LA JOLLA SHORES ASBS PROTECTION IMPLEMENTATION PROGRAM

Detailed Project Descriptions

Program Development Overview

Goal of the Program: Protect and enhance the Beneficial Uses of the La Jolla State Marine Conservation Area (ASBS No. 29) and the San Diego-Scripps State Marine Conservation Area (ASBS No. 31) through impact reduction, water quality benefits, and habitat enhancement.

There are eight projects in the proposed La Jolla Shores ASBS Protection Implementation Program. The basic characteristics of each are presented in Table 1.

Table 1: Project Elements and Targeted Contaminant or Issue

Project Element	Implementation	Assessment	Habitat Improvement	Flow	Sediments	Metals	Bacteria	Pesticides
Project 1: Dry Weather Flow Diversion	✓	✓	-	●	-	●	●	-
Project 2: Source Controls	✓	✓	-	●	●	●	●	●
Project 3: Runoff Reduction	✓	✓	-	●	●	●	●	●
Project 4: LID "Green Lot" Project & Bioretention Project	✓	✓	-	●▲	●▲	●▲	●▲	●▲
Project 5: Street Sweeping	✓	✓	-	-	●	●	●	●
Project 6: Outreach	✓	-	-	●	●	●	●	●
Project 7: Ecosystem Assessment	✓	✓	▲	-	-	-	-	-
Project 8: Information Management	✓	✓	▲	▲	▲	▲	▲	▲

●: Target improvement
▲: Increases understanding
- : Not applicable

Impacts to the ASBS

Constituents of Concern (COC): The ASBS support many of the beneficial uses outlined in the Ocean Plan, of which the most relevant relate to recreational uses of the beach and support of the special habitat within the ASBS.

Studies performed for the Final Integrated Coastal Watershed Management Plan (ICWMP) for La Jolla Shores ASBS (Triad Assessment phase) indicated that the priority contaminants of concern include metals, bacterial indictors and turbidity. Lower priority preliminary COC included TCDD (dioxin), PAHs and synthetic pyrethroids (pesticides). These COC are known to impact beneficial uses through beach closures, reduced mussel growth and potential chronic impacts to giant kelp germination and growth. The ASBS drain 1,600 acres of urbanized area. The identified COC sources include: urban runoff, stormwater discharges, aerial deposition, the UCSD/SIO research pier and aquaria seawater discharges from UCSD/SIO.

Nuisance Flows:
Added to the issue of contaminant loads is the **high water usage** for landscaping. Over irrigation on the western campus of UCSD/SIO results in regular urban runoff which picks up pollutants from parking lots and other hardscapes and depositing them directly into the ASBS. These flows carry not only sediment, but also a number of other contaminants, such as nutrients (from irrigation runoff), bacteria (from undetermined sources), and copper and cadmium (from road runoff). Reduced residential and commercial over irrigation will be targeted in the Outreach Project lead by Coastkeeper.

UCSD/SIO was the first ASBS discharger to obtain an exception to the California Ocean Plan's waste discharge prohibition. UCSD/SIO worked collaboratively with the SWRCB and the San Diego RWQCB for over two years to obtain an exception to the Ocean Plan which was granted on July 19, 2004 by the SWRCB. Ocean Plan exception conditions were incorporated into SIO's NPDES permit (No. CA0107239) that was adopted on February 19, 2005. The required monitoring, studies and planning associated with the exception are currently being performed. UCSD and SIO have implemented a Storm Water Management Program to comply with the Phase II MS4 Program.

The City of San Diego is currently working with the SWRCB and San Diego RWQCB to obtain an exception to the waste discharge prohibition for the ASBS. The City submitted its application for an exception in May 2006, and has been actively pursuing activities to characterize and reduce the City's discharges to the ASBS.

Program Benefits

The projects described below as part of the La Jolla Shores ASBS Protection Implementation Program has multiple benefits and is part of several regional planning initiatives.

In addition, the Program has numerous benefits:

- Addresses a total of 14 high threat discharges in two southern California ASBS (#29 and #31) and focuses on reducing or eliminating the primary source of the threat – urban runoff;

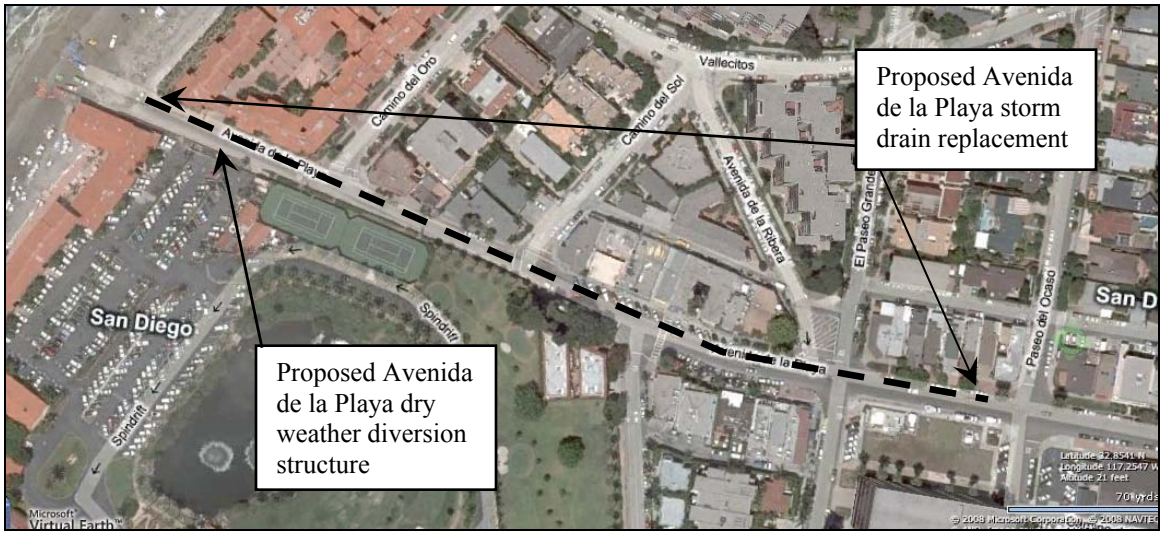
- Addresses the bacteria TMDL listed in *Total Maximum Daily Loads for Indicator Bacteria, Project I - Beaches and Creeks in the San Diego Region.*
- Provides multiple benefits by protecting the ASBS as well as high use public beaches and two Marine Protected Areas;
- Is an essential component of other regional planning efforts (ICWMP, IRWMP, City's 5-Year Strategic Watershed Activity Implementation Plan, Mission Bay & La Jolla Watershed Urban Runoff Management Plan, UCSD/SIO's Stormwater Management Plan);
- Supports LID and water re-use (two Projects in the Program)
- Examines environment variables affecting ASBS and begins integration of selected data sets;
- Supports development web based visualization of near real-time data;
- Tests the ASBS Protection Model and the ASBS Triad Assessment Method which are long-term management tools which could potentially be used across multiple ASBS and multiple regions of California;
- Promotes local and regional information sharing initiatives.

More detailed information on the eight projects that make up this Program is given below:

Dry Weather Flow Diversion at Avenida de la Playa (Project 1)

Problem Statement: The invert elevation of the existing beach outfall is at the mean sea level and sand regularly blocks all flow, except during the largest winter storms. Dry weather flows collect and stagnate, creating a known source of bacterial discharge to the receiving waters of the La Jolla State Marine Conservation Area (ASBS No. 29).

The Goal: Eliminate bacteria and other COC loads to the ASBS by replacing 1,173 linear feet of existing storm drain with a new reinforced concrete box (RCB) culvert and a dry weather diverter located near the outfall.



Discharge Characteristics: The Avenida de la Playa Project addresses a high threat bacterial discharge to ASBS No. 29 (SDL062) (see map in Attachment 2).

Improvements to Water Quality: The Project will improve water quality in ASBS No. 29 by diverting and therefore eliminating stagnant, bacteria-associated flows.

Expected Load Reduction: This Project will reduce dry weather flows by 100%.

Success of Similar Projects: The Project elements have all shown to be successful in achieving the goal of reducing flows and loads to the ASBS. The City has installed and is operating many low flow diversions around Mission Bay, and several within the La Jolla Shores area.

Project Readiness: This Project was studied by the City as part of the Coastal Low Flow Diversion Program (2005). A mitigated negative declaration was prepared and certified by the City of San Diego for the City's Urban Runoff Management Plans including low flow diversion projects. It is anticipated that this project will be deemed consistent with the mitigated negative

declaration (MND) and an addendum would be prepared. The City of San Diego has provided a cost match of $30,000 for planning and engineering design of the Avenida de la Playa diversion. This money has been secured through the City's Annual Storm Water Department Budget. The City requests that this grant fund the $950,000 construction cost of the diversion Project.

Effectiveness Assessment: The effectiveness of this Project will be assessed by monitoring the average annual flow diverted from the outfall and the load reduction will be quantified with a grab sample from the sump.

Project Description: *See Attachment 2 for detailed, technical concept design*. The low flow diversion at Avenida de la Playa is designed to address the problem of water collecting and stagnating in the existing storm drain system. In the existing condition, the downstream end of the system consists of a double 51-inch concrete pipe headwall and attached concrete structure, which is designed to keep beach sand from entering into the system. The invert elevation of the existing storm drain system at this outfall location is approximately equal to the elevation of mean sea level, and thus the outfall is typically blocked by beach sand except when cleared by City crews or by a large storm event. Water in this storm drain system originates from: 1) urban runoff draining from approximately 844 acres of urbanized land, 2) groundwater, and 3) seawater which enters the storm drain through wave action and high tides. Dry weather flows from the much of the upstream watershed are already intercepted by a dry weather diversion structure near the intersection with El Paseo Grande and diverts flows to the sanitary sewer system. Between this existing low flow diversion structure and the beach outfall, water enters the storm drain system, collects, and stagnates. The stagnant water turns black, emits a foul odor and is a known source of bacterial discharge.

To accomplish its goals, this Project will replace approximately 1,173 linear feet of existing storm drain system between the beach outfall and the existing dry weather diverter, with a new reinforced concrete box (RCB) culvert and an additional dry weather diverter located near the outfall (Figure 1). Construction of the RCB culvert, which would have no joints through which groundwater could enter, would eliminate the infiltration of groundwater issue. Construction of a new dry weather diverter would provide that flows seeping in to the downstream end of the system at the outfall could be pumped to the sanitary sewer, thus eliminating prolonged stagnation and subsequent bacterial growth.

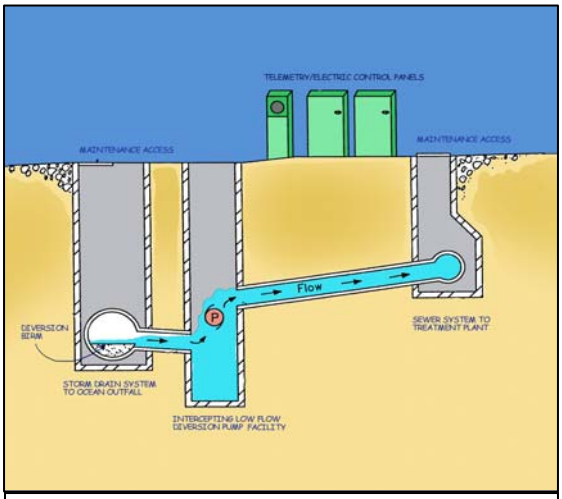


Figure 1. Pumped Dry Weather Diverter.

Project Benefits:

- Protection and enhancement of water quality and aquatic habitats, particularly those of the La Jolla State Marine Conservation Area (ASBS No. 29);
- Protection of the regional value of coastal waters, including creeks and the ocean;
- Implementation of the City's strategic and urban runoff management plans; and
- Improve recreational quality of public beaches.