



Santa Monica Bay Beach Bacteria Total Maximum Daily Load Jurisdictional Groups 5 & 6
El Segundo Manhattan Beach Hermosa Beach Redondo Beach Torrance

February 13, 2013

Ms. Jeanine Townsend, Clerk to the Board
State Water Quality Control Board
P.O. Box 100
Sacramento, CA 95812-2000

Via email: commentletters@waterboards.ca.gov

Re: Comment Letter – (1) Santa Monica Bay Beaches; (2) Marina del Rey Harbor Mothers’ Beach and Back Basins; (3) Los Angeles Harbor, Inner Cabrillo Beach, and Main Ship Channel; (4) Ballona Creek, Ballona Estuary, and Sepulveda Channel; (5) Malibu Creek and Lagoon; and to amend Chapter 3 to modify the Implementation Provisions for Water Contact Recreation Bacteria Objectives

Dear Chair and Board Members of the State Water Resources Control Board:

The Cities of Redondo Beach, Manhattan Beach, Hermosa Beach, Torrance and El Segundo are responsible agencies (Agencies) with jurisdictional area located within the “Hermosa” and “Redondo” subwatersheds identified in Table 7-4.2b of Attachment A to Resolution No. R12-007. These agencies have been working jointly to implement BMPs towards complying with the provisions of the Santa Monica Bay Beaches Bacteria Total Maximum Daily Load (SMBBB TMDL). The Cities of Manhattan Beach and Redondo Beach as Primary Jurisdictions have been designated as co-Chairs of Jurisdictional Groups 5 and 6, respectively, with authority to correspond on behalf of the group regarding the SMBBB TMDL.

We appreciate the changes made by the Regional Water Quality Control Board—Los Angeles (Regional Board) in the reconsideration of the Santa Monica Bay Beaches Bacteria TMDL, most notably the revision of the winter dry weather allocations to adjust the allowable number of exceedance days during winter dry weather based on the historical 10th percentile year in terms of non-wet days at LAX meteorological station.

However, we have several significant unresolved concerns regarding the proposed Amendment to the Basin Plan to revise the SMBBB TMDL that are discussed below.

Additional detailed and specific comments on the proposed Basin Plan Amendment were provided in our comment letter to the Regional Board dated May 7, 2012. The comment letter is attached to this letter for your reference.

Lacking Non-point Source Analysis and Load Allocations

One of our primary concerns is that the Source Analysis and discussion of Load Allocations in the proposed Basin Plan Amendments do not address non-point source load allocations (LA) separate from waste load allocations (WLAs). The extensive data collected at the reference beach since adoption of the SMBBB TMDL demonstrates that natural conditions associated with freshwater outlets from undeveloped watersheds result in summer and winter dry weather exceedances of the single sample bacteria objectives absent any MS4 discharges (waste loads). Furthermore, at “open beach” monitoring stations not associated with freshwater outlets, MS4 outfalls or natural streams, data show non-point source indicator bacteria loads in the receiving water contribute on average a baseline frequency of exceedances on the order of 3-4% of sampling days during year-round dry weather.

As noted in the comment letter to the Regional Board from the City of Malibu, a number of recent studies have further identified and confirmed natural (non-anthropogenic) sources of fecal indicator bacteria (FIB) – including plants, algae, decaying organic matter, and bird feces – demonstrating these as potentially significant contributors to exceedances (Imamura et al 2011, Izbicki 2012b). Beach sands, sediments and beach wrack have been shown to be capable of serving as reservoirs of FIB (Imamura et al 2011, Lee et al 2006, Ferguson et al 2005, Phillips et al 2011, Jiang et al 2004). Thus there is ample evidence of the need for load allocations to address non-point sources of fecal indicator bacteria which this TMDL does not.

Summer Dry Weather Allowable Exceedance Days inconsistent with Reference Beach/Anti-degradation Approach

To be consistent with the reference beach/anti-degradation approach established for the SMBBB TMDL and with the extensive data discussed in the staff report, the allowable summer dry weather exceedance days must be revised. Data collected at the reference beach since adoption of the TMDL, as tabulated in Table 3 of the staff report, demonstrate that natural conditions associated with freshwater outlets from undeveloped watersheds result in exceedances of the single sample bacteria objectives during both summer and winter dry weather on approximately 10% of the days sampled. Thus the previous Source Analysis in the Basin Plan Amendment adopted by Resolution No. 02-004 which stated that “*historical monitoring data from the reference beach indicate no exceedances of the single sample targets during summer dry weather and on average only three percent exceedance during winter dry weather*” was incorrect and based on a data set not located at the point zero compliance location. Continued allocation of zero summer dry weather exceedances in the proposed Basin Plan Amendment is in direct conflict with the stated intent to utilize the

reference beach/anti-degradation approach and ignores the scientifically demonstrated reality of natural causes and non-point sources of indicator bacteria exceedances.

In the Los Angeles Regional Water Quality Control Board's June 2012 response to comment 3.2 Board staff acknowledges that:

"Between April 2004 and November 2010, Leo Carrillo has been observed to exceed single sample indicator bacteria limits in excess of 10% of the time during the summer period, as tabulated in the staff report. Staff acknowledges that further study and corrective actions may be required at Leo Carrillo Beach in order to address summer dry-weather exceedances. In order to protect public health, there should be no exceedances of the single sample objectives during summer dry weather...staff recommended not adjusting allowable exceedance days for summer dry weather despite the exceedances occurring at Leo Carrillo Beach. And staff intends to coordinate with stakeholders regarding the outstanding issues at Leo Carrillo beach."

Section 3.1 of the staff report recommends to continue to use Leo Carrillo Beach as the reference beach for all Santa Monica Bay beaches. Furthermore, the staff report states it is not the Regional Board's intention to hold a non-reference beach to a higher standard than a reference beach. The recommendation and intent outlined in the staff report is inconsistent with the Regional Board staff's response that there should be no exceedances because that is what is desirable for recreational beach water quality regardless of extensive data representing natural beach water quality. There is no mention or analysis of the potential local sources of non-point source bacteria such as birds and other wild life, swimmers, and piers. This is also in conflict with finding 21 of Resolution 2002-022 "*that it is not the intent of the Regional Board to require treatment or diversion of natural coastal creeks or to require treatment of natural sources of bacteria from undeveloped areas*". And it is notable that such a finding has been omitted from Resolution R12-007.

Identify Completed Implementation Actions and Milestones

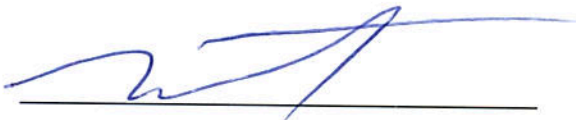
The implementation schedule shown in Table 7-4.3 of Attachment A to Resolution No. R12-007 does not identify which milestones have already been completed by the responsible agencies. This creates a misunderstanding as to which requirements have already been met and what are the remaining actions to be completed. The proposed Basin Plan Amendment should be modified to reference the SMBBB TMDL Coordinated Shoreline Monitoring Plan (CSMP) approved by the Regional Board staff and that CSMP should be incorporated into the TMDL monitoring requirements of the next MS4 Permit. Text and footnotes, such as footnotes 8 and 9, which imply that the development of the CSMP has not yet been prepared and approved, should be eliminated.

Implementation Schedule

Attachment B to our May 7, 2012 comment letter summarizes a planning-level BMP siting study to theoretically achieve attainment of the wet weather bacteria TMDL targets for the two high priority storm drain systems in Jurisdictional Groups 5 & 6. This study is strictly an internal planning study providing an order-of-magnitude estimate of \$60.3 million in potential capital costs that could be required to attain the Santa Monica Bay Wet Weather TMDL objectives. Due to significant funding gaps that must be filled in order to implement the siting study projects and the need to integrate watershed planning with other Santa Monica Bay TMDLs, we believe there is sufficient justification to revise the proposed implementation schedule to provide additional time to attain the 25% and 50% reductions in wet weather exceedances for the Santa Monica Bay Beaches Bacteria TMDL.

In closing, we appreciate the opportunity to discuss our concerns and have provided additional supporting details in the attached May 7, 2012 comment letter.

Sincerely,



Mike Witzansky

City of Redondo Beach
Director of Public Works



Jim Arndt

City of Manhattan Beach
Director of Public Works

Attachments:

Attachment A: Jurisdictional Groups 5 and 6 Comment Letter to Los Angeles Regional Water Quality Control Board dated May 7, 2012

References from City of Malibu's Comments dated May 7, 2012:

Ferguson, D.M., Moore, D.F., Getrich, M.A., and M.H. Zhouwandai, 2005. "Enumeration and speciation of enterococci found in marine and intertidal sediments and coastal water in southern California." *Journal of Applied Microbiology* 99(3).

Imamura, G.J., Thompson, R.S., Boehm, A.B., and J.A. Jay, 2011. "Wrack promotes the persistence of fecal indicator bacteria in marine sands and seawater." *FEMS Microbiology Ecology* 77(1).

Izbicki, J., Swarzenski, P., Burton, C., and L.C. Van DeWerfhorst, 2012b. "Sources of fecal indicator bacteria to groundwater, Malibu Lagoon, and the near-shore ocean, Malibu, California." Submitted 2012

Jiang, S., McGee, C., Candelaria, L., and G. Brown, 2004. "Swimmer Shedding Study in Newport Dunes, California. Final Report."

http://www.waterboards.ca.gov/rwqcb8/water_issues/programs/tmdl/docs/swimmerreport.pdf

Lee, C.M., Lin, T.Y., Lin, C.C., Kohbodi, G.A., Bhatt, A., Lee, R., and J.A. Jay, 2006. "Persistence of fecal indicator bacteria in Santa Monica Bay beach sediments." *Water Research* 40(14).

Phillips, M.C., Solo-Gabriele, H.M., Piggot, A.M., Klaus, J.S., and Y. Zhang, 2011. "Relationships between Sand and Water Quality at Recreational Beaches", *Water Resources* 45(20).



Santa Monica Bay Beach Bacteria Total Maximum Daily Load Jurisdictional Groups 5 & 6
El Segundo Manhattan Beach Hermosa Beach Redondo Beach Torrance

May 7, 2012

California Regional Water Quality Control Board
Los Angeles Region
Attn: Man Voong
320 West Fourth Street, Suite 200
Los Angeles, CA 90013

Via email: losangeles@waterboards.ca.gov

Re: Comment Letter – Bacteria TMDL Revisions – Santa Monica Bay Beaches

Dear Madam Chair and Members of the Los Angeles Regional Water Quality Control Board:

The Cities of Redondo Beach, Manhattan Beach, Hermosa Beach, Torrance and El Segundo are responsible agencies (Agencies) with jurisdictional area located within the “Hermosa” and “Redondo” subwatersheds identified in Table 7-4.2b of Regional Board Resolution No. 02-004. These agencies have been working jointly to implement BMPs towards complying with the provisions of the Santa Monica Bay Beaches Bacteria Total Maximum Daily Load (SMBBB TMDL). The Cities of Manhattan Beach and Redondo Beach as Primary Jurisdictions have been designated as co-Chairs of Jurisdictional Groups 5 and 6, respectively, with authority to correspond on behalf of the group regarding the SMBBB TMDL.

We have several major concerns regarding the proposed Amendment to the Basin Plan to revise the SMBBB TMDL, discussed below. Additional detailed and specific comments on the proposed Basin Plan Amendment are provided in Attachment A to this letter.

Source Analysis and Load Allocations

Our first concern is that the Source Analysis and discussion of Load Allocations in the proposed Basin Plan Amendments do not address non-point source load allocations (LA) separate from waste load allocations (WLAs) for the municipal separate storm sewer system (MS4). The extensive data collected at the reference beach since adoption of the SMBBB TMDL demonstrates that natural conditions associated with freshwater outlets from undeveloped watersheds result in summer and winter dry weather exceedances of the single

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City of Manhattan Beach
1400 Highland Avenue, Manhattan Beach, CA 90266

sample bacteria objectives absent any MS4 discharges. Furthermore, at “open beach” monitoring stations not associated with freshwater outlets, neither with MS4 outfalls nor natural streams, evidence of non-point source indicator bacteria loads in the receiving water contribute on average a baseline frequency of exceedances on the order of 3-4% of sampling days during year-round dry weather. Therefore non-point source load allocations separate from MS4 waste load allocations have been scientifically proven and must be accounted for in the SMBBB TMDL.

Summer Dry Weather Targets

The summer dry weather targets must be revised to be consistent with the reference beach/anti-degradation approach established for the SMBBB TMDL and with the extensive data discussed in the staff report. The Regional Board is not precluded from reconsidering aspects of the TMDL that were not envisioned for reconsideration at the time of adoption of a TMDL if new data and information is gathered which supports reconsidering other aspects of the TMDL, nor should it be. Data collected at the reference beach since adoption of the TMDL, as tabulated in Table 3 of the staff report, demonstrate that natural conditions associated with freshwater outlets from undeveloped watersheds result in exceedances of the single sample bacteria objectives during both summer and winter dry weather on approximately 10% of the days sampled. Thus the previous Source Analysis in the Basin Plan Amendment adopted by Resolution No. 02-004 which stated that “*historical monitoring data from the reference beach indicate no exceedances of the single sample targets during summer dry weather and on average only three percent exceedance during winter dry weather*” was incorrect and based on a data set not located at the point zero compliance location. Continued allocation of zero summer dry weather exceedances in the proposed Basin Plan Amendment is in direct conflict with the stated intent to utilize the reference beach/anti-degradation approach and ignores the scientifically demonstrated reality of natural causes and non-point sources of indicator bacteria exceedances. Continued use of the zero summer dry weather exceedance level will make compliance with the SMBBB TMDL impossible for the Jurisdictional agencies. This is also in conflict with finding 21 of Resolution 2002-022 “*that it is not the intent of the Regional Board to require treatment or diversion of natural coastal creeks or to require treatment of natural sources of bacteria from undeveloped areas*”.

Identify Completed Implementation Actions and Milestones

The findings in the Tentative Resolution and the implementation schedule shown in Table 7-4.3 of Attachment A to the proposed Basin Plan Amendment do not acknowledge the many implementation actions that have been completed and milestones that have been met by the responsible agencies. This creates a misunderstanding as to which requirements have already been met and what are the remaining actions to be completed. For example, the proposed Basin Plan Amendment does not acknowledge the extensive, collaborative effort that has been undertaken to develop and implement the Coordinated Shoreline Monitoring Plan

(CSMP) for the SMBBB TMDL with the participation and approval of Regional Board staff. The CSMP established the compliance monitoring locations based on the provisions required by the original SMBBB TMDL adopted in 2002. The proposed Basin Plan Amendment should be modified to reference the SMBBB TMDL Coordinated Shoreline Monitoring Plan approved by the Regional Board staff and that CSMP should be incorporated into the TMDL monitoring requirements of the next MS4 Permit. Text and footnotes, such as footnotes 8 and 9, which imply that the development of the CSMP has not yet been prepared and approved, should be eliminated.

The CSMP established that compliance monitoring would be conducted on a weekly basis, and although some monitoring sites are being monitored on additional days of the week, none of the sites are monitored seven days per week, thus it is highly confusing and misleading to refer throughout the proposed Basin Plan Amendment to “daily monitoring”.

The responsible agencies of Jurisdictional Groups 5 and 6 have been and are committed to implementing both the Dry Weather and Wet Weather Bacteria TMDLs to the best of our ability given the resources available. To date all storm drains discharging at point zero shoreline monitoring locations within the Hermosa and Redondo subwatersheds have been diverted through cooperation with Los Angeles County Flood Control District and the Sanitation Districts of Los Angeles. A total of seven low flow diversions are operational year-round during dry weather on six major outfalls within the two subwatersheds.

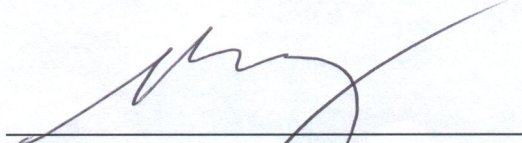
We have also undertaken programmatic measures and source identification investigations as well as a conceptual BMP siting study to develop a proposed system of strategically sited structural BMPs.

Implementation Schedule

Attachment B to this letter summarizes a planning-level BMP siting study to theoretically achieve attainment of the wet weather bacteria TMDL targets for the two high priority storm drain systems in Jurisdictional Groups 5 & 6. This study is strictly an internal planning study and has not been adopted or approved by the jurisdictions' City Councils, however it provides an order-of-magnitude estimate of \$60.3 million in potential capital costs that could be required to attain the Santa Monica Bay Wet Weather TMDL Targets. Grant funding of \$4.4 million has been secured for three of the nine projects, however the Jurisdictional Groups 5 and 6 agencies have no funding source for the remaining \$55.9 million in identified structural BMP projects. Based on the significant funding gap faced by the responsible agencies and the need to conduct integrated watershed planning to develop the most cost effective BMPS to address the SMBBB TMDL and the newly adopted Santa Monica Bay Marine Debris TMDL and DDT/PCB TMDL, we believe there is sufficient justification to revise the proposed implementation schedule to provide additional time to attain the 25% and 50% reductions in wet weather exceedances for the Santa Monica Bay Beaches Bacteria TMDL.

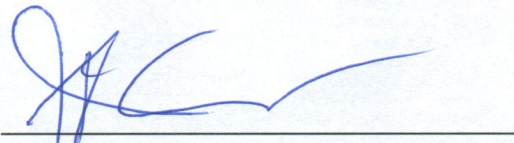
In closing, we appreciate the opportunity to discuss our concerns and have provided additional supporting details in the two attachments.

Sincerely,



Steve Huang

City of Redondo Beach
City Engineer/Chief Building Official



Jim Arndt

City of Manhattan Beach
Director of Public Works

Attachments:

Attachment A: Detailed Comments

Attachment B: Planning-Level BMP Costs for Two High Priority Subwatersheds

**ATTACHMENT A
RECONSIDERATION OF SANTA MONICA BAY BEACHES BACTERIA TMDLs
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No.	Document, Page No.	Modified Language	Comment
1	Staff Report, Section 3.2.2.3		<p>The staff report minimizes the exceedances that have occurred during the summer dry weather period. In addition the most recent summer, 2011, was left out of the analysis. The statement: "... few exceedances, which brought the exceedance rate to 10%, happened early in the summer season during a single year (2006). The rest of the years of data showed no exceedances in the summer dry weather." is not correct.</p> <p>The data analysis shows:</p> <ol style="list-style-type: none"> 1) full data has been collected for 7 summer seasons 2004 thru 2011 not just 6 summer seasons as was used in the Staff analysis. 2) The reference beach had exceedance days in four of the last 7 summer seasons (2005, 2006, 2008 and 2011). 3) Over this 7 summer period water quality targets were exceeded in 21 of the 214 samples collected. 4) The average exceedance rate was 10%. 5) In 2010, 5 of 34 samples exceeded the water quality targets. 6) In 2006, 8 of 31 samples exceeded the water quality targets and they occurred in May, June and July. <p>While the staff report minimizes the summer dry weather, it accepts that winter dry weather data as being sufficient to set waste load allocations other than zero for this period.</p> <p>However the data analysis shows:</p> <ol style="list-style-type: none"> 1) Over the last 7 years exceedance days occurred in 5 of the winter seasons (2004-5, 2005-6, 2006-7, 2007-7, and 2010-11). 2) Over the 7 winter seasons water quality targets were exceeded in 10 of 101 samples collected 3) The average exceedance rate was 10%. 4) In 2010-11, 1 of 11 samples exceeded the water quality targets 5) In 2004-5, 5 of 16 samples exceeded the water quality targets and they occurred in January, February, and March. <p>In reviewing this information it is hard to understand the logic in setting a waste load allocation based on actual reference beach data for the winter while not for the summer dry weather period.</p> <p>There is also no mention or analysis of the potential local sources of bacteria such as birds and other wild life, swimmers, and piers. Exhibit A attached to these comments provides such an analysis.</p> <p><i>The conclusion of this information can only be that a waste load allocation other than zero needs to be set for the summer dry weather period.</i></p>

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2	Staff Report Table 3, p. 12-14		Columns two and three in Table 3 are incorrect beginning with SMB 2-2 and down through the remainder of the table – please verify that the data associated with the sample stations is correct and has not also been misaligned.
3	Staff Report Table 3, p.12-14		<p>Some data collected at some stations doesn't appear to be used. Examples: Stations SMB-5-1, 5-3, 5-5, 6-5, and 6-6 were monitored by two labs. Between 11/2004 and 7/2005 one lab monitoring each station five days per week and the other lab one day per week. During this period one sample per week by each lab was collected on the same day but at a different time. Between 7/2005 and 11/2010 each lab collected a sample one day per week; one sampled on Monday and the other sampled on Tuesday. Total number of samples collected for these stations including accelerated samples ranged between 758 to 767. Approximately 40 of the total were collected on the same day. Around 725 samples were collected on different days. Table 3 shows 370 to 474 samples collected at these stations over the entire period.</p> <p>Not using all of the data could result in an incorrect calculation of the number of exceedances allowed for anti-degradation stations. Specifically, SMB-5-3 is listed to be an anti-degradation station with 8% wet weather exceedances. If all samples collected were used in the calculation the percentage of wet weather exceedances would increase to 16%.</p>
4	Staff Report, Section 3.2.1, second paragraph, last sentence p.12		The statement that samples collected on the same day are not temporally independent is not entirely correct. Studies have shown that samples collected on the same day but just hours apart can result in far different results thus it may not be appropriate to use an arithmetic mean. It is recommended that all results be used provided they are not duplicates.
5	Staff Report, Table 4, p.16	*** Exceedance days calculated by multiplying % exceedance days observed by the number of summer dry days (___), winter dry days (___) or wet days (___) that would occur in the 10th/90th percentile year."	Recommend that a general formula and explanation showing how the exceedance days were calculated be placed as footnote to Table 4. Specifically show the number of wet and summer & winter dry days used. Table 4 should also include columns showing the calculated results for summer dry weather exceedance days.
6	Staff Report, Table 5, p.20		The subwatershed for SMB-6-6 should be "Redondo" not "Palos Verdes"
7	Staff Report, Table 7, p.29		The reference beach shows that even a natural discharge can exceed the geometric mean up to 23% of the time. Since a reference system is being used for all singles sample exceedance allowances the same approach should be used for the Geomean limit. The zero exceedance limit is not justified.

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8	Staff Report, Section 3.4.3, p.31		The fact that the change in frequency of geometric mean exceedances is small between 3.7 and 10 doesn't mean it shouldn't be used. Using a number less than 10 for enterococcus when there is no detection will be more accurate. In addition Table 10 shows that, by using 3.7 in lieu of 10 for the enterococcus, the number of exceedances of the geomean at the reference beach is reduced from 6 to 4. This is a 33% reduction which is significant and more accurate. Recommendation should be changed to allow use of the value 3.7 in lieu of the detection limit of 10 for the enterococcus geomean calculation.
9	Staff Report, Section 3.5, p. 36-37		If the natural source exclusion approach is eliminated for the Santa Monica Bay Beaches Bacteria TMDL, then the reference beach approach must be used fully for summer dry weather as well as winter dry weather and wet weather and the geometric mean. The reference beach data shows a history of summer dry weather exceedances and, contrary to the statement in the Staff Report, those summer dry weather exceedances were not limited to a single year, but occurred in multiple years: 2005, 2006, 2008, and 2011. Thus there is no basis for using the reference beach approach in establishing zero waste load allocation for summer dry weather when in fact the exceedance rate is 10% during both summer dry weather and winter dry weather at the reference beach based on the data presented in Table 3 of the Staff Report.
10	Resolution		Include findings regarding all of the actions that responsible agencies have taken to comply with the Significant Dates/Actions listed in Table 7-4.3 to date. In some cases there have been Regional Board resolutions acknowledging the submittals (e.g., Implementation Plan submittals Resolution No. 2006-07 (Appendix A)), yet no findings were included recognizing these actions.
11	Resolution Finding 13		Finding 13 states "This reconsideration is not a general reconsideration of each and every element of these TMDLs, but a re-examination of certain technical issues which, as recognized at the time of TMDL adoption, might need revision upon further data collection and analysis, study, or experience as indicated in Tables 7-4.3, 7-4.7, 7-5.3 and 7-11.3." The Regional Board is not precluded from reconsidering aspects of the TMDL that were not envisioned for reconsideration at the time of adoption if new data and information is gathered which supports reconsidering other aspects of the TMDL, nor should it be. Although not envisioned by the Board staff as needing revision at the time the TMDL was promulgated, data collected under the Coordinated Shoreline Monitoring Program has made it clear that the Regional Board staff assumption that the reference beach exhibits zero summer dry weather exceedances is not supported by the data collected since adoption. Monitoring data also shows that

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			<p>exceedances are caused by discharges from natural watersheds as demonstrated by the 10% of samples exceeding limits at the reference beach during dry weather and from local non-point and natural sources as demonstrated by the occurrence of limit exceedance when there is zero discharge from the MS4 and at “Open Beach” locations where there is no MS4 influence. Despite the caveat this is not a “reconsideration of each and every element of the TMDL,” it would be arbitrary to ignore some data and use others. All available data relative to this TMDL should be considered at this time.</p>
12	Attachment A, Numeric Target, fifth paragraph, Page 3	<p>The geometric mean targets may not be exceeded at any time. For purposes of this TMDL, the geometric mean shall be calculated weekly as a rolling geometric mean using 5 or more samples, for six week periods starting all calculation weeks on Sunday. <u>The value to be used in the geometric mean calculation for enterococcus when a sample result in less than the lower detection limit of 10 / 100ml shall be 3.7. During any 52 week period the geometric mean for any target shall not be exceeded more than 7 times.</u> For the single sample targets, each existing shoreline monitoring site is assigned an allowable number of exceedance days for two three time periods as defined in Table 7-4.2a (summer dry weather, and winter dry weather, and wet weather [defined as days with 0.1 inch of rain or greater and the three days following the rain event).</p>	<p>The geometric mean target per the statement in paragraph four is to achieve numeric target using the “reference system/anti-degradation approach”. The historical data between November 2004 and October 2010 was used to determine the reference beach limits for compliance of the single sample limits. This same approach should be used for achieving the Geometric Mean limit. The calculated geometric mean at the reference beach, using the once per week - six week rolling approach, exceeded one of the objective targets 48 of 307 (16%) of the calculation days. Therefore, the geometric mean exceedance day limit should not be set at zero. The annual (52 week) limit should be set at 9. In addition based on the study referenced in the Staff Report the value to be used in the Geometric mean calculation for enterococcus when the result is less than 10 should be 3.7 / 100ml. This change would lower the percentage of objective limits exceedances at the reference beach to 42 of 307 (14%) of the calculation days and the annual limit would then be lowered to 7. The paragraph should be revised as shown.</p>
13	Attachment A, Numeric Targets, P.4		<p>Do not omit but instead restore the final statement under Numeric Target: “The allowable number of exceedance days is set such that (1) bacteriological water quality at any site is at least as good as at designated reference site within the watershed and (2) there is no degradation of existing shoreline bacteriological water quality.” The staff report clearly says the TMDL is based on reference beach and exclusion of this clause excludes consideration of any natural contributions.</p>
14	Attachment A, Source Analysis, p. 4	<p>With the exception of isolated sewage spills, d Dry weather urban runoff and stormwater runoff conveyed by storm drains and creeks is <u>are the significant primary</u> sources of elevated bacterial indicator densities to SMB beaches during dry weather. Limited n Natural runoff and groundwater</p>	<p>Natural sources of indicator bacteria in the watershed and local sources of indicator bacteria along the beach need to be acknowledged. As explained in comments provided above to the Staff Report, these sources are not insignificant and it would require eliminating natural sources of bacteria to comply with the zero exceedance allowance proposed during summer dry weather. Additional language needs to be added to the</p>

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		<p>may also potentially contribute to elevated bacterial indicator densities during winter dry weather. Because the bacterial indicators used as targets in the TMDL are not specific to human sewage, <u>dry weather and</u> stormwater runoff from undeveloped areas may also be a <u>are</u> sources of elevated bacterial indicator densities. For example, <u>dry weather and</u> stormwater runoff from natural areas may convey fecal matter from wildlife and birds or bacteria from soil. This is supported by the finding that at the reference beach the probability of exceedance of the single sample targets during <u>summer dry weather, winter dry weather, and wet weather</u> is <u>are</u> 0.10, 0.10 and 0.22 respectively. <u>Local sources of indicator bacterial also contribute to elevated densities to SMB beaches. This is supported by the finding that during summer dry weather and winter dry weather at the 23 “Open Beaches” compliance locations, where there are no MS4 or fresh water outlets that could provide a source of dry weather runoff, that would contribute indicator bacteria from the a watershed, exceed water quality objectives are exceeded 3% of the time during summer dry weather and 4% of the time during winter dry weather.</u></p>	<p>Source Analysis address this issue.</p>
<p>15</p>	<p>Attachment A, Waste Load Allocations, p.5</p>	<p><u>Waste load allocations as measured in the receiving waters only apply to the MS4 to the extent that they are caused by MS4 discharge.</u> Waste load allocations assigned to municipal separate storm sewer system discharges are expressed as the number of sample days at a shoreline monitoring site that may exceed the single sample targets identified under “Numeric Target.” Waste load allocations are expressed as allowable exceedance days because the bacterial density and frequency of single sample exceedances are the most relevant to public health protection.</p> <p>For each shoreline monitoring site and corresponding subwatershed, the allowable</p>	<p>Because the waste load allocations assigned to the municipal separate storm sewer system discharges are measured in the receiving water where, as discussed previously, there are other nonpoint sources which also contribute to exceedance, MS4 agencies are only responsible through the MS4 permit for compliance with waste load allocations associated with MS4 discharges. If there is no flow from the MS4 at the time of sampling of the receiving water, then the exceedance is not associated with a waste load allocation but with a load allocation.</p>

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	<p>number of exceedance days is set for three time periods. These three periods are:</p> <ol style="list-style-type: none"> 1. Summer dry weather (April 1 to October 31), 2. Winter dry weather (November 1 to March 31), and 3. Wet weather (year-round). <p>The allowable number of exceedance days for a shoreline monitoring site for each time period is based on the lesser of two criteria (1) exceedance days in the designated reference system and (2) exceedance days based on historical bacteriological data at the monitoring site. This ensures that shoreline bacteriological water quality is as least as good as that of a largely undeveloped system and that there is degradation of existing shoreline bacteriological water quality.²</p> <p>All responsible jurisdictions and responsible agencies within a subwatershed are jointly responsible for complying with the allowable number of exceedance days for the compliance locations each associated shoreline monitoring site identified in Table 7-4.2a below.</p> <p>The three Publicly Owned Treatment Works (PTOWs) discharging to Santa Monica Bay are each given individual WLAs equal to the bacteriological objectives contained in Chapter 3 during summer dry weather, winter dry weather, and wet weather.</p> <p>Discharges from general NPDES permits, general industrial storm water permits and general construction storm water permits are not expected to be a significant source of bacteria. Additionally, these discharges are not eligible for the reference system approach set forth in the implementation provisions for the bacteriological objectives in Chapter 3. Therefore, the waste load allocations for these discharges for all time periods are the</p>	<p>All responsible jurisdictions and agencies within a sub watershed (Jurisdictional Group) should not be jointly responsible for complying with allowable exceedance days at all shoreline compliance locations associated with that subwatershed. Only responsible agencies that own or operate MS4 or have land area tributary to a specific MS4 outfall at a shoreline compliance location should be responsible for compliance with a Waste Load Allocation at that specific compliance location. At “Open Beach” locations not associated with an MS4 outfall, the responsible agencies should be the owner or operator of the beach and jurisdictions with beach front land area that drains directly to the wave wash. See proposed Table 7-4.2a.</p> <p>Disagree that discharges from general NPDES Permits, especially general</p>
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		bacteriological objectives contained in Chapter 3. Any future enrollees under a general NPDES permit, general industrial storm water permit or general construction storm water permit within the Santa Monica Bay watershed management area will also be subject to a WLA based on these bacteriological objectives.	industrial and construction permits are not expected to be significant sources of bacteria, there is no such evidence provided in the staff report. In our experience stormwater runoff from parking lots can carry loading of indicator bacteria above the targets, furthermore soil at construction sites is very likely to contain high levels of indicator bacteria since such bacteria are ubiquitous in the environment. Accordingly, those General Industrial Stormwater Permittees and General Construction Stormwater Permittees which are required to conduct water quality monitoring for other pollutants must also be required to include indicator bacteria in the stormwater discharge monitoring.
16	Attachment A, Footnote 2, p. 5		Although the goal of protecting public health as stated in the footnote is important, it contradicts the reference system approach that is the basis for establishing the waste load allocations and would necessitate responsible agencies to remove natural sources of bacteria. Based on the most current monitoring results that show discharges from natural watershed and local natural sources can cause exceedances of water quality targets during summer dry weather this footnote should be removed.
17	Attachment A, Load Allocations, p.7	Because all dry weather urban runoff and stormwater to SMB beaches is regulated as a point source, load allocations of zero days of exceedance are set in this TMDL. If a nonpoint source is directly impacting shoreline bacteriological quality and causing an exceedance of numeric target(s), the permittee(s) under the municipal separate storm sewer system NPDES permits are not responsible through these permits. However, the jurisdiction or agency adjacent to the shoreline monitoring location may have further obligations as described under "Compliance Monitoring" below.	The logic in the first sentence about load allocations is faulty. First, there are areas of the coastline where stormwater runoff reaches the shoreline via non-point sources. Second, there is ample evidence that non-point source associated conditions during dry weather are responsible for exceedances of the TMDL targets. It may be that the goal is to have a load allocation of zero, but that is not because there are naturally zero exceedances as shown by the reference beach, it is because that is what would be desired by the Board staff at an ideal, sterile beach. Non-point source load allocations separate from MS4 waste load allocations have not been accounted for and should be acknowledged in this TMDL.
18	Attachment A, Implementation , p.7	This TMDL will be implemented in three phases over a 18 year period. The regulatory mechanisms used to implement the TMDL include, but are not limited to, the municipal separate storm sewer system NPDES permits (MS4 permits) covering areas within the Santa Monica Bay watershed management area, including any future Phase II MS4 permits, the General Industrial Stormwater Permit , the General Construction Stormwater Permit , the Caltrans Stormwater Permit, the three NPDES permits for the POTWs, the authority	The General Industrial Stormwater Permit and the General Construction Stormwater Permit are also relevant with respect to implementation of the bacteria TMDLs and should be included in the regulatory mechanisms used to implement the TMDLs.

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	<p>contained in sections 13263,13267 and 13383 of the Water Code, and regulations to be adopted pursuant to section 13291 of the Water Code. Each NPDES permit assigned a waste load allocation shall be reopened or amended at reissuance, in accordance with applicable laws, to incorporate the applicable waste load allocation(s) as a permit requirement.</p> <p>By July 15, 2006, summer dry-weather allowable exceedance days must be achieved. By November 1, 2009, winter dry-weather allowable exceedance days must be achieved.</p> <p>For those beach monitoring compliance locations subject to the antidegradation provision, there shall be no increase in exceedance days during the implementation period above that estimated for the beach monitoring location in the critical year as identified in Table 7-4.2a.</p> <p>The implementation schedule for achieving the wet weather allocations shall be determined on the basis of the implementation plan(s), which must <u>be</u> submitted to the Regional Board by responsible jurisdictions and agencies by July 15, 2005 (see Table 7-4.3). Responsible jurisdictions and agencies must <u>have</u> clearly demonstrated in the above-mentioned plan whether they intend to pursue an integrated water resources approach.⁵</p> <p>The subwatersheds associated with each beach monitoring location may include multiple responsible jurisdictions and responsible agencies. Therefore, a “primary jurisdiction,” defined as the jurisdiction comprising greater than fifty percent of the subwatershed land area, is identified for each subwatershed (see Table 7-4.2b). Nine primary jurisdictions are identified within the Santa Monica Bay watershed management area, each with a group of associated subwatersheds and beach</p>	<p>While it makes sense for the Jurisdictional Groups previously identified in the TMDLs to work jointly to carry out implementation plans to meet the interim reductions, only the responsible agencies with land use or MS4 tributary to a specific shoreline monitoring location can be held responsible for the final implementation targets to be achieved at each individual compliance location. A revised Table 7-4.2a is provided showing the responsible agencies for each individual shoreline monitoring location.</p>
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		<p>monitoring locations. These are identified as “jurisdictional groups” (see Table 7-4.2b). The primary jurisdiction of each “jurisdictional group” shall be was responsible for submitting the implementation plan described above, which will determine the implementation timeframe to achieve the wet weather allocations for the subwatershed. A jurisdictional group may change its primary jurisdiction by submitting a joint, written request, submitted by the current primary jurisdiction and the proposed primary jurisdiction, to the Executive Officer requesting a reassignment of primary responsibility. Two jurisdictional groups may also choose to change the assignment of monitoring locations between the two groups by submitting a joint, written request, submitted by the current primary jurisdiction and the proposed primary jurisdiction, to the Executive Officer requesting a reassignment of the monitoring location.</p> <p>Jurisdictional group(s) must achieve a 10% cumulative percentage reduction from the total wet weather exceedance-day reduction required for the group of compliance beach monitoring locations by July 15, 2009, a 25% reduction July 15, 2013<u>2015</u>, and a 50% reduction by July 15, 2018.⁶</p> <p>The final implementation targets in terms of allowable wet-weather exceedance days must be achieved at each individual beach location no later than July 15, 2021. In addition, the geometric mean targets must be achieved for each individual beach location no later than July 15, 2021.</p>	<p>Revise the “July 15, 2013” date to “July 15, 2015.” There has been no funding source for the BMPs needed to comply with wet weather discharges, therefore agencies will be out of compliance when the TMDL is incorporated into the MS4 Permit. Regional Board should acknowledge that, for example, out of the \$60.3 million identified for wet weather TMDL compliance for Jurisdictional Groups 5 & 6, only \$3.3 million has been funded by State grants. Changing the date now would acknowledge the lack of funding while also acknowledging the potential for funding via the County Stormwater Fee that could start providing funding by 2014. It would also provide additional time to integrate watershed implementation planning for this TMDL as well as the newly adopted Marine Debris and DDT-PCB TMDLs into a watershed plan consistent with the upcoming reissuance of the MS4 Permit. Integration of multiple TMDLs are essential to achieve cost effective use of public funds in attaining water quality standards.</p>
19	Attachment A, Seasonal	Seasonal variations are addressed by developing separate waste load	

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	<p>Variations and Critical Conditions, p.9</p>	<p>allocations for three time periods (summer dry weather, winter dry weather and wet weather,) based on public health concerns and observed natural background levels of exceedance of bacterial indicators.</p> <p>The critical dry weather period for this dry weather bacteria TMDL is during winter months, when historic shoreline monitoring data for the reference beach indicate that the single sample bacteria objectives are exceeded on average 310% of the dry weather days sampled.</p> <p>The critical condition for this bacteria TMDL is wet weather generally, when historic shoreline monitoring data for the reference beach indicate that the single sample bacteria objectives are exceeded on 22% of the wet-weather days sampled. To more specifically identify a critical condition within wet weather in order to set the allowable exceedance days shown in Tables 7-4.2a and 7-4.2b, the 90th percentile 'storm year' is in terms of wet days is used as the reference year. Selecting the 90th percentile year avoids a situation where the reference beach is frequently out of compliance.</p>	<p>The statement about critical dry weather conditions omits the fact that seven years of shoreline monitoring data for the reference beach during summer dry weather as shown in Table 3 of the staff report exceeds the single sample bacteria objectives at the same rate as during the winter dry weather, i.e., in 10% of the days sampled. It is unclear then, why the winter is the critical condition for dry weather.</p>
<p>20</p>	<p>Attachment A, Compliance Monitoring, p.10</p>	<p>Responsible jurisdictions and agencies as defined in Footnote 2-3 shall conduct daily or systematic weekly sampling in the wave wash at all major drains and creeks or at existing monitoring stations at beaches without storm drains or freshwater outlets at the compliance locations identified in Table 7-4.2a and specifically in the CSMP to determine compliance.⁹ At all locations, samples shall be taken at ankle depth and on an incoming wave. At locations where there is a freshwater outlet, during wet weather, samples should be taken as close as possible to the wave wash, and no further away than 10 meters down current of the major drain or</p>	<p>The compliance locations have already been established in the Coordinated Shoreline Monitoring Plan in accordance with the provisions of the adopted TMDL. Modifying this footnote suggests that there is a need to change the monitoring locations, yet there has been no information presented which suggests that these locations need to be revisited, indeed the Board staff have relied heavily on this data in this reconsideration and to further modify these locations would be counterproductive in evaluating long term trends The permit monitoring plan should incorporate the approved CSMP which has been implemented since 2004. The CSMP already set the sampling frequency at weekly; why does daily sampling even need to be mentioned again since none of the sites are being sampled seven days per week. Eliminate Footnote 8 and modify Footnote 9 to state that the permits monitoring plan should incorporate the CSMP.</p>

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	<p>outlet.¹⁰ At locations where there is a freshwater outlet, samples shall be taken when the freshwater outlet is flowing into the surf zone.</p> <p>If the number of exceedance days exceeds the allowable number of exceedance days for a <u>compliance location target beach at after</u> the final implementation deadline, the responsible jurisdictions and agencies within the contributing subwatershed shall be considered out-of-compliance with the TMDL. <u>However,</u> Responsible jurisdictions or agencies shall not be deemed out of compliance with the TMDL if: <u>1) there were no discharge from the outfall to the wave wash or 2) if a source investigation demonstrated that the discharge from the MS4 was caused by a permitted or exempted discharge or 3) if the investigations</u> described in the paragraph below demonstrates that bacterial sources originating within the jurisdiction of the responsible agency have not caused or contributed to the exceedance.</p> <p>If a <u>wave wash compliance location is single sample shows the discharge or contributing area to be out-of-compliance as determined in the preervious paragraph</u> the Regional Board may require, through permit requirements or the authority contained in Water Code section 13267, <u>daily sampling in the wave wash or at the existing open shoreline monitoring location (if it is not already) until all single sample events meet bacteria water quality objectives. Furthermore, if a beach location is out-of-compliance as determined in the previous paragraph,</u> responsible agencies shall initiate an <u>source</u> investigation, which at a minimum shall include daily sampling <u>in the wave wash or at the existing open shoreline monitoring location</u> until all single sample events meet bacteria water quality objectives. If bacteriological water quality objectives are exceeded in any three weeks of a four-week period when weekly</p>	<p>Table 7-4.2a has identified “compliance location” this term should be used throughout.</p> <p>The MS4 Permittees are only responsible for exceedances caused by discharges from the MS4 of which they are tributary. Monitoring sites are <u>beaches</u> without storm drain outfalls or freshwater outlets can only indicate if there are exceedances caused by non-point sources or natural causes, so monitoring at those locations should continue for that purpose. Only those agencies with land area tributary to an MS4 outlet associated with a given shoreline monitoring location should be held responsible for attaining the TMDL targets at that monitoring location.</p> <p>The standard should be that waste load allocations have not been exceeded, i.e., discharges from the MS4 have not caused or contributed to the exceedance. MS4 agencies are not responsible for exceedances of load allocations due to permitted discharges, non-point sources, natural causes or discharges otherwise exempted in the MS4 Permit.</p> <p>Since we are not monitoring the “discharge” of an outlet, the sampling isn’t showing if the discharge is out of compliance only that the compliance location is out-of-compliance.</p> <p>The two conditions that required a source investigation seem redundant. If a site is out-of-compliance with the waste load allocation and exemption 1 above isn’t triggered the an investigation is needed. Why say the same thing twice. The words “(if it is not already)” should be omitted since weekly sampling is the frequency of the approved CSMP and no compliance location is being monitored daily.</p>
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		<p>sampling is performed, or, for areas where testing is done more than once a week, 75% of testing days produce an exceedance of bacteria water quality objectives, the responsible agencies shall conduct a source investigation of the subwatershed(s) pursuant to protocols established under Water Code 13178. If a beach-compliance location without a freshwater outlet is out-of-compliance or if the outlet is diverted or being treated, the adjacent municipality, County agency(s), or State or federal agency(s) shall be responsible for conducting the investigation and shall submit its findings to the Regional Board to facilitate the Regional Board exercising further authority to regulate the source of the exceedance in conformance with the Cal. Water Code and Statewide Policy for Implementation and Enforcement of the Nonpoint Source Control Program.</p> <p>⁹The frequency of sampling (i.e., daily versus weekly) will shall be at the discretion of the implementing agencies determined in The The approved Coordinated Shoreline Monitoring Plan shall be integrated into the monitoring and reporting programs of the permits through which the waste load allocations are implemented. However, the number of sample days that may exceed the objectives will be scaled accordingly.</p>	<p>This TMDL is requiring the investigation of non-point sources of exceedances, therefore it should assign responsibility for compliance with non-point source load allocations, as has been done in many other TMDLs, to agencies with responsibility for those loads, not to the MS4 operators.</p> <p>Weekly sampling frequency has already been established in the CSMP. Therefore any reference to daily sampling should be removed. Since the CSMP has been approved and should be incorporated into the NPDES permit monitoring and reporting plan with only minor modifications</p>
21	Attachment A, Table 7-4.3, p.12-13		<p>Santa Monica Bay Beaches Bacteria TMDL Significant Dates: Many of the actions required in this table have already been accomplished through the extensive good-faith efforts of the responsible agencies and this should be recognized, in the form of “findings” that document the submittals, and by modifications to Table 7-4.3 for each action that has been met. Responsible agencies would be happy to provide as further evidence a list of all actions taken and the dates of submittals to the Regional Board.</p> <p>Revise the “July 15, 2013” date to “July 15, 2015.” There has been no funding source for the BMPs needed to comply with wet weather discharges, therefore agencies will be out of compliance when the TMDL is incorporated into the MS4 Permit. Regional Board should acknowledge</p>

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			that, for example, out of the \$60.3 million identified for wet weather TMDL compliance for Jurisdictional Groups 5 & 6, only \$3.3 million has been funded by State grants. Changing the date now would acknowledge the lack of funding while also acknowledging the potential for funding via the County Stormwater Fee that could start providing funding by 2014. It would also provide additional time to integrate watershed implementation planning for this TMDL as well as the newly adopted Marine Debris and DDT-PCB TMDLs into a watershed plan consistent with the upcoming reissuance of the MS4 Permit. Integration of multiple TMDLs are essential to achieve cost effective use of public funds in attaining water quality standards.
22	Attachment A, Table 7-4.2a	See attached Exhibit B showing a partial list of compliance locations	For the reasons stated above Table 7-4.2a needs to be revised to add the Responsible Agencies for each compliance location; add exceedance days for summer dry weather; remove the daily limit; change the title. In addition SMB-6-6 subwatershed should be "Redondo" not "Palos Verdes"

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Exhibit A Santa Monica Bay Beach Bacteria TMDL - Reopener Source Analysis during Dry Weather

Hypothesis: local non-point sources of bacteria contribute to dry weather exceedances in the wave wash.

Analysis: Open Beach Compliance stations are monitoring locations that are not associated with a fresh water/MS4 outlet that discharges during dry weather. Therefore at these monitoring locations dry weather exceedances of water quality objectives must be caused by local sources of indicated bacteria. Monitoring results of samples collected at 23 Open Beach monitoring stations between November 2004 thru October 2010 for the SMBBB TMDL are summarized below (see complete data in table below):

- 23 open beach stations
- 158 exceedance days out of 6121 samples = 3% open beach exceedances during summer dry weather
- 121 exceedance days out of 3373 sample = 4% open beach exceedances during winter dry weather

Conclusion: local non-point sources of bacteria do contributed to exceedances of water quality objectives in the wave wash and load allocations should be assigned to local non-point sources as follows:

- During 90th percentile year
 - 3% of 207 summer dry weather daily samples = 6 exceedance days
 - 3% of 30 summer dry weather weekly samples = 1 exceedance days
 - 4% of 83 winter dry weather daily samples = 3 exceedance days
 - 4% of 12 winter dry weather weekly samples = 1 exceedance days

Hypothesis: natural sources of indicator bacteria cause exceedances of water quality objectives in the wave wash in the watershed of fresh water/MS4 outlets.

Analysis: the Reference Beach is associated with a fresh water outlet that collects dry weather and wet weather runoff from a watershed that is primarily undeveloped. Therefore exceedances of water quality objectives during dry and wet weather are caused by natural sources of indicator bacteria. Local sources of bacteria can also cause exceedances of water quality objectives therefore this contribution needs to be factored out of the source contributed by the discharge from the fresh water outlet. Monitoring results of samples collected from the Reference monitoring station between November 2004 thru October 2010 for the SMBBB TMDL are summarized below:

- 19 exceedance days out of 187 samples = 10% during summer dry weather
- 10 exceedance days out of 96 samples = 10% during winter dry weather
- 3% exceedance days are caused by local non-point sources during summer dry weather and 4% during winter dry weather (from the above local source analysis)

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- Factoring out local sources, 7% exceedance days during summer dry weather and 6% exceedance days during winter dry weather are caused by natural sources of bacteria in watershed conveyed via the freshwater outlet.

Conclusion: natural sources of indicator bacteria in the watershed of fresh water/MS4 outlets cause exceedances of water quality objectives in the bay so wasteload allocations should be assigned to the natural sources of bacteria in the discharge from fresh water/MS4 outlets as follows:

- During 90th percentile year
 - 7% of 207 summer dry weather daily samples = 15 exceedance days
 - 7% of 30 summer dry weather weekly samples = 3 exceedance days
 - 6% of 83 winter dry weather daily samples = 5 exceedance days
 - 6% of 12 winter dry weather weekly samples = 1 exceedance days

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Non-Point Source Analysis Data Nov-2004 thru Oct 2010				
Open Beach Stations	Summer Dry		Winter Dry	
	Exc. Day	Samples	Exc. Day	Samples
SMB-1-2	0	169	1	92
SMB-1-3	0	169	1	91
SMB-1-15	21	190	26	107
SMB-2-3	8	178	1	90
SMB-2-8	7	178	3	91
SMB-2-9	16	185	4	91
SMB-2-12	4	173	5	92
SMB-2-14	3	173	3	91
SMB-3-9	5	176	8	95
SMB-5-1	4	234	2	124
SMB-5-4	29	273	1	87
SMB-5-5	26	807	5	110
SMB-6-2	10	178	30	169
SMB-6-4	15	261	13	94
SMB-6-6	4	196	5	110
SMB-7-1	0	176	0	96
SMB-7-2	0	374	1	97
SMB-7-3	0	374	0	273
SMB-7-4	1	375	1	273
SMB-7-5	1	374	4	275
SMB-7-6	0	152	0	273
SMB-7-8	0	378	4	275
SMB-7-9	4	378	3	277
Total	158	6121	121	3373
		3%		4%
90th Percentile Year	Days			
Daily Sampling	6	207	3	83
Weekly Sampling	1	30	1	12

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Exhibit B
 Revised Partial Table 7-4.2a

Table 7-4.2a: Santa Monica Bay Beach Bacteria TMDL Implementation Schedule:
 Allowable Number of Days that May Exceed Any Single Sample Bacterial Indicator Target for Compliance Stations

Compliance Deadline				15-Jul-06	1-Nov-09	15-Jul-21
Station ID	Location Name	Watershed	Responsible Agency	Summer Dry Weather [^]	Winter Dry Weather [^]	Wet Weather [^]
				Weekly Sampling (No. days)	Weekly Sampling (No. days)	Weekly Sampling (No. days)
SMB-5-1	40th Street - Manhattan Beach	Hermosa	Los Angeles County Beaches and Harbors	1	1	2
SMB-5-2	28th Street - Manhattan Beach	Hermosa	Manhattan Beach, Los Angeles County Beaches and Harbor, Caltrans	3	2	3
SMB-5-3	Manhattan Beach Pier	Hermosa	Manhattan Beach, Los Angeles County Beaches and Harbor	1	1	1
SMB-5-4	26th Street - Hermosa Beach	Hermosa	Hermosa Beach	1	1	3
SMB-5-5	Hermosa Beach Pier	Hermosa	Hermosa Beach	3	1	3
SMB-6-1	Herondo Street	Redondo	Manhattan Beach, Hermosa Beach, Redondo Beach, Torrance, Los Angeles Beaches and Harbor, Caltrans	3	2	3
SMB-6-2	Redondo Beach Pier - 100 Yards South	Redondo	Los Angeles County Beaches and Harbors	3	2	3
SMB-6-3	Sapphire Street-Redondo Beach	Redondo	Redondo Beach, Los Angeles County Beaches and Harbors, Caltrans	2	1	3
SMB-6-4	Topaz Street - Redondo Beach	Redondo	Los Angeles County Beaches and Harbors	2	2	3
SMB-6-5	Ave I - Redondo Beach	Redondo	Redondo Beach, Torrance, Los Angeles Beaches and Harbor, Caltrans	2	1	2
SMB-6-6	Malaga Cove - Torrance	Redondo	Los Angeles County Beaches and Harbors	1	1	2

ATTACHMENT B

PLANNING-LEVEL BMP COSTS FOR TWO HIGH PRIORITY SUBWATERSHEDS

A structural BMP siting and conceptual design study was conducted by Geosyntec Consultants within two high priority drainage areas in Jurisdictional Groups 5 and 6 as part of the jurisdictions' joint implementation program planning process. This study is considered draft and has not been adopted or approved by the jurisdictions' City Councils and is strictly a planning-level internal draft document at this time. This document is provided to demonstrate the costs for compliance with Santa Monica Bay Beaches Bacteria TMDL for the Jurisdictional Groups 5 and 6 cities. With the exception of grant funding for the Henrietta, Amie and Entradero Basin Enhancement Project, the Jurisdictional Groups 5 and 6 cities have no funding source for implementation of the projects described.

Using the Structural BMP Prioritization and Analysis Tool (SBPAT), sub-catchments within these watersheds were prioritized based on water quality need and land use and ownership opportunity. Responsible jurisdictions provided jurisdiction-specific GIS information and input on the siting and BMP prioritization process to facilitate the strategic siting of regional infiltration BMPs, attempting to garner the most water quality benefit from available opportunities.

The waste load allocations stipulated by the Santa Monica Bay Beaches Bacteria TMDL are based on exceedance days, and although these criteria facilitate monitoring for receiving water quality, they are not readily conducive to setting design criteria for BMPs. A conservative design approach is to limit the number of days that stormwater is discharged from the outfall to less than the allocated number of exceedance days under the wet weather bacteria TMDL to try to assure that MS4 discharges do not cause or contribute to receiving water exceedances in excess of the waste load allocations. Accordingly the runoff from the two priority watersheds were modeled using the United States Environmental Protection Agency's (EPA) Storm Water Management Model Version 5 (SWMM5) and a 10 year continuous rainfall record from 1990 thru 1999. An iterative conceptual BMP sizing approach was then used to try to meet the design criteria based on exceedance days. The study modeled the watershed hydrology as if all nine sited structural BMPs as conceived at the 10% design level had been in operation over this period. This retrospective analysis showed that the 1,565 acre 28th Street Storm Drain subwatershed would have discharged at a frequency less than or equal to the allowable number of wet weather exceedance days in 10 out of 10 years and that the 3,042 acre Herondo subwatershed would have met that criteria in nine out of 10 years based on the rainfall record used in the analysis. This analysis is retrospective and does not guarantee future performance.

Preliminary planning-level (order-of-magnitude) cost opinions were estimated for these optimized sited BMPs based on a number of simplifying assumptions and on information available at the time of study and without detailed field or design studies. These order-of-magnitude cost opinions are listed in the table below for each sited structural BMP project rounded to the nearest \$100,000 in the summary table below. The cost opinions were developed based on a unit cost analysis of construction quantities required for each conceptual design and the application of factors of safety to construction costs to account specifically for non-construction costs including: engineering (site investigation and design), permitting and

environmental clearance, administration and construction management, retrofit and utilities, escalation, and construction contingency.

Project Concept	Cost Opinion ¹
28th Street Storm Drain Subwatershed (1,565 acres)	
Beach outfall at SMB 5-2 Subsurface Infiltration Trench	\$12,800,000
Polliwog Park Subsurface Infiltration Gallery	\$13,400,000
Manhattan Heights Subsurface Infiltration Gallery	\$7,700,000
<i>Total 28th Street Subwatershed Retrofit:</i>	
\$33,900,000	
Herondo Subwatershed (3,042 acres)	
Herondo Parking Lot Detention Basin and Beach Infiltration	\$8,800,000
Andrews Park Subsurface Storage, Use and Infiltration	\$6,800,000
South Park Subsurface Infiltration Gallery	\$6,400,000
Amie Basin (passive wetland treatment and infiltration)	\$1,300,000
Henrietta Basin (passive wetland treatment and infiltration)	\$1,500,000
Entradero Basin (habitat restoration and infiltration)	\$1,600,000
<i>Total Herondo Subwatershed Retrofit:</i>	
\$26,400,000	

1- All costs are preliminary and subject to change. Provided for planning purposes only, rounded to nearest \$100,000