

**Clean Beaches Initiative**  
**Urban Runoff/Water Quality Improvement Projects – Annual Progress Summary #1**

**City: City of Imperial Beach**

**Project Name: Tijuana River Bacteria Source Identification Study (07-584-550-0)**

**Project Description/Purpose/Approach:** This project directly addresses two beaches on the CBI Competitive Location list: 1) Border Field State Park at Tijuana River; and 2) Imperial Beach. Both beaches are periodically impacted by sewage-contaminated flows from the Tijuana River, which crosses into the U.S. near San Ysidro and flows west through the Tijuana River Valley and Estuary into the Pacific Ocean. Monitoring data for bacterial indicators of fecal contamination from years 2003 to 2005 demonstrate a strong relationship between water quality in the river, the estuary mouth, and the ocean shoreline at the south end of Imperial Beach. Shoreline bacterial monitoring data collected during the AB411 time period (April 1, to October 31) at the south end of Seacoast Drive in Imperial Beach produced a 'D' grade in Heal the Bay's 2004 beach report. Subsequent Heal the Bay grades have improved; however, this is largely due to the use of the San Diego Coastal Ocean Observing System (SDCOOS) plume tracker and less intensive water quality monitoring in recent years.

This Study is being conducted to identify and quantify the sources of bacteria loading in the Tijuana River Watershed that is a tributary to the Pacific Ocean and causing beach postings and closures at two prominent beaches. The study will also identify potential mitigation projects to reduce the bacterial loading in the Tijuana River.

Although it is not a requirement of the project, reducing the number of bacterial advisory postings at Imperial Beach is important to the economy of the city. Imperial Beach has approximately 2.3 million visitors annually, and is heavily used recreationally by surfers, kayakers, windsurfers, hikers, dog walkers, bird watchers, swimmers, waders, families, clam diggers, kite surfers, and a variety of commercial ventures. Most beach closures in Imperial Beach occur during the winter and spring when Tijuana River flows exceed the capacity of the river diversion system in Tijuana. However, past experience has shown that frequent contamination of ocean beaches adjacent to Tijuana Estuary can be expected whenever flows in the Tijuana River enter the estuary during dry weather. For example, in the summer of 1998, when river flows exceeded the capacity of the river diversion, the Imperial Beach shoreline was closed to water contact for 52 days between July 1 and September 30. Closure beach mile data for Imperial Beach between 2000 and 2006 are as follows: 2006 – 68.9; 2005 – 106.3; 2004 – 81.0; 2003 – 72.0; 2002 – 22.0; 2001 – 76.9; 2000 – 32.0.

**Project Scope:** The project will not implement any BMPs or management measures. It will assess where and what sources/activities contribute most to bacterial loads. The results will be used to suggest potential bacterial source elimination or reduction practices targeted at the identified sources. Implementation will depend on the source of bacteria and the appropriate BMP/ management measures relative to that source reduction.

**Progress/Milestones Achieved/Schedule:** During this annual reporting period, project activity focused on developing the stakeholder group, and completing the data compilation for the literature review and preparation of the literature review and Quality Assurance Project Plan and Monitoring Plan. Field reconnaissance was also conducted throughout the watershed to ascertain appropriateness of sampling locations.

Project management included preparing for the quarterly stakeholders meetings. The first was successfully held in March while the second was scheduled to be held on June 25th at the City of Imperial Beach Council Chambers. Changes to the SDRWQCB board meeting agenda meant that the meeting was postponed to July 22, 2008. The Regional Board meeting was a stakeholder workshop to introduce regulatory changes in the management of the Tijuana River Watershed with emphasis on the development of bacterial, sediment and trash Total Maximum Daily Loads. A brief stakeholder meeting was held immediately after the Regional Board meeting to update members of developments in the monitoring plan and literature review. In addition, the project Technical Advisory Committee (TAC) was consulted regarding the development of the monitoring plan and their input was included in the draft for review. An ftp site was established for optimized communication with stakeholders.

Data continue to be compiled from the stakeholders' submittals. Comprehensive water quality data from Coastkeeper and IBWC are being compiled into a database for comparison with data collected in this study. The literature review has been submitted with the following information:

- Review of watershed characteristics;
- Review of hydrological models historically used in the Tijuana Watershed;
- Review of available GIS layers for the entire watershed with focus on the U.S. portion;
- Preparation of notes regarding stakeholder input into the literature review;
- Comprehensive scientific review of current molecular and microbiological methodologies;
- Statistical analysis of historical water quality data;
- Information regarding infrastructural changes relating to waste water treatment at IBWC and construction of the border fence across Goat and Smugglers Gulch; and
- Compilation of all reference documents.

**Other Public Agency/Private Partners:** State of California Water Resources Control Board; City of Imperial Beach; City of San Diego: Stormwater Management Division; Clean Beaches Initiative Task Force; County of San Diego: Watershed Protection Program; Department of Public Works and Department of Environmental Health; International Boundary and Water Commission (IBWC); National Oceanic and Atmospheric Administration (NOAA); San Diego Regional Water Quality Control Board; San Diego State University; Scripps Institute of Oceanography; State Water Resources Control Board (State Water Board); Tijuana River National Estuarine Research Reserve (TJNERR); U.S. Fish and Wildlife Service; Wildcoast

**Project Cost: \$1,324,784.00**

**Project Funding Sources:** State Water Resources Control Board (SWRCB)

**Clean Beaches Initiative Funding: \$1,324,784.00**

**Project Outcomes/Effectiveness/Benefits:** The primary project goal is to identify anthropogenic sources of bacteria. Other goals include identifying non-anthropogenic sources of bacteria; assessing annual bacteria loads into the Tijuana River; identifying point and non-point sources of pollutants; and to better develop mitigation strategies aimed at the reduction of bacteria loads.

Desired project outcomes include:

1. Identification of the anthropogenic sources that are important to the frequency and duration of bacterial advisory postings at Imperial Beach.
2. Identification of the non-anthropogenic sources that are important to the frequency and duration of bacterial advisory postings at Imperial Beach.
3. Quantification of the bacteria load of the Tijuana River and from identified tributaries.
4. Understanding the temporal and spatial patterns of bacteria in the Tijuana River watershed.
5. Development of bacteria mitigation strategies based on identified sources to the Tijuana River watershed.

The project will not implement any BMPs or management measures. It will assess where and what sources and activities contribute most to bacterial loads. The results will be used to suggest potential bacterial source elimination or reduction practices targeted at the identified sources. Implementation will depend on the source of bacteria and the appropriate BMP/ management measures relative to that source reduction.