The City of Long Beach Successfully Deploys Progressive Stormwater Solution to Help Reduce Coliform Bacteria Contamination of City Beaches

Case Study

The City of Long Beach

The City of Long Beach occupies a land area of about 50 square miles; operates and maintains an international deep-water harbor; manages close to 2,000 oil wells; has 11 linear miles of beaches covering 541 acres, operates two city owned marinas, oversees 468 acres of navigable waterways, manages the Southeast Resource Recovery Facility (SERRF), and hosts a regional airport. The City faces many challenges and opportunities to continue its environmental leadership role.

Project Challenge

The City of Long Beach is located south of Los Angeles and bordered by the Los Angeles and San Gabriel rivers. It faces significant environmental challenges with one of the most pressing issues being the ability to maintain and improve receiving water quality. To compound these environmental challenges, the Los Angeles and San Gabriel Rivers run along the east and west borders of the city carrying urban and stormwater runoff and pollutants from over 80 Southern California cities directly to its ocean and beaches. The Colorado Lagoon , San Gabriel River, and Los Angeles River are 303(d) listed and impaired for constituents such as copper, algae, oil, lead, zinc, and coliform bacteria and impact Long Beach economically and environmentally. The City in search of a solution, took innovative and proactive action by seeking and allocating funding for the Long Beach Stormwater Project.

As part of this progressive environmental effort, the City of Long Beach launched a clean water initiative that resulted in the deployment of an innovative stormwater filter called the AbTech Ultra-Urban® Filter (UUF) with Smart Sponge® Plus technology. The technology and product were chosen by the City based upon a matrix of product attributes. Perhaps most significant was the Smart Sponge technology's ability to reduce coliform bacteria (EPA Registration #86256-1) while providing removal of trash, sediment, and hydrocarbons.

Project Description

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 channel 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. In addition, the City of Long Beach has an approximate population of 465,000 people.

A comprehensive stormwater management program was developed to protect the city's waterways from nonpoint-source pollution. This Project was one of several initiatives funded by the City of Long Beach in an effort to better manage stormwater runoff. An integral part of this program involved the use of Ultra-Urban Filters (UUFs).

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The City of Long Beach sought to exceed its compliance with local, State and Federal water quality guidelines as mandated by the Federal Clean Water Act and RWQCB-issued TMDLs, initiated a two-phase program. In the first phase, the City deployed 1,318 UUF catch basin insert filters in 328 catch basins (approximately 10% of the citywide total of 3,300). In the second phase, the City installed an additional 529 inserts in 175 catch basins for a total of 1,904 inserts in 503 catch basins (15% of the citywide total). The City gave installation priority to drains that are tributary to waters used for recreation. A wide variety of installation locations were selected based on land use, projected pollutant loads and beneficial use designation.

The results of the Project indicate that AbTech Industries' Ultra-Urban® Filter (UUF) with Smart Sponge Plus can significantly improve water quality by reducing coliform bacteria and intercepting large quantities of oil, grease, debris, and sediment. Over a three-year period, it was estimated that AbTech's Ultra Urban Filters removed over 90,000 pounds of total contaminants (trash, debris, sediment, oil, grease, organics, and heavy metals). Of the total contaminants captured, approximately 25,000 pounds were oil derivatives (i.e. volatiles, light hydrocarbons and heavy hydrocarbons). The City's decision to use Smart Sponge essentially prevented over 3,600 gallons of hydrocarbons from entering the ocean and surrounding water bodies.

What Others are Saying about the Project

Our number one priority is to protect the public's health. With over 11 miles of public beaches and Colorado Lagoon, one of the few remaining inland recreational water bodies, the presence of bacteria and other harmful pathogens in our stormwater and urban runoff poses risks to human health, particularly after heavy rainfall. "I am pleased with the results of the pilot program in dramatically reducing bacteria in our stormdrains and thus allowing us to keep our beaches safe and open to the public. We hope to receive continued support from local and federal officials to sustain our efforts and expand the program

Tom Leary, Stormwater Management Division Officer, Long Beach Public Works Department

For more information about the Smart Sponge® technology,
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