Clean Beaches Task Force
Proposition 50 Northern CA Outreach Meeting
San Francisco Bay Conservation District Commission
December 5, 2006

Attendees:

Alexandra Boehm, Stanford University
Philip Smith, Marin County Environmental Health
Trish Holden, University California Santa Barbara
Peter Mangarella, Geosyntec Consulting
Charlie McGee, Orange Co. Sanitation District
John Ricker, Santa Cruz Environmental Health Services
Mark McPherson, San Diego County Environmental Health
Michael Johnson, University of California, Davis
Jack Gregg, California Coastal Commission
Jim Rasmus, PBS&J
Guangyu Wang, Santa Monica Bay Restoration Commission

SWRCB Staff:

Laura Peters
Kari Holmes
Dayne Kendrick
Leslie Laudon
Ruben Mora
Kathy Bare

Guests:

John Hulls, Marin County
Dr. Gary Anderson, Lawrence Berkeley Lab
Marty Isom, Sonoma Co. Envr. Health
Vika Sirova, National Park Service
Lorraine Anderson, SF Dept. Public Health
Mark Cleveland, County of Sonoma Parks & Rec
Tanya Yurovsky, Sewer Authority Mid-Coast
Rachel Lather, Santa Cruz County
Mike Kellogg, San Francisco PUC
Kristen Ward, Golden Gate National Rec. Area
Scott Holmes, City of Pacifica
Akin Babatola, City of Santa Cruz

Changes/ Additions to Agenda

Laura Peters added three presentations to the agenda for the afternoon session, which included Tanya Yurovsky representing Sewer Authority Mid-Coast, Mark Cleveland representing the County of Sonoma Parks and Recreation, and Scott Holmes representing the City of Pacifica.

The purpose of this Clean Beaches Task Force (CBTF) meeting is to hear from prospective Proposition 50 Clean Beaches Initiative (CBI) applicants representing Northern California coastal beaches regarding their potential projects. The CBTF will give suggestions to make the proposals stronger and decide whether they believe the projects are a good fit for this funding.

There is approximately $27 million (~$23 million Prop 50 and ~$4 million Prop 13) available for water quality improvement projects at California coastal beaches. Proposition 84 passed in the

polls in the November 2006 election, therefore, $37 million will be available in the future for more clean beaches initiative grant projects.

Proposition 50: Project Concept Proposals

City of Santa Cruz

Presentation by Akin Babatola

Problem Statement:

Publicly accessible data fails to reflect the expected improvement in beach health and trends in beach postings. There is a lack of correlation between investment and reductions in beach postings, which causes concern for resource managers at communities affected by beach postings as well as project managers for CBI grant funded projects. The Environmental Compliance program at the City of Santa Cruz Public Works Department, in cooperation with the Central and Northern California Ocean Observing System (CeNCOOS) propose an interagency effort to analyze the causes of the disconnection between the investment and results.

Research will include calibrating numbers from the defined substrate media in Colilert tests. There is a tendency of the defined substrate media to inflate results (Colilert exaggerates coliform by 40% and under represents fecal coliform by 10%).

Project:

This research will be conducted in three distinct phases as follows:

1. Review of current data and methodologies to identify confounders including method compatibility with AB411 objectives; cross-compatibility of AB411 and CBI study data
2. Feasibility of developing reliable correlation factors between defined substrate methods for bacteria analyses as used by AB411 monitoring programs and other rapid and reliable methods of bacteria analyses for marine environments; and
3. Collaborative examination of other ancillary information from hyperspectral imagery, multibeam bathymetry, shore-based stations and moorings, satellite imagery, to be performed in partnership with CeNCOOS

Products

1. Comprehensive review of technical literature on the influence of data quality objectives on methods used to assess CBI effectiveness.
2. Possible normographs for converting or correlating data from select culture based bacteria monitoring and defined substrate based monitoring techniques. These may result in equations such as:
   'Cultured Coliforms' CFU/100ml = 0.X ('DST Coliforms'/100ml) +/- Constant; or
   'Cultured Coliforms/DST Coliforms' ratio = X('DST Coliforms'/100ml) +/- Constant.
3. Seminars and peer-reviewed publications.

Still developing a cost estimate to present in Proposition 50 CBI application.

Discussion/Suggestions:

Is Colilert going to be outdated with the development of Rapid Indicators?
Rapid Indicator development has been pursued for years and it is a rigorous process to validate and then standardize. It will take many years and is a long-term process, where Colilert is currently being used in the field and giving quick results.

Colilert was approved in AB411 because of cost, not necessarily because it is a “great” method. Glad to see a potential formula for correction for exaggerated false positives and total coliform errors. Although it is a good concept, it may be a local, not a statewide issue, since some agencies (i.e. San Diego) have stopped using Colilert altogether due to inaccuracies. CBTF questioned whether this project addresses a Research Priority.

The CBTF expressed interest in seeing the City of Santa Cruz submit an application for a kelp/beach rack study/management near Santa Cruz beaches since those have been recently pointed out as possible sources of poor water quality.

County of Santa Cruz
Presentation by Rachel Lather

Problem Statement:
The existing sewer infrastructure in Santa Cruz County is greater than 80 years old and in need of repair/replacement. There is an existing sewer trunk line in Noble Gulch, which drains to Capitola Beach via Soquel Creek. This trunk in Noble Gulch was built in the 1960s and is asbestos lined cement. Wet and dry weather flow monitoring demonstrated that the flow upstream in the pipe was higher than downstream, which implies that exfiltration is most likely occurring. Additionally, a ribotyping study pointed to the sewer trunk as a source of bacterial contamination at Capitola Beach.

Project:
The project would consist of removal of one pump station (converted to gravity flow), remove most of pipeline from the riparian area and replacing pipe in low lying area. The preliminary cost estimate for this project is $4 million. It is a sewer infrastructure project and therefore would only be eligible for 25% funding ($1 million CBI grant).

Discussion/Suggestions:
This project would supplement three other Proposition 40 CBI sewer replacement projects that have recently been funded at Capitola, Aptos Esplanades and New Brighton Beach. Constructing this project would hopefully rid human sources of bacteria to Capitola Beach.

The ribotyping indicated 4-6% isolates pointing to human sewage. Therefore, this project would have some benefit but not a substantial reduction in the number of postings and closures at the beaches. Removing the pump station will eliminate the potential for future failures.

CBTF encouraged County to apply for this project but to make the case that it positively affects beach water quality.

Marin County/Lawrence Berkeley Laboratories
Presentation by Phil Smith, John Holls, Dr. Gary Anderson

Problem Statement:
There is currently little technology being used to determine if pathogens/organisms are present in the ocean water near the beaches. Technology has been developed for homeland security and can be made adaptable to a water environment. This information would be useful in determining the risk level associated with postings/closures due to pathogen presence.

Project:
Lawrence Berkeley Laboratories (LBL) already has the technology to detect changes in microbial population over time, in addition to developing census at the same time. This project would complete a microbial census of ocean water in Tomales Bay using a reduced scale micro array chip that can determine if pathogens are present. The micro array will be able to identify organisms of substantial existence and how they are changing over time. This project would be tied in with the epidemiological study being conducted by the Southern California Coastal Water Research Project (SCCWRP). Affametrix manufactures these chips, and the cost is approximately $200 each to purchase and process.

Discussion/Suggestions:
The idea of micro array is the right direction for water quality. A potential problem is the presumption that if RNA/DNA is present, then there are bacteria present. If DNA is found in the water, assume organisms are present, however, not sure if the organisms are living. Assume if the DNA is increasing the organisms are viable. Are the bacteria or pathogen you're finding infectious? May not be able to differentiate species. The method is to detect organism presence, then check to see if it's pathogenic. How will this directly apply to improving water quality at beach or reducing postings/closures? A reduced scale micro array will be used to produce useful beach water quality information. LBL will continue work with University California Berkeley's Public Health Department to identify organisms with statistical significance.

Sewer Authority Mid-Coastside (SAM)
Presentation by Tanya Yurovsky

Problem Statement:
SAM facilities lack the storage capacity and transmission system to accommodate stormwater flows. Overflows are common with discharge going directly into the Pacific Ocean (Venice Beach, Frenchman's Creek, Fitzgerald Marine Area), contaminating the water and beaches with pathogens and bacteria. Stormwater overflows of this frequency and magnitude endanger both coastal resources and public health. Pillar Point Beach and Venice Beach have already been listed on the State's "Competitive Location List (CLL)" as some of the most contaminated beaches. Exceedences have been correlated to sewage overflows.

Project:
Design combined stormwater system to accommodate wet weather flows by installing a new parallel 14-inch pipeline to convey excess stormwater flows to the existing treatment facility, a new 400,000-gallon storage basin to control the volume of stormwater flows into the existing treatment facility and pump station improvements to accommodate the changing hydraulic conditions of the new system. Land must be purchased for the construction of a new storage basin proposed to coincide with a wetland restoration project. The total estimated cost for this project is $12.5 million. It is a sewer infrastructure project and therefore would only be eligible for 25% funding ($3.125 million CBI grant). Project will begin June 2007 and finish March 2010.

Discussion/Suggestions:
This is a wet weather project and in the past the CBTF has focused on dry weather impacts to beach water quality. The question was raised "Could wet weather flows contribute to summer exceedances?" In the meantime, the CBTF recommends that SAM address efficacy of reducing storm water overflows and separate out what pieces are directly tied to water quality postings/ closures and associated costs.

County of San Francisco Public Utilities Commission
Presentation by Mike Kellogg

Problem Statement:
There are naturally occurring pools of water that form during spring tide cycles and become isolated during neap tide cycles. These standing water pools occur at Crissy Field Beach, Baker Beach and Ocean Beach and may cause a human health risk. Initial monitoring indicates elevated bacteria relative to State recreational water contact standards, however, the source (bird, dogs, children, algae) and public health risk is unknown.

Project:
This project would investigate the water quality and public health risk of standing water pools (approx. 10s of yards long X 10 yards wide) that form on Crissy Field, Baker and Ocean Beaches and how they potentially impact the ocean water quality. This project would be jointly conducted by the San Francisco Public Utilities Commission, the National Park Service, and the San Francisco Department of Public Health and would evaluate the water quality history of these pools from formation through flushing and evaluate the source of bacteria and the potential public health risk.

Discussion/Suggestions:
Explore the bacteria in the sand – is sand bacteria regrowth occurring in these pools? What is the level of fresh groundwater influence? There have been fresh water dipole studies, maybe use their knowledge with this project. Fate and transport study? The applicants are unsure at this time where exactly this study/project would go (ie Study that leads to a project? Recontouring beach?) CBTF recommends phasing the project. First conduct standing pool, ocean water and sediment sampling to determine public health risk and relationships. Also monitor salinity to determine stormwater and/or groundwater influence to these standing pools. Need background data to showcase project – what's allowing these ponds to form and what is triggering degraded water quality conditions? Contrast any data/results found with AB411 data at nearby beaches. SFPUC would like to send around a pre-concept proposal to the CBTF members for a preliminary review/comment phase and develop a defined project using academic CBTF knowledge/experience.

County of Sonoma
Presentation by Marty Isom

Problem Statement:
Campbell Cove has a naturally occurring eddy current in the cove, which causes repetitive circulation and minimal ocean water flushing. There is a fresh water fan across the sand beach from a fresh water spring (aka Hole in the Head). The County has been sampling for the past ~6 years and has found consistently high levels of bacteria from mid-September thru October (no problems in the Spring). The sediment was also tested for bacteria and the levels were extremely high (although there were only a few samples tested). This beach has been labeled by the CBTF as an "Enclosed Beach" and was reviewed at the State Water Board's Enclosed Beaches Symposium and Workshop in August 2005.

Project:
The County would like to partner with Bodega Marine Laboratory (John Largier, Ph.D.), State Parks, North Coast Regional Water Quality Control Board, and possibly University of California Davis (Stefan Wuertz, Ph.D.) to develop a good project. A few suggestions have been proposed by John Largier and include:

- Re-route fresh water from Hole in the Head (Diverting fresh water off of beach so seagulls may not populate the beach in such large numbers)
- Install circulation devices (i.e. Oloids)
- No action

Would be a three-phased project with an estimated cost of $900,000 and would take approximately 3 years to complete.

Phase I would consist of an analysis of monitoring including:
- Sediment Sampling
- Source Identification
- Monitor number of sea birds

Phase II and Phase III are yet to be determined based on the monitoring results.

Discussion/Suggestions:
Is diverting Hole in the Head beyond the scope of the CBTF's agenda to clean coastal beaches? The three-phased process seems like a long research project. The CBTF would rather see a proposal for Campbell Cove that has a "here's what we've found, here's the project we're proposing." This research project, as presented here, does not demonstrate a refined idea. The CBTF recommends pulling out the suggestions developed from the Enclosed Beaches Workshop for Campbell Cove. Oloids were not highly recommended as a solution to water circulation problems at the Workshop because it does not address source control. Fresh water from Hole in the Head is clean, where is the source of contamination then? Does water quality change seasonally with the currents near Campbell Cove – address the seasonality, why is the problem only in the fall?

County of Sonoma Regional Parks and Recreation
Presentation by Mark Sandoval

Problem Statement:
There has been poor water quality in and around Bodega Bay and there are a few projects that the County Parks and Recreation has been developing that may improve water quality.

Projects:
1) Replace chemical toilet restroom and replace with sewer connection at Doran Regional Park (~$150,000)
2) Fuel system and storage improvements at Spud Point (~$275,000)
3) Install fish cleaning stations at Doran and Westside Regional Parks (~$125,000)

All sewer infrastructure projects would be eligible for up to 25% funding.

Discussion/Suggestions:
Potential projects need to be tied to bacterial reduction in ocean water quality in Proposition 50 CBI applications.

City of Pacifica
Presentation by Scott Holmes

Problem Statement:
San Pedro and Adobe/Peralta Reach Creeks have excessive erosion along its banks and bed. Debris is also a problem. The proposed Adobe to Peralta reach project (about 1½ miles long)

would protect the banks adjacent and downstream from erosion and would also restore the wildlife habitat.

Projects:
San Pedro Creek Restoration Projects

- Adobe/Peralta Reach Creek Widening
- Adobe Bridge Culvert Removal Project
- Construction of Treatment Wetlands at Pedro Point and Crepsi drainage channels

Discussion/Suggestions:
Restoration projects typically do not qualify for CBI funds. Potential projects need to be tied to bacterial reduction at the beach. Water quality components should be provided and data supporting beach water quality improvement is critical.

Next Meeting: February 27, 2007 at the NEW Southern California Coastal Water Research Project office in Orange County.

* For copies of the presentations, please contact Kari Holmes at ***Kholmes@waterboards.ca.gov*** or (916) 341-5636.