



Information Item

Date: September 2, 2009

To: Mayor and City Council

From: Lee E. Swain, Director of Public Works

Subject: Background on the Selection of Bird Netting as One of Many Water Quality Improvement Strategies

Introduction

This information item is to provide the City Council with the background information that resulted in the recommendation to install bird netting as one of the numerous strategies to improve water quality under and near a small intertidal section of the Santa Monica Pier.

Background

The Los Angeles Regional Water Quality Control Board (LARWQCB) establishes total maximum daily loads (TMDL) in an effort to reduce the concentrations of many pollutants and improve water quality in the Santa Monica Bay watershed. Wet weather and dry weather bacterial TMDL's are currently in effect for Santa Monica Bay and compliance is measured by the number of exceedance days.

On August 10, 2006, Heal the Bay completed the Santa Monica Pier Bacterial Source Identification Study. This study identified the pond in front of the storm drain as "the predominant source of fecal bacteria to the Santa Monica Pier Beach," but also noted that "pigeons are a definite source of fecal bacteria and the elimination or reduction of roosting sites in the intertidal zone area would help reduce fecal bacterial densities in the surf zone."

On June 25, 2009, RBF Consulting, Inc., completed the Pier Storm Drain Diversion Project Water Quality Bacterial Indicator Source Study. This study identified the Pier storm drain, sanitary sewer overflows and birds, among others, as potential contributors of fecal coliform loads to Santa Monica Bay. Based on seabird densities in Santa Monica Bay established by the United States Geological Survey, the study notes that the fecal coliform produced by birds could significantly contribute to the number of exceedance days.

Other relevant studies, including a 1995 study by the Water Resources Research Center at the University of Hawaii, linked the poor water quality in Hanauma Bay to soil, sand and pigeon droppings.

More recent DNA studies conducted by Weston Solutions, Inc., for Mission Bay in San Diego and Marina del Rey in 2000 and 2004, respectively, concluded that poor water quality in these specific locations were overwhelmingly attributable to avian sources.

Discussion

Based on the studies that have been presented, the City has endeavored to achieve compliance with the LARWQCB's water quality objectives in a number of ways.

On [September 25, 2007](#), the City Council conceptually approved the Pier Storm Drain System Upgrades and Pollution Prevention Reduction project. This project included improvements to the Pier Storm Drain and implementation of structural measures to better mitigate ocean pollution from birds and other activities on or near the Pier.

On [January 27, 2009](#), the City Council awarded a construction contract for the construction of the Pier Storm Drain Improvement project. The project was completed in May 2009, and currently prevents dry weather runoff from reaching the beach sand under the Pier. Although the bacterial levels have been reduced, they have not been completely eliminated and continue to exceed allowable limits.

On [February 11, 2009](#), the Measure V Citizen's Oversight Committee approved the Pier Water Quality Improvement project which included the installation of bird deterrents such as ultrasonic/sonic devices, spikes, contraceptive Ovocontrol feeder devices and netting. Despite the installation of sonic devices, birds continue to roost under the Pier and were observed in the direct vicinity of the devices. Bird spikes on the traffic signals and street light standards at Ocean Avenue and Colorado Boulevard were installed to discourage birds from roosting at areas around the Pier. Bird feeding with Ovocontrol, by Innolytics, LLC is currently in progress at four locations around the Pier area and reduction of bird numbers is anticipated to be gradual over the next 12 months. Innolytics, LLC estimates a population decline of 5% per month and notes that the program would be most effective in combination with exclusion techniques (netting and bird spikes).

On [July 28, 2009](#), the City Council awarded a bid for the installation of netting around a small intertidal section under the Santa Monica Pier. The installation of netting will provide a physical barrier and is anticipated to prevent bird access to the tidal areas under the Pier where bacterial sampling occurs.

During the summer of 2009, the City initiated a study with the University of California, Los Angeles, analyzing bacterial concentrations in sand and water under the Pier. Shallow groundwater samples exhibited the highest bacterial readings. The initial DNA analysis results point to animals as being the major contributor of bacteria, not humans. Pigeons are the overwhelmingly dominant species in this area. Pigeons are capable of breeding yearlong with the peak time occurring between May and July. Most pigeons will raise four to five broods per year but can go as high as nine broods.

Staff contacted various agencies to ascertain their experiences in controlling pigeon populations. Telephone conversations with the Law Enforcement Division of The California Department of Fish and Game indicated that there are no applicable laws governing the exclusion of feral pigeons from public areas and/or the handling of their

nests. The Los Angeles County Department of Health Services indicated that they do not deal with bacteria levels in public waters nor the control of pigeons.

Additionally, staff researched locations where bird exclusion techniques have been used. The Orange County Watersheds Program installed chain link bird screens under the Baby Beach Pier in Dana Point as one of their strategies to improve water quality at the beach. During installation of the screens, both empty and occupied nests were destroyed. The City of Dana Point advises that the strategy in combination with storm drain improvements has been effective in helping improve overall water quality.

The City of Oceanside installed bird netting under their Pier. During installation, the contractor was left with the task of destroying or relocating any existing nests. The netting has proven to be effective in excluding birds.

For the Santa Monica Pier installation, the impact of the netting to the pigeons and nests will be minimized by inspection of nesting sites weeks prior to the start of installation. Any populated existing nests will be monitored daily for fledge timeline and any new nests, without eggs or young, will be removed. Once the populated nests have been abandoned, those nests will also be removed. Once the netting has been installed, another inspection for nests will be conducted. The netting is equipped with maintenance zippers for ease of debris and trash removal. If any nests have been built and populated with eggs or young during installation the zippers will remain open so the nest and any fledglings may be cared for until it is abandoned then the nest will be removed and the netting closed.

Staff contacted the California Wildlife Center in Malibu and the All Wildlife Rescue & Education Center in Long Beach. Both animal welfare groups agreed that this proposed methodology of protecting the pigeon eggs and hatchlings prior to installation of the netting was acceptable. Messages left with the People for Ethical Treatment of Animals

(PETA) organization have not been returned and staff will continue to make an effort to reach them.

In addition to being a potential source of fecal bacteria in the water underneath the Santa Monica Pier, pigeon droppings pose a general health hazard to humans as noted in numerous articles from the

Center for Disease Control:

<http://www.cdc.gov/niosh/nas/RDRP/appendices/chapter6/a6-133.pdf>

Los Angeles County Pest Management Division:

http://acwm.co.la.ca.us/pdf/pigeon_pdf.pdf, and

New York City Department of Health:

<http://www.nyc.gov/html/doh/html/epi/epi-pigeon.shtml>

Human diseases linked to pigeon droppings include salmonella (a gastrointestinal disease which can cause nausea, fever, abdominal cramps and vomiting), histoplasmosis (an influenza-like illness which can cause high fever, pneumonia and death), and cryptococcosis (a lung infection that can spread to other areas of the body).

Finally, the city has taken actions towards improving overall water quality at the Santa Monica Pier, including:

- Continuing daily inspections under the Pier which allow for prompt repairs of any sewer leaks, storm drain conditions and other problems by Community Maintenance Department staff
- Enforcing a City ordinance that prohibits dogs on beach sand (S.M.M.C. 4.04.160)
- Preventing transients from taking temporary residence under the Pier
- Replacing the Pier sanitary sewer main which is currently under design and will be ready to bid in January 2010.

Summary

The City is proactively pursuing compliance with the bacterial TMDL's established by the LARWQCB for the Santa Monica Bay Watershed. Studies prepared for the City have identified potential sources of bacteria such as the Pier storm drain, sanitary sewer overflows, birds, domestic pets and human population under the Pier. The Pier storm drain upgrade is complete. The sanitary sewer main is scheduled for a complete replacement. Deterrence of birds, pets and transients continues to be an ongoing effort.

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