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March 24, 2008

Mr. Farhad Ghodrati
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Pathogens in Richardson Bay
Total Maximum Daily Load (TMDL)
Staff Report and Proposed Basin Plan Amendment

Dear Mr. Ghodrati:

I am writing on behalf of the Marin County Stormwater Pollution Prevention Program (MCSTOPPP). MCSTOPPP is a joint effort by Marin County and its 11 cities and towns. We coordinate local stormwater pollution prevention efforts by each municipality and implement countywide activities that protect and enhance water quality in Marin's creeks and wetlands, the San Francisco Bay Estuary, and coastal waters. MCSTOPPP is administered by the Marin County Flood Control and Water Conservation District with staffing provided by the Marin County Department of Public Works. A Citizen's Advisory Committee (CAC) provides review and advice.

MCSTOPPP strongly supports this TMDL's overarching goal of improving Richardson Bay water quality by preventing potential pathogens from entering the Bay and its tributaries. To further that end, this letter proposes changes to the draft Basin Plan Amendment (BPA) and also provides comments on the Staff Report.

PROPOSED CHANGES TO THE BASIN PLAN AMENDMENT

Evaluation of Attainment of Shellfish Harvesting Beneficial Use

The BPA should state how attainment of the shellfish harvesting designated use (Table 7-1) is to be measured and determined. The evaluation of attainment should be based on measurements at or near historic or potential shellfish harvesting areas.

Likewise, in the BPA the TMDL (Table 7-2) states the number and timing of samples which are to be taken for the purpose of evaluating attainment. It should

also say measurements are to be made at historic or potential shellfish harvesting areas.

The principal reasons for these changes are:

- Samples from marinas, harbors, and the urban shoreline are not representative of Richardson Bay as a whole, and are unrepresentative of the areas where shellfish harvesting has historically taken place or may take place in the future.
- Evaluating attainment using samples taken at historic or potential shellfish harvesting areas would focus implementation efforts on protecting the potential shellfish harvesting beneficial use.

Other reasons include:

- There is only a tenuous quantitative association between coliform levels in fresh and marine waters and risk to human health from ingestion of those waters. The risk from ingestion of shellfish is even more uncertain. The uncertainties are not adequately addressed in the Staff Report.
- Sporadic exceedances of coliform water quality objectives do not necessarily imply that the shellfish harvesting use is impaired.

Load Allocations

The allocation to stormwater of a median MPN/100mL < 14 and a 90^{th} percentile MPN/100mL < 43 (Table 7-3) may not be achievable—depending on where measurements are made. It would make little sense to measure stormwater itself; rather the measurement should be made at those locations within the Bay where the shellfish harvesting use could potentially and feasibly take place.

Alternatively, the allocation for stormwater measured upstream of outfalls should account for attenuation and die-off of organisms between the outfall location and where the beneficial use could potentially and feasibly take place.

While sanitary sewer systems, houseboats, and vessels are already required to achieve zero discharge to Richardson Bay (i.e., are prohibited from discharging), stormwater discharges cannot be prevented. Adoption of the load allocation in Table 7-3 without this change could potentially place Marin municipalities in a situation where no actual use impairment might exist, but "paper noncompliance" could trigger additional monitoring and reporting and thereby divert resources needed to implement local pollution-prevention programs.

Implementation

MCSTOPPP supports adoption of the implementation measures listed for stormwater runoff in Table 7-4.

COMMENTS ON THE TMDL STAFF REPORT

The Problem Statement (Section 3.1) should summarize the uncertainties associated with the statements therein. In particular, the chain of inference—from the presence of fecal coliform bacteria, to the presence of pathogens, to human health risk—has not been quantified.

The Project Objectives (Section 3.3) should note that, to protect the shellfish harvesting beneficial use, the objectives for shellfish harvesting need only be met in areas where shellfish harvesting could potentially occur.
The discussion of the use of fecal coliform bacteria as indicators for pathogens (Section 4.1) should note there is only a weak quantitative relationship between fecal coliforms and pathogens and should also note there is an even weaker quantitative relationship between the presence of fecal coliform in water and the incidence of disease from consuming shellfish.
Section 4.2 (Water Quality Standards) should note the shellfish harvesting beneficial use is based on historic and potential shellfish harvesting, that there has not been shellfish harvesting in Richardson Bay for 40-50 years, and that the water-quality data which form the basis of the 303(d) listing were obtained in areas in which shellfish harvesting does not occur and would not be possible, as is documented in Section 4.4.

Section 4.5 (Recent Bacterial Monitoring Data) should note that the correlation between elevated fecal coliform in wet-season samples as compared to dry-season samples could be due to increased mixing and turbidity, as well as other potential causes.
The last paragraph of Section 4.5 should be made clearer with regard to the TMDL process. The TMDL process generally presumes contributions of loads from various sources into a well-mixed water body. "Relative contributions" from various sources is of less relevance in this TMDL which is not based on loads but is instead "density based." In this case, the "contributions" (loads) of coliforms from stormwater or sanitary sewer overflows are not very relevant. Therefore the last three sentences of this paragraph, including the statements about monitoring, should be deleted as the monitoring approach described is not relevant to the TMDL project objectives—nor is it technically sound.

In Section 4.7, it is noted that the data provides "a consistent picture of widespread, but somewhat localized potential pathogen impairment. Data indicate that houseboats consistently have been and still are a significant source of potential pathogen pollution in the Bay. They also indicate that vessel discharges in certain recreational boat marinas are a significant potential pathogen source." It should be noted here, as well as elsewhere, that the houseboats and recreational boat marinas are well removed from historic or potential shellfishing areas and that there is no evidence that the discharges significantly affect coliform levels in those areas.

Also in Section 4.7, the last sentence should be deleted, as additional wet-weather monitoring would be unlikely to achieve better characterization of the magnitude and relative contributions from sanitary sewer overflows and stormwater.
In Section 6.3, the discussion of the relative percentage of exceedances during the wet season and dry season should include a statistical analysis of the likelihood that the difference in relative percentages is due to chance rather than a difference in actual conditions. Without such an analysis, these data should not be used to support "the conclusion that stormwater runoff could potentially be a source of pathogens loading to the Bay."

Also in Section 6.3, the last three sentences regarding the need for additional monitoring should be deleted as the monitoring approach described is not relevant to the TMDL project objectives nor is it technically sound.

In Section 7.5 (Seasonal Variation), in the first sentence, the phrase "due to factors such as stormwater runoff" should be deleted as there has been no statistical analysis as to whether the data support this conclusion.

Because this is a density-based TMDL, Section 8 (Linkage Analysis) must discuss the geographic relationship between the identified sources (houseboats and marinas) and the uses (water-contact recreation and shellfishing), and the extent to which discharges at the source locations may affect, or not affect, water quality where the uses actually occur or could potentially occur.

In Section 10.2 (Water Quality Monitoring), Table 18, MCSTOPPP should be deleted from the list of sampling entities as we are not currently engaged in the monitoring of Bay waters, have no expertise in such monitoring, and are not interested in cancelling a portion of our pollution-prevention activities in order to divert funds to pay for monitoring. In addition, the monitoring approach should be revisited and reconsidered. It would make the most sense to fully implement the controls described in Section 9 for houseboats and marinas before conducting limited follow-up sampling in those areas to confirm the effectiveness of the additional measures. Because of the sporadic and variable nature of stormwater discharges and sanitary sewer overflows, it is very unlikely that water-quality monitoring would be able to detect a response to additional BMPs at a statistically significant level.

We appreciate your consideration of our comments. If you have any questions regarding these comments please contact me at 415-499-6583.

Sincerely,

Terri Fashing
Stormwater Program Administrator

cc: MCSTOPPP Agency Staff Committee
MCSTOPPP Citizens Advisory Committee
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