great! Students
will benefit from hands on activities

Seafood Watch (negative) 1 2 3 4 5 (positive)

Comments:

Information card

Fish Contamination (negative) 1 2 3 4 5 (positive)

Comments:

Bringing awareness to health hazards
DDT PCB mercury
Making the fishing pole to "go fishing"

Water-Its Everywhere (negative) 1 2 3 4 (5) (positive)

Comments: _____
Water cycle - stressing the importance
of a drop of water.

Storm Drains (negative) 1 2 3 4 (5) (positive)

Comments: _____
Creating the timeline is a great
visual for students' understanding of
the breaking down of products in the
environment.

Sewage treatment (negative) 1 2 3 4 (5) (positive)

Comments: _____
Great idea for fieldtrip! West Basin
Radish experiment

3. Please offer an evaluation of the Instructors that assisted in training today.

Name and Comments: _____
Catie & Marie were both great in
presenting the material. They were very knowledgeable
and were enthusiastic.

4. Overall, the workshop and activities will be helpful?
(negative) 1 2 3 4 (5) (positive)

Suggestions for improvement: _____
Literature introduced will greatly
enhance the students understanding of concepts
Kids will love all the hands on activities

Great job!!

Post Program Evaluation

School: Mesa Name: Susan Mendenhall Grade: 3

Field Trip Location: Santa Monica Bay Aquarium Date of Visit: Jan. 11, 2006

Teachers, please complete the following evaluation after you have attended your *Key to the Sea* field trip and completed the curriculum.

Please mail to:

Heal the Bay; attn: Key to the Sea
3220 Nebraska Ave.
Santa Monica, CA 90404

Thank you for helping to make *Key to the Sea* the best it can be!

Logistics

1. Ease of making reservations at marine science center:

(negative) 1 2 3 4 5 (positive)

Comments: _____

2. Overall ease of registering for *Key to the Sea* Professional Development Workshop:

(negative) 1 2 3 4 5 (positive)

Comments: The website made it very easy and convenient.

3. Convenience of workshop dates offered:

(negative) 1 2 3 4 5 (positive)

Convenience of workshop times:

(negative) 1 2 3 4 5 (positive)

Suggestions for improvement: _____



Beach Exploration

(on the beach portion of your field trip led by Key to the Sea Naturalists)

1. How was the overall Beach Exploration portion of your field trip?

(negative) 1 2 3 4 5 (positive)

Comments: *I would have loved to have more time for this activity.*

2. How effectively do you feel the beach exploration activity Awakening the Powers of Observation, including the use of the binoculars, was taught?

(negative) 1 2 3 4 5 (positive)

Suggestions for improvement: *The presenter needed to speak louder in order for all students to hear over the surrounding environmental noises.*

3. How effectively do you feel the beach exploration activity Zonation Study was taught?

(negative) 1 2 3 4 5 (positive)

Suggestions for improvement: *This activity was excellent and the group leaders were very well-organized, kept all students actively engaged and focused on the task.*

4. How was your interaction with the Key to the Sea naturalists?

(negative) 1 2 3 4 5 (positive)

Comments: *They were helpful and responsive to questions.*

and reviewed the learning objectives effectively at the end of the lesson segment.

Curriculum

1. Which lessons from the Key to the Sea curriculum did you use in your classroom?

What is a Watershed? Maureen Debus's Pollution, Sewers vs. Storm Drains, The Litter Timeline, The Permeability Experiment

2. What was your reason for not using specific lessons?

Primarily time due to so much to read in of time. I plan to do Quadrat Cope w/ our life cycles/habitats unit in science.

3. Was the curriculum easy to understand and implement?

(negative) 1 2 3 4 5 (positive)

Suggestions for improvement:

curriculum area.



4. Were the standards easy to understand?

(negative) 1 2 3 4 5 (positive)

Suggestions for improvement: _____

5. Overall, what was your impression of the Key to the Sea Curriculum?

(negative) 1 2 3 4 5 (positive)

Suggestions for improvement: *Great! I truly enjoyed learning a lot myself and my students learned a great deal as well and enjoyed the subjects and content being studied.*

Impact

1. Has participating in the Key to the Sea curriculum had an effect on your students' behavior with regards to marine debris and pollution issues?

(negative) 1 2 3 ⁴ 5 (positive)

Comments: *They realize the danger ~~of~~^{that} common everyday items pose to marine life.*

2. What, if any, changes in your students' behavior have you noticed since participating in Key to the Sea?

Whenever they see litter on the ground, they pick it up and comment on how that could have gotten into the storm drains and ended up in the ocean.

3. Have you implemented any changes in your classroom or school as a result of your participation in Key to the Sea?

I try to consistently build an awareness in my students of the impact they have daily on our environment.

4. Have you received any feedback from parents or family members regarding the program?

If so, please summarize. *The parents who attended the trip were very positive. We also took a walking trip to our local water company as a follow up upon return which ~~was~~ the families enjoyed as well. They all commented on how much they had learned.*



Assessment

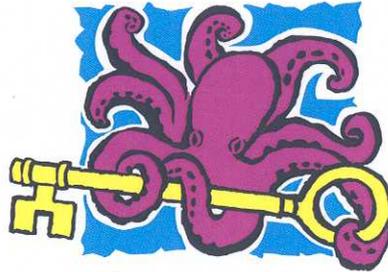
Please share any additional comments, suggestions for improvement, or stories in the space below. Thank you, again, for completing and mailing in this post-program evaluation.

The program was well-organized and effective. We incorporated the ^{ocean} pollution facts into our math unit as well and integrated them with our technology lessons by teaching the students to use the graph wizard in Microsoft Excel to create a pie graph of the marine pollutants using the data you provided. We took a walking trip to our local water company and to our own local storm drains to follow up on sewers vs. storm drains and how water gets to their homes. We learned that an average sprinkler-head uses 5 gallons of water per min. Students collected data about the # of sprinkler heads at their home and created graphs of their families' water usage in gallons for every min. they run their sprinklers. I continue to integrate other parts of the ~~unit~~^{key} to the sea curriculum as appropriate. Thank you for a wonderful educational experience.

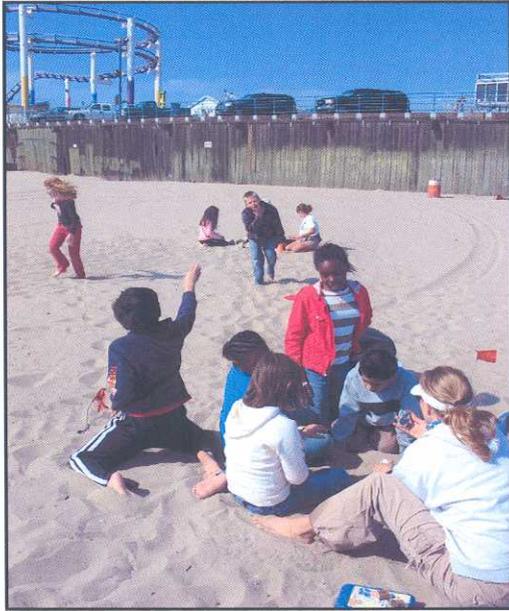


Photos and Students' Work

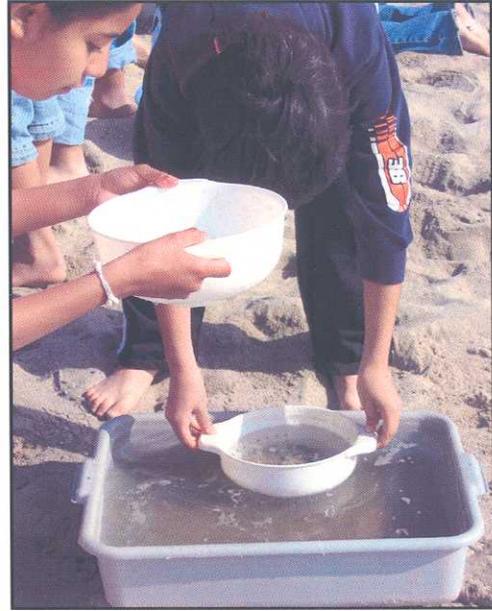




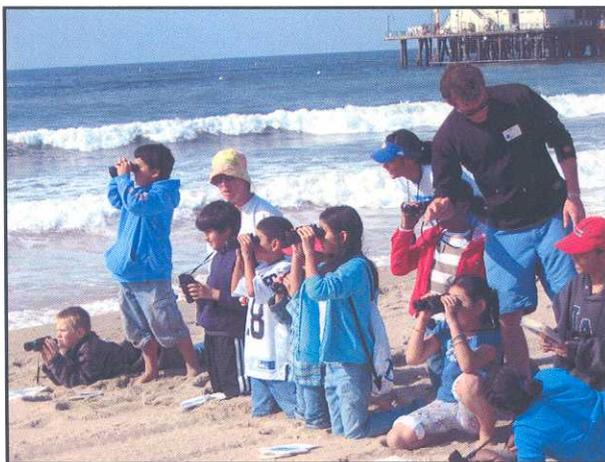
Key to the Sea..



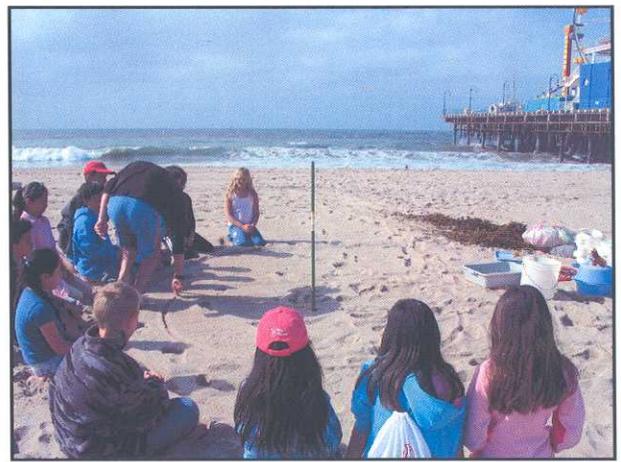
Students playing Fatal Food Relay!



Using sifters to search for sand crabs and bean clams

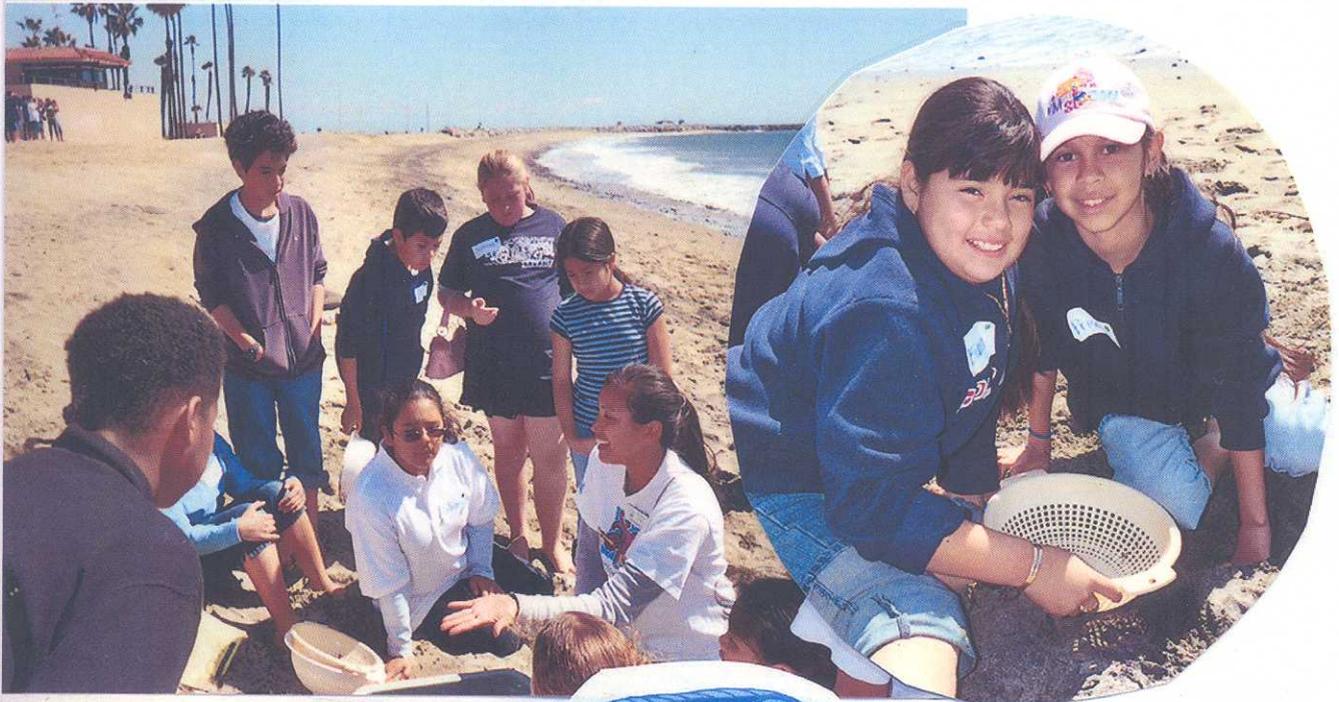


Bird Detectives using binoculars on the beach in search for clues!

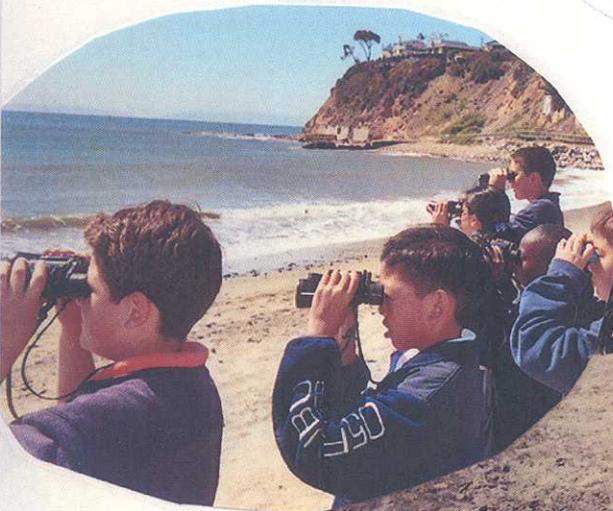


Students creating the Zonation Sampling Area to begin searching for signs of life!





Our Day at the Beach
March 15, 2006

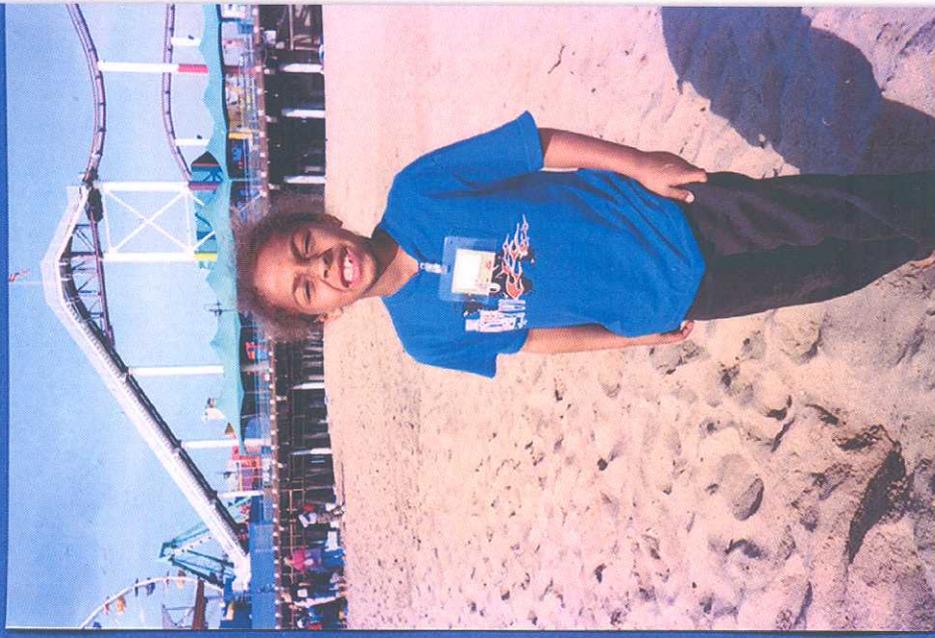




KEY TO THE SEA

This is a drawing of me listening to the girl that was teaching us about the animals that live underground. My day at the beach was fun, I learned about how trash gets in the ocean through the stormdrains. It is important to have a clean beach. I'm going to take care of the beach by telling other people not to litter because it hurts the animals in the ocean. I had a great time.

My name is Andrew. My favorite part of the field trip was the relay race. And my team was Tiger Sharks. We had to run and open a little bag it either had trash or food if it was trash you had to go to the hospital or if you got food you got to go back to your team. I got trash. I also saw a huge eel inside one of the tanks



City of Long Beach Stormwater Management Program Expenditures

	ATTY	CD	Fire	LB GOD	Harbor	Health	Library	PR&M	Plan & Bldg	Police	Public Works	Tech Svcs	Water
Program Management	\$0	\$0	\$0	\$0	\$546,400	\$1,840	\$0	\$15,000	\$0	\$0	\$1,685,832	\$0	\$14,000
Illicit Connections/Illicit Discharges	\$0	\$0	\$0	\$0	\$855,000	\$422,066	\$0	\$0	\$0	\$101,908	\$0	\$0	\$6,300
Development Planning/Construction	\$0	\$0	\$0	\$0	\$170,000	\$0	\$0	\$2,296,835	\$343,878	\$0	\$168,895	\$0	\$0
Construction Inspection Activities	\$0	\$0	\$0	\$0	\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Public Agency Activities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>operations and maintenance</i>	\$0	\$53,368	\$0	\$0	\$1,725,000	\$0	\$0	\$765,064	\$18,129	\$0	\$5,096,757	\$0	\$693,792
<i>municipal street sweeping</i>	\$0	\$0	\$0	\$0	\$300,000	\$4,411	\$0	\$0	\$0	\$0	\$5,851,702	\$0	\$0
<i>fleet and public agency facilities</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>landscape and recreational facilities</i>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,531,770	\$0	\$0	\$311,066	\$0	\$0
Capital Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Public Information and Participation	\$0	\$54,945	\$0	\$0	\$84,000	\$5,803	\$0	\$46,000	\$152,835	\$0	\$494,082	\$0	\$39,500
Monitoring Program	\$0	\$0	\$0	\$0	\$100,000	\$67,000	\$0	\$0	\$0	\$0	\$395,740	\$0	\$0
Other - Permit Fee	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$29,625	\$0	\$0
Department Total	\$0	\$108,313	\$0	\$0	\$3,830,400	\$501,120	\$0	\$4,654,669	\$514,842	\$101,908	\$14,033,700	\$0	\$753,592
TOTAL FY '06 EXPENDITURES-CITYWIDE	\$24,498,544												

PROGRAM TOTALS

Program Management	\$2,263,072
Illicit Connections/Illicit Discharges	\$1,385,274
Development Planning/Construction	\$2,979,608
Construction Inspection Activities	\$50,000
Public Agency Activities	
<i>operations and maintenance</i>	\$8,352,110
<i>municipal street sweeping</i>	\$6,156,113
<i>fleet and public agency facilities</i>	\$0
<i>landscape and recreational facilities</i>	\$1,842,836
Capital Costs	\$0
Public Information and Participation	\$877,165
Monitoring Program	\$562,740
Other	\$29,625
TOTAL FY '06 EXPENDITURES-CITYWIDE	\$24,498,544