

RESOLUTION NO. 2007-_____

A RESOLUTION OF THE BOARD OF SUPERVISORS
OF THE COUNTY OF MARIN AUTHORIZING ENTERING INTO AN AGREEMENT WITH
THE STATE OF CALIFORNIA AND DESIGNATING A REPRESENTATIVE TO SIGN THE
AGREEMENT, AND ANY AMENDMENTS THERETO, FOR THE BEACH MONITORING
PHYLOCHIP PROJECT

Whereas, the Board authorizes the Community Development Agency, Environmental Health Services Division, to enter into an Agreement with the State of California; and

Whereas, the Board authorizes the Director of the Marin County Community Development Agency or his or her designee, to sign the Agreement, and any amendments thereto; and

Whereas, the Project shall demonstrate the capability of contributing to sustained long term water quality or environmental restoration or protection benefits for a minimum period of 20 years after completion of the Beach Monitoring Phylochip project; and

Whereas, the public benefit to be derived from the completion of the project is an improved testing methodology for recreational contact waters, resulting in benefits to public health and sanitation; and

Whereas, the Marin County Environmental Coordinator has determined this project to be categorically exempt under the California Environmental Quality Act Section 15306 (Information Collection);

NOW, THEREFORE, BE IT RESOLVED, that the Marin County Board of Supervisors hereby authorizes the Director of the Community Development Agency to submit a detailed grant application for the Beach Monitoring Phylochip Project.

PASSED AND ADOPTED at a regular meeting of the Board of Supervisors of the County of Marin held on this 7th day of August, 2007 by the following vote:

AYES: SUPERVISORS

NOES:

ABSENT:

PRESIDENT, BOARD OF SUPERVISORS

ATTEST:

CLERK

CERTIFICATION

I hereby certify that the foregoing Resolution (2007-) was duly and regularly adopted by the Board of Supervisors of the County of Marin at the meeting thereof held on the 7th day of August, 2007, motion by (member name) and seconded by (member name), motion passed by the following roll call vote:

Ayes:

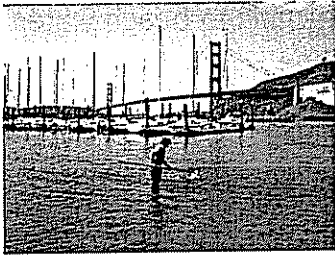
Noes:

Abstained:

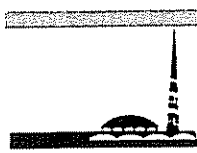
Absent:

Attest:

Diane Patterson
Assistant Clerk of the Board



Beach Water Quality Testing Project



Marin County Environmental Health Services

What's the problem?

Using the current testing method, it takes a couple of days from the time a sample is taken to get results from the County lab and post advisory signs at the beach (if necessary). Worse, the testing methodology is over 30 years old and relies on the principle of "indicator organisms" to tell us whether the water meets standards or not. This works reasonably well in Southern California where there are numerous storm drains and sewage outfalls but recent studies have shown that there is insufficient correlation with risk to human health for beaches like ours. We do not know the sources of bacteria that cause our water quality difficulties, but wildlife is one of several possible causes.

If we go out to post a warning sign at the beach, we sometimes take a repeat water sample. Over 90% of the time, this sample shows that the water is clean. Therefore our cycles are often opposite reality – we're not warning people when the water doesn't meet the standards, and by the time we put up signs, the water is clean again – causing false alarms, lost revenues and additional laboratory costs.

Heal the Bay's Report Card

While our beaches generally show good results, several beaches have scored poorly on the annual report card issued by Santa Monica-based Heal the Bay. Muir Beach North, China Camp and Chicken Ranch have all received poor grades in the past. Using our current tools, we have little idea of why this is so. In 2006, the Natural Resources Defense Council drew unflattering national attention to Marin's beaches, erroneously reporting that we had some of the poorest water quality in the State.

What's the Solution?

A powerful new testing technology has been developed in the form of a microarray chip, which combines computer technology with biochemistry. This highly accurate method was funded by the federal government and developed by Lawrence Berkeley Labs and Affymetrix, a Bay Area company. The chip, with 2.4 million genetic probes in an area about the size of a thumbnail, can identify virtually all known types of bacteria, detect specific pathogens of interest such as the toxic *e-coli* O157H, and provide source identification capabilities so we would be able to see the entire microbial population of our waters for the first time. Not only would this have important public health benefits, but we'd gain a lot of information about Tomales Bay to help

agricultural and mariculture interests. The project is simply to adapt these chips to beach water quality purposes – fortunately a lot of the groundwork has already been done.

Would we use these chips for routine beach water quality monitoring?

No - using the information gleaned by the chip analysis, the project will develop a simple and rapid QPCR test to look for the list of 10 -20 keystone organisms that reliably indicate the presence of human pathogens. These tests could be run in half a day by the County lab and the machine required costs about \$5000 at a cost comparable to existing tests. Lab personnel costs would be reduced when compared with the archaic methods currently in use.

What would be the costs to the County?

Nothing. The State Water Resources Control Board has invited us to apply for full funding for the project – approximately \$840,000. The funds come from the Prop. 50 Clean Beaches Initiative. No match funding from the County is required and the project would largely be externally managed by our scientific coordinator John Hulls and Lawrence Berkeley Labs ecology division. We can operate the project minimal commitment and with existing staffing. Over the last year John Hulls has put in many hours as a County Volunteer and is very familiar with the project and enthusiastic about its potential.

Through Dr. Corey Goodman, a National Science Foundation fellow and Marin resident, a verbal offer has been received for private foundation funding in excess of \$200,000 for further tests in Tomales Bay. This will be of help to the community and the County in dealing with the Tomales Bay pathogen TMDL and preserving and protecting the agricultural environment of Coastal Marin.

Is there support for this project from others?

Yes, the shellfish industry and state regulators are most interested as is our Parks & Open Space Department. San Francisco and Sonoma County will cooperate in the project although Marin would be the main focus. Southern California Coastal Water research projects, UC Davis, UC Santa Barbara and Oregon State University (OSU) have all pledged assistance. Dr. Kate Field at OSU wants to assist us by using her tests that are selective for different bacteria sources e.g. horse, cow, dog, human etc. Dr. Field has family in the Inverness area and is familiar with Marin County.

This project is regarded as innovative and prestigious. It might garner the County some recognition and awards for environmental and public health leadership.

What is the proposed timeline?

The grant money has been allocated by State Water Quality Control Board and can be made available very soon, upon completion of the formal application and approval of the Marin County Board of Supervisors. The Lawrence Berkeley Lab would like to begin work in late summer 2007.