

**STATE WATER RESOURCES CONTROL BOARD
BOARD MEETING SESSION--DIVISION OF WATER QUALITY
May 15, 2006**

ITEM #8

SUBJECT

CONSIDERATION OF A RESOLUTION APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY REGION (BASIN PLAN) INCORPORATING A TOTAL MAXIMUM DAILY LOAD (TMDL) FOR PATHOGENS IN TOMALES BAY WATERSHED

DISCUSSION

The San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Water Board) adopted the latest edition of the Basin Plan in 1995 under Resolution No. 95-76. The Basin Plan is reviewed triennially and updated as needed. The Basin Plan sets Water Quality Standards (standards) to protect all waters in the San Francisco Bay Region and prescribes programs to implement these standards. The standards consist of the designated beneficial uses of the waters, narrative and numeric objectives to protect these uses, and the State's Antidegradation Policy.

In 2002, the San Francisco Bay Water Board identified Tomales Bay (Bay) and portions of its main tributaries (Lagunitas, Walker, and Olema Creeks) as not meeting standards due to elevated levels of pathogens under section 303(d) of the federal Clean Water Act (CWA). The designated beneficial uses for the watershed are not being fully attained due to the presence of excessive levels of pathogens originating from human and animal wastes. Placement on the 303(d) list requires that a plan (i.e., a TMDL) be developed to control the pollution and ensure that standards are met. On ~~November 16, 2005~~, September 21, 2005, the San Francisco Bay Water Board adopted Resolution No. R2-2005-0046 (Attachment) that amended the Basin Plan to establish a TMDL for pathogens in Tomales Bay Watershed.

The long, shallow Bay is a unique and highly valuable natural resource located in Marin County. Major land uses are livestock grazing, dairy farming, equestrian facilities, low-density residential housing, and parklands (including Point Reyes National Seashore Park). The watershed is widely used for recreational pursuits such as hiking, boating, camping, picnicking, clamming, fishing, and bird watching. The Bay also supports commercial cultivation and harvesting of shellfish.

Pathogens in the water pose a health risk to people who are exposed either through incidental ingestion of water (for instance, through recreational activities such as swimming, fishing, boating, tide pooling, etc.) or through the consumption of contaminated shellfish. The following beneficial uses of the watershed have been identified as impaired due to excessive levels of pathogens: shellfish harvesting (SHELL), water contact recreation (REC-1), and non-contact water recreation (REC-2).

Studies indicate that the main potential sources of bacteria and associated human pathogens include on-site sewage disposal systems, small wastewater treatment facilities and sewage holding ponds, boat discharges, grazing lands, dairies, equestrian facilities, and municipal runoff. Terrestrial and marine wildlife are not considered major sources. The largest discharges and exceedances are associated with rainfall during the winter season, when runoff flushes fecal wastes to the Bay.

The detection and enumeration of all human pathogens of concern is impractical in most circumstances due to the potential for many different pathogens to reside in a single water body, the lack of readily available and affordable methods, and the variation in pathogen concentrations. Indicator organisms are therefore commonly used to indicate the presence and to assess the magnitude of human fecal pathogens in the water column. Several types of indicator organisms (coliform bacteria) colonize the intestinal tracts of warm-blooded animals and are abundantly shed in their feces. These organisms are not necessarily pathogenic but are easily detected in the environment.

The Basin Plan sets numeric density-based objectives for total and fecal (a subset of total) coliform bacteria, which are the two indicators most commonly used for assessing fecal contamination of shellfish and recreational use waters¹. The SHELL beneficial use is the most sensitive to fecal contamination and has the most stringent objectives applied.

The California Department of Health Services (DHS) has separate superseding authority and standards to regulate commercial shellfish growing areas. DHS standards follow criteria developed by the National Shellfish Sanitation Program, which is administered by the U.S. Food and Drug Administration. DHS prohibits commercial shellfish harvesting in the Bay during rainfall periods based on studies showing the influence of runoff events on fecal coliform concentrations in water and shellfish. The Bay is closed to shellfish harvesting an average of 70 days per year, affecting the economic viability of the commercial shellfishing industry. However, a major human illness outbreak, caused by the consumption of contaminated Bay oysters in May 1998, suggests that the SHELL use may be impaired during dry periods as well. Because the number of closures exceeds 30 days, the Bay has been listed as “threatened” under the 1993 California Shellfish Protection Act.

The proposed TMDL sets numeric targets, allocates responsibility among the sources for meeting those targets, and establishes an implementation plan to ensure that all segments of the Bay and its major tributaries attain applicable bacteriological water quality objectives established in the Basin Plan to protect and support the designated beneficial uses. The numeric targets are comprised of (1) fecal coliform bacteria density targets for the Bay and the main tributaries (identical to the Basin Plan objectives); (2) a shellfish harvesting closure target of less than 30 days per year (consistent with the California Shellfish Protection Act); and (3) a human waste discharge prohibition for the Bay and its tributaries (consistent with existing discharge prohibitions).

Load and wasteload allocations assigned to the various animal waste sources to the Bay and the tributaries are density-based and reflect the highest densities that can be discharged while

¹ Since they are not specific to humans, these indicators do have some shortcomings. Microbial source tracking techniques (most using *Escherichia coli* and *Enterococci* as indicator organisms) have shown promise in narrowing down sources of contamination, but many of these methods are still in development and have not been extensively tested.

still attaining the SHELL beneficial use designated for the Bay. An allocation for all tributary sources applies where Walker and Lagunitas Creeks discharge into the Bay and is based on results from a hydrodynamic model developed for the purpose.

The implementation plan requires actions to eliminate potential discharges of human waste from boats, on-site sewage disposal systems, small wastewater treatment facilities, and sewage holding ponds. The plan also requires actions to minimize discharges of animal wastes from sources such as grazing lands, dairies, equestrian facilities, and domestic animals (municipal runoff). Discharging entities are not held accountable for discharges originating from wildlife. The requirements are consistent with the State's Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program and the California Water Code. Implementation measures include evaluation of operating practices, development of control measures and a schedule for implementing those measures, and submittal of progress reports documenting the actions taken.

Water quality monitoring will be conducted to evaluate fecal coliform concentration trends in the Bay and its tributaries. Every five years, the San Francisco Bay Water Board will evaluate new and relevant information from monitoring and scientific literature, assess progress towards meeting the targets and load allocations and appropriateness and effectiveness of proposed action, and may consider revising the TMDL if needed. The reviews will provide opportunities for stakeholder participation. Any necessary modifications to the targets, allocations, or implementation plan will be incorporated into the Basin Plan.

DHS, working in consultation with the Shellfish Technical Advisory Committee, is encouraged to periodically evaluate shellfish harvesting guidelines beginning in 2009.

POLICY ISSUE

Should the State Water Resources Control Board (State Water Board) approve the amendment to the Basin Plan in accordance with the staff recommendations below?

FISCAL IMPACT

San Francisco Bay Water Board and State Water Board staff work associated with or resulting from this action can be accomplished within budgeted resources.

REGIONAL WATER BOARD IMPACT

Yes, San Francisco Bay Water Board.

STAFF RECOMMENDATION

That the State Water Board:

1. Approves the amendment to the Basin Plan adopted under San Francisco Bay Water Board Resolution No. R2-2005-0046.
2. Authorizes the Executive Director or designee to transmit the amendment and the administrative record for this action to the Office of Administrative Law and the TMDL to the U.S. Environmental Protection Agency for approval.

Draft

April 17, 2006
Revised May 5, 2006

**STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 2006-**

**APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN
FOR THE SAN FRANCISCO BAY REGION (BASIN PLAN) INCORPORATING
A TOTAL MAXIMUM DAILY LOAD (TMDL) FOR PATHOGENS
IN TOMALES BAY WATERSHED**

WHEREAS:

1. The San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Water Board) adopted a revised Basin Plan on June 21, 1995, which was approved by the State Water Resources Control Board (State Water Board) on July 20, 1995 and by the Office of Administrative Law (OAL) on November 13, 1995.
2. On ~~November 16, 2005~~, September 21, 2005, the San Francisco Bay Water Board adopted Resolution No. R2-2005-0046 ([Attachment](#)) amending the Basin Plan to incorporate a TMDL for pathogens in Tomales Bay Watershed.
3. The State Water Board finds that the Basin Plan amendment is in conformance with Water Code section 13240, which specifies that Regional Water Quality Control Boards may revise Basin Plans.
4. San Francisco Bay Water Board staff prepared documents and followed procedures satisfying environmental documentation requirements in accordance with the California Environmental Quality Act and other State laws and regulations.
5. The Basin Plan amendment does not become effective until approved by the State Water Board and until the regulatory provisions are approved by OAL and the TMDL approved by the U.S. Environmental Protection Agency (USEPA).

THEREFORE BE IT RESOLVED THAT:

The State Water Board:

1. Approves the amendment to the Basin Plan adopted under San Francisco Bay Water Board Resolution No. R2-2005-0046.
2. Authorizes the Executive Director or designee to transmit the amendment and the administrative record for this action to OAL and the TMDL to USEPA for approval.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on May 15, 2006.

Song Her
Clerk to the Board