

Appendix E

Comment Letters Received
by
October 8, 2012

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Scenic Pacifica

October 8, 2012

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Mr. Farhad Ghodrati
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San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
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Subject: Comments Regarding the draft Staff Report for the San Pedro Creek and Pacifica State Beach Bacteria TMDL

Dear Mr. Ghodrati:

Thank you for the opportunity to comment on the draft Staff Report and proposed Basin Plan Amendment for the proposed bacteria Total Maximum Daily Load (TMDL) in San Pedro Creek and at Pacifica State Beach. We would particularly like to thank you and your staff for your diligence and care in preparing this draft report.

Our detailed comments can be found in the attached document. Please feel free to contact Ray Donguines at (650)738-3768 or donguinesr@ci.pacificaca.us should you have any questions or require additional information. Thank you for your consideration of these comments.

Sincerely,

Stephen A. Rhodes
City Manager

cc: Bruce Wolfe, Regional Water Board
Naomi Feger, Regional Water Board
Keith Lichten, Regional Water Board
Pacifica City Council Members
Monica Oakley, RMC Water and Environment

City of Pacifica

**Comments Regarding Proposed Basin Plan Amendment to establish a
Total Maximum Daily Load (TMDL) for Bacteria
In San Pedro Creek and at Pacifica State Beach**

October 8, 2012

The City of Pacifica (City) appreciates the opportunity to submit the following comments on the Draft Staff Report for Proposed Basin Plan Amendment (draft Staff Report, proposed amendment, proposed TMDL) to establish a Total Maximum Daily Load (TMDL) in San Pedro Creek and at Pacifica State Beach. The City is also concerned with bacterial loadings in San Pedro Creek and Pacifica State Beach and recognizes the need to improve water quality. Page numbers in the comments below refer to the draft Staff Report (August 2012). The City is available to answer questions or provide additional information.

COMMENTS ON DRAFT STAFF REPORT

1. The City in conjunction with San Mateo County is concerned about being held responsible for all sources of bacteria to San Pedro Creek and Pacifica State Beach.

(Page 41)

Normally within a TMDL, each source of pollutant is assigned its own Waste Load Allocation (WLA), which comprises loads or activities that each entity has control over. However, in this proposed TMDL, the entire allocation is being assigned to the City and San Mateo County. The proposed amendment states that “All permittees or entities that discharge indicator bacteria or have jurisdiction over such dischargers are collectively responsible for meeting these allocations” (page 120). This approach is unworkable for the City because the City and San Mateo County do not have control over all the sources, or in any event, there is a tremendous amount of uncertainty regarding whether the City has control over all the sources (see also Comment No. 15 below regarding reference stream approach).

This draft TMDL expresses WLAs as allowable exceedance days, which were calculated from the proposed exceedance rates. The exceedance rates were calculated based on single sample *E. coli* counts. EPA’s *Protocol for Developing Pathogen TMDLs* states “*E. coli* is one of the ubiquitous coliform members of the intestinal microflora of warm-blooded animals”¹. Thus, the exceedance rates do not indicate fecal contamination solely from humans, but also from other warm-blooded animals (many of which were identified in the San Pedro Creek Coalition report). The proposed amendment requires implementing controls for some of these animal sources of bacteria in the watershed (such as horse facilities) and does not require controls for others (such as birds, wild cats, and raccoons). The proposed amendment unfairly assigns responsibility to parties that do not have control over all the sources of bacteria loading.

¹ EPA, 2001. Protocol for Developing Pathogen TMDLs, First Edition. Environmental Protection Agency, Office of Water.

2. The Linkage Analysis is does not show a connection between City-controlled sources and water quality.

(Page 47)

The Linkage Analysis should establish the relationship between the pollutant loadings from the identified sources and existing water quality. In particular, the linkage analysis does not show how reducing the pollutant loadings from stormwater runoff from point sources and nonpoint sources, and dry weather flows, will restore water quality to protect beneficial uses.

Since the City and San Mateo County are being held responsible for the entire waste load allocations, a source analysis must show that stormwater runoff and dry weather flows conveyed through storm drains are the primary sources of elevated bacteria loading in San Pedro Creek and at Pacifica State Beach. The source analysis in the San Pedro Creek Watershed Coalition Bacteria Analysis Project study identified major human and animal sources contributing to the watershed, not only sources from stormwater and dry weather run-off. The study supports the possibility that storm drains must be contributing to bacteria loading, but does not concretely determine that stormwater drains are a major source.

The Los Angeles Harbor², Santa Monica Bay Beaches (dry-weather)³, and Marina del Rey Harbor Mothers' Beach and Back Basins⁴ Bacteria TMDLs cite numerous studies that show that dry weather urban runoff and storm water, both conveyed by storm drains, are the primary sources of elevated bacterial indicator densities. The Los Angeles River⁵, Santa Clara River Estuary⁶, and Harbor Beaches of Ventura County⁷ Bacteria TMDLs cite the former three TMDLs to support their linkage analysis. These Southern California TMDLs utilized the reference system approach and also justified linkage between the pollutant loadings with the scientific studies to link bacteria loading sources and existing water quality. However, the proposed amendment incorrectly assumes that the reference system approach accounts for linking run-off to existing water quality. The Staff Report must clearly support linkage with scientific data before assigning responsibility to the City and San Mateo County for stormwater and dry-weather run-off.

² LARWQCB, 2004. Los Angeles Harbor Bacteria TMDL. Los Angeles Regional Water Quality Control Board

³ LARWQCB, 2002. Santa Monica Bay Beaches dry-weather bacteria TMDL. Los Angeles Regional Water Quality Control Board.

⁴ LARWQCB, 2003. Marina del Rey Harbor Mothers' Beach and Back Basins. Los Angeles Regional Water Quality Control Board.

⁵ LARWQCB, 2010. Los Angeles River Watershed Bacteria Total Maximum Daily Load. Los Angeles Regional Water Quality Control Board.

⁶ LARWQCB, 2010. Total Maximum Daily Loads for Indicator Bacteria in Santa Clara River Estuary and Reaches 3, 5, 6, and 7. Los Angeles Regional Water Quality Control Board.

⁷ LARWQCB, 2007. Harbor Beaches of Ventura County Bacteria TMDL. Los Angeles Regional Water Quality Control Board.

In addition, because some of the dry weather flow is currently being diverted to the wastewater treatment facility, storm drain flows may not be responsible for causing the exceedances of the bacteria water quality objectives. If dry weather storm sewer flows are not the cause of exceedances, requiring reductions in the number of exceedances for dry weather (a 93% reduction) will not result in meeting the allowable exceedance objectives. This lack of a linkage does not support a clear relationship between the exceedances in bacterial water quality objectives and the City's stormwater runoff and dry weather flows.

3. The existing Municipal Regional Permit is a very comprehensive stormwater management tool and is sufficient to satisfy City requirements.

Because the City only has control over a limited number of sources, and because each of these sources is comprehensively covered in the Municipal Regional Stormwater NPDES Permit (MRP, Order No. R2-2009-0074), requirements in addition to the baseline MRP mandates are not warranted for the City. The City is in compliance with the MRP and is committed to implementing existing programs under the MRP as long as that mandate exists. The City believes that this approach would address the other comments in this document. See also changes to Table 10.2 after Comment No. 22.

4. The City should not have to report the efforts of horse management in the Watershed.

(Page 52)

The City plans to continue to enforce the local ordinances for the horse facilities; however, the City believes it should not be required to submit a report that summarizes the facilities' current efforts to ensure compliance with these local ordinances for proper horse waste management in the Watershed. The draft Staff Report proposes that the horse facilities develop and implement Waste Management Plans for the Regional Water Board that provide the facility's detailed operations and management plan, and an assessment of the overall facility and effectiveness of waste containment and disposal and improvement schedule. Thus, the Regional Water Board will already be receiving information from the horse facilities that details the facilities' efforts, so the City should not have to conduct additional reporting. In summary, this reporting would be extra work for the City for which there is no funding to conduct.

5. Existing data and information does not support the allegation that leaking sewer lines are a significant source of bacteria loading.

(Page 12)

The draft Staff Report states, "Human inputs are no doubt from leaking sewer lines." However, if the sewer lines are leaking, the leak would steadily contribute to bacteria counts; in other words, the recorded bacteria counts on page 15 of the Staff Report would be much more consistent. Furthermore, because wet weather flows effectively dilute wastewater in the sewer system, leaking sewer lines would contribute less to the wet season bacteria count than the dry season bacteria count, but the bacteria count results do not reflect this pattern. The dry season counts are not significantly more than or less than the wet season count, so there is no technical link that supports the statement that human inputs are from sewers. In summary, there is no substantial evidence that leaking sewer lines are contributing to bacteria loading.

6. Special studies should be performed before the TMDL implementation, not after.

(Page 66)

The draft Staff Report specifies that responsible parties “may conduct special studies designed to help refine allocations and/or assist with TMDL implementation”. The City believes such special studies should be performed before assigning WLAs in order to make informed decisions about how to implement the TMDL. The City feels it would waste time and resources attempting to implement measures to meet likely unachievable goals in the proposed TMDL. Furthermore, the City does not have funding to conduct these additional studies and should not be held responsible for conducting these studies that are the responsibility of the Regional Water Board.

7. Many of the CEQA statements conflict with the TMDL implementation program.

The CEQA statements say there will be no impacts, but it is likely that to really achieve the significant reduction needed to achieve the proposed waste load allocations, there will be impacts, which are not reflected in analysis. For example, the draft Staff Report indicates that “any physical changes to the aesthetic environment as a result of the Bacteria TMDL would be small in scale”, but many of the suggested structural Best Management Practices (BMPs) are large in scale and will significantly impact the aesthetic environment of San Pedro Creek. For example, local rainwater capture systems (page 56) such as large tanks, rain barrels, and cisterns would have a huge impact on the aesthetic environment at schools and public facilities. Also, media filtration treatment systems (page 57-58), as stated in the draft Staff Report, are generally off-line facilities that require a diversion structure. Other suggested BMPs include large basins for a regional infiltration facility, regional detention facilities that require a relatively large contiguous area, and diversion and/or treatment BMPs that require additional pump stations to divert water to the Calera Creek Water Recycling Facility. Attempting to comply with the proposed numeric targets in the draft Staff Report will create major physical changes that would adversely impact the aesthetic environment, at a minimum.

8. The Draft Staff Report should recognize that the City has already installed major stormwater BMPs that go above and beyond the MRP.

(Pages 31-32)

The City of Pacifica diverts stormwater from two pump stations to the Calera Creek Water Recycling Plant during dry weather, and also for a portion of wet weather flow. This activity is significant because very few other communities, if any, in the entire San Francisco Bay Area are diverting any kind of stormwater to sanitary sewer wastewater treatment plants. The MRP requires pilot testing at five locations around the Bay Area for this stormwater control approach, but it does not even require stormwater diversions. The City has been very proactive in this stormwater control activity. After the installation of a larger transfer pump at Anza Pump Station, almost all of the stored dry weather flows at both stations will be diverted to the wastewater treatment plant for treatment.

9. The economic analysis does not consider the City finances needed to support the suggested BMPs.

(Pages 108-110)

The economic considerations do not account for the lack of funds available to the City's Stormwater Compliance program. Currently, a fraction of property taxes in Pacifica funds the program to handle storm drainage issues and maintenance, such as street sweeping and storm drain cleaning.

Due to Proposition 218, which requires local government to achieve voter approval for any changes in all taxes and most charges on property owners, the City has had difficulty raising additional funding for stormwater activities. For example, in May 2009, the City proposed *Pacifica Sales Tax, Measure D*, which proposed a one-cent sales tax in Pacifica that would have expired in 2016. A portion of this sales tax would have contributed to protecting local coastal areas and beaches from polluted runoff and trash. This measure failed at the ballot box.

Due to the City's very limited budget, for the current fiscal year, the City has cut previous funding levels for the Pacifica Chamber of Commerce's Visitor Center, the Pacifica Resource Center, Pacifica Community Television, and Pacifica Sanchez Library (public library) hours. Spending money on new stormwater controls other than those the City has already committed to will decrease spending on those and other programs even more.

10. The economic analysis significantly underestimates the costs of capital and operations and maintenance costs of structural BMPs.

(Pages 108-110)

The economic analysis performed for the proposed Basin Plan Amendment greatly underestimates the costs of the structural BMPs.

The City has already installed two of the suggested BMPs indicated in the draft Staff Report. One of the installed BMPs is a 1,480-square foot vegetated bioswale in a dog park. When calculating capital costs of this bioswale by using the same estimation method from the proposed amendment (using a 1,000 square feet per acre ratio of swale surface area to drainage area and the cost of approximately \$19,000 for the treatment of a 10-acre drainage area), the City determined that the capital cost for this 1,480-square foot vegetated bioswale using the Staff Report cost methodology would be about \$2,815. However, the actual capital cost of this project was \$24,825, so the actual cost was *8.8 times, or 880%* of the cost that would be estimated based on the values in the draft Staff Report.

The City also installed a tree box filter in the same dog park. The tree box filter is intended to filter runoff from the park, which is 18,480 square feet. Using the method indicated in the draft staff report (with a design depth of 0.5 inch and a construction cost of \$7 per cubic feet⁶), the capital cost of the tree filter would be estimated to cost about \$5,400. However the actual capital cost was \$24,475, so the cost in the draft Staff Report values is *3.5 times, or 350%* of the cost that would be estimated based on the values in the draft Staff Report. These two examples show that the economic analysis in the proposed TMDL significantly underestimates the actual costs of the structural BMPs.

The calculations and table below show in detail how the capital costs estimated by Regional Water Board staff are significantly less than the actual costs the City staff paid.

Vegetated Treatment Systems

$$1,480 \text{ square feet} \times \frac{\text{acre of drainage area}}{1,000 \text{ sq. ft. swale}^6} \times \frac{\$19,000 \text{ for treatment}^6}{10 - \text{acre drainage}} = \$2,815$$

Infiltration Systems

$$18,480 \text{ square feet} \times 0.5 \text{ inches of runoff} \times \frac{\text{foot}}{12 \text{ inch}} \times \frac{\$7 \text{ for construction}^6}{\text{cubic feet}} = \$5,390$$

BMP	Capital Cost		Actual Cost as a Percentage of Staff Report Cost
	Estimated Cost Using Draft Staff Report Figures	Actual Cost	
Vegetated Treatment System (Bioswale)	\$2,812	\$24,825	880%
Infiltration System (Tree Filter)	\$5,390	\$24,475	350%

One consideration for calculating costs using unit costs originally intended perhaps for larger systems is the potential effect of the economy of scale (i.e. smaller cost per unit for a larger system than a smaller system). However, researchers have found that bioretention systems, such as tree filters and bioswales, do not display an economy of scale. For example, a study titled *The Economics of Structural Stormwater BMPs in North Carolina* concluded that non-sandy bioretention does not exhibit economy of scale⁸. Also, the EPA’s *Preliminary Data Summary of Urban Stormwater Best Management Practices* states that “Bioretention is relatively constant in cost, because it is usually designed as a constant fraction of the total drainage area”⁹. Thus, the economy of scale factor does not apply for these two stormwater management systems.

11. Economic considerations must include land acquisition costs.

(Pages 108-110)

The cost calculations for the structural BMPs must include land acquisition costs because these costs are significant. Because Pacifica is about 95% developed within the developable area, the cost of land can greatly increase the capital costs of structural controls. By excluding the land acquisition costs, the economic analysis is further underestimating the actual costs of these systems.

⁸ Wossink, Ada and Bill Hunt, 2003. *The economics of structural stormwater BMPs in North Carolina*. Water Resources Research Institute of the University of North Carolina.

⁹ EPA, 1999. *Preliminary Data Summary of Urban Stormwater Best Management Practices*, August 1999. Available online at: <http://water.epa.gov/scitech/wastetech/guide/stormwater/> (accessed September 12, 2012)

Land in Pacifica is approximately \$900,000 per acre at the present time, based on current prices for several available lots in the developed areas in Pacifica. The value is the cost of acquiring developed land, because building stormwater facilities will occur in a developed area.

During a meeting with Regional Water Board staff in October, Regional Water Board staff indicated they believed future stormwater BMPs would be located in public right-of-way. However, land acquisition is required for many of the suggested structural stormwater BMPs (pages 56-59), such as diversion structures for media filtration treatment systems, transfer pumps stations, and other structural BMPs discussed in Comment No. 7. Hence, the cost estimates must include land acquisition costs.

12. The Staff Report significantly underestimates the cost of water quality monitoring.

(page 110)

Because the economic analysis omits many costs associated with sampling at five different reaches of San Pedro Creek, the cost of monitoring is significantly underestimated. The estimated cost for monitoring in the draft Staff Report only includes the laboratory analysis at \$25 per sample. However, the draft Staff Report does not include costs for *E. coli* analysis, sample collection, transportation, lab report review and results analysis, interaction with the laboratory, results reporting, or other monitoring activities. In addition, in contacting the bacteriological laboratory Biovir, which is often used for this type of sampling in the Bay Area, the laboratory analysis cost for *E. coli*, fecal coliform and total coliform was \$78/sample, considerably more than the estimated \$25/sample (for fecal coliform and total coliform).

The City estimated a more complete annual cost for monitoring activities of \$95,400 as shown in the following table.

Activity	Labor Time (hour)	Unit Cost	Cost
Additional Cost Estimates for 1 monitoring frequency (5 samples)			
Collecting Samples	6	\$80 / hour	\$480.00
Transporting Samples to Lab	6	\$80 / hour	\$480.00
Reviewing Laboratory Reports	0.5	\$80 / hour	\$40.00
Interacting with Laboratory	0.5	\$80 / hour	\$40.00
Laboratory Analysis	-	\$78 / sample	\$390.00
Analyzing Results	1	\$80 / hour	\$80.00
Reporting Results	1	\$80 / hour	\$80.00
Other Costs ⁽¹⁾	15	\$30 / hour	\$450.00
Total Cost for 5 samples (one sampling event):			\$1,590.00
Annual Cost with a monitoring frequency of 5 times per month:			\$95,400.00

1. Other costs include mileage, secretarial assistance, supplies, and other costs associated with monitoring.

So a more complete annual monitoring cost estimate of \$95,400 is much more than, actually about 1,270% of, the \$7,500 provided in the draft Staff Report.

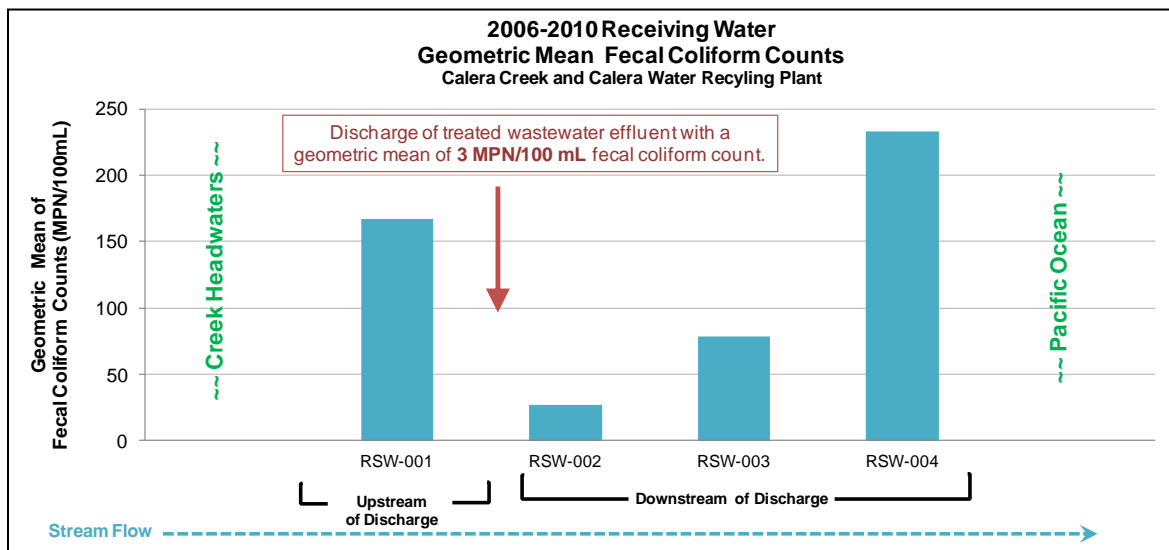
13. The City does not have funding to conduct monitoring of San Pedro Creek and the City should not be responsible for this monitoring.

The City is struggling, although committed, to conduct the *existing* requirements in Stormwater MRP. The City cannot take on a whole new monitoring program, and especially not at this cost. The City does not have this expertise and, in any event, monitoring of receiving waters should be conducted by the Regional Water Board. This responsibility should be assigned to another party if the Regional Water Board desires the monitoring to be conducted.

14. Compliance is not achievable with the proposed numeric targets.

San Pedro Creek watershed is a developed watershed, with domestic animals, as well as wild animals that are attracted to developed areas (such as raccoons, skunks, and opossums). There is also a large bird population in and around the City. While public outreach can have some effect on the magnitude of domestic animals' bacterial loadings, the City simply cannot control all sources, certainly not to the degree suggested in the proposed TMDL.

Calera Creek, another water body within the city of Pacifica, is an example of a creek in the same region. Most of the water in Calera Creek is the effluent discharged from the Calera Creek Water Recycling Plant, which has been treated with significant ultraviolet light disinfection, and whose geometric mean is a fecal coliform density of 3 MPN/100 mL from the years 2006 to 2010. Calera Creek data below show that bacteria densities upstream of the plant discharge (at RSW-1, 10 feet upstream of the discharge) are higher than bacteria densities immediately downstream after the effluent discharge (monitoring station RSW-2) enters the waterbody. The plant effluent discharge is effectively diluting the bacteria loading in Calera Creek.



However, as the creek flows downstream of the plant effluent discharge location, bacteria counts increase with distance downstream, showing that natural sources of bacteria loading in the undeveloped area around Calera Creek are causing the increases in bacteria counts at monitoring station RSW-3 (about 1,300 feet downstream of the discharge) and at RSW-4 (about 2,500 feet downstream of the discharge).

Thus, even the natural, undeveloped area in the Pacifica region contributes considerably to bacteria loading. And even if the City installs many of the BMPs to control stormwater runoff and dry-weather flows in San Pedro Creek, the natural sources of bacteria in the region will most likely cause exceedances in the applicable water quality objectives. There is no evidence, the City is aware of, that the targets in the TMDL are achievable.

15. The draft Staff Report does not justify why applying the proposed Southern California freshwater reference system is appropriate for San Pedro Creek.

(Pages 38-39)

The City believes there is insufficient justification for selecting the reference system for San Pedro Creek. The proposed Staff Report simply indicates that the chosen reference exceedance rates were taken from the reference exceedance rates calculated in the *Total Maximum Daily Loads for Indicator Bacteria in Santa Clara River Estuary and Reaches 3, 5, 6, and 7*⁶. These exceedance rates were determined from data from three Southern California Coastal Water Research Project (SCCRP) studies for multiple freshwater Southern California reference systems.

However, just because the exceedance rate percentages are applied in Southern California does not mean they are appropriate, or even realistic, for Pacifica. Numerous factors affecting bacteria loading in Northern California and Southern California are substantially different and the Staff Report is introducing a large degree of uncertainty by assuming that the Southern California reference systems are appropriate for San Pedro Creek.

The City requests more justification for why a Southern California reference system can be applicable in the San Pedro Creek watershed. As the Environmental Protection Agency states in its *Handbook for Developing Watershed Plans to Restore and Protect Our Waters*¹⁰, when selecting a reference system for a watershed, stream conditions in the reference watershed should be representative of the impaired stream to support its designated uses. The reference watershed should be similar to the applicable watershed in size, land use distribution, soils, topography, and geology. These site-specific factors must be adequately addressed.

16. Leo Carrillo Beach is not an appropriate reference system for Pacifica State Beach.

(Page 39)

As indicated above in Comment 15, comparable land use is an important factor for a reference stream. However, the reference stream for Pacifica State Beach, the Leo Carrillo State Beach in Southern California, has a very different land use distribution. The Leo Carrillo State Beach and its associated drainage Arroyo Sequit Canyon consist of 98% open space, whereas Pacifica State Beach and its associated watershed is 50% developed. Further, field surveys have confirmed that there is little evidence of anthropogenic impact in most this relatively large subwatershed¹¹.

¹⁰ EPA, 2008. Handbook for Developing Watershed Plans to Restore and Protect Our Waters. Environmental Protection Agency, Office of Water.

¹¹ LARWQCB, 2002. Santa Monica Bay Beaches wet-weather bacteria TMDL. Los Angeles Regional Water Quality Control Board.

In addition, an important consideration for selecting a reference stream is to look at rainfall patterns. The storm events at the Leo Carrillo Beach in Southern California are not comparable to the storm events in Pacifica. Regional Water Board staff state that even though storm sizes are not comparable, the rainfall runoff transport systems are comparable; however, no justification is provided for how transport systems could be comparable. Without this information it seems unlikely that the transport systems are comparable because storm intensity is important in transport characteristics.

In any event, even if it was tempting to argue that a developed watershed should attain the water quality of an undeveloped watershed, this notion is very impractical and simply unrealistic.

17. The animal sources of bacteria loading are not comparable to the reference watersheds.

While the reference system is supposed to account for uncontrollable sources, there is a tremendous amount of uncertainty in whether the reference system is comparable. For example, the fraction of developed land in the San Pedro Creek watershed is not the same as the fraction in the freshwater reference systems. The diversity, and species distribution, of domestic and wild animals depends on the amount of undeveloped and developed land in a watershed. Hence, the animal populations in the two watersheds likely vary significantly due to this difference in development. In the San Pedro watershed, avian, canine, wildlife, and other types of warm-blooded animals are major sources of bacteria loading. In the reference watershed, the animal sources may be significantly different from those in the San Pedro Creek. The draft Staff Report does not provide any information about how the differences in wild animal populations are accounted for in the reference system approach.

18. The City requests one or more milestones in the Implementation Plan for the Regional Board to re-evaluate the reference system approach.

Both of the LARWQCB bacteria TMDLs that developed the two reference systems (the LA River Watershed Bacteria TMDL⁵ and the Santa Monica Bay Beaches TMDL¹¹) include a milestone that requires the LARWQCB to reconsider the TMDL. Regional Water Board staff are under the impression that scoping and studies to identify and analyze an appropriate bacteria TMDL reference system for the San Francisco Bay Area will be performed in the next several years. Thus, the City feels it is appropriate for the Regional Water Board to reconsider this TMDL to reflect technical studies and/or policy changes that occur after the approval of this TMDL. Suggested language about this milestone is provided in the marked-up of Table 10.2 after Comment No. 22.

19. The compliance deadlines for allowable exceedances should be revised.

(Page 64)

The City is aware that the 8 and 12 year deadlines were chosen because they would both potentially come after the required January 1, 2020 deadline to achieve full compliance with Prohibitions C.1 and C.2 of the Sanitary Sewer Order, which prohibit any sanitary sewer overflow that results in a discharge of untreated or partially treated wastewater to waters of the United States. However, as stated in Comment No. 5, there is no clear evidence that sewers are the source water quality objective exceedances for bacteria.

The City reviewed the currently effective bacteria TMDLs in the Los Angeles region and found that the average final compliance deadlines for those TMDLs using the same reference systems were an average of 11 years for fresh water bodies and 21 years for marine water bodies.

The City requests that the deadlines for compliance with allowable exceedances be revised to 12 years (Pacifica State Beach) and 20 years (San Pedro Creek) to allow time for the current activities to have some effect. For example with the newly enacted private sewer lateral ordinance, it will take approximately 30 years for close to full property turnover to occur. The requested revisions are shown in the markup of Table 10.2 after Comment No. 22.

20. If the City is required to conduct water quality monitoring in San Pedro Creek despite a lack of funds to do so, the City will significantly reduce the monitoring scheme and must have additional time to submit the plan.

(Page 63)

The proposed implementation schedule allows about only 6 months of time for the City and San Mateo County to submit a bacteria water quality monitoring plan. Many activities will need to be conducted during this period, including a Proposition 218 ballot, the development of a Request for Proposals (RFP), City Council approval to send out the RFP, time for consultants to develop a proposal, City selection and review of the proposals, negotiation of the contract for the work, City Council approval of the selected consultant, and actually doing the work. In addition, the monitoring program will be reduced to once per quarter, to capture the different seasons of the year.

The City requests that the Regional Water Board revise the deadline for the submittal of the comprehensive bacteria water quality monitoring plan to June 2014, so the City can budget for this activity for the 2013-2014 fiscal year, since no funds in this fiscal year are available for this purpose. Regional Water Board staff have indicated a preference for these activities to occur before the next scheduled reissuance of the Stormwater MRP, however it appears there is insufficient time for that goal based on the timing of the TMDL adoption. This information can be added to the following Stormwater MRP if desired. The changes are shown in Table 10.2 after Comment No. 22.

21. The City requests more specificity in the Staff Report that the specific WLAs will not be included in a future-reissued MRP as enforceable.

Based on correspondence with Regional Water Board staff, the City understands that only specific BMP-type activities would be required in the MRP (based on a work plan developed by the City), not numbers related to the WLAs.

The City requests that this approach be discussed more explicitly in the Basin Plan amendment. The City has already committed to implementing many activities to help control bacteria loading, and because there is considerable uncertainty about whether the numeric targets are achievable, the City believes it should not be penalized for trying to achieve the unachievable. The Staff Report and Basin Plan amendment must state that the WLAs or related numeric limits will not be enforced. In addition, the City should not be required to ratchet down the bacteria levels beyond existing programs, due to the *significant* uncertainty inherent in the development of the WLAs. The changes are shown in Table 10.2 after Comment No. 22.

22. The existing MRP annual reporting should be sufficient for reporting on TMDL activities.

The City should not have to conduct additional, separate monitoring for the TMDL. Significant reporting is already occurring in the Annual MRP Report and this reporting should be sufficient. Please see changes to Table 10.2 below.

Table 10.2. Implementation Schedule	
Deadline	Task
Effective date of the TMDL	Interim LAs and WLAs must be maintained.
Upon reissuance or other significant amendment of the MRP or adoption of a new or reissued NPDES municipal stormwater permit for Pacifica and the County	Incorporate specific TMDL requirements into the new, reissued, or amended permit. Acknowledge that current MRP activities are sufficient for implementation of the TMDL.
As soon as possible, and no later than June 2013 4	Pursuant to MRP Sections C.1, C.8 and Section 13267 of the Water Code, Pacifica and San Mateo County must submit a comprehensive bacteria water quality monitoring plan for the San Pedro Creek watershed to 1) better characterize their bacteria contributions; and 2) assess compliance with the wasteload allocations. They may submit plans separately, but are encouraged to collaborate on a single cooperative plan. The plan(s) shall be acceptable to the Executive Officer before the monitoring data can be considered during the implementation of the TMDL. Once the monitoring plan(s) has(have) been accepted by the Executive Officer, monitoring shall commence within 6 months. include a sampling frequency of quarterly for a maximum of five locations along San Pedro Creek.
No later than two years after the effective date of the TMDL	Horse facility owners shall submit a Report of Waste Discharge to obtain coverage under the Order No. R2- 2003-0093, General Waste Discharge Requirements for Confined Animal Facilities, or an updated version of it.
As soon as possible, and no later than December 2013 June 2014	Pursuant to MRP Section C.1, Pacifica and San Mateo County shall submit a draft <u>5-year</u> Plan to the Water Board outlining how each intends to cooperatively or individually achieve compliance with the WLAs for stormwater runoff and dry weather flow discharges. The report shall include implementation methods, an implementation schedule, and proposed milestones. fulfill existing requirements to reduce bacteria loadings.

Table 10.2. Implementation Schedule

Deadline	Task
6 months after receipt of Water Board comments on the draft Implementation Plan	Pacifica and San Mateo County shall submit a final Plan.
Beginning with the MRP starting in December 2012 <u>in June 2015</u>	Pacifica and San Mateo County shall implement the proposed Plan, including making and implementing any necessary improvements to the plan, until wasteload allocations have been achieved.
Beginning with the MRP cycle starting in December 2019	If wasteload allocations have not been achieved by the end of the next MRP permit cycle (December 2019), Pacifica and San Mateo County shall develop and implement an enhanced Plan in the subsequent permit cycle that will result in the achievement of the wasteload allocations by the dates specified below in this table.
5 years after the effective date of this TMDL, and annually <u>Annually with Annual MRP Self-Monitoring Report thereafter</u>	Pacifica and San Mateo County shall provide an update to the Water Board on the progress of their TMDL implementation activities related to bacteria.
<u>6 years after the effective date of this TMDL</u>	<p><u>The Regional Water Board shall reconsider the TMDL based on technical studies or policy changes to:</u></p> <p><u>(1) re-evaluate reference system selected to set allowable exceedance levels, including a reconsideration of whether the allowable number of exceedance days should be adjusted annually dependent on the rainfall conditions and an evaluation of natural variability in exceedance levels in the reference system(s) and</u></p> <p><u>(2) re-evaluate the reference year used in the calculation of allowable exceedance days.</u></p>
<u>8-12</u> years after effective date of this TMDL	For Pacifica State Beach: All dischargers shall achieve e Compliance with the applicable LAs and WLAs <u>shall be achieved</u> , expressed in terms of allowable exceedance days of the single-sample objectives for summer dry weather (April 1 to October 31), winter dry weather (November 1-March 31), and wet weather.

Table 10.2. Implementation Schedule

Deadline	Task
+2-20 years after the effective date of this TMDL	For San Pedro Creek: All dischargers shall achieve <u>Compliance with the applicable LAs and WLAs shall be achieved</u> , expressed in terms of allowable exceedance days of the single-sample objectives for dry and wet weather.

23. The City requests an opportunity to review a revised draft Staff Report and Basin Plan amendment with a minimum 2-week review period prior to adoption.

The City requests the ability to review a revised Staff Report and Basin Plan amendment prior to adoption.



COUNTY OF SAN MATEO

BOARD OF SUPERVISORS
DAVE PINE
CAROLE GROOM
DON HORSLEY
ROSE JACOBS GIBSON
ADRIENNE J. TISSIER

Department of Public Works and Parks

JAMES C. PORTER
DIRECTOR

555 COUNTY CENTER, 5TH FLOOR • REDWOOD CITY • CALIFORNIA 94063-1665 • PHONE (650) 363-4100 • FAX (650) 361-8220

October 5, 2012

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

Re: Draft Staff Report Related to 2012 Proposed TMDL for Bacteria in San Pedro Creek and at Pacifica State Beach

Dear Mr. Ghodrati:

The County of San Mateo Department of Public Works and Parks (County) appreciates this opportunity to provide comments on the Draft Staff Report Related to the 2012 Proposed Total Maximum Daily Load for Bacteria in San Pedro Creek and at Pacifica State Beach and the Proposed Basin Plan Amendment. The County understands that the San Francisco Bay Regional Water Quality Control Board (Water Board) is in the process of developing a Total Maximum Daily Load (TMDL), including the development of bacteria load and waste load allocations and an Implementation Plan designed to support and protect San Pedro Creek and Pacifica State Beach's designated beneficial use of water contact recreation (i.e. swimming, fishing). County staff attended a meeting held on October 1, 2012 with Water Board and City of Pacifica representatives to discuss these issues, and we would like to provide additional clarification to the limits of County jurisdiction and land use composition within the San Pedro Creek watershed. Information regarding the County's jurisdiction and additional comments on the subject report is provided below.

Unincorporated San Mateo County

According to County calculations, the San Pedro Creek watershed is approximately 5,275 acres (compared to a figure of 5,114 acres as stated in the subject report), of which approximately 2,200 acres are located in unincorporated San Mateo County. Within unincorporated San Mateo County, approximately 85% of lands are large open space/undeveloped parcels owned by public agencies including the County of San Mateo, City of Pacifica, City and County of San Francisco Water Department (SFPUC), State of California, and North Coast County Water District. Land use within these areas is park (McNee Ranch State Park, San Pedro Valley County Park, and Golden Gate National Recreation Area) and public utility/water supply (public access in these areas is generally restricted). The remaining 15% of the unincorporated area within the watershed is privately owned. Of the privately owned lands, approximately 50% is the Shamrock Ranch property, 25% is owned by the Linda Mar Land Company, and the remaining 25% (3% of total watershed area) is smaller undeveloped privately-owned parcels.

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Mr. Farhad Ghodrati, San Francisco Bay Regional Water Quality Control Board

Re: Draft Staff Report Related to 2012 Proposed TMDL for Bacteria in San Pedro Creek and at Pacifica State Beach

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There are no County maintained roadways or storm drain infrastructures nor any urban or residential development within the unincorporated portion of the watershed. The Shamrock Ranch and San Pedro Valley County Park, which are described in more detail below, do have facilities appropriate for their uses. We recommend adding more detail to Section 2.2 of the report to provide a better understanding of the limited potential for anthropogenic bacterial source contributions from unincorporated lands within the County's jurisdiction.

Shamrock Ranch

Shamrock Ranch is a horse stabling facility that is located on an approximate 100-acre privately owned parcel within unincorporated San Mateo County. The facility operates under a County Planning Department issued Confined Animal Facility Permit. The operation is subject to the County's Confined Animal regulations, and reviewed for manure management by the County Environmental Health Division.

In the subject report, *Horse Facilities* were listed as a specific category for indicator bacteria sources. In Table 8.4, Load and Wasteload Allocation Scheme for Dischargers of Bacteria in San Pedro Creek Watershed, the owner is listed as the Responsible Party. The Water Board's proposed Implementation Plan lists, as an example of implementation actions, that the County submit a report summarizing current efforts to ensure compliance with local ordinances for proper horse waste management.

In addition to the implementation action recommended in the plan and mentioned above, the subject report also acknowledges that the Water Board is in the process of updating and preparing for reissuance of an existing General Waste Discharge Requirements Order for Confined Animal Facilities Order No. R2-2003-0093 (CAF Order), to refine the requirements for horse facilities, and regulate horse waste discharges. The reissued CAF Order would apply to this horse facility and two others in the City of Pacifica's jurisdiction and any new equestrian facilities. Once the CAF Order is reissued, owners or operators of the existing or future horse facilities within the watershed will be required to obtain coverage under the new CAF Order and comply with its requirements. We are supportive of this approach and feel that it adequately covers potential bacterial sources from the Shamrock Ranch property.

San Pedro Valley County Park

The San Pedro Valley County Park (County Park) consists of 1,150 acres and is located generally along the eastern boundary of the City of Pacifica and abutting San Francisco Public Utilities Commission's Crystal Springs Watershed lands along its eastern boundary. The County Park includes land within Pacifica's city limits and unincorporated San Mateo County. The County Park has three fresh water creeks, which flow year round through lush valleys, the south and middle forks of San Pedro Creek and Brooks Creek. They are of particular significance because they provide some of the few remaining spawning areas for migratory Steelhead trout in the County. A portion of the south fork of San Pedro Creek lies within property owned by the North Coast County Water District (Water District) and is used seasonally to provide water for

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Mr. Farhad Ghodrati, San Francisco Bay Regional Water Quality Control Board

Re: Draft Staff Report Related to 2012 Proposed TMDL for Bacteria in San Pedro Creek and at Pacifica State Beach

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the City of Pacifica. San Mateo County operates this land as open space under an agreement with the Water District. Infrastructure at the Park consists of:

- A Visitors Center
- A Ranger's Office/Shop
- A Care-taker/Ranger Residence
- Two Restrooms
- Two Group Picnic Areas
- A Youth Day Camp Area
- Small Picnic Areas
- 11 miles of trails

Wildlife is abundant at the County Park and includes: Red-tailed Hawks, Turkey Vultures, Quail, Scrub Jays, Garter Snakes, Deer, Bobcats, Grey Fox, Raccoons, Rabbits, and Gopher Snakes.

Dogs and cats are prohibited by County Ordinance. Equestrian use is allowed on designated trails only (nine of the 11 miles of trails). Park Rangers' observations indicate that equestrian use in the park is very low with an estimated maximum of two horses using equestrian designated trails per month. The typical use is believed to be closer to one horse every two-three months.

The Implementation Plan (Plan) identified four primary bacteria source categories –*Sanitary Sewer Systems, Horse Facilities, Stormwater Runoff and Dry-Weather Flows, and Horse Trails*. Based on the source analysis, *Horse Trails* were not a significant source, and therefore, no implementation actions were recommended. This is consistent with very limited equestrian trail use reported by County staff, as described above. One horse facility, the Shamrock Ranch, is located within unincorporated San Mateo County. According to the Plan, issues related to *Horse Facilities* are currently being addressed through existing local ordinances and more stringent Waste Discharge Requirements. The County does not own, operate, or maintain *Sanitary Sewer Systems* within the watershed, except for the two restrooms and the care-taker/ranger residence in the County Park, which are connected to the City's sanitary sewer system and the County Park does not have any formal stormwater drainage system; therefore this source of bacterial discharges is minimal at best and should not be applicable to the County. The County is listed as a Responsible Party for *Stormwater Runoff and Dry-Weather Flows*. As described above, land use within the unincorporated area is largely open space with a small percentage of undeveloped private lands. As such, typical anthropogenic/urban sources of bacterial stormwater contamination would not come from these lands. Any sources for bacterial discharges are likely to be background from wildlife, which were addressed in the report by Water Board staff through the reference system approach. Many of the example implementation actions/BMPs for the stormwater category are not applicable for the County. As written in the Plan, there is no clear

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Mr. Farhad Ghodrati, San Francisco Bay Regional Water Quality Control Board

Re: Draft Staff Report Related to 2012 Proposed TMDL for Bacteria in San Pedro Creek and at Pacifica State Beach

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distinction made between the named responsible parties for stormwater and the degree of potential bacteria source contribution or expected level of effort for TMDL implementation. In Table 8.4, Load and Wasteload Allocation Scheme for Dischargers of Bacteria in San Pedro Creek Watershed, and Table 10.1, Implementation Actions, we recommend adding footnotes for the County, similar to that for CalTrans, indicating that the open space land within County jurisdiction is not believed to be a significant source of anthropogenic indicator bacteria and that the County would not be expected to develop plans to conduct extensive water quality monitoring and implement any additional pollution prevention measures/BMPs, unless a significant source contribution from the unincorporated area is discovered in the future or the land use changes.

Proposed Basin Plan Amendment

We have reviewed the Proposed Basin Plan Amendment and would like to clarify the very limited role the County has in pollutant contribution in this watershed. The source assessment determined that the major man-made sources of pollutants are from sewer infrastructure and horse facilities. The County Park's restrooms and care-taker/ranger residence are connected to the City's sewer system, which has not had any problems with cracked or leaking pipes. There are no horse facilities at the County Park, and as observed by Rangers overseeing the County Park on a daily basis (see above), there is a minimal amount of equestrian use taking place in the County Park.

We are concerned about prior monitoring stations identified in the August 2012 report because the sources of monitoring for problems at the County Park were taken outside of park boundaries at the confluence of the Middle Fork and North Fork. The North Fork is surrounded by residential development and has a horse facility upstream, and it is regulated by the City of Pacifica.

We see no need for the County to be involved in future bacterial monitoring in the watershed since equestrian use is minimal and potential sources from the undeveloped rural County jurisdiction is likely from native wildlife and cannot be controlled. In addition to the County's existing Confined Animal Ordinance, improved Water Board oversight of horse facilities under the reissued CAF Order should be sufficient to address any equestrian related issues at Shamrock Ranch.

October 5, 2012

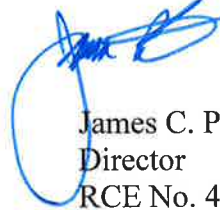
Mr. Farhad Ghodrati, San Francisco Bay Regional Water Quality Control Board

Re: Draft Staff Report Related to 2012 Proposed TMDL for Bacteria in San Pedro Creek and at Pacifica State Beach

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We appreciate your consideration of our comments on the Draft Staff Report Related to the 2012 Proposed TMDL for Bacteria in San Pedro Creek and at Pacifica State Beach. If you have any further questions or need additional information, please feel free to contact Julie Casagrande at (650)599-1457.

Very truly yours,



James C. Porter
Director
RCE No. 48056

JCP:AMS:MC:GL:JC:SH :bb

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cc: Ann M. Stillman, P.E., Deputy Director of Public Works and Parks, Engineering and Resource Protection
Gary Lockman, Superintendent, Parks
Sam Herzberg, Senior Planner, Parks
Julie Casagrande, Watershed Protection Specialist, Utilities-Flood Control-Watershed Protection
Jim Eggemeyer, Community Services Director, Planning and Building Department
Dean Peterson, Director, Environmental Health
Matt Fabry, Coordinator, San Mateo Countywide Water Pollution Prevention Program

October 8, 2012

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

Subject: Total Maximum Daily Load (TMDL) for Bacteria in San Pedro Creek and at Pacifica State Beach - Preliminary Comments Regarding Regional Water Board Draft Staff Report for Proposed Basin Plan Amendment, August 2012

Dear Mr. Ghodrati,

The San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) appreciates the opportunity to comment on *Total Maximum Daily Load (TMDL) for Bacteria in San Pedro Creek and at Pacifica State Beach, Draft Staff Report for Proposed Basin Plan Amendment, August 2012*.

The staff report and proposed Basin Plan amendment are well written and organized and SMCWPPP commends Regional Water Board staff on all the hard work that went into preparation of these documents. Our principal comments focus on the derivation of the TMDL Waste Load Allocations. The allocations (i.e., number of exceedances of Basin Plan Water Quality Objectives (WQOs) allowable) are driven primarily by potential human exposure to pathogens in San Pedro Creek, not Pacifica State Beach. However, the WQOs in the Basin Plan were derived from epidemiological studies of people recreating at bathing beaches that received bacteriological contamination via treated human wastewater. Applying these WQOs in San Pedro Creek is highly questionable for two reasons:

1. The level of human exposure at a creek is presumably much lower than at a bathing beach. Even if the full presumptive REC-1 beneficial use of the creek is achieved at some point in the future the rate of usage (i.e., number of people recreating over a unit time period such as yearly) would likely be much lower at a creek than at a bathing beach.
2. The staff report presents very useful data showing that among sources of indicator bacteria assumed to be at least somewhat "controllable," fecal contamination from domestic animals (e.g., horses, dogs and cats) may make a much greater contribution in this watershed than human fecal contamination. EPA's recent research indicates that the source of fecal contamination is critical to understanding the human health risk associated with recreational waters and that the amount of human health risk in recreational waters varies with various fecal sources (*EPA Draft Recreational Water Quality Criteria, December 2011*). Thus deriving the TMDL allocations based on the Basin Plan WQOs, which are based solely on exposure to human fecal contamination, may not be appropriate in this watershed.

In light of the above, the existing proposed allocations may be overly conservative and essentially unachievable. Thus attempting to meet these allocations could result in unwarranted use of limited public resources that to the extent available could instead have been prioritized to address other pressing needs. The proposed TMDL allocations do not apply the Basin Plan WQOs strictly but instead make use of a reference system in an attempt to adjust the allocations to account for "uncontrollable" natural sources of indicator bacteria (e.g., wildlife). However, an evaluation should be conducted regarding whether the allocations should be adjusted further to account for 1) potential lower human exposure in creeks compared to bathing beaches and 2) the potential predominance of non-wildlife animal sources over human sources in the watershed.

It is important to note that the Regional Water Board plans to begin developing other bacteria TMDLs in San Mateo County and the Bay Area region over the next few years. SMCWPPP is concerned about setting the best precedents for these future TMDLs. We need to begin the discussion now about developing and applying tools in our region to improve the scientific basis and defensibility of all bacteria TMDLs and thereby optimizing our ability to prioritize the use of limited public resources in addressing water quality problems caused by fecal contamination.

Recommended Revisions to Draft Staff Report and Proposed Basin Plan Amendment

SMCWPPP recommends the following revisions to the draft staff report and proposed Basin Plan amendment:

1. Section 9 of the staff report is entitled "Linkage between Water Quality Targets and Pollutant Sources." Some of the language in this section is misleading and should be revised to include the information presented above regarding the derivation of WQOs and allocations, including the potential for lower human exposure in creeks compared to bathing beaches and the potential lower human health risk associated with the predominance of non-wildlife animal sources over human sources in the watershed. The objective would be to provide the public and stakeholders with a fully transparent and unbiased description of the very conservative basis of the proposed Waste Load Allocations and set the stage for evaluating the possible development of alternative allocations during the adaptive implementation phase of the TMDL.
2. Section 11.3 of the staff report and Section 7.4.1.8 of the proposed Basin Plan amendment are both entitled "Special Studies." Both of these sections should be revised to explicitly include an option to allow for evaluation of methods and tools to develop alternative TMDL allocations that account for lower human exposure in San Pedro Creek and the potential predominance of non-wildlife animal sources over human sources in the watershed. For example, EPA's *Draft Recreational Water Quality Criteria, December 2011* describes tools that can be used to assess and manage recreational waters and derive site-specific water quality criteria, including sanitary surveys, epidemiological studies, and quantitative microbial risk assessment.

3. Section 12.3 of the staff report is entitled "Economic Considerations." SMCWPPP understands that the City of Pacifica will provide information regarding refining the cost estimates for implementing the TMDL presented in this section. SMCWPPP supports revising these estimates and would like to point out that the estimated monitoring costs in the staff report are based simply upon multiplying an estimated number of samples by an estimated laboratory analysis cost per sample. This calculation omits large parts of the cost for designing and implementing a field monitoring program including project management/coordination, developing a Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP), labor and equipment to collect the samples in the field, QA/QC review and documentation, developing a data management system, and reporting. The monitoring program estimates should be revised to include all of these costs.

Again, SMCWPPP appreciates the opportunity to comment on the draft TMDL staff report and proposed Basin Plan amendment and commends Regional Water Board staff on all the hard work that went into preparing these documents. Please feel free to contact me at 650/599-1419 if you have any questions about the above comments or would like to discuss further.

Sincerely,



Matthew Fabry
Program Manager



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

October 5, 2012

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

Subject : Comments regarding the public review draft *Total Maximum Daily Load for Bacteria in San Pedro Creek and at Pacifica State Beach, Staff Report for Proposed Basin Plan Amendment* with the associated draft basin plan amendments, dated August 2012.

Dear Farhad,

We appreciate the opportunity to provide comments on the public review draft staff report for *Total Maximum Daily Load for Bacteria in San Pedro Creek and at Pacifica State Beach* (San Pedro/Pacifica TMDLs). The attached comments are to assist the San Francisco Bay Regional Water Quality Control Board (Regional Board) staff in preparing TMDLs that will meet EPA requirements. These comments are not comprehensive and do not constitute an approval or determination by the U.S. Environmental Protection Agency (EPA) under Clean Water Act Sections 303(c) or 303(d).

EPA supports the Regional Board's use of the reference beach approach to develop numeric targets and allocations to protect recreational uses in waters for San Pedro Creek and at Pacifica State Beach. EPA has approved this approach in other bacteria TMDLs (e.g., Santa Monica Bay Bacteria TMDL, Los Angeles River Bacteria TMDLs, and San Diego Beaches). Additionally, we support and encourage the Regional Board's involvement with ongoing efforts to establish a reference beach in northern California.

EPA acknowledges that approval of the San Pedro/Pacifica TMDLs will be contingent on the approval of the Basin Plan Implementation Provision. Therefore, we ask that the submittal to EPA request review for two separate actions under Clean Water Act: 303(c) for use of the reference beach approach to establish allowable exceedance frequencies of the Single Sample Objectives, and 303(d) for the TMDLs.

EPA appreciates your efforts in completing the San Pedro/Pacifica TMDLs to address bacteria impairment. We will continue working with you to help finalize any remaining issues. If you have any questions, please call me at (415) 972-3452, or Susan Keydel at (415) 972-3106.

Sincerely,

A handwritten signature in cursive script that reads "David Hashimoto for".

Janet Hashimoto, Manager
Standards and TMDL Office

Enclosure

Attachment
US EPA COMMENTS ON PUBLIC REVIEW DRAFT
Total Maximum Daily Load for Bacteria in San Pedro Creek and at Pacifica State Beach,
Staff Report for Proposed Basin Plan Amendment, August 2012

1. EPA supports use of the reference beach approach; additionally we encourage the San Francisco Bay Regional Water Quality Control Board (Regional Board) staff to support efforts to identify reference beaches in northern California, and revisit the San Pedro/Pacifica TMDLs when such data are available.
2. In either the transmittal letter or the TMDL Staff Report, please include a table identifying the CWA 303(d) listed waterbodies (name and waterbody identification number) and pollutants being addressed by the TMDLs.

Allocations:

3. For clarity in assigned allocations, please provide separate tables for load allocations and waste load allocations (WLAs) (see Staff Report Table 8-4 and Proposed Basin Plan Amendment Table 7.4.1-3), and include in the Proposed Basin Plan Amendment the information currently presented in Staff Report Table 8.4.
4. Please clarify that the identified horse facilities are properly categorized as non-point sources (e.g., the number of animals confined does not exceeds 150 horses).
5. The discrepancy between the allowable exceedance numbers in the Proposed Basin Plan Amendment Table 7.4.1-4 (Allowable Exceedance of Single Sample Bacteria Objectives as Interim LAs and WLAs) and in TMDL Staff Report Table 8.5 (pg 44) should be corrected.

Compliance locations:

6. Please clarify if allocations apply to all points in the creek or only at the bottom, and be more specific as to the location of compliance points (e.g., show on map). Section 11.2 of the TMDL Staff Report states compliance locations will be in the receiving water bodies (i.e., San Pedro Creek and Pacific Ocean Waters adjacent to the Pacifica State Beach), and page 44 states "Exceedance rate is based on the "San Pedro Creek" station located near the mouth of the creek where an exceedance of an SSO on any day counts as an exceedance".

Monitoring Program

7. Chapter 11 of the TMDL Staff Report says monitoring locations should be located in each creek/watershed. We recommend that future monitoring be able to distinguish contributions from all forks of San Pedro Creek. It appears from Figure 4.1 that prior sampling did not distinguish the Middle and North Forks of San Pedro Creek.
8. Please specify in both Chapter 11 of the TMDL Staff Report and the Proposed Basin Plan Amendment (BPA) that monitoring data will be entered into the BEACH database. (Please coordinate with Michael Gjerde of State Board for this.)

Implementation actions and schedule:

9. So that it is easy for an agency or a member of the public to track what the Implementation Plan of the TMDL expects to be done, by whom and by when, Table 10.1 and Table 10.2 should be cross-referenced and/or merged. Table 10.1 lists implementation actions by source. Table 10.2 provides a schedule of implementation actions, with "tasks" that aren't always readily found in the "action" table and vice-versa. These clarifications should also be reflected in Proposed Basin Plan Amendment tables 7.4.1-5 and 7.4.1-6.
10. Proposed Basin Plan Amendment Table 7.4.1-6 Implementation Schedule - Where implementation actions require reports and/or plans (e.g., MRP compliance / implementation plans), please clarify if there are review/approval requirements for such reports and/or plans, and how they affect the schedule.
11. The Adaptive Implementation (BPA Section 7.4.1.9) schedule refers to "periodically" evaluating water quality monitoring results and assessing progress toward attaining TMDL targets. The schedule can and should be more specific (e.g., coordinating with tasks on the implementation schedule at 5, 8 and 12 years).

TO: Farhad Ghodrati, Environmental Scientist, San Francisco Bay Regional Water Quality Control Board
FROM: Patricia A. Holden, Ph.D., Bren School, University of California, Santa Barbara
DATE: 9-30-12
RE: Peer Review of the Bacterial TMDL for San Pedro Creek and Pacifica State Beach

This report comprises my response to the (May 25, 2012) “Request for Peer Review of the Technical Basis for a Bacteria TMDL for San Pedro Creek and Pacifica State Beach and its Associated Implementation Plan”, received August 24, 2012 by email. As per the Request, the peer review charge is overall to “determine whether the scientific portion” of the proposed rule is “based upon sound scientific knowledge, methods, and practices”, for the following issues, which are addressed in the order listed in the Request.

1. General Approach: the Reference System Approach

The reference system approach has the following inherent flaw. When a reference beach or watershed is chosen, this is on the basis of it being similar to the study watershed / beach in all ways except the potential for human-associated fecal sources. Natural sources of fecal indicator bacteria are assumed to predominate at the reference watershed / beach. It is assumed that this abundance will be similar at the study watershed / beach. But it is not known—at the time of adopting the reference beach—if the abundance of “natural” source fecal indicator bacteria (FIB) is the same when comparing the reference and the study watershed/ beach. To strike an “apple and orange” analogy, it is as though a specific number of apples (natural source FIB) would be subtracted from a combination of apples and oranges (natural and human-associated FIB at the study watershed/ beach). But if the “apple” abundance at the study watershed/ beach is much less than the “apple” abundance at the reference watershed/ beach, then “natural apples” are being subtracted from “human associated oranges”. This situation, which would tend to underestimate real risk, is possible at the time of reference watershed/ beach selection / adoption. Further, since there is no reason to believe that the parallels—even if they do exist at the time of selection—will remain the same over time, there is an inherent risk that human-associated waste management would worsen as the reference and study watershed/beach diverge (e.g. due to continual infrastructure degradation in the study watershed/ beach, or due to development, or other changes that can impact water quality and FIB sources). Inherently, a better model to manage FIB contamination is to determine sources using modern BST methods, then alleviate or manage those sources, with a particular focus on human-associated sources as those carry the greatest human health risk to swimmers. The reference system, in contrast, allows exceedances without knowing the sources.

2. Selection of Reference Systems

It is difficult to defend the scientific basis for selection of reference systems when the concept of reference systems is flawed. The basis appears to be on watershed area, lack of development, and possibly similar terrain.

3. Numeric Targets

The numeric targets in Table 6.1 are aligned with regulations, as indicated. The targets in Table 6.2 include disallowing exceedances in summer dry months at Pacifica State Beach, which is appropriate—especially considering that human waste is considered to be a source of contamination. The exact basis for wet weather allowances for exceedances in Table 6.2 is not described in Section 6 (it is, in Section 8). Scientifically, it is unknown how fecal bacterial emissions in wet weather affect exceedances in dry weather, for example by introduction of fecal bacteria that persist or colonize coastal sands during the protracted dry weather period that follows wet weather in this climatic region.

4. TMDL and Load and Waste Load Allocations

In section 8.2, it is conveyed that the San Pedro Creek watershed “areas contribute indicator bacteria loads to San Pedro Creek and Pacifica State Beach”. However, this is actually unknown, and is part of the “apples and oranges” conundrum described in part 1 of this review. In order to contribute to the lower watershed contamination, FIB from the upper watershed would need to be conserved (i.e. not decay) during transit from up to downstream. The degree to which this happens is unknown. The problem with assuming direct, conserved, translocation is that if the contamination is mostly arising in downstream reaches of the watershed, then the reference system is even further susceptible to erroneously equating FIB from one watershed to FIB in another (more developed) watershed.

Section 8.5 contains Table 8.4 wherein the load allocation for sanitary sewers is appropriately (sound, scientifically) zero.

5. TMDL Implementation

The legal analysis in section 10 appears to be very comprehensive.

Section 10.4 (first paragraph) is somewhat challenging to understand, since earlier in the draft plan (section 7.1), it is stated that “Due to data and resource limitations, this report does not quantitatively estimate loads for the different bacteria sources”.

The implementation actions outlined in Table 10.1 are comprehensive, and are scientifically sound, for example based on current understanding of the propensity for aged sanitary sewers to leak and pollute.

6. The Big Picture, addressing the following:

a. Are there any additional scientific issues?

In Section 3 “Problem Definition”, section 3.1 equates “pathogens” with FIB in stating that the Creek and Beach “are impaired by the types of pathogens that are found in warm-blooded (e.g., human) waste”. While this is clarified in the next statement by the use of “infer”, still the measurement of FIB is just that: only a measurement of FIB.

Section 4.2 presents a somewhat dated summary of where BST methods stand, currently. While this doesn’t really impact the rest of the report, the following book published in 2011 is a source of more up to date descriptions of current methods in BST: “Microbial Source Tracking: Methods, Applications, and Case Studies”. 2011. Hagedorn, C., Blanch, A. R., and Harwood, V. J. (Eds).

Regarding section 4.4.2 and the cited BST study, while not part of this review, it is noted that the “Draft Report” of the Creek Coalition (2008), which can be downloaded from the worldwide web, describes typing of *E. coli* isolates for source identification. This type of method is inherently non-quantitative due to the random nature of isolate selection. Further, it is uncertain if the methods used for that study would now be considered scientifically sound for source differentiation, at the time of this peer review. Other methods that have arisen since 2006 have supplanted the methods, generally, used for BST in the 2008 report. The concerns expressed herein affect the “Discussion” in section 4.4.2 where the term “dominated” is used to describe fecal hosts. Part of the issue regards the unequal abundances of *E. coli* across various hosts, which would create bias in representation of fecal sources. However, the random selection of *E. coli* for typing, as above, is a further concern that relegates the approaches to being qualitative, not quantitative.

b. Altogether, is the scientific portion based on sound scientific knowledge, methods and practices?

Taken together, with the exception of the adoption of a “reference system” approach, the emphasis on eliminating human sources of pollution through enforcement of existing laws and order(s) is scientifically sound, on the basis of the highest risk to recreational water use emanating from the likely presence of human waste and human waste-associated pathogens. Regardless of the adoption of the reference approach, the outcome should be protective based on scientific knowledge. A broader concern would be that the adoption of the reference watershed / beach here becomes the template for other basin plans where local order(s) are not available to reduce the sources that are known to be associated with risk to human health.