STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENVIRONMENTAL ANALYSIS, MS 27
1120 N STREET
P. O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 653-7507
FAX (916) 653-7757
TTY (916) 653-4086

Flex your power!
Be energy efficient!

January 21, 2010

Mr. Wayne Chiu
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

RE: Comments on *Revised Total Maximum Daily Loads for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek) November 25, 2009*

Dear Mr. Chiu:

The California Department of Transportation (Caltrans) appreciates the opportunity to comment on the Revised Total Maximum Daily Loads (TMDLs) for Indicator Bacteria Project I for twenty beaches and creeks in the San Diego Region. Caltrans strongly supports efforts to protect human health and attain water quality standards.

Since Caltrans facilities are not a significant source of bacterial indicators, the TMDL for indicator bacteria sets Caltrans waste load allocation (WLA) equal to its existing load. Although Caltrans is not required to reduce its existing load, the TMDL Basin Plan Amendment requires Caltrans to submit a Bacteria Load Reduction Plan (BLRP) or a Comprehensive Load Reduction Plan (CLRP). The plan is intended to outline a proposed BMP program that will be capable of attaining the TMDLs in the receiving waters.

Caltrans will continue its commitment to improve water quality by implementing the necessary actions to comply with the requirements of the current statewide National Pollutant Discharge Elimination System (NPDES) permit and any reissuance thereafter. However, Caltrans would like to request that the Regional Water Quality Control Board remove the requirement to submit a BLRP or CLRP since Caltrans is not a considerable

source of indicator bacteria to the listed water bodies. We will continue our efforts to eliminate indicator bacteria sources discharging to the listed receiving water bodies and report these activities with other actions and planned activities to comply with the TMDL in the Stormwater Management Program Annual Report, as done for other TMDLs throughout the state.

If you have any questions, please contact Joyce Brenner of my staff at (916) 653-2512.

Sincerely,

G. SCOTT MCGOWEN
Chief Environmental Engineer

c: Joyce Brenner, Headquarters - Division of Environmental Analysis
Constantine Kontaxis, D-11, NPDES Program Manager
Grace Pina-Garrett, D-12, NPDES Program Manager

KJones:rk

City of Carlsbad

Property and Environmental Management

January 22, 2010

Mr. Wayne Chiu
Water Resources Control Engineer
San Diego Regional Water Quality Control Board
9174 Sky Park Court
San Diego, CA 92123

Re: Revised TMDL for Indicator Bacteria, Project 1 – Twenty Beaches and Creeks in the San Diego Region

Dear Mr. Chiu:

On behalf of the City of Carlsbad (City), please accept the information contained in this letter as formal comment to the Revised Total Maximum Daily Load (TMDL) for Indicator Bacteria, Project 1 – Twenty Beaches and Creeks in the San Diego Region. Thank you for the opportunity to submit comments and we look forward to your thorough review.

The City of Carlsbad strongly supports comments and recommended changes submitted by the County of San Diego, in its letter dated January 22, 2010.

We appreciate the opportunity to work with the Regional Board and stakeholders in the development of TMDLs to improve water quality in our region. If you have any questions or need further clarification, please do not hesitate to contact me at (760) 602-7582.

Sincerely,

Elaine Lukey
Environmental Manager

cc: David Hauser, Director Property and Environmental Management

This page left intentionally blank

CITY OF DANA POINT

DEPARTMENT OF PUBLIC WORKS

January 22, 2010

Mr. Wayne Chiu
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340
wchiu@waterboards.ca.gov

RE: COMMENTS REGARDING REVISED TOTAL MAXIMUM DAILY LOADS FOR INDICATOR BACTERIA PROJECT I – BEACHES & CREEKS IN THE SAN DIEGO REGION

Dear Wayne:

Thank you for the opportunity to comment on the revisions to the Bacteria TMDL Project I for Beaches and Creeks in the San Diego Region. As requested by San Diego Board staff, comments were focused on the Basin Plan Amendment (BPA) document itself; however it should be noted that errata should be revised consistently throughout all companion documents (i.e. Technical Report, etc.), as appropriate.

We understand that the San Diego Board desires to move forward with this TMDL and have scaled down our comments as such to address the most contentious issues described below:

1) There are three sets of statements/assumptions that may have been justified at the beginning of development of the TMDL in 2003, but have since been demonstrated to be inaccurate. These inaccurate statements need to be corrected and the TMDL revised accordingly. Please see the three bulleted items below.

   - Page 81 of the Technical Report states, *"Available data show that exceedances of REC-1 WQOs in local reference systems during dry weather conditions are uncommon (see section 4.2). "*

     This statement is not accurate. San Diego Board staff members are aware of the study conducted by the independent Southern Coastal California Water Research Project (SCCWRP) published and titled, **Fecal Indicator Bacteria (FIB) levels during dry weather from southern California reference streams.** 2008, LL Tiefenthaler, ED Stein, GS Lyon. Technical Report 542., which states, **"***A total of 18.2% of the indicator bacteria samples (for all three indicators) from the natural sites exceeded daily (single sample) water quality standards. Approximately 1.5%, 14%, and 3% of E. coli, enterococci, and total coliforms, respectively, exceeded single sample water quality criteria."*

Taking this information into account, the statement that WQO exceedences during dry weather are "uncommon" is thus incorrect and a reference system approach is thus necessary for the dry weather TMDLs in issue.

A calculated exceedance frequency for dry weather TMDLs based on the reference watershed data should thus be incorporated into the TMDL at this time, prior to adoption of the proposed TMDL. We are aware of the San Diego Board's and EPA's desire to keep this TMDL moving forward, with no substantive changes thereto, but do not believe that this significant data can be ignored for the sake of expediency. As such, at a minimum, we propose that the following or similar language be added to the TMDL, and that other appropriate changes be made to the TMDL consistent with the objective of the suggested language below:

"More recently published data, Southern Coastal California Water Research Project's (SCCWRP) Study published and titled, Fecal Indicator Bacteria (FIB) levels during dry weather from southern California reference streams. 2008. LL Tiefenthaler, ED Stein, GS Lyon, shows that exceedances of REC-1 WQOs in local reference systems during dry weather conditions is not uncommon. A reference system approach for dry weather TMDLs, as in the wet weather TMDLs, resulting in an allowable exceedance frequency, is thus warranted and will be developed by San Diego Board staff prior to final adoption of this TMDL, and once developed will be utilized as the basis for the waste load allocation for dry weather runoff."

- The underlying assumption that surface runoff is only generated by anthropogenic activities is also inaccurate. There are creeks that flow during dry weather. Natural springs and groundwater inputs into creeks and MS4 systems also contribute to non-anthropogenic dry weather flows. The factual data must be acknowledged in the TMDL, and an appropriate load assigned to this non-point source, with the MS4 Permittees not being held responsible for these loads.

- Caltrans and other land use dischargers have been allocated a WLA/LAs of zero during dry weather based on the invalid assumption that there is no surface runoff discharge to receiving waters from these facilities during dry weather and thus that they are "not likely to discharge bacteria" (Page 82 of Technical Report). These are false assumptions. Because Caltrans and agricultural uses, for example, irrigate during dry weather, some amount of runoff occurs and this runoff likely conveys bacteria through the MS4 to the receiving water. These discharges are either non-point sources of bacteria, or are non-municipal point discharges and as such, again the MS4 Permittees cannot lawfully be required to monitor and otherwise be responsible for these discharges. The TMDL must therefore be

revised so that proper loads and waste loads are assigned, and the City and other MS4 Permittees are not forced to address loads they are not responsible for.

Staff appears to have recognized this concern of the MS4 dischargers; however there have been no changes and no acknowledgement of this issue in the documents. We request that the San Diego Board staff include recognition of this issue in the BPA, similar to the acknowledgement/recognition that was included regarding usage frequency in the creeks.

2) Page 13 states, *"A TMDL is intended to fulfill two purposes: 1) calculation of the assimilative loading capacity for an impaired waterbody, and 2) development of a strategy to restore an impaired waterbody so the water quality can once again meet the water quality standards."*

Since the 2008 303(d) List has been approved by the RWQCB with several delistings of waterbodies impacted by the TMDL, it begs the question as to why the delisted waterbodies remain in this TMDL, as the purpose of the TMDL has already been accomplished. If the water quality standards are being met, based on the 2008 303(d) list, the TMDL serves no purpose for these waterbodies, at this point. As such, it is arbitrary and capricious to adopt a TMDL and accompanying load allocations and waste load allocations for water bodies for pollutants that are no longer considered to be impairing the designated uses.

3) Although, we feel that de-listed waterbodies should be removed from this TMDL (see comment #2 above), in absence of San Diego Board's agreement to remove delisted waterbodies, at a minimum, the following text or similar language should be added on page A1 of the BPA:

"Some of the waterbodies listed in the above table have been delisted from the 2008 303(d) list that was approved by the San Diego Board on December 16, 2009. Waterbodies that have been delisted have demonstrated that they meet water quality standards and therefore are not subject to any further action as long as monitoring data continues to support compliance with water quality standards."

4) The table in Appendix Q, Small Municipal Separate Storm Sewer Systems in the Revised Bacteria TMDLs Project I Watersheds, must be revised to identify the appropriate waterbody which the facility is impacting.

5) Page 40 of the Technical Report states, "*However, if adequate data are collected to characterize dry weather flows and bacteria densities using a statistical approach, the reference system approach may be an option that would allow an exceedance frequency to be included with the dry weather numeric targets in the dry weather TMDLs to revise the final dry weather targets in this TMDL project.*" Unfortunately, however this language does not appear in the Basin Plan Amendment as it should. Please include this language

in the BPA. We suggest, at a minimum, the following changes on page 12, #28 of the BPA:

> *"At the end of the dry weather TMDL compliance schedule, the 30- day geometric mean REC-1 WQOs for dry weather days must be met 100 percent of the time, or must be consistent with the allowable exceedance frequency established for the receiving water."*

6) *"The concentration based TMDLs will be used to determine compliance with the TMDLs in the receiving waters."*

This statement is in conflict with the introduction to Appendix 9 of the Technical Report (Recommended Components for Bacteria Load Reduction Plans and Comprehensive Load Reduction Plans) which states that the BLRP or CLRP is 'the dischargers' opportunity to propose methods for assessing compliance with the WQBELS." The BLRP/CLRP language is consistent with what was envisioned for compliance during the SAG development process. Changing to concentration-based waste load allocations is thus in direct conflict with the stakeholder process and the language provided in Appendix 9.

Moreover, it is clear that the federal Clean Water Act does not require that MS4 Permittees strictly comply with any waste load allocations in a TMDL, *i.e.,* either concentration-based or otherwise. In a November 22, 2002 U.S. EPA Guidance Memorandum (Exhibit "1" hereto) entitled, *"Establishing Total Maximum Daily Loads (TMDL) Waste Load Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs,"* EPA established federal policy to be utilized in developing TMDLs when addressing storm water discharges. Such policy makes clear that because of the problems in frequency and variability with storm water, that MS4 Permit limits to comply with a TMDL typically should be expressed as Best Management Practices (BMPs), that numeric limits in such permits will only be used in rare instances, and, importantly, that the TMDLs should themselves "reflect" this BMP approach. According to this EPA TMDL Guidance Memorandum:

> EPA expects that most WQBELs [water quality based effluent limits] for NPDES regulated municipal and small construction storm water discharges will be in the form of BMPs, **and that numeric limits will be used only in rare instances**.
>
> When a non-numeric water quality based effluent limit is imposed, the permit's administrative record, including the fact sheet when one is required, needs to support that the BMPs are expected to be sufficient to implement the WLA in the TMDL. (*Id.* at p. 2; emphasis added.)

* * *

> EPA's policy recognizes that because storm water discharges are due to storm events that are highly variable in frequency and duration and are not easily

> characterized, **only in rare cases will it be feasible or appropriate to establish numeric limits for municipal and small construction storm water discharges**. (*Id*. at p. 4.)
>
> * * *
>
> Under certain circumstances, BMPs are an appropriate form of effluent limits to control pollutants in storm water. See 40 C.F.R. § 122.44(k)(2) & (3). If it is determined that a BMP approach (including an iterative BMP approach) is appropriate to meet the storm water component of the TMDL, EPA recommends that the TMDL reflect this. (*Id.* at p. 5.)

In conjunction with the above, we are concerned about the agreed upon approach discussed during the stakeholder process getting lost at such time as the TMDL is to be incorporated into the NPDES Permits, just as the new MS4 Permit approved in December 2009 for South Orange County itself includes, concentration-based numeric targets for the Baby Beach TMDL (which also went against the intent of BMP-based compliance approach that was developed and agreed upon during the TMDL stakeholder meetings). We commented on this issue for the MS4 Permit, but these comments were not addressed, and yet we continue to be assured that "TMDL staff will coordinate with NPDES Permit staff"; however our recent experience proves differently. As such, as the EPA TMDL Guidance Memorandum recommends that the TMDL itself reflect that it will be implemented through a BMP approach, the proposed TMDL must be revised at this time to "reflect" this approach.

7) Page 15, #35. Economic analysis is inadequate. We continue to dispute that an adequate economic analysis was conducted (the economic factor discussion is on Page 230 of the Technical Report). The vague statement indicating that the San Diego Regional Board has considered the costs of the reasonable foreseeable methods of compliance is not adequate, nor correct. The rudimentary calculations and astronomically large range of cost provided is not adequate and there appears to be no consideration of the actual likely costs of compliance, nor any consideration of whether or not these TMDLs are "reasonably achievable." (See California Water Code sections 13241 and 13000.) What is the rationale supporting the assumption that only 10% of the watershed will need to be treated to achieve the TMDL goals? Due to proliferation and regrowth, the evidence shows that treating 10% of the watershed will <u>not</u> result in compliance and therefore the low-ended and very wide ranging estimates of $50,000 to $973,000,000 for treating only 10% of the watershed only reinforce the fact that the TMDL has not been developed in accordance with the analysis required under CWC sections 13241/13000. We anticipate that we will need to treat much more than 10% of the watershed to meet wet and dry weather TMDLs, and the costs in reality will escalate accordingly. The conclusion that only 10% of the watershed will require treatment is not supported by the evidence, and the adoption of the TMDL based on this incorrect assumption would be arbitrary and capricious.

The requirement for the Board to consider "economics" as well as whether the TMDLs "could reasonably be achieved," along with other factors as set forth in CWC sections 13000 and 13241 must be met as a part of the TMDL development process. CWC section 13000 requires a consideration by the Board of "all demands being made and to be made" on the subject waters bodies, including the "total values involved, beneficial and detrimental, economic and social, tangible and intangible." (CWC § 13000.) CWC section 13241 specifically then requires the Boards, when developing water quality objectives, to consider a series of factors including but not limited the "environmental characteristics of the hydrographic unit under consideration," as well as whether the water quality conditions "could reasonably be achieved through the coordinated control of all factors which affect water quality in the area," and "economic considerations." (CWC § 13241(b), (c) & (d).)

The proposed TMDL has not been developed in accordance with CWC sections 13000 and 13241. For example, the recent data not considered by Board Staff on the number of exceedances in dry weather runoff shows that there are natural dry weather loads of bacteria that have not been accounted for in the TMDL. Thus, without allowing for a certain number of exceedances to accommodate these natural loads, the TMDL as written is not "reasonably achievable." Similarly, the TMDL does not include any analysis of the type, level and extent of structural best management practices ("BMPs") that will be needed to meet the requirements of the TMDL, and the assumption that only 10% of the watershed will require treatment, as discussed above, is not supported by the evidence. There is no discussion of how effective the non-structural BMPs are expected to be towards meeting the waste load allocations, and it appears clear that a number of structural BMPs will likely be necessary in order to meet the proposed concentration-based waste load allocations. Yet there is no discussion as to the amount of land and the practicability of installing structural based BMPs throughout a good portion of the various jurisdictions to meet the bacterial limits in question, and nor is there any good faith analysis of the true potential economic impacts from installing the necessary structural TMDLs to strictly comply with the numeric waste load allocations. Instead, the TMDL includes a completely arbitrary and meaningless range of costs to comply with the TMDL, *i.e.*, a range of $50,000 to $973,000,000 to comply. In short there is no analysis as required under CWC sections 13241/13000, of the true potential economic impacts and costs to comply with this TMDL, and the proposed TMDL is therefore defective and cannot lawfully be adopted at this time.

In EPA's "Guidance for Developing TMDLs in California," dated January 7, 2000 ("EPA California TMDL Guidance"), (Exhibit "2" hereto), EPA recognized that although its regulations do not require "any particular form of economic analysis," it also recognized that "the Office of Chief Counsel, State Water Resources Control Board, issued the following memorandum addressing economic analysis

requirements under state law." The Office of Chief Counsel Memorandum referenced by EPA was a Memorandum dated October 27, 1999 from Sheila Vassey, Office of Chief Counsel for the State Board, and was entitled "Economic Considerations in TMDL Development and Basin Planning" (hereafter "Vassey Memo," a copy of which is marked hereto and attached as Exhibit "3"). In the Vassey Memo (cited in EPA's California TMDL Guidance), the Chief Counsel's Office concluded as follows:

> **Porter-Cologne requires that the Regional Water Boards take "economic considerations," among other factors, into account when they establish water quality objectives**. . . .
>
> **Attached to this memorandum is a 1994 memorandum containing guidance on the consideration of economics in the adoption of water quality objectives. The key points of this guidance are:**
>
> - **The Boards have an affirmative duty to consider economics when adopting water quality objectives**.
>
> - **At a minimum, the Boards must analyze: (1) whether a proposed objective is currently being attained; (2) if not, what methods are available to achieve compliance with the objective; and (3) the cost of those methods.**
>
> - **If the economic consequences of adoption of a proposed objective are potentially significant, the Board must state on the record why adoption of the objective is necessary to ensure the reasonable protection of beneficial uses or the prevention of nuisance**. (Exhibit "3," Vassey Memo, pp. 3-4.)

The State Board's Chief Counsel Memo further provides that the regional boards must comply with CEQA when they amend their basin plans (*id*. at 4), and that CEQA requires the Water Boards to conduct an environmental analysis of the reasonably foreseeable methods of compliance with performance standards or treatment requirements. In doing so, "**[t]hey must consider economic factors in this analysis**." (See Exhibit "3," Vassey Memo, p. 4; and Public Resources Code ["PRC"] § 21159.)[1]

The Chief Counsel concluded as follows:

> **Thus, the Regional Water Board must identify the reasonably foreseeable methods of compliance with the wasteload and load allocations and consider economic factors for those methods. This**

[1] PRC section 21159(c) provides that: "The environmental analysis shall take into account a reasonable range of environmental, **economic** and technical factors, population and geographic areas, and specific sites."

economic analysis is similar to the analysis for water quality objectives discussed above. (*Id.* at p. 6, emphasis added.)

Accordingly, pursuant to CWC sections 13241 and 13000, and PRC section 21159, as underscored by the administrative interpretation provided in the Chief Counsel's Memo, the Board is required to consider "economics" before adopting the TMDL.

In this case, there has been no real consideration of whether the TMDL in question, particularly if it is intended to be applied as a concentration-based effluent limit in the Municipal NPDES Permits, "could reasonably be achieved," and nor has there been any true consideration, of the "economic" impacts from such a TMDL, or any of the other factors and consideration under CWC sections 13000 and 13241. The proposed TMDL should therefore not be adopted until the requirements of these sections have been met.

8) Page A12 & A65 of the BPA, we disagree that the beach segments began to be listed separately with the 2008 303(d) List; the 2006 303(d) lists specific beach segments where the impairment is located. Therefore, the identified beach segments should be included in the Tables on pages A12 & A25-A35. We have provided an example with information taken directly from the 2006 303(d) List. See suggested changes in red text below.

Watershed	Type of Listing	Waterbody Name [a]	Number of Listings	Impairment located at
Lower San Juan HSA (901.27)	Creek	San Juan Creek	3	
	Estuary	**San Juan Creek (mouth)**		
	Shoreline	**Pacific Ocean Shoreline, Lower San Juan HSA [b]**		*North Beach Creek, San Juan Creek (large outlet), Capistrano Beach, South Capistrano Beach at Beach Road.*

9) Page A14 of the BPA, footnote 5 is inaccurate. As we discussed with your staff and EPA staff at the stakeholder meeting held on January 7, 2010, we suggest the following language changes or similar language:

5 Available water quality data from San Diego Region reference systems during time of development indicated that exceedances of the single sample WQOs during dry weather conditions are uncommon. However, recently published data by Southern Coastal California Water Research Project (SCCWRP) Study titled, **Fecal Indicator Bacteria (FIB) levels during dry weather from southern California reference streams.** 2008. LL Tiefenthaler, ED Stein, GS Lyon. Technical Report 542, indicated to the contrary and that, *"A total of 18.2% of the indicator bacteria samples (for all three indicators) from the natural sites exceeded daily (single sample) water quality standards. Approximately 1.5%, 14%, and 3% of E. coli, enterococci, and total coliforms, respectively, exceeded single sample water quality criteria."* and the applicability of an allowable exceedance frequency for dry weather TMDLS will be evaluated further. ~~Furthermore, if the exceedance of the single sample WQOs during dry weather is unlikely, exceedances of the geometric mean are even more unlikely.~~

In addition, the following changes should be made:

The allowable load (i.e., TMDL) that is calculated based on these numeric targets consists of the sum of two parts: 1) the bacteria load that is calculated with the REC-1 WQOs and, 2) the bacteria load that is associated with the allowable exceedance frequency, calculated using the existing load in exceedance of the REC-1 WQOs on the allowable exceedance days. For wet weather, the allowable exceedance days are calculated based on the allowable exceedance frequency and total number of wet days in a year. For dry weather TMDLs using a reference system approach, the allowable exceedance days are calculated based on the allowable exceedance frequency and the total number of dry days in a year.

In addition, please add the following underlined sentence to the end of footnote 4:

[4] In the calculation of the wet weather TMDLs, the San Diego Regional Board chose to apply the 22 percent allowable exceedance frequency as determined for Leo Carrillo Beach in Los Angeles County. At the time the wet weather watershed model was developed, the 22 percent exceedance frequency from Los Angeles County was the only reference beach exceedance frequency available. The 22 percent allowable exceedance frequency used to calculate the wet weather TMDLs is justified because the San Diego Region watersheds' exceedance frequencies will likely be close to the value calculated for Leo Carrillo Beach, and is consistent with the exceedance frequency that was applied by the Los Angeles Regional Board. Ongoing studies by SCCWRP and the dischargers indicate there are more local reference beaches that are appropriate for these TMDLs. The information and evidence justify revising the TMDL to account for these additional references.

10) On page A16 of the BPA, the following underlined text should be added to the footnote a. under both tables and in the Table on A25-A35, as appropriate:

a. Percent of wet days (i.e., rainfall events of 0.2 inches or greater and the following 72 hours) allowed to exceed the wet weather numeric targets. Exceedance frequency based on reference system in the Los Angeles Region. The information and evidence justify using a different exceedance frequency for wet weather TMDLS, and as such the reference frequency is to be recalculated/revised.

a. Percent of dry days (i.e., days with less than 0.2 inch of rainfall observed on each of the previous 3 days) allowed to exceed the dry weather numeric targets. The information and evidence justify using a reference system for the dry weather TMDLs, and as such the allowable exceedance frequency for dry weather TMDLS is to be recalculated/revised.

11) On page A20 of the BPA, please add the following underlined text to foot note 7 and correspondingly in the footnotes to the Tables on A26:

In the calculation of the wet weather TMDLs, the San Diego Regional Board chose to apply the 22 percent allowable exceedance frequency as determined for Leo Carrillo Beach in Los Angeles County. At the time the wet weather watershed model was developed, the 22 percent exceedance frequency from Los Angeles County was the only reference beach exceedance frequency available. The 22

percent allowable exceedance frequency used to calculate the wet weather TMDLs is justified because the San Diego Region watersheds' exceedance frequencies will likely be close to the value calculated for Leo Carrillo Beach, and is consistent with the exceedance frequency that was applied by the Los Angeles Regional Board. New information is available showing that more applicable reference system data is available. The information and evidence justify revising the TMDL for dry and wet weather to account for this information and the TMDLs will be recalculated/revised accordingly.

12) On page A42 of the BPA:

a. How is the San Diego Board going to identify Phase II MS4s as "significant sources of bacteria discharging to the receiving waters and/or Phase I MS4s?

b. It appears that Phase I and Phase II MS4s are being held to different standards – the implementation plan indicates that Phase II MS4s are required to implement a SWMP with the goal of reducing the discharge of pollutants to the maximum extent practicable (page 154), while the Phase I MS4s are facing compliance with numerical effluent limitations on the amounts of specified pollutants that may be discharged and/or specified best management practices (BMPs) designed to minimize water quality impacts. These numerical effluent limitations and BMPs or other non-numerical effluent limitations must implement both technology-based and water quality-based requirements of the Clean Water Act. Technology-based effluent limitations (TBELs) represent the degree of control that can be achieved by point sources using various levels of pollution control technology. (Page 148). The standard for both Phase I and Phase II MS4 Permittees should be the same, *i.e.*, the MFP standard, and the use of a different standard for Phase II versus Phase I MS4 Permittees is arbitrary and capricious.

13) On page A45 of the BPA, has an evaluation of the WDRs and NPDES requirements for Concentrated Animal Feeding Operations (CAFOs) been conducted, and if so, are there any recommendations for a more aggressive program? If an evaluation has not occurred, it should occur, and the results of that evaluation should be included in this BPA. It is arbitrary and capricious to do otherwise.

14) Page 165 of Technical Report, there is no standard for Total Coliform in the Basin Plan and therefore Total Coliform should be removed from Table 11-2. Superscript *f* should be deleted as well.

15) When was the last time that the conditional waivers for agriculture were evaluated? It appears that the general conditional waivers will expire December 31, 2012. When will San Diego Board begin to evaluate these to decide whether or not they are sufficient to implement the agriculture load allocations? How will the San Diego Water Board ensure that such owners and operators of are not discharging in excess of their loads?

16) Page A49. The City disagrees with the statement "Implementation of these TMDLs by the San Diego Water Board should not require any special studies to be conducted by the dischargers or other entities." During discussions at the January 7 stakeholder meeting, it was acknowledged that this TMDL is based on old data or a lack of data and that special studies will most likely be part of the dischargers Load Reduction Plan. It is thus not clear why this statement was made, and discussions regarding old data and lack of data illustrate the fact that the Board does not have sufficient data at this time to adopt the proposed TMDL.

17) The Environmental Review prepared by Board Staff in an effort to comply with the California Environmental Quality Act ("CEQA") is deficient and does not comport with CEQA. There is a wholly inadequate analysis of the "reasonably foreseeable" BMPs that will need to be utilized in type, size, number and location, and as such, the CEQA Environmental Review prepared by Board Staff to access the environmental impacts from the installation of the "reasonably foreseeable" BMPs, is entirely lacking in substance.

For example, the analysis under the section entitled "The Utilities and Service Systems. a" on page R-51 of the Environmental Analysis and Checklist ("EAC"), provides that the "Installation of structural BMPs may require alterations or installation of new power or natural gas lines" but, "that the installation of structural BMPs will result in a substantial increased need for new systems, or substantial alterations to power or natural gas utilities, is not reasonably foreseeable, because none of these BMPs are large enough to substantially tax current power or natural gas sources." Yet, there is no analysis in the EAC describing the number and size of treatment facility BMPs, such as the number and necessary expansions to existing sanitary sewer facilities, to support this statement. In fact, the EAC makes no attempt to describe how large of a BMP is too large "to substantially tax current power or natural gas sources," and in general wholly fails to describe the "reasonably foreseeable" approximate number, type, size and location of the various types of structural BMPs that will be needed to meet the TMDL's waste load allocations, or even the extent of the non-structural BMPs that will be needed (e.g., the extent street sweeping will need to be increased, in what areas, the extent of the increase, etc).

Complying with CEQA necessarily involves some degree of forecasting. "While forecasting the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can." (CEQA Guidelines, 14 CCR § 15144.) Here, the Board has ignored this mandate.

The discussion contained throughout the EAC simply deems impacts to be insignificant under the presumption that the BMPs and mitigation measures ultimately selected to implement the TMDLs will be properly designed and sited by local agencies. The Board makes no effort to analyze "reasonably foreseeable" physical changes to the environment necessitated by the TMDL.

As one example, the Board's discussion relating to whether the proposal will result in any "change in climate" consists entirely of the following conclusory statement: "Non-structural and/or structural BMPs would not be of the size or scale to result in

alterations of air, movement, moisture, or temperature, or any change in climate, either locally or regionally." (EAC, p. R-25.) This analysis completely fails to adequately evaluate the project's impacts on the climate.

With the adoption of SB 97 in 2007, the California legislature directed that greenhouse gas ("GHG") emissions and the effects of climate change be included in future analyses under CEQA. More specifically, SB 97 directs the State Office of Planning and Research ("OPR") to develop draft CEQA Guidelines "for the mitigation of GHG emissions or the effects of GHG emissions" by July 1, 2009 and directs the Natural Resources Agency to certify and adopt revised CEQA Guidelines by January 1, 2010.

Proposed CEQA Guidelines, received by the Natural Resources Agency on April 13th, 2009, outline in 14 CCR section 15064.4 the following responsibilities for Lead Agencies in determining the significance of GHG emissions:

a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; or

(2) Rely on a qualitative analysis or performance based standards.

. . .

b) A lead agency may consider the following when assessing the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects

> *of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.*

Proposed subsection (c) to 14 CCR section 15126.4 provides additional guidelines on how to minimize and mitigate a project's GHG emissions. While the Board, for example, recognizes potential impacts of air quality due to increased traffic, it makes no attempt to quantify foreseeable increases in vehicular emissions. Moreover, the analysis similarly fails to estimate GHG emissions as a result of (1) increased energy usage, (2) increased emissions from organic sources, or (3) increased solid waste generation.

In short, the Board makes no effort to describe, calculate or estimate the type and number of BMPs that will generate GHG emissions, nor the *amount* of GHG emissions that will result from the construction, installation, operation, and maintenance of these BMPs. Nor does the Board's Environmental Review make any attempt to otherwise determine the reasonably foreseeable BMPs needed to meet the TMDL in general, and thus generally fails to analyze the reasonably foreseeable impacts to the environment from the implementation of these expected BMPs.

We thank you for taking the time to consider the above comments and suggestions. Please do not hesitate to contact me should you have any questions regarding the above.

Respectfully,

Lisa Zawaski
Senior Water Quality Engineer
City of Dana Point
949-248-3584

Enc: Exhibits "1", "2" & "3"

CC: B. Fowler, D. Chotkevys, Dana Point
R. Montevideo, Rutan & Tucker
San Juan Creek Watershed Municipalities

EXHIBIT "1"

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 22 2002

OFFICE OF WATER

MEMORANDUM

SUBJECT: Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs

FROM: Robert H. Wayland, III, Director
Office of Wetlands, Oceans and Watersheds

James A. Hanlon, Director
Office of Wastewater Management

TO: Water Division Directors
Regions 1 - 10

This memorandum clarifies existing EPA regulatory requirements for, and provides guidance on, establishing wasteload allocations (WLAs) for storm water discharges in total maximum daily loads (TMDLs) approved or established by EPA. It also addresses the establishment of water quality-based effluent limits (WQBELs) and conditions in National Pollutant Discharge Elimination System (NPDES) permits based on the WLAs for storm water discharges in TMDLs. The key points presented in this memorandum are as follows:

- NPDES-regulated storm water discharges must be addressed by the wasteload allocation component of a TMDL. See 40 C.F.R. § 130.2(h).

- NPDES-regulated storm water discharges may not be addressed by the load allocation (LA) component of a TMDL. See 40 C.F.R. § 130.2 (g) & (h).

- Storm water discharges from sources that are not currently subject to NPDES regulation may be addressed by the load allocation component of a TMDL. See 40 C.F.R. § 130.2(g).

- It may be reasonable to express allocations for NPDES-regulated storm water discharges from multiple point sources as a single categorical wasteload allocation when data and information are insufficient to assign each source or outfall individual WLAs. See 40 C.F.R. § 130.2(i). In cases where wasteload allocations

are developed for categories of discharges, these categories should be defined as narrowly as available information allows.

The WLAs and LAs are to be expressed in numeric form in the TMDL. See 40 C.F.R. § 130.2(h) & (i). EPA expects TMDL authorities to make separate allocations to NPDES- regulated storm water discharges (in the form of WLAs) and unregulated storm water (in the form of LAs). EPA recognizes that these allocations might be fairly rudimentary because of data limitations and variability in the system.

NPDES permit conditions must be consistent with the assumptions and requirements of available WLAs. See 40 C.F.R. § 122.44(d)(1)(vii)(B).

WQBELs for NPDES-regulated storm water discharges that implement WLAs in TMDLs may be expressed in the form of best management practices (BMPs) under specified circumstances. See 33 U.S.C. §1342(p)(3)(B)(iii); 40 C.F.R. §122.44(k)(2)&(3). If BMPs alone adequately implement the WLAs, then additional controls are not necessary.

EPA expects that most WQBELs for NPDES-regulated municipal and small construction storm water discharges will be in the form of BMPs, and that numeric limits will be used only in rare instances.

When a non-numeric water quality-based effluent limit is imposed, the permit's administrative record, including the fact sheet when one is required, needs to support that the BMPs are expected to be sufficient to implement the WLA in the TMDL. See 40 C.F.R. §§ 124.8, 124.9 & 124.18.

The NPDES permit must also specify the monitoring necessary to determine compliance with effluent limitations. See 40 C.F.R. § 122.44(i). Where effluent limits are specified as BMPs, the permit should also specify the monitoring necessary to assess if the expected load reductions attributed to BMP implementation are achieved (e.g., BMP performance data).

The permit should also provide a mechanism to make adjustments to the required BMPs as necessary to ensure their adequate performance.

This memorandum is organized as follows:

(I). Regulatory basis for including NPDES-regulated storm water discharges in WLAs in TMDLs;

(II). Options for addressing storm water in TMDLs; and

(III). Determining effluent limits in NPDES permits for storm water discharges consistent with the WLA

(I). Regulatory Basis for Including NPDES-regulated Storm Water Discharges in WLAs in TMDLs

As part of the 1987 amendments to the CWA, Congress added Section 402(p) to the Act to cover discharges composed entirely of storm water. Section 402(p)(2) of the Act requires permit coverage for discharges associated with industrial activity and discharges from large and medium municipal separate storm sewer systems (MS4), i.e., systems serving a population over 250,000 or systems serving a population between 100,000 and 250,000, respectively. These discharges are referred to as Phase I MS4 discharges.

In addition, the Administrator was directed to study and issue regulations that designate additional storm water discharges, other than those regulated under Phase I, to be regulated in order to protect water quality. EPA issued regulations on December 8, 1999 (64 FR 68722), expanding the NPDES storm water program to include discharges from smaller MS4s (including all systems within "urbanized areas" and other systems serving populations less than 100,000) and storm water discharges from construction sites that disturb one to five acres, with opportunities for area-specific exclusions. This program expansion is referred to as Phase II.

Section 402(p) also specifies the levels of control to be incorporated into NPDES storm water permits depending on the source (industrial versus municipal storm water). Permits for storm water discharges associated with industrial activity are to require compliance with all applicable provisions of Sections 301 and 402 of the CWA, i.e., all technology-based and water quality-based requirements. See 33 U.S.C. §1342(p)(3)(A). Permits for discharges from MS4s, however, "shall require controls to reduce the discharge of pollutants to the maximum extent practicable ... and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." See 33 U.S.C. §1342(p)(3)(B)(iii).

Storm water discharges that are regulated under Phase I or Phase II of the NPDES storm water program are point sources that must be included in the WLA portion of a TMDL. See 40 C.F.R. § 130.2(h). Storm water discharges that are not currently subject to Phase I or Phase II of the NPDES storm water program are not required to obtain NPDES permits. 33 U.S.C. §1342(p)(1) & (p)(6). Therefore, for regulatory purposes, they are analogous to nonpoint sources and may be included in the LA portion of a TMDL. See 40 C.F.R. § 130.2(g).

(II). Options for Addressing Storm Water in TMDLs

Decisions about allocations of pollutant loads within a TMDL are driven by the quantity and quality of existing and readily available water quality data. The amount of storm water data available for a TMDL varies from location to location. Nevertheless, EPA expects TMDL authorities will make separate aggregate allocations to NPDES-regulated storm water discharges

(in the form of WLAs) and unregulated storm water (in the form of LAs). It may be reasonable to quantify the allocations through estimates or extrapolations, based either on knowledge of land use patterns and associated literature values for pollutant loadings or on actual, albeit limited, loading information. EPA recognizes that these allocations might be fairly rudimentary because of data limitations..

EPA also recognizes that the available data and information usually are not detailed enough to determine waste load allocations for NPDES-regulated storm water discharges on an outfall-specific basis. In this situation, EPA recommends expressing the wasteload allocation in the TMDL as either a single number for all NPDES-regulated storm water discharges, or when information allows, as different WLAs for different identifiable categories, e.g., municipal storm water as distinguished from storm water discharges from construction sites or municipal storm water discharges from City A as distinguished from City B. These categories should be defined as narrowly as available information allows (e.g., for municipalities, separate WLAs for each municipality and for industrial sources, separate WLAs for different types of industrial storm water sources or dischargers).

(III). Determining Effluent Limits in NPDES Permits for Storm Water Discharges Consistent with the WLA

Where a TMDL has been approved, NPDES permits must contain effluent limits and conditions consistent with the requirements and assumptions of the wasteload allocations in the TMDL. See 40 CFR § 122.44(d)(1)(vii)(B). Effluent limitations to control the discharge of pollutants generally are expressed in numerical form. However, in light of 33 U.S.C. §1342(p)(3)(B)(iii), EPA recommends that for NPDES-regulated municipal and small construction storm water discharges effluent limits should be expressed as best management practices (BMPs) or other similar requirements, rather than as numeric effluent limits. See *Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits*, 61 FR 43761 (Aug. 26, 1996). The Interim Permitting Approach Policy recognizes the need for an iterative approach to control pollutants in storm water discharges. Specifically, the policy anticipates that a suite of BMPs will be used in the initial rounds of permits and that these BMPs will be tailored in subsequent rounds.

EPA's policy recognizes that because storm water discharges are due to storm events that are highly variable in frequency and duration and are not easily characterized, only in rare cases will it be feasible or appropriate to establish numeric limits for municipal and small construction storm water discharges. The variability in the system and minimal data generally available make it difficult to determine with precision or certainty actual and projected loadings for individual dischargers or groups of dischargers. Therefore, EPA believes that in these situations, permit limits typically can be expressed as BMPs, and that numeric limits will be used only in rare instances.

Under certain circumstances, BMPs are an appropriate form of effluent limits to control pollutants in storm water. See 40 CFR § 122.44(k)(2) & (3). If it is determined that a BMP approach (including an iterative BMP approach) is appropriate to meet the storm water component of the TMDL, EPA recommends that the TMDL reflect this.

EPA expects that the NPDES permitting authority will review the information provided by the TMDL, see 40 C.F.R. § 122.44(d)(1)(vii)(B), and determine whether the effluent limit is appropriately expressed using a BMP approach (including an iterative BMP approach) or a numeric limit. Where BMPs are used, EPA recommends that the permit provide a mechanism to require use of expanded or better-tailored BMPs when monitoring demonstrates they are necessary to implement the WLA and protect water quality.

Where the NPDES permitting authority allows for a choice of BMPs, a discussion of the BMP selection and assumptions needs to be included in the permit's administrative record, including the fact sheet when one is required. 40 C.F.R.§§ 124.8, 124.9 & 124.18. For general permits, this may be included in the storm water pollution prevention plan required by the permit. See 40 C.F.R. § 122.28. Permitting authorities may require the permittee to provide supporting information, such as how the permittee designed its management plan to address the WLA(s). See 40 C.F.R. § 122.28. The NPDES permit must require the monitoring necessary to assure compliance with permit limitations, although the permitting authority has the discretion under EPA's regulations to decide the frequency of such monitoring. See 40 CFR § 122.44(i). EPA recommends that such permits require collecting data on the actual performance of the BMPs. These additional data may provide a basis for revised management measures. The monitoring data are likely to have other uses as well. For example, the monitoring data might indicate if it is necessary to adjust the BMPs. Any monitoring for storm water required as part of the permit should be consistent with the state's overall assessment and monitoring strategy.

The policy outlined in this memorandum affirms the appropriateness of an iterative, adaptive management BMP approach, whereby permits include effluent limits (e.g., a combination of structural and non-structural BMPs) that address storm water discharges, implement mechanisms to evaluate the performance of such controls, and make adjustments (i.e., more stringent controls or specific BMPs) as necessary to protect water quality. This approach is further supported by the recent report from the National Research Council (NRC), *Assessing the TMDL Approach to Water Quality Management* (National Academy Press, 2001). The NRC report recommends an approach that includes "adaptive implementation," i.e., "a cyclical process in which TMDL plans are periodically assessed for their achievement of water quality standards" . . . and adjustments made as necessary. *NRC Report* at ES-5.

This memorandum discusses existing requirements of the Clean Water Act (CWA) and codified in the TMDL and NPDES implementing regulations. Those CWA provisions and regulations contain legally binding requirements. This document describes these requirements; it does not substitute for those provisions or regulations. The recommendations in this memorandum are not binding; indeed, there may be other approaches that would be appropriate

in particular situations. When EPA makes a TMDL or permitting decision, it will make each decision on a case-by-case basis and will be guided by the applicable requirements of the CWA and implementing regulations, taking into account comments and information presented at that time by interested persons regarding the appropriateness of applying these recommendations to the particular situation. EPA may change this guidance in the future.

If you have any questions please feel free to contact us or Linda Boornazian, Director of the Water Permits Division or Charles Sutfin, Director of the Assessment and Watershed Protection Division.

cc:
Water Quality Branch Chiefs
Regions 1 - 10

Permit Branch Chiefs
Regions 1 - 10

EXHIBIT "2"

Guidance for Developing TMDLs in California

EPA Region 9

January 7, 2000

Table of Contents

Disclaimer

This document provides guidance to the State of California concerning its responsibility under section 303(d) of the Clean Water Act concerning the development of TMDLs for water quality-limited segments listed under section 303(d). It also provides guidance to the public and the regulated community on how EPA intends to exercise its discretion in implementing section 303(d) and its regulations regarding TMDLs. The guidance is designed to implement national regulations and policies on these issues. The document does not, however, substitute for section 303(d) of the Clean Water Act or EPA's regulations; nor is it a regulation itself. Thus, it does not impose legally-binding requirements on EPA, the State of California, or the regulated community, and may not apply to a particular situation based upon the circumstances. EPA and State decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate and consistent with the requirements of section 303(d) and EPA's regulations. EPA may change this guidance in the future.

1. What does this guidance address?

Clean Water Act Section 303(d) establishes a water quality assessment and planning process through which states, territories, and authorized tribes are required to identify polluted waterbodies, set priorities for addressing these polluted waters, and write pollutant control plans called Total Maximum Daily Loads (TMDLs) in order to attain state water quality standards, including water quality standards promulgated by EPA for California. This process, known generally as the TMDL process, provides an effective mechanism for determining the causes of waterbody impairment and allocating responsibility among different pollutant discharge sources for reducing pollutant emissions to achieve water quality standards. The TMDL process affords the public the opportunity to participate in decisions about these pollutant control plans. States are generally responsible for developing TMDLs, and EPA reviews and approves TMDLs. If EPA disapproves a TMDL, EPA is responsible for establishing the TMDL for the State. In some cases, EPA may also establish TMDLs when the State has not yet adopted and submitted a required TMDL. TMDLs are implemented through existing regulatory and non-regulatory programs to control pollutant discharges from point sources (e.g. discharges from wastewater treatment plants) and nonpoint sources (e.g. polluted runoff from agricultural lands).

The goal of a Total Maximum Daily Load (TMDL) is to attain state water quality standards including water quality standards promulgated by EPA for California. A TMDL is a written, quantitative assessment of water quality problems and contributing pollutant sources. It identifies one or more numeric targets based on applicable water quality standards, specifies the maximum amount of a pollutant that can be discharged (or the amount of a pollutant that needs to be reduced) to meet water quality standards, allocates pollutant loads among sources in the watershed, and provides a basis for taking actions needed to meet the numeric target(s) and implement water quality standards.

This guidance describes the minimum federal requirements for developing TMDLs as well as additional requirements for establishing TMDLs in California which must be met in order to comply with State legal and administrative procedures.[1] It is important that TMDLs include all the required elements and comply with federal and state procedural requirements in order to ensure that the TMDLs include information needed to implement effective pollutant controls, provide meaningful opportunities for public input, and are legally and technically defensible. More than 500 waterbodies or segments have been identified as needing TMDLs in California, many for multiple pollutants. Therefore, a great deal of work needs to be done by the State, EPA, and interested stakeholders to develop and implement TMDLs. This guidance, which is tailored to California's unique legal and administrative process, should assist in completing this work in a timely manner.

---

[1] This guidance reports EPA's understanding of requirements which stem from State statutes, regulations, or policies, based on information furnished by the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs). Interested parties should contact the SWRCB or RWQCBs to obtain definitive guidance concerning State-related requirements.

This guidance is based on existing federal and state requirements in effect in January, 2000. The guidance does not address proposed changes in federal TMDL requirements or possible changes in California's TMDL program being considered in the State legislature. The guidance also does not address the process for identifying waterbodies that do not meet Water Quality Standards after application of technology-based and other required controls (the Section 303(d) list). The guidance does not discuss TMDL implementation requirements in detail since TMDL implementation plans are currently governed by regulatory provisions which are separate from TMDL development requirements. Finally, the guidance focuses upon legal and procedural requirements and does not provide technical guidance concerning scientific methodologies for developing TMDLs.

In August 1999, EPA published proposed revisions to the TMDL regulations and national TMDL guidance. This California guidance will remain in effect unless EPA determines that it is superceded by new regulations and/or guidance.

2. Minimum Required Elements of TMDLs

2.1 Federal Requirements

State TMDL SUBMITTAL and TMDLs established by EPA **must** contain the following elements indicated in bold type in order to be approvable under the Clean Water Act (CWA) and associated federal regulations[2]:

1. Submittal Letter

A letter must be submitted by the State providing notification that the final TMDL(s) for specific water(s)/pollutant(s) were adopted by the State and submitted to EPA for approval under Section 303(d) of the CWA [40 CFR 130.7(d)].

2. Water Quality Standards Attainment

The TMDL and associated waste load and load allocations must be set at levels necessary to result in attainment of all applicable water quality standards, including designated beneficial uses, narrative water quality objectives[3], numeric water quality objectives, and State anti-degradation policies [40 CFR 130.7(c)(1)].

3. Numeric Target(s)

The TMDL document describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative objectives, and antidegradation

---

[2] In this document, the term "must" is used to describe a federal requirement. The terms "may" or "should" are used to describe recommended program actions or elements.

[3] In California, the term "water quality objective" is equivalent to the federal "water quality criteria".

policies. Numeric water quality target(s) for TMDL must be identified, and an adequate basis for target(s) as interpretation of water quality standards must be specifically documented in the submittal. [40 CFR 130.7(c)(1)] TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure.

These targets identify the specific instream (and potentially hillslope) goals or endpoints for the TMDL which equate to attainment of the water quality standard. In some cases, multiple indicators and associated numeric target values may be needed to interpret an individual water quality standard (e.g. multiple fish habitat indicators to interpret acceptable sediment levels). In addition, some TMDLs may incorporate multiple numeric targets to account for seasonal differences in acceptable pollutant levels in a particular water body.

In many cases where applicable standards are expressed in numeric terms, it is appropriate to set the numeric target equal to the numeric water quality standard. However, it may be desirable to interpret a numeric standard in terms other than the method through which the standard is expressed as long as the target(s) can be shown to relate back to achieving the water quality standard(s). For some pollutants (e.g., bioaccumulative toxins or salts) or receiving water settings (e.g. lakes or poorly mixed waters), it makes more sense from the standpoint of source control and impact assessment to focus the TMDL on reductions of pollutant mass loads than solely on avoidance of exceedences of concentration-based standards.

In situations where applicable water quality standards are expressed in narrative terms or where 303(d) listings were prompted primarily by beneficial use or antidegradation concerns, it is necessary to develop a quantitative interpretation of narrative standards. Since a TMDL is an inherently quantitative analysis, it is necessary to determine appropriate quantitative indicators of the water quality problem of concern in order to calculate a TMDL. It is sometimes possible to supplement instream indicators and targets with hillslope targets-- measures of conditions within the watershed which are directly associated with waterbodies meeting their water quality standards for the pollutant(s) of concern.

The numeric targets section generally includes the following elements:

- identification of one or more instream indicators (and possibly hillslope indicators) and the basis for using the indicator(s) to interpret or apply applicable water quality standards
- identification of target levels for each indicator and the technical basis for the targets
- comparison of historical or existing conditions and target conditions for the indicators selected for the TMDL.

If it is determined that water quality standards are now being met throughout the year taking into account seasonal variations and other critical conditions, and are not expected to be exceeded by the next listing cycle, then the TMDL is not required (although it can be developed to support permit issuance or for informational purposes pursuant to Clean Water Act Section 303(d)(3)). If the State determines a TMDL is not necessary after the TMDL development process has begun, the State would normally stop work on the TMDL and identify the waterbody as a candidate for removal from the 303(d) list at the time of the next listing cycle. EPA

encourages the State to notify interested members of the public of this finding and potentially provide an opportunity for public review of the State's analysis. For TMDLs required under consent decrees, the State should notify EPA immediately of any finding that the TMDL is not necessary in order for EPA to ensure that consent decree requirements are met.

4. Source Analysis

Point, nonpoint, and background sources of pollutants of concern must be described, including the magnitude and location of sources. The TMDL document demonstrates all sources have been considered [40 CFR 130.2(i) and 40 CFR 130.7(c)(1)].

An understanding of pollutant loading sources and the amounts and timing of pollutant discharges is vital to the development of effective TMDLs. The TMDL document must provide estimates of the amounts of pollutants entering the receiving water of concern or, in some cases, the amount of pollutant that is bioavailable based on historic loadings stored in the aquatic environment. These pollutant sources or causes of the problem need to be documented based on studies, literature reviews or other sources of information. Because the source analysis provides the key basis for determining the levels of pollutant reductions needed to meet water quality standards, and the allowable assimilative capacity, TMDL, wasteload allocations, and load allocations, quantified source analyses are required. Sources can be categorized in many ways, including but not limited to discharge source, land use category, ownership, pollutant production process (e.g. sedimentation processes), and/or tributary watershed areas. The source analysis must discuss in detail the data and methods used to estimate source contributions.

5. Link Between Numeric Target(s) and Pollutant(s) of Concern

The TMDL document must describe the relationship between numeric target(s) and identified pollutant sources, and estimate total assimilative capacity (loading capacity) of the waterbody for the pollutant of concern [40 CFR 130.7(d) and 40 CFR 130.2 (i) and (f)].

The loading capacity is the critical quantitative link between the applicable water quality standards (as interpreted through numeric targets) and the TMDL. Thus, a maximum allowable pollutant load must be estimated to address the site-specific nature of the impairment. The loading capacity reflects the maximum amount of a pollutant that may be delivered to the waterbody and still achieve water quality standards. A number of different loading capacity approaches have been approved as part of TMDLs.

The loading capacity section must discuss the methods and data used to estimate loading capacity. A range of methods can be used from predictive water quality models to inferred linkages based on comparison of local reference conditions with existing conditions in the watershed of concern. In some cases, loading capacity may vary within the watershed of concern (e.g., toxics loading capacity may be higher in areas with high water mixing rates than in backwater areas with poor water exchange), and in different time periods (e.g. nutrient loading capacity may be lowest during high temperature summer low flow periods). The basis for spatial and temporal variations in loading capacity estimates should be discussed in detail.

6. TMDLs and Individual Load and Wasteload Allocations

The document must identify the TMDL (total allowed pollutant amount) and its components: appropriate wasteload allocations for point sources and load allocations for nonpoint sources and natural background. If no point sources are present or anticipated, wasteload allocations are zero. If no nonpoint sources are present or anticipated, load allocations are zero. TMDLs and associated wasteload and load allocations must be expressed in quantitative terms [40 CFR 130.2 (e-i) and 40 CFR 130.7(c)].

The method of TMDL calculations must be discussed in detail. In some cases it will be appropriate to reserve (i.e., not allocate) a portion of the allowable loading capacity as part of the TMDL and its associated allocations. Such reserves may address the margin of safety requirement, account for sources which do not receive specific allocations, and/or to provide for future sources (although EPA advises providing for future sources through establishment of load allocations for future loading sources where feasible).

Separate wasteload and load allocations are needed for point and nonpoint sources, respectively. In cases where it is feasible, individual wasteload allocations should be established for each existing or anticipated future point source discharge, including NPDES-permitted stormwater discharges. However, circumstances may arise in which it is appropriate to set wasteload allocations that cover more than one discharge (e.g., discharges covered by a general permit). The State should coordinate with EPA prior to proposing a wasteload allocation which addresses more than one discharge, and clearly explain how the group wasteload allocation would be implemented.

Load allocations for nonpoint sources may be expressed as specific allocations for specific dischargers or as "gross allotments" to nonpoint source discharger categories. Separate nonpoint source allocations should be established for background loadings. Allocations may be based on a variety of technical, economic, and political factors. The methodology used to set allocations should be discussed in detail. It is advisable to include some assessment of the feasibility of the allocations in order to increase the likelihood that the TMDL can actually be attained through implementation actions and, accordingly, is sufficient to be approved by EPA.

TMDLs (and thus, load allocations and wasteload allocations) can be expressed as *"mass per time, toxicity, or other appropriate measure"*, depending on the type of waterbody and the sources that contribute to impairment. When using allocations in some *"other appropriate measure"* a discussion of why the *"other appropriate measure"* was used is necessary. *"Other appropriate measures"* may include an estimate of the percent reduction in discharge of the pollutant of concern which is needed to attain water quality standards. Where the percent reduction approach is used, the specific pollutant loading baseline against which the reductions are to be measured must be specified. For example, if the water quality impairment is due to excessive sedimentation from upland conditions, then the allocations may relate to the decrease in amount of erosion from uplands. If the problem is sedimentation related to channel conditions, then the allocations may relate to the decrease in the amount of bank erosion or the increase in stream stability.

Load allocations can be expressed in many ways. It is important to express load allocations in ways that can be implemented and monitored effectively. Where feasible, load allocations should be expressed in terms of:

- individual discharge location,
- individual land ownership, or
- individual land area subject to management jurisdiction by a single entity.

Where it is infeasible to set load allocations in these terms, load allocations may be expressed in the following ways:

- by pollutant discharge process (e.g. landslides),
- by land use type (e.g., rangeland),
- by land characteristics (e.g., geologic type)
- by discharger group (e.g. construction sites),
- by tributary subbasin area,
- by waterbody segment, or
- other discreet source description method approved by EPA.

In some TMDLs, it will be appropriate to express load allocations in terms of multiple classifications. Examples may include:

- lands managed for timber harvest with slopes greater than X% or less than X%,
- row crop lands located within 1000 feet of perennial streams or outside that zone, or
- unpaved roads within the A, B, and C subbasins of a larger watershed.

Federal regulations do not establish specific criteria which must be considered in dividing and allocating any available loading capacity between contributing sources. The State may consider a mix of the following allocation criteria (see Technical Support Document for Water Quality Based Permit Decisions (EPA, 1991) for more information):

- technical and engineering feasibility,
- cost or relative cost,
- economic impacts/benefits,
- cost effectiveness,
- fairness/equity,
- ability to monitor implementation and effectiveness,
- assurance and timeliness of attainment of the TMDL and water quality standards,
- relative source contributions, and/or
- other appropriate criteria.

7. Margin of Safety

The TMDL document must describe an explicit and/or implicit margin of safety for each pollutant [40 CFR 130.7(c)].

An explicit margin of safety can be provided by reserving (not allocating) a portion of the loading capacity identified for the waterbody for the pollutant of concern. An implicit margin of safety can be provided by making and documenting conservative assumptions used in the TMDL analysis. The TMDL submittal must provide a detailed explanation of the basis for margin of safety which shows why it is adequate to account for uncertainty in the TMDL. Where an implicit margin of safety is provided, the submittal should include a specific discussion of sources of uncertainty in the analysis and how individual analytical assumptions or other provisions adequately account for these specific sources of uncertainty.

Different analysis steps in TMDL development will involve different levels of uncertainty in the accuracy of results. TMDL developers should consider and document the types of uncertainty involved in each step of the analysis. Because TMDLs must account for uncertainties in the analysis, the different sources of uncertainty should be summarized. A margin of safety is required in the TMDL to account for uncertainty in the understanding of the relationship between pollutant discharges and water quality impacts. In any case, assumptions must be stated and the basis behind the margin of safety must be documented. The margin of safety is not meant to compensate for a failure to consider known sources.

8. Seasonal Variations and Critical Conditions

The TMDL document must describe the method used to account for seasonal variations and critical conditions (e.g., stream flows, pollutant loadings, and other water quality parameters) in the TMDL(s) [40 CFR 130.7(c)].

Pollutant discharges and associated effects on beneficial uses may vary in different years and at different times of the year. The TMDL developer should evaluate how seasonal or interannual variations in loadings, flows, pollutant fate and transport, pollutant effects, ecological conditions or other factors affect the waterbody of concern in TMDL. TMDLs are required to demonstrate how seasonal variations and critical conditions were accounted for in the TMDL analysis in order to ensure that the TMDL results in attainment of water quality standards throughout the year. The TMDL document must show how the TMDL accounts for seasonal variations and critical conditions concerning receiving water flow (e.g. low flow during drought periods), receiving water conditions (e.g. temperature), beneficial use impacts (e.g., key aquatic life stages), pollutant loadings (e.g., high flow nonpoint source runoff), and other environmental factors which affect the relationship between pollutant loading and water quality impacts. This element is required in order to ensure that the TMDL will protect the receiving water during the periods in which it is most sensitive to the impacts associated with the pollutant(s) of concern.

9. Public Participation

The TMDL package must document the provision of public notice and public comment opportunity concerning TMDL calculations; and explains how public comments were considered in the final TMDL(s) [40 CFR 130.7(c)(1)].

Minimum requirements for public participation for state adopted and EPA established TMDLs are discussed in the following section. However, there are additional ways of providing for public participation in TMDL development beyond the minimum. Table 1 on the following page summarizes three models of stakeholder participation and discusses some advantages and disadvantages of each model. These examples do not cover all approaches to providing for public participation but are intended to illustrate a range of viable public participation models. Although the State can address minimum federal requirements concerning public participation by providing a 30 day notice and comment period and preparing a comment responsiveness summary, EPA encourages that, where feasible, the State communicate with the public earlier in the process of developing a particular TMDL to discuss the TMDL approach and stakeholder involvement opportunities.

10. Technical Analysis

The TMDL document must provide an appropriate level of technical analysis supporting all TMDL elements [40 CFR 130.2(i) and 40 CFR 130.7(c)].

The State may include needed technical analysis in the TMDL document, submit copies of supporting documentation providing technical analysis supporting the TMDL, or cite documents in the State's administrative record which discuss the supporting technical analysis in detail. If the State cites documents as the basis for technical findings in the TMDL which are not submitted with the TMDL package, the TMDL document must clearly summarize the technical analysis supporting the findings concerning individual TMDL elements. In addition, the State should maintain these documents in its administrative record for review by EPA on request.

Table 1: Public Participation Models

Model	Characteristics	Advantages	Disadvantages
Public Notice and Comment	- provides formal opportunity to review proposed TMDL, may include public hearings - responses are provided to public comments in final TMDL or in a responsiveness summary - State or EPA explain how comments were considered in the final decision	- less time and resource intensive - satisfies minimum public participation requirements - avoids repetition of effort where TMDL based on previous, uncontroversial decisions	- interested parties will not hear about TMDL - reduces chance of local support and buy-in - developing comment responses can be time consuming and difficult - may be dissatisfying to stakeholders who want more involvement
Stakeholder Consultation Plus Public Comment Period	- developer meets several times with stakeholders during TMDL development - developer informs group of progress and draft analysis, seeks input	- involved stakeholders not taken by surprise - increases chances for local support/buy in - earlier identification of tough or contentious issues	- moderately time/resource intensive - may be dissatisfying to stakeholders who want more involvement - difficult to manage expectations
Extensive Stakeholder Collaboration Plus Public Comment Period	- stakeholders involved from outset in different TMDL elements - stakeholders may do substantial analysis, not just review state work - stakeholders may attempt to seek agreement on TMDL content	- best chances for local support/buy in - improves ability to identify and evaluate implementation measures - may reduce resources needed for analysis since other parties do some analysis	- very time/resource intensive - may be unrealistic to get consensus or agreement on TMDL content - problematic for TMDLs with tight, inflexible deadlines - may be unsatisfying to interested stakeholders-- extensive time commitments required may be infeasible for many interested groups

Requirements For The Phased Approach To TMDLs

EPA has described an approach to TMDL development in situations where data and information needed to determine the TMDL and associated allocations are limited. This "phased approach" to TMDLs enables States to adopt TMDLs and begin implementation while collecting additional information needed to review and, if necessary, revise TMDL elements based on new information (see Guidance for Water Quality Based Decisions-- The TMDL Process (EPA, 1991) for more information). For TMDLs developed under the "phased approach", the following additional element must be included in the TMDL submittal:

11. Monitoring and Review Plan

TMDLs developed under phased approach must identify specific implementation actions, monitoring plans and a schedule for considering revisions to the TMDLs.

EPA also recommends that any TMDL include a monitoring and review process whether it is developed pursuant to the phased approach or not.

Requirement Concerning Point/Nonpoint Source Allocation Practicability

For waters affected by both point source and nonpoint source discharges, TMDL documents must address the following additional requirement. Note that EPA has also established national policies concerning reasonable assurances as part of TMDL implementation plans, which are discussed in the implementation section of this guidance.

12. Showing of Practicability of Nonpoint Source Load Allocations

Where point source(s) receive less stringent wasteload allocations because nonpoint source reductions are expected and reflected in load allocations, the TMDL must include a demonstration that nonpoint source loading reductions needed to implement load allocations are actually practicable [40 CFR 130.2(i) and 122.44(d)].

This means that the load allocations are technically feasible and reasonably assured of being implemented in a reasonable period of time. Reasonable assurances may be provided through use of regulatory, non-regulatory, or incentive based implementation mechanisms as appropriate but must include an actual demonstration that the measures identified will actually obtain the predicted reductions and that the State is able to assure this result.

2.2 Other EPA Guidance Concerning TMDL Content

In addition to these minimum required elements, EPA recommends that all TMDLs should contain the following elements in order to facilitate public and EPA review of the TMDL:

Problem Statement

The process of problem definition identifies the context for TMDL development and describes the water quality standards issue(s) which prompted development of the TMDL. The problem statement should identify:

- name(s) and location(s) of waterbody segments for which the TMDL is being developed,
- the pollutant(s) for which the TMDL is being developed and information about why the pollutant(s) are being addressed,
- the specific applicable water quality standard(s) for those pollutants,
- a description of the water quality impairment or threat which necessitated TMDL development, and
- adequate background information about the watershed setting for the TMDL to help the reader understand the key water quality, pollutant discharge, land use, and resource protection issues in the watershed.

Administrative Record Keeping

An administrative record that supports development and approval of the TMDL should also be prepared. Components of the administrative record should include all materials used to develop the TMDL and make decisions, including any data or references that were used, records of any correspondence, and other background materials. Such a record is needed in order to ensure that the public has the opportunity to review documents which formed the basis for the TMDL. In addition, EPA may request access to documents upon which the State relied in developing a TMDL if necessary to determine whether a TMDL submittal complies with federal requirements. As discussed above under Technical Analysis, the State should maintain in its administrative record copies of technical documents which serve as the basis for one or more findings contained in the TMDL submittal to EPA.

2.3 Federal Requirements and Guidance Concerning TMDL Implementation

States are not currently required to include implementation plans as part of the TMDL submittal. However, federal regulations require States to incorporate TMDLs in the State Water Quality Management Plan along with adequate implementation measures to implement all aspects of the plan (including the TMDLs) [40 CFR 130.6]. Therefore, TMDL implementation measures must be identified by the State and submitted for EPA's review, either concurrent with the TMDL or afterward. EPA suggests that the implementation plan should be prepared and submitted concurrent with the TMDL. If the State plans to prepare the implementation plan after the TMDL, the State's TMDL submittal should provide a schedule for developing the implementation plan.[4] Federal regulations do not currently provide that EPA will establish an implementation plan for TMDLs established by EPA. However, EPA may make implementation recommendations as part of TMDLs it establishes. States should consider EPA's implementation recommendations at the time the State develops its implementation measures for the TMDL and should adopt these measures into the Basin Plan unless the State identifies alternative measures which are sufficient to implement the TMDL.

The State's TMDL implementation plan submittal should describe planned implementation actions or, where appropriate, specific process(es) and schedule(s) for determining future implementation actions. The implementation plan needs to be sufficient to implement all wasteload and load allocations in a reasonable period of time. TMDL(s) and implementation measures are formally incorporated into the water quality management plan through the state's established process for amending that plan. Water quality management plan revisions must be consistent with other existing provisions of the water quality management plan [40 CFR 130.6].

---

[4] As discussed in Section 2.4 below, the State of California's position is that State law usually requires the Regional Boards to adopt implementation provisions concurrent with TMDLs in order to meet State Basin Planning requirements for TMDL adoption.

Reasonable Assurances Concerning Implementation

EPA's national policy is that all TMDLs are expected to provide reasonable assurances that they can and will be implemented in a manner that results in attainment of water quality standards (EPA, 1997). This means that the wasteload and load allocations are technically feasible and reasonably assured of being implemented in a reasonable period of time. Reasonable assurances may be provided through use of regulatory, non-regulatory, or incentive based implementation mechanisms as appropriate.

TMDLs and NPDES Permits

Discharge permits issued under Clean Water Act Section 402 (the NPDES program) contain effluent limitations for individual pollutants. These effluent limitations must be consistent with any wasteload allocations developed as part of TMDLs approved or established by EPA. This provision applies to all types of NPDES permits (including stormwater and general permits). If these procedures are not addressed in the TMDL, the NPDES permit writer determines the specific method of assuring that a new or revised permit is consistent with its wasteload allocation at the time the permit is scheduled for issuance.

To avoid permitting problems, EPA recommends that the State evaluate how waste load allocations will be translated into NPDES permit limits as part of developing the TMDL implementation plan. EPA believes it is useful to do this concurrent with TMDL development. Consideration of permitting issues will also assist in evaluating the practicability of WLAs during the allocation step of TMDL development. Permitting issues which the State should consider in establishing WLAs include:

- whether WLAs and effluent limits will be expressed on a concentration and/or mass basis,
- whether pollutant trading is contemplated as part of the TMDL and WLAs,
- appropriate permit averaging periods,
- whether mixing zones are appropriate, and, if so, how they would be delineated, and
- ambient monitoring provisions.

TMDLs and Nonpoint Sources

There are few specific federal requirements concerning implementation of nonpoint source controls pursuant to load allocations. As discussed above, the State must demonstrate reasonable assurances that the load allocations will be (1) set at sufficient levels to attain Water Quality Standards and (2) implemented, if wasteload allocations were relaxed based on the expectation of nonpoint source reductions. EPA's national policy is that all implementation plans for all TMDLs will provide reasonable assurances that all wasteload and load allocations will be implemented in a timely manner. EPA recommends evaluating at a specific level how load allocations will be implemented as part of the TMDL implementation plan, and believes it is useful to do this concurrent with TMDL development. Consideration of potential nonpoint source management approaches and the effectiveness of available management practices will

assist in evaluating the practicability of load allocations and assessing whether there is reasonable assurance that the TMDL will be implemented and result in attainment of water quality standards.

2.4 State of California-Related Requirements

In addition to federal requirements, the Regional Water Quality Control Boards and State Water Resources Control Board are required to comply with various additional requirements under State law in order to develop, adopt, and submit a TMDL and associated implementation measures to EPA. These State-related requirements are summarized below in table 2, based on material provided to EPA by the State. The process through which the State develops these required materials is discussed in the following section. In addition, Appendix A to this guidance provides a legal opinion from the Office of Chief Counsel, State Water Resources Control Board, which describes economic considerations in TMDL development and basin planning which stem from State law.

EPA does not review TMDL submittals for compliance with State-related requirements, and they are listed here for information purposes only. Interested parties should contact the State or Regional Board TMDL contacts for more definitive guidance concerning State-related requirements.

Table 2: State Basin Planning Required Elements

Requirements For Basin Plan Amendment	Summary
Administrative Record	Record of information used to make the staff decision and only admissible evidence during legal challenge
Notification	Provide State Board staff of draft amendment for review of state board and Office of Administrative Law (OAL) requirements, State Board and EPA review of TMDL staff report draft
Index	List of contents, and number pages
Public Process	Evidence of meetings, sign in sheets, mailing lists
Public Comment	Comment letters from 45 days between Public draft presentation and Board presentation
Records cited	List of records on which amendment is based
Peer Review and report	Route through Division of Water Quality (DWQ) coordinator, allow time for technical peer review
TMDL introduction	Confirm that supporting material in chapter introduction is sufficient and diagrams and basin plan material are updated
CEQA check list	Documents no environmental impact assumption
Amendment	Copy as presented for Regional Board consideration (may be the same as required for printing and distribution below)
Transcript	Of regional board meeting where amendment was approved

Requirements For Basin Plan Amendment	Summary
Exhibit	Copies of those exhibits presented at hearing by staff and public
Late Public Comments	Summary of verbal responses to comments made at hearing and to those received after formal comment period
Economic Cost Analysis	Analysis of costs of agricultural controls, performance standards, and/or treatment requirements mandated by amendment (see Appendix A for details.)
Staff Report/TMDL	Rationale for amendment
Adopted Amendment	Adopted amendment and signed resolution
Printing and Distribution	Basin Plan update inserts mailed to current holders and updated 'record of amendments' page for insertion
Required Approvals and Concurrences	
Regional Water Board	approves TMDL and basin plan amendment
State Water Board	approves TMDL and basin plan amendment following Regional Board action
Office of Administrative Law	concurs that basin plan amendment meets State Administrative Procedures Act requirements
U.S. EPA	approves state submitted TMDL and basin plan amendment

3. Steps in TMDL Development and Approval

There are likely to be three approaches through which TMDLs are completed in California– (1) State adoption, (2) EPA establishment, and (3) State adoption following extensive 3rd party assistance in developing TMDL component parts. This section describes the procedural steps in completing TMDLs through these 3 approaches.

3.1 State-Adopted TMDLs

This approach entails preparation of a TMDL by Regional Board staff, approval by the Regional Board, approval by State Board, approval by Office of Administrative Law, and approval by U.S. EPA. The steps in this process are summarized in table 3 below.

Table 3: Steps in Developing and Adopting State-Adopted TMDLs

Step	Timing	Responsible Party
Develop draft TMDL/ Basin Plan Amendment(BPA) - usually involves detailed workplan and may involve significant stakeholder involvement	varies	Regional Board staff (often with substantial assistance from other parties)
Provide TMDL/BPA and record for peer review	varies	Regional Board staff
Peer review completed	within 60 days	Peer reviewer(s)
Respond to peer review	varies	Regional Board staff
Provide draft TMDL/BPA to EPA for review	varies	Regional Board and EPA staff
Open public comment period	45 days	Regional Board staff
Hold public hearing	varies	Regional Board
Adopt TMDL, considering public comments	varies	Regional Board
Transmit BPA/TMDL and record to State Board	varies	Regional Board staff
Prepare approval package for State Board	varies	State Board staff
Open comment period	30 days	State Board staff
Hold meeting to hear public comments	varies	State Board
Approve TMDL considering public comments	varies	State Board
Transmit BPA/TMDL and supporting record to Office of Administrative Law	varies	State Board Staff
Review BPA/TMDL for consistency with State Administrative Procedures Act	within 60 days	OAL staff
Transmit concurrence/comments to State Board	within 60 days	OAL staff
(If needed) Resolve OAL comments	varies	State and Regional Board staff
(If needed) obtain OAL concurrence	varies	State Board staff, OAL staff
Transmit final TMDL/BPA and record to EPA	varies	State Board staff
Approve or disapprove TMDL	30 days	EPA
If disapprove, establish TMDL	within 30 days after disapproval	EPA
Open comment period	30 days min.	EPA
Transmit final TMDL to State for inclusion in Basin Plan after considering public comments and making changes if needed	within 30 days after comment period	EPA

3.2 EPA-Established TMDLs

EPA's process for establishing a TMDL is more straightforward than the State's process and is summarized in table 4.

Table 4: EPA's Process for Establishing TMDLs

Step	Timeline	Responsible Party
Develop draft TMDL	varies	EPA staff, often with help from State or other parties
Public notice draft TMDL	30 day minimum	EPA staff
Hold public hearing if warranted	varies	EPA staff
Develop final TMDL, considering public comment	varies	EPA staff
Establish and transmit final TMDL to State for inclusion in Basin Plan with implementation measures	immediately upon establishment	EPA Division Director

3.3 Process Steps for Third Party Involvement in TMDL Development

Several TMDLs have been developed in California for which third parties (e.g., dischargers, land managers, or citizen groups) have prepared significant portions of the TMDL analysis or provided support for TMDL development. Third parties can assist in TMDL development in several capacities. They may include:

- developing significant work products with State and/or EPA oversight,
- administering stakeholder meetings and organizations,
- providing technical support for individual components of the TMDL,
- providing specific funding assistance for individual TMDL analysis elements, and
- providing expert review of specified components of TMDLs.

Table 5 suggests steps for more intensive involvement of third parties in TMDL development. EPA strongly recommends that these steps be followed in order to ensure that intensive third party involvement in TMDL development is productive. Only the State water quality agency or EPA are authorized to actually adopt or establish TMDLs, but third parties can assist a great deal in TMDL work in a well-managed process. Where a particular stakeholder group or discharger plays an enhanced role in TMDL development, the TMDL development process should provide specific opportunities for the Regional Board and other interested stakeholders to participate in the selection and application of the methods used to develop TMDL components. These extra opportunities for involvement in review of 3rd party efforts are needed to ensure that the selected approaches are valid and balanced.

Table 5: Steps for Involving Third Parties in TMDL Analysis

Step	Timeframe	Responsible Party
Contact Regional Board to discuss potential TMDL-related work (also contact EPA if consent decree TMDL involved)	as soon as possible	Third party organization with work conducted as part of a public process
Regional Board and Third Party establish written agreement specifying resource commitments, work to be done by third party, technical workplan,	as soon as possible	Regional Board and Third Party (and EPA if consent decree TMDLs involved)

Step	Timeframe	Responsible Party
milestones, interim deliverables, schedules, public involvement provisions, and project dependencies.		
Designate State staff contact who will work with Third Party throughout project to ensure work products are consistent with all TMDL requirements	as soon as possible	Regional Board staff
Neutral peer reviewers review technical approach	as soon as possible (can be done earlier)	peer reviewers identified and overseen by Regional Board, (also EPA if consent decree involved), third party funds
Adjust approach as needed to address peer review comments	varies	Third Party, with Regional Board oversight
Perform activities/analysis per workplan	per schedule	Third party with Regional Board staff oversight
Deliver interim/final products to Regional Board (and EPA if consent decree TMDLs involved)	per schedule	Third party with Regional Board oversight
Public review/adoption process as described above	see above	see above

3.4 How Does EPA Review and Establish TMDLs?

EPA Region 9 staff usually review draft TMDLs and provide comments to the State before the State adopts the TMDLs, in order to help ensure that the TMDLs include all federally-required elements.

The Clean Water Act and EPA regulations require EPA to review State-adopted TMDLs and either approve or disapprove the TMDLs within 30 days of final submission. EPA reviews TMDL submissions to ensure that:

- all TMDL elements required by the Clean Water Act and EPA regulations are present,
- adequate explanations and documentation are provided for each element, and
- the TMDL will result in attainment of applicable State water quality standards.

EPA Region 9 generally uses a checklist prepared by Region 9 to document its review of the TMDL submission (see Appendix B). The checklist identifies each TMDL element required by the Clean Water Act or EPA's regulations, briefly describes the element, and provides a brief explanation of EPA's analysis indicating that the element is or is not consistent with federal requirements. The checklist also addresses TMDL implementation elements in order to assist in review of State TMDL submissions which include implementation measures.

If EPA finds that all required elements are present and are adequately documented, and that the TMDL is therefore expected to result in attainment of water quality standards, EPA approves the TMDL. If any required element is missing or insufficiently documented, EPA attempts to clarify the submission during the 30 day review period. If the State does not provide

the missing TMDL element(s) or does not clarify or document the basis for its findings, EPA disapproves the TMDL.[5] If EPA disapproves the TMDL, it has 30 days to establish a TMDL which meets federal requirements.

EPA is not required to provide for public review and comment on its decision to approve or disapprove a State-established TMDL because the State provides the public with the opportunity to review and comment on the TMDL prior to State adoption of the TMDL. If EPA establishes a TMDL, EPA provides the public with an opportunity to review and comment on the TMDL, considers public comments concerning the EPA-established TMDL, and makes changes to the TMDL if warranted based on comments received from the public.

After EPA completes its review of the final TMDL submittal, staff complete a staff report, checklist, and decision letter. The Water Division Director is the official who actually makes the final decisions concerning TMDL submissions. The decision letter signed by the Water Division Director is transmitted along with the staff report and checklist to the Executive Director of the State Water Resources Control Board with a copy to the Executive Officer of the appropriate Regional Water Quality Control Board.

EPA sometimes establishes TMDLs without having disapproved a State TMDL submission (e.g., to meet court-ordered schedules or at the request of the State). EPA-established TMDLs must contain the minimum federally required elements mandated by the Clean Water Act and EPA regulations, and result in attainment of water quality standards. When EPA establishes a TMDL, it provides an opportunity for public review and comment on the TMDL, prepares a public comment responsiveness summary, and makes changes in the TMDL if needed based on comments received. The TMDL is established through the action of the Water Division Director. The final TMDL is transmitted to the Executive Director of the State Water Resources Control Board with a copy to the Executive Officer of the appropriate Regional Water Quality Control Board for inclusion in the Basin Plan by the State.

4. Additional Guidance for TMDL Development

4.1 Water Quality Standards and TMDLs

Under the Clean Water Act and EPA's regulations, the TMDL process is designed to implement existing water quality standards in waters where water quality is not good enough to meet those standards. In most situations, existing water quality standards will need to be applied in developing TMDLs. For many TMDLs, the State will need to interpret narrative objectives,

---

[5] If the State provides insufficient opportunities for public participation or does not describe how public comments were considered in the final TMDL, EPA may open a comment period and make its final decision following the close of the comment period, after considering comments received from the public.

use nonattainment, or (possibly) antidegradation policies quantitatively to develop TMDL numeric targets if no numeric standards are in effect or numeric standards are not designed to address the impairment of concern. Federal regulations do not require the state to adopt TMDL numeric targets as state water quality standards. To assist in interpreting narrative objectives, beneficial use designations, and/or antidegradation policies, TMDL writers should consult applicable California implementation procedures for water quality standards.

In some cases, it may be appropriate to reevaluate the appropriateness of water quality standards for the targeted waters. Separate federal regulations provide for modifying water quality standards for individual water bodies when specified showings can be made. Additional guidance documents concerning modification of water quality standards are listed in the references. As early in the process as possible, parties who are interested in seeking revisions of water quality standards on a site-specific basis should consult with Water Quality Standards program staff at EPA Region 9, the State Water Resources Control Board, and the appropriate Regional Water Quality Control Board to discuss the suitability of standards modifications in particular situations.

4.2 TMDL Planning and Project Management

Each TMDL project is different. Planning and managing a complex TMDL project can be difficult. The following checklist summarizes factors TMDL analysts should consider in initiating a TMDL project:

- How long to you have to complete the TMDL?
- Do you face resource constraints? What staff, contractor, or stakeholder resources are available? Are resources assured for future years?
- Can other agencies, stakeholders, or programs help you do the TMDL?
- How complex are the watershed setting and pollutant issues of concern?
- What information, data, and prior efforts are available regarding the watershed setting and pollutant of concern?
- What is the scope of the TMDL? What area and what pollutants are to be addressed?

EPA strongly encourages the State to develop detailed workplans to guide the technical analysis and stakeholder participation aspects of the TMDL before starting the TMDL. The State should distribute workplans to stakeholders for input if time and resources allow. The workplans should include specific information on technical methods, interim milestones in TMDL development, responsible parties, schedules, interim deliverables, and project dependencies. It is often useful to plan a TMDL timeline by working backwards from an existing decision deadline to determine how much time is actually available to develop the TMDL. In addition, the workplans should:

- include estimated resources/costs of the project and the specific method of funding to be used, including provisions for contract assistance where needed,
- factor in time for review of the draft TMDL by EPA and interested stakeholders,

- provide some flexibility to account for unforeseen events, and
- provide for each step prescribed in the State and federal administrative processes.

TMDL planners should assess whether it is feasible to coordinate with related program decisions/activities to reduce the amount of work done solely to support the TMDL decision. Examples of coordination opportunities include:

- standards revisions already planned or underway,
- discharge permitting decisions,
- rotating basin management approaches or other watershed management planning (if any),
- development of environmental impact statements or reports for planned projects, and
- other activity in watershed (e.g., hydropower licenses issued by Federal Energy Regulatory Commission, habitat conservation plans developed pursuant to Federal Endangered Species Act, Section 319 nonpoint source management projects).

In many locations in California, there is considerable interest in developing TMDLs through a "watershed approach". The State should consider the following factors which, in EPA's experience, are key to effectively melding TMDL development and locally focused watershed management planning:

- Regional Boards should clarify that TMDL (and perhaps other regulatory) decisions that will need to be made and establish timeframes (if any) for making these decisions.
- These efforts should start several years before a TMDL is scheduled for adoption because this approach generally takes substantial time to complete.
- The State should obtain agreement to ground rules by all participants, including ground rules with respect to regulatory deadlines.
- The State should secure firm commitments from stakeholders concerning participation, funding support, etc.
- The State should use existing stakeholder groups where feasible, if those groups are interested in working on TMDL issues.
- The group should develop a detailed schedule which contemplates key decisions and dependencies related to the minimum TMDL requirements and how they are completed.
- State water quality staff should participate fully as stakeholders and have the time and resources available which are necessary to do so.

5. Sources of Additional Information and Guidance

Further information concerning TMDL development can be obtained from EPA Region 9 by visiting the Region 9 web site at www.epa.gov/region09/water/tmdl or by calling the Region 9 Water Division office at (415) 744-2012. In addition, information concerning the national TMDL program and national reference documents can be obtained by visiting the EPA Headquarters web site at www.epa.gov/OWOW/tmdl. Several cited references which provide useful guidance concerning TMDLs and related programs are listed below, and can be obtained or will soon be available through the EPA Headquarters web site.

EPA, 1990. *Technical Support Document for Water Quality-Based Toxics Control.* EPA 505-2-90-001.

EPA, 1991. *Guidance for Water Quality-Based Decisions: The TMDL Process.* EPA 440/4-91-001.

EPA, 1996. *Catalog of Publications: Office of Science and Technology.* EPA-820-R-96-001. (Wasteload Allocation Guidance Series).

EPA, 1997. New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs). Memorandum from Robert Perciasepe to Regional Administrators, August 8, 1997.

EPA, 1999. *Protocol for Developing Sediment TMDLs.* EPA 841-B-99-004, October, 1999.

EPA, 1999. *Protocol for Developing Nutrient TMDLs.* EPA 841-B-99-007, November, 1999.

Documents which should assist in considering modifications of water quality standards on a site specific basis include:

EPA 1983-84. *Technical Support Manual: Waterbody Surveys and Assessments for Conducting Use Attainability Analyses* Vol. 1, EPA 440/4-86-037, 1983; Vol. 2 Estuarine Systems, EPA 440/4-86-038, 1984; Vol. 3: Lake Systems, EPA 440/4-86-039, 1984.

EPA Region 9, 1992. Guidance for Modifying Water Quality Standards and Protecting Effluent-Dependent Ecosystems. Interim Final, June 1992.

EPA, 1993. *Water Quality Standards Handbook.* 2nd Edition. EPA 823-B-93-002, September 1993.

EPA, 1994. *Interim Guidance on Determination and Use of Water Effect Ratios for Metals.* EPA 823-B-94-001, February 1994.

EPA, 1995. *Interim Economic Guidance for Water Quality Standards: Workbook.* EPA 823/B-95-002.

Appendix A: "Economic Considerations in TMDL Development and Basin Planning"-- An Opinion From Office of the Chief Counsel, California State Water Resources Control Board

TMDL analysts with the State and Regional Water Boards and other interested stakeholders have requested clarification concerning economic analysis considerations in the TMDL process. Neither the federal Clean Water Act nor EPA regulations require that any particular form of economic analysis must be conducted to meet federal requirements for TMDL adoption. The Office of Chief Counsel, State Water Resources Control Board, issued the following memorandum addressing economic analysis requirements under State law. The Office of Chief Counsel is solely responsible for the content of the memorandum. EPA had no role in its preparation, and we are including it with the guidance solely to convey the State's legal analysis of State requirements.

Winston H. Hickox
Secretary for Environmental Protection

State Water Resources Control Board

Office of Chief Counsel
901 P Street • Sacramento, California 95814 • (916) 657-2154
Mailing Address: P.O. Box 100 • Sacramento, California 95812-0100
FAX (916) 653-0428 • Internet Address: http://www.swrcb.ca.gov

Gray Davis
Governor

TO: Stefan Lorenzato
TMDL Coordinator
Division of Water Quality

FROM: Sheila K. Vassey
Senior Staff Counsel
OFFICE OF CHIEF COUNSEL

DATE:

SUBJECT: ECONOMIC CONSIDERATIONS IN TMDL DEVELOPMENT AND BASIN PLANNING

ISSUE

When are the Regional Water Quality Control Boards (Regional Water Boards or Boards) legally required to consider economics in Total Maximum Daily Load (TMDL)[1] development and water quality control planning (basin planning)?[2]

CONCLUSION

The Regional Water Boards, in general, adopt TMDLs as basin plan amendments. Under state law, there are three triggers for Regional Water Board consideration of economics or costs in basin planning. These are:

- The Regional Water Boards must estimate costs and identify potential financing sources in the basin plan before implementing any agricultural water quality control program.
- The Boards must consider economics in establishing water quality objectives that ensure the reasonable protection of beneficial uses.

[1] See 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7.

[2] See Wat. Code §§ 13240-13247.

- The Boards must comply with the California Environmental Quality Control Act (CEQA)[3] when they amend their basin plans. CEQA requires that the Boards analyze the reasonably foreseeable methods of compliance with proposed performance standards and treatment requirements. This analysis must include economic factors.

Economic factors come into play under federal law when the Regional Water Boards designate uses. Specifically, the Boards can decide not to designate, dedesignate, or establish a subcategory of, a potential use where achieving the use would cause substantial and widespread economic and social impact.

DISCUSSION

I. STATE LAW

Under federal and state law, the Regional Water Boards are required to include TMDLs in their basin plans.[4] There are three statutory triggers for an economic or cost analysis in basin planning. These triggers are:

- adoption of an agricultural water quality control program;
- adoption of water quality objectives; and
- adoption of a treatment requirement or performance standard (CEQA).

Each category is briefly discussed below.

A. Agricultural Water Quality Control Program

Agricultural activities are significant sources of nonpoint source pollution. Many waterbodies in the state are impaired due to one or more agricultural operations. As a result, the Regional Water Boards will be faced with developing programs to control agricultural activities, as part of TMDL development.

Under the Porter-Cologne Water Quality Control Act (Porter-Cologne),[5] before a Regional Water Board implements an agricultural water quality control program, the Board must identify

---

[3] Pub. Resources Code § 21000 et seq.

[4] See 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(d)(2) (TMDLs must be incorporated into the state's water quality management plan. In California the basin plans are part of the state's water quality management plan.); Wat. Code §§ 13050(j), 13242.

[5] Wat. Code § 13000 et seq.

the total cost of the program and potential sources of financing.[6] This information must be included in the basin plan.

The statute does not define "agricultural" programs. The Legislature has, however, defined agricultural activities elsewhere to mean activities that generate "horticultural, viticultural, forestry, dairy, livestock, poultry, bee, or farm product[s]."[7] Because "agricultural" programs under Porter-Cologne are not restricted to particular activities, presumably, the Legislature intended that the term be interpreted broadly. Thus, the Regional Water Boards should identify costs and financing sources for agricultural water quality control programs" covering not only typical farming activities but also silviculture, horticulture, dairy, and the other listed activities.

The statute focuses only on costs and financing sources. The statute does not require the Regional Water Boards to do, for example, a cost-benefit analysis or an economic analysis.

B. Water Quality Objectives

Porter-Cologne requires that the Regional Water Boards take "economic considerations", among other factors, into account when they establish water quality objectives.[8] The objectives must ensure the reasonable protection of beneficial uses and the prevention of nuisance.[9]

Attached to this memorandum is a 1994 memorandum containing guidance on the consideration of economics in the adoption of water quality objectives.[10] The key points of this guidance are:

- The Boards have an affirmative duty to consider economics when adopting water quality objectives.
- At a minimum, the Boards must analyze: (1) whether a proposed objective is currently being attained; (2) if not, what methods are available to achieve compliance with the objective; and (3) the costs of those methods.

---

[6] *Id.* § 13141.

[7] Food & Agr. Code §§ 564(a), 54004.

[8] Wat. Code § 13241. The other factors include the past, present, and probable future beneficial uses of water; environmental characteristics of the hydrographic unit under consideration; water quality conditions that could reasonably be achieved through the coordinated control of all factors affecting water quality in the area, the need for developing housing, and the need to develop and use recycled water.

[9] *Ibid.*

[10] Memorandum, dated January 4, 1994, from William R. Attwater, Chief Counsel, to Regional Water Board Executive Officers and Attorneys, entitled "Guidance on Consideration of Economics in the Adoption of Water Quality Objectives".

- If the economic consequences of adoption of a proposed objective are potentially significant, the Boards must state on the record why adoption of the objective is necessary to ensure the reasonable protection of beneficial uses or the prevention of nuisance.

- The Regional Water Boards can adopt objectives despite significant economic consequences.

- The Boards are not required to do a formal cost-benefit analysis.

C. CEQA

The Regional Water Boards must comply with CEQA when they amend their basin plans.[11] The State Resources Agency has certified the basin-planning program as exempt from the requirement to prepare environmental documents under CEQA.[12] In lieu of preparing an environmental impact report or negative declaration, the Boards must comply with the State Water Resources Control Board's regulations on exempt regulatory programs when they amend their basin plans.[13] These regulations require the Boards to prepare a written report that analyzes the environmental impacts of proposed basin plan amendments.[14] In general, CEQA requires the Regional Water Boards to consider economic factors only in relation to physical changes in the environment.[15]

CEQA also has specific provisions governing the Regional Water Boards' adoption of regulations, such as the regulatory provisions of basin plans that establish performance standards or treatment requirements. The Boards must do an environmental analysis of the reasonably foreseeable methods of compliance with those standards or requirements.[16] They must consider economic factors in this analysis.

CEQA does not define "performance standard"; however, the term is defined in the rulemaking provisions of the Administrative Procedure Act.[17] A "performance standard" is a regulation that describes an objective with the criteria stated for achieving the objective.[18]

---

[11] See Pub. Resources Code § 21080.

[12] See Cal. Code Regs., tit. 14, § 15251(g).

[13] See Cal. Code Regs., tit. 23, §§ 3775-3782.

[14] *Id.* § 3777.

[15] See Cal. Code Regs., tit. 14, § 15064(e).

[16] Pub. Resources Code § 21159.

[17] Gov. Code §§ 11340-11359.

[18] *Id.* § 11342(d).

TMDLs will typically include performance standards. TMDLs normally contain a quantifiable target that interprets the applicable water quality standard. They also include wasteload[19] allocations for point sources, and load allocations[20] for nonpoint sources and natural background to achieve the target.[21] The quantifiable target together with the allocations may be considered a performance standard. Thus, the Regional Water Board must identify the reasonably foreseeable methods of compliance with the wasteload and load allocations and consider economic factors for those methods. This economic analysis is similar to the analysis for water quality objectives discussed above. That is, the Regional Water Board should determine: (1) whether the allocations are being attained; (2) if not, what methods of compliance are reasonably foreseeable to attain the allocations; and (3) what are the costs of these methods.

II. FEDERAL LAW

Under federal law, economics can be considered in designating potential beneficial uses. Specifically, the federal water quality standards regulations allow a state to dedesignate, to decide not to designate, or to establish a subcategory of a potential beneficial use on economic grounds. To rely on this basis, the state must demonstrate that attaining the use is infeasible because the controls necessary to attain the use "would result in substantial and widespread economic and social impact."[22]

The states can take this action only for potential uses. These are uses that do not meet the definition of an "existing use". Existing uses are those uses actually attained in the water body on or after November 28, 1975.[23]

Attachment

---

[19] See 40 C.F.R. § 130.2(g). A wasteload allocation is the portion of the receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution.

[20] See *id.* § 130.2(g). A load allocation is the portion of the receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources.

[21] See *id.* § 130.2(i). A TMDL is the sum of the individual wasteload and load allocations.

[22] See *id.* § 131.10(g)(6).

[23] *Id.* § 131.3(e).

Appendix B: EPA Region 9 TMDL Review Checklist

EPA Region 9 uses this checklist to review TMDLs submitted for EPA Region 9 approval to ensure that the TMDLs meet all the requirements of the Clean Water Act and EPA's regulations concerning TMDL content. Because many TMDL submissions from California and other states also include TMDL implementation measures pursuant to EPA's regulatory requirements at 40 CFR 130.6, the checklist also includes review criteria for TMDL implementation measures. EPA regulations do not require the submission of implementation measures at the same time as TMDLs are submitted.

State: **Waterbodies:**
Pollutant(s): **Date of State Submission:**
Date Received By EPA: **EPA Reviewer:**

TMDL Review Criteria (per Clean Water Act Section 303(d) and 40 CFR 130.2 and 130.7)	Approved	Comments
1. Submittal Letter: State submittal letter indicates final TMDL(s) for specific water(s)/pollutant(s) were adopted by state and submitted to EPA for approval under 303(d).		
2. Water Quality Standards Attainment: TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.		
3. Numeric Target(s): Submission describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. Numeric water quality target(s) for TMDL identified, and adequate basis for target(s) as interpretation of water quality standards is provided.		
4. Source Analysis: Point, nonpoint, and background sources of pollutants of concern are described, including the magnitude and location of sources. Submittal demonstrates all significant sources have been considered.		
5. Allocations: Submittal identifies appropriate wasteload allocations for point sources and load allocations for nonpoint sources. If no point sources are present, wasteload allocations are zero. If no nonpoint sources are present, load allocations are zero.		
6. Link Between Numeric Target(s) and Pollutant(s) of Concern: Submittal describes relationship between numeric target(s) and identified pollutant sources. For each pollutant, describes analytical basis for conclusion that sum of wasteload allocations, load allocations, and margin of safety does not exceed the loading capacity of the receiving water(s).		
7. Margin of Safety: Submission describes explicit and/or implicit margin of safety for each pollutant.		

8. Seasonal Variations and Critical Conditions: Submission describes method for accounting for seasonal variations and critical conditions in the TMDL(s)		
9. Public Participation: Submission documents provision of public notice and public comment opportunity; and explains how public comments were considered in the final TMDL(s).		
10. Technical Analysis: Submission provides appropriate level of technical analysis supporting TMDL elements.		
Note: **The following criteria do not apply to all TMDLs, but must be applied in the situations noted.**		
11. Monitoring Plan for TMDLs Under Phased Approach (where phased approach is used): TMDLs developed under phased approach identify implementation actions, monitoring plan and schedule for considering revisions to TMDL.		
12. Reasonable Assurances (for waters affected by both point and nonpoint sources): Where point source(s) receive less stringent wasteload allocations because nonpoint source reductions are expected and reflected in load allocations, implementation plan provides reasonable assurances that nonpoint implementation actions are sufficient to result in attainment of load allocations in a reasonable period of time. Reasonable assurances may be provided through use of regulatory, non-regulatory, or incentive based implementation mechanisms as appropriate.		
Implementation Plan Review Criteria (per Clean Water Act Section 303(e) and 40 CFR 130.6)		
13. Clear Implementation Plan: Submittal describes planned implementation actions or, where appropriate, specific process and schedule for determining future implementation actions. Plan is sufficient to implement all wasteload and load allocations in reasonable period of time. TMDL(s) and implementation measures are incorporated into the water quality management plan. Water quality management plan revisions are consistent with other existing provisions of the water quality management plan.		

EXHIBIT "3"

Winston H. Hickox
Secretary for
Environmental
Protection

State Water Resources Control Board

Office of Chief Counsel
901 P Street • Sacramento, California 95814 • (916) 657-2154
Mailing Address: P.O. Box 100 • Sacramento, California 95812-0100
FAX (916) 653-0428 • Internet Address: http://www.swrcb.ca.gov

Gray Davis
Governor

TO: Stefan Lorenzato
TMDL Coordinator
Division of Water Quality

FROM: Sheila K. Vassey
Senior Staff Counsel
OFFICE OF CHIEF COUNSEL

DATE: OCT 27 1999

SUBJECT: ECONOMIC CONSIDERATIONS IN TMDL DEVELOPMENT AND BASIN PLANNING

ISSUE

When are the Regional Water Quality Control Boards (Regional Water Boards or Boards) legally required to consider economics in Total Maximum Daily Load (TMDL)[1] development and water quality control planning (basin planning)?[2]

CONCLUSION

The Regional Water Boards, in general, adopt TMDLs as basin plan amendments. Under state law, there are three triggers for Regional Water Board consideration of economics or costs in basin planning. These are:

- The Regional Water Boards must estimate costs and identify potential financing sources in the basin plan before implementing any agricultural water quality control program.
- The Boards must consider economics in establishing water quality objectives that ensure the reasonable protection of beneficial uses.

[1] See 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7.

[2] See Wat. Code §§ 13240-13247.

- The Boards must comply with the California Environmental Quality Control Act (CEQA)[3] when they amend their basin plans. CEQA requires that the Boards analyze the reasonably foreseeable methods of compliance with proposed performance standards and treatment requirements. This analysis must include economic factors.

Economic factors come into play under federal law when the Regional Water Boards designate uses. Specifically, the Boards can decide not to designate, dedesignate, or establish a subcategory of, a potential use where achieving the use would cause substantial and widespread economic and social impact.

DISCUSSION

I. STATE LAW

Under federal and state law, the Regional Water Boards are required to include TMDLs in their basin plans.[4] There are three statutory triggers for an economic or cost analysis in basin planning. These triggers are:

- adoption of an agricultural water quality control program;
- adoption of water quality objectives; and
- adoption of a treatment requirement or performance standard (CEQA).

Each category is briefly discussed below.

A. Agricultural Water Quality Control Program

Agricultural activities are significant sources of nonpoint source pollution. Many waterbodies in the state are impaired due to one or more agricultural operations. As a result, the Regional Water Boards will be faced with developing programs to control agricultural activities, as part of TMDL development.

Under the Porter-Cologne Water Quality Control Act (Porter-Cologne),[5] before a Regional Water Board implements an agricultural water quality control program, the Board must identify

---

[3] Pub. Resources Code § 21000 et seq.

[4] See 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(d)(2) (TMDLs must be incorporated into the state's water quality management plan.); Wat. Code §§ 13050(j), 13242.

[5] Wat. Code § 13000 et seq.

the total cost of the program and potential sources of financing.[6] This information must be included in the basin plan.

The statute does not define "agricultural" programs. The Legislature has, however, defined agricultural activities elsewhere to mean activities that generate "horticultural, viticultural, forestry, dairy, livestock, poultry, bee, or farm product[s]."[7] Because "agricultural" programs under Porter-Cologne are not restricted to particular activities, presumably, the Legislature intended that the term be interpreted broadly. Thus, the Regional Water Boards should identify costs and financing sources for agricultural water quality control programs" covering not only typical farming activities but also silviculture, horticulture, dairy, and the other listed activities.

The statute focuses only on costs and financing sources. The statute does not require the Regional Water Boards to do, for example, a cost-benefit analysis or an economic analysis.

B. Water Quality Objectives

Porter-Cologne requires that the Regional Water Boards take "economic considerations", among other factors, into account when they establish water quality objectives.[8] The objectives must ensure the reasonable protection of beneficial uses and the prevention of nuisance.[9]

Attached to this memorandum is a 1994 memorandum containing guidance on the consideration of economics in the adoption of water quality objectives.[10] The key points of this guidance are:

- The Boards have an affirmative duty to consider economics when adopting water quality objectives.
- At a minimum, the Boards must analyze: (1) whether a proposed objective is currently being attained; (2) if not, what methods are available to achieve compliance with the objective; and (3) the costs of those methods.

---

[6] *Id.* § 13141.

[7] Food & Agr. Code §§ 564(a), 54004.

[8] Wat. Code § 13241. The other factors include the past, present, and probable future beneficial uses of water; environmental characteristics of the hydrographic unit under consideration; water quality conditions that could reasonably be achieved through the coordinated control of all factors affecting water quality in the area, the need for developing housing, and the need to develop and use recycled water.

[9] *Ibid.*

[10] Memorandum, dated January 4, 1994, from William R. Attwater, Chief Counsel, to Regional Water Board Executive Officers and Attorneys, entitled "Guidance on Consideration of Economics in the Adoption of Water Quality Objectives".

- If the economic consequences of adoption of a proposed objective are potentially significant, the Boards must state on the record why adoption of the objective is necessary to ensure the reasonable protection of beneficial uses or the prevention of nuisance.
- The Regional Water Boards can adopt objectives despite significant economic consequences.
- The Boards are not required to do a formal cost-benefit analysis.

C. CEQA

The Regional Water Boards must comply with CEQA when they amend their basin plans.[11] The State Resources Agency has certified the basin-planning program as exempt from the requirement to prepare environmental documents under CEQA.[12] In lieu of preparing an environmental impact report or negative declaration, the Boards must comply with the State Water Resources Control Board's regulations on exempt regulatory programs when they amend their basin plans.[13] These regulations require the Boards to prepare a written report that analyzes the environmental impacts of proposed basin plan amendments.[14] In general, CEQA requires the Regional Water Boards to consider economic factors only in relation to physical changes in the environment.[15]

CEQA also has specific provisions governing the Regional Water Boards' adoption of regulations, such as the regulatory provisions of basin plans that establish performance standards or treatment requirements. The Boards must do an environmental analysis of the reasonably foreseeable methods of compliance with those standards or requirements.[16] They must consider economic factors in this analysis.

CEQA does not define "performance standard"; however, the term is defined in the rulemaking provisions of the Administrative Procedure Act.[17] A "performance standard" is a regulation that describes an objective with the criteria stated for achieving the objective.[18]

---

[11] See Pub. Resources Code § 21080.

[12] See Cal. Code Regs., tit. 14, § 15251(g).

[13] See Cal. Code Regs., tit. 23, §§ 3775-3782.

[14] *Id.* § 3777.

[15] See Cal. Code Regs., tit. 14, § 15064(e).

[16] Pub. Resources Code § 21159.

[17] Gov. Code §§ 11340-11359.

[18] *Id.* § 11342(d).

TMDLs will typically include performance standards. TMDLs normally contain a quantifiable target that interprets the applicable water quality standard. They also include wasteload[19] allocations for point sources, and load allocations[20] for nonpoint sources and natural background to achieve the target.[21] The quantifiable target together with the allocations may be considered a performance standard. Thus, the Regional Water Board must identify the reasonably foreseeable methods of compliance with the wasteload and load allocations and consider economic factors for those methods. This economic analysis is similar to the analysis for water quality objectives discussed above. That is, the Regional Water Board should determine: (1) whether the allocations are being attained; (2) if not, what methods of compliance are reasonably foreseeable to attain the allocations; and (3) what are the costs of these methods.

II. FEDERAL LAW

Under federal law, economics can be considered in designating potential beneficial uses. Specifically, the federal water quality standards regulations allow a state to dedesignate, to decide not to designate, or to establish a subcategory of a potential beneficial use on economic grounds. To rely on this basis, the state must demonstrate that attaining the use is infeasible because the controls necessary to attain the use "would result in substantial and widespread economic and social impact."[22]

The states can take this action only for potential uses. These are uses that do not meet the definition of an "existing use". Existing uses are those uses actually attained in the water body on or after November 28, 1975.[23]

Attachment

---

[19] See 40 C.F.R. § 130.2(g). A wasteload allocation is the portion of the receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution.

[20] See *Id.* § 130.2(g). A load allocation is the portion of the receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources.

[21] See *Id.* § 130.2(i). A TMDL is the sum of the individual wasteload and load allocations.

[22] See *Id.* § 131.10(g)(6).

[23] *Id.* § 131.3(e).

Chron

State of California

Memorandum

To : Regional Water Board Executive Officers

Regional Water Board Attorneys

Date: JAN -4 1994

From : William R. Attwater
Chief Counsel
OFFICE OF THE CHIEF COUNSEL
STATE WATER RESOURCES CONTROL BOARD
901 P Street, Sacramento, CA 95814
Mail Code: G-8

Subject: GUIDANCE ON CONSIDERATION OF ECONOMICS IN THE ADOPTION OF WATER QUALITY OBJECTIVES

ISSUE

What is required of a Regional Water Quality Control Board (Regional Water Board) in order to fulfill its statutory duty to consider economics when adopting water quality objectives in water quality control plans or in waste discharge requirements?

CONCLUSION

A Regional Water Board is under an affirmative duty to consider economics when adopting water quality objectives in water quality control plans or, in the absence of applicable objectives in a water quality control plan, when adopting objectives on a case-by-case basis in waste discharge requirements. To fulfill this duty, the Regional Water Board should assess the costs of the proposed adoption of a water quality objective. This assessment will generally require the Regional Water Board to review available information to determine the following: (1) whether the objective is currently being attained; (2) what methods are available to achieve compliance with the objective, if it is not currently being attained; and (3) the costs of those methods. The Regional Water Board should also consider any information on economic impacts provided by the regulated community and other interested parties.

If the potential economic impacts of the proposed adoption of a water quality objective appear to be significant, the Regional Water Board must articulate why adoption of the objective is necessary to assure the reasonable protection of beneficial uses of state waters, despite the potential adverse economic consequences. For water quality control plan amendments, this

JAN -4 1994

discussion could be included in the staff report or resolution for the proposed amendment. For waste discharge requirements, the rationale must be reflected in the findings.

DISCUSSION

A. Legal Analysis

1. Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, Water Code Section 13000 et seq. (Porter-Cologne Act or Act), the State Water Resources Control Board (State Water Board) and the Regional Water Boards are the principal state agencies charged with responsibility for water quality protection. The State and Regional Water Boards (Boards) exercise this responsibility primarily through the adoption of water quality control plans and the regulation of waste discharges which could affect water quality. See Water Code Secs. 13170, 13170.2, 13240, 13263, 13377, 13391.

Water quality control plans contain water quality objectives, as well as beneficial uses for the waters designated for protection and a program of implementation to achieve the objectives. Id. Sec. 13050(j). In the absence of applicable water quality objectives in a water quality control plan, the Regional Water Board may also develop objectives on a case-by-case basis in waste discharge requirements. See id. Sec. 13263(a).[1]

When adopting objectives either in a water quality control plan or in waste discharge requirements, the Boards are required to exercise their judgment to "ensure the reasonable protection of beneficial uses and the prevention of nuisance": Id. Secs. 13241, 13263; see id. Sec. 13170. The Porter-Cologne Act recognises that water quality may change to some degree without

---

1 The focus of this memorandum is limited to an analysis of the Boards' obligation to consider economics when adopting water quality objectives either in water quality control plans or, on a case-by-case basis, in waste discharge requirements. This memorandum does not discuss the extent to which the Boards' are required to consider the factors specified in Water Code Section 13241 in other situations. Specifically, this memorandum does not discuss the applicability of Section 13241 to the development of numeric effluent limitations, implementing narrative objectives contained in a water quality control plan. Further guidance on the latter topic will be developed at a later date.

causing an unreasonable effect on beneficial uses. Id. The Act, therefore, identifies factors which the Boards must consider in determining what level of protection is reasonable. Id.[2] These factors include economic considerations. Id.[3]

The legislative history of the Porter-Cologne Act indicates that "[c]onservatism in the direction of high quality should guide the establishment of objectives both in water quality control plans and in waste discharge requirements". Recommended Changes in Water Quality Control, Final Report of the Study Panel to the [State Water Board], Study Project--Water Quality Control Program, p. 15 (1969) (Final Report). Objectives should "be tailored on the high quality side of needs of the present and future beneficial uses". Id. at 12. Nevertheless, objectives must be reasonable, and economic considerations are a necessary part of the determination of reasonableness. "The regional boards must balance environmental characteristics, past, present and future beneficial uses, and economic considerations (both the cost of providing treatment facilities and the economic value of development) in establishing plans to achieve the highest water quality which is reasonable." Id. at 13.

2. Senate Bill 919.

The Boards are under an additional mandate to consider economics when adopting objectives as a result of the recent enactment of Senate Bill 919. 1993 Cal. Stats., Chap. 1131, Sec. 8, to be codified at Pub. Res. Code, Div. 13, Ch. 4.5, Art. 4. The legislation, which is

---

2 *Other factors which must be considered include:*

(a) Past, present, and probable future beneficial uses of water;
(b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto;
(c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area;
(d) The need for developing housing within the region;
(e) The need to develop and use recycled water.

3 *See also Water Code Section 13000 which mandates that activities and factors which may affect water quality "shall be regulated to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible" (emphasis added).*

effective January 1, 1994, amended the California Environmental Quality Control Act, Public Resources Code Section 21000 et seq. (CEQA), to require that, whenever the Boards adopt rules requiring the installation of pollution control equipment or establishing a performance standard or treatment requirement, the Boards must conduct an environmental analysis of the reasonably foreseeable methods of compliance. This analysis must take into account a reasonable range of factors, including economics. For the reasons explained above, the latter requirement is duplicative of existing requirements under the Porter-Cologne Act regarding consideration of economics.

B. Recommendation

The meaning of the mandate to "consider economics" in the Porter-Cologne Act is not entirely clear. It is clear that the Porter-Cologne Act does not specify the weight which must be given to economic considerations. Consequently, the Boards may adopt water quality objectives even though adoption may result in significant economic consequences to the regulated community. The Porter-Cologne Act also does not require the Boards to do a formal cost-benefit analysis.

The Porter-Cologne Act does impose an affirmative duty on the Boards to consider economics when adopting water quality objectives. The Boards probably cannot fulfill this duty simply by responding to economic information supplied by the regulated community. Rather, the Boards should assess the costs of adoption of a proposed water quality objective. This assessment will normally entail three steps. First, the Boards should review any available information on receiving water and effluent quality to determine whether the proposed objective is currently being attained or can be attained. If the proposed objective is not currently attainable, the Boards should identify the methods which are presently available for complying with the objective. Finally, the Boards should consider any available information on the costs associated with the treatment technologies or other methods which they have identified for complying with a proposed objective.[4]

---

4 See, for example, Managing Wastewater In Coastal Urban Areas. National Research Council (1993). This text provides data on ten technically feasible wastewater treatment technologies, which can be used to make comparative judgments about performance and to estimate the approximate costs of meeting various effluent discharge standards, including standards for toxic organics and metals.

In making their assessment of the cost impacts of a proposed objective, the Boards are not required to engage in speculation. Rather, the Boards should review currently available information. In addition, the Boards should consider, and respond on the record, to any information provided by dischargers or other interested persons regarding the potential cost implications of adoption of a proposed objective.

If the economic consequences of adoption of a proposed water quality objective are potentially significant, the Boards must articulate why adoption of the objective is necessary to ensure reasonable protection of beneficial uses. If the objective is later subjected to a legal challange, the courts will consider whether the Boards adequately considered all relevant factors and demonstrated a rational connection between those factors, the choice made, and the purposes of the Porter-Cologne Act. See California Hotel & Motel Assn. v. Industrial Welfare Com., 25 Cal.3d 200, 212, 157 Cal.Rptr. 840, 599 P.2d 31 (1979).

Reasons for adopting a water quality objective, despite adverse economic consequences, could include the sensitivity of the receiving waterbody and its beneficial uses, the toxicity of the regulated substance, the reliability of economic or attainability data provided by the regulated community, public health implications of adopting a less stringent objective, or other appropriate factors. These factors may also include the legislative directive that a "margin of safety [ ] be maintained to assure the protection of all beneficial uses." Final Report, p. 15 and App. A, p. 59.

If objectives are proposed for surface waters and adverse economic consequences stemming from adoption of the objectives could be avoided only if beneficial uses were downgraded, the Boards should address whether dedesignation would be feasible under the applicable requirements of the Clean Water Act and implementing regulations. See 40 C.F.R. Sec. 131.10. Dedesignation is feasible only for potential, rather than existing, uses. See id. Sec. 131.10(g). If dedesignation of potential beneficial uses is infeasible, the Boards should explain why, e.g., that there is a lack of data supporting dedesignation.[5]

5. It should also be noted that, even if dedesignation of potential beneficial uses is feasible, in the great majority of cases it will not have any significant effect on the selection of a proposed objective. This is so because the proposed objective will be necessary to protect existing beneficial uses, which cannot be dedesignated.

JAN - 4 1994

The State or Regional Water Board's rationale for determining that adoption of a proposed objective is necessary to protect water quality, despite adverse economic consequences, must be discernible from the record. This reasoning could be included in the staff report or in the resolution adopting a proposed water quality control plan amendment. When objectives are established on a case-by-case basis in waste discharge requirements, the rationale must be included in the findings.

bbarrera
SKVassey/dlheryford/(12-24-93)
dhery220/VASSEY/econ.cons.01

City of Del Mar

January 22, 2010

Via E-mail

Mr. Wayne Chiu
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

City of Del Mar Comments on the Revised Total Maximum Daily Loads for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek)

Dear Mr. Chiu:

The City of Del Mar (City) appreciates the opportunity to provide comments on the Revised Total Maximum Daily Loads (TMDL) for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria Project I TMDL) being considered by the San Diego Regional Water Quality Control Board (Regional Board) on February 10, 2010. The City understands the importance of this TMDL, and is especially cognizant of the importance of water quality protections. However, we do have specific concerns about approaches being taken under this proposed TMDL. As such, the City is submitting the following comments for consideration by the Regional Board and its staff.

1) Our technical staff has reviewed, and concurs with, the comments and recommendations for proposed changes to the Indicator Bacteria Project I TMDL which have been submitted to the Regional Board by the County of San Diego. The comments and recommendations prepared by the County of San Diego address many of the same concerns that the City has in regard to this proposed TMDL.

2) The Pacific Ocean Shoreline, Miramar Reservoir was delisted for bacteria in the most recently adopted water quality impaired list or 303(d) listing, dated October 25, 2006. The listing was last approved by the State Water Resources Control Board to reflect new data and information in accordance with the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Listing Policy). The fact sheet for the Pacific Ocean Shoreline at Miramar Reservoir HA recommended the delisting of the segment using the weight of evidence and in

compliance with the Listing Policy. The City recognizes that Section 303(d)(3) of the Clean Water Act states that,

> *"for the specific purpose of developing information, each State shall identify all waters within its boundaries which it has not identified under paragraph (I)(A) and (I)(B) of this subsection and estimate for such water the total maximum daily load […]."*

However, the City firmly believes that the inclusion of this previously delisted water body will result in valuable municipal and state resources being spent on a project that will not provide any benefit to water quality comparable to the anticipated expenditures. Limiting the Indicator Bacteria Project I TMDL to 303(d) listings allows the City to focus its resources on high priority water impairments, and future TMDLs, rather than on a segment that has effectively shown attainment of water quality objectives.

3) If the delisted Pacific Ocean Shoreline, Miramar Reservoir segment remains a part of this proposed TMDL, the City respectfully requests that the Load Reduction Plan requirements be revised. Specifically, the City requests that the following language be added to the second paragraph on Page A65:

> "For areas that are no longer on the List of Water Quality Limited Segments (303(d) List), Phase I and II MS4 dischargers and Caltrans need not prepare Bacteria Load Reduction Plans for their discharges in these watersheds, providing that attainment of WQOs continues to be demonstrated."

4) Page A40 states that, "Municipal (Phase I and Phase II) MS4s and Caltrans are the only point sources that have been assigned WLAs". However, the table on page A59 also lists the owners/operators of small MS4s as responsible Municipalities in all of the watersheds included in this Resolution. It is unclear in many instances throughout the Resolution as to whether Phase II MS4s (non-Municipal) are subject to certain requirements because they are not specifically listed. Therefore, the City respectfully requests that Regional Board staff review the Resolution to ensure that all Phase II MS4 (municipal and non-municipal) dischargers are included in the requirements applicable to Phase I MS4 dischargers and Caltrans. For example, Phase II MS4 discharges should be added to the Compliance Schedule on page A66 and be required to develop and submit Bacteria Load Reduction Plans (BLRPs). This language change will ensure that smaller MS4s with a high potential for discharge of bacteria loads are also included in this TMDL.

5) The City also requests that owners/operators of small MS4s be added to the Table on pages A69 and A70 as a responsible party for Items 6-13, 16, and 21.

If you should have any questions regarding these comments please contact me directly at (858) 755-9313 x172, or by email at CleanWater@delmar.ca.us.

Sincerely,

JOSEPH M. DE STEFANO II, M.Sc., CPP, CCIS™, CSI
Clean Water Manager
City of Del Mar

JMD:KLB:ns

0 Attachment(s)

cc: Mr. Todd Snyder, Watershed Planning Manager, County of San Diego, Department of Public Works, Watershed Planning Program, 5201 Ruffin Rd, Ste P, San Diego, CA 92123

Mr. Mikhail Ogawa, P.E., Mikhail Ogawa Engineering, 3525 Del Mar Heights Road, #429, San Diego, CA 92130

File

This page left intentionally blank

City of Encinitas

January 21, 2010

Mr. Wayne Chiu
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA. 92123-4340

SUBJECT: COMMENTS ON THE REVISED TOTAL MAXIMUM DAILY LOADS FOR INDICATOR BACTERIA, PROJECT I – TWENTY BEACHES AND CREEKS IN THE SAN DIEGO REGION, UPDATED NOVEMBER 25, 2009

Dear Mr. Chiu,

The City of Encinitas appreciates the opportunity to provide comments on the Revised Total Maximum Daily Loads (TMDL) for Indicator Bacteria, Project I. City staff has carefully reviewed the proposed TMDL, and has developed specific comments that are presented below.

In addition, with this letter the City of Encinitas expressly supports the comments provided to the San Diego Regional Water Quality Control Board by the County of San Diego in their forthcoming comment letter to be submitted under separate cover.

We trust that the Regional Board will give full consideration to the comments and recommendations provided herein as well as those that have been provided by the region and we thank you in advance for your attention to these matters.

Sincerely,

Erik Steenblock

Clean Water Program Manager, City of Encinitas

cc: Peter Cota-Robles, Director of Engineering
Phil Cotton, City Manager

CITY OF ENCINITAS: COMMENTS ON THE REVISED TOTAL MAXIMUM DAILY LOADS (TMDL) FOR INDICATOR BACTERIA, PROJECT I – TWENTY BEACHES AND CREEKS IN THE SAN DIEGO REGION, UPDATED NOVEMBER 25, 2009

1. **Comprehensive Load Reduction Plans:** The Revised TMDL for Indicator Bacteria allows the Phase 1 MS4s to submit Comprehensive Load Reduction Plans (CLRPs) outlining a Best Management Practice (BMP) Program that will be capable of achieving the necessary load required to attain the TMDLs in the receiving water within 18 months after the effective date of these TMDLs.

   If the Phase 1 MS4s choose to submit CLRPs, the compliance targets for any additional constituents of concern have defined. Therefore, if BMPs are designed to support water quality objectives for Bacteria, the Phase 1 MS4s will not know what the allowable loads are for any of the additional constituents of concern that may be included in their CLRPs.

2. **Wet Weather Exceedance Frequencies:** The Revised TMDL for Indicator Bacteria identifies exceedance frequencies for wet weather expressed as percentages. Wet weather exceedance frequencies are calculated by dividing the number of wet weather days that exceed the single sample maximum REC-1 WQOs by the total number of wet weather days during the rainy season.

   This formula makes it difficult for the responsible parties to assess compliance with the TMDL until the end of the wet season and thereby does not provide the responsible parties with an opportunity to take appropriate actions or make timely changes to their programs.

Tel 760/633-2600 FAX 760/633-2627, 505 South Vulcan Avenue, Encinitas, CA 92024 TDD 760/633-2700

CITY OF
LA MESA
JEWEL of the HILLS

PUBLIC WORKS DEPARTMENT

January 21, 2010

Mr. Wayne Chiu
San Diego Regional Water Quality Control Board
9174 Sky Park Court Ste 100
San Diego, CA 92123

Subject: Revised Total Maximum Daily Loads for Indicator Bacteria Project, Twenty Beaches and Creeks in the San Diego Region

Mr. Chiu,

Upon review of the project documents, the City of La Mesa has the following comments.

1. On Page A62 of Attachment A of the Tentative Resolution R9-2010-0001 and on Page 131 of the Draft Technical Report, the City of La Mesa is listed as a responsible municipality for Forrester Creek, within the Mission San Diego and Santee HSA watershed heading. No portion of the City of La Mesa is tributary to Forrester Creek. Please remove the City of La Mesa from the Responsible Municipalities grouping for this listing.

2. The City of La Mesa supports the comments and proposed changes issued by the County of San Diego regarding the revised TMDL for Indicator Bacteria Project I. The comments issued by the County of San Diego highlight several different portions of the revised TMDL documents which are inconsistent and are not based on scientifically valid principles or assumptions. We urge Regional Board staff to make changes to the revised TMDL documents as outlined in the comment letter submitted by the County of San Diego.

Thank you,

Joe Kuhn
Storm Water Program Manager
City of La Mesa

8130 ALLISON AVENUE • LA MESA, CA 91942 • TEL: 619.667.1166 FAX: 619.667.1380

This page left intentionally blank

January 22, 2010

Wayne Chiu
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego CA 92123-4340

RE: BACTERIA TMDL I FOR BEACHES AND CREEKS

Dear Mr. Chiu:

As municipal representative of the San Juan Hydrologic Unit on the Stakeholder Advisory Group (SAG) for the Bacteria TMDL I for Beaches and Creeks, and as a member of the stakeholder group that worked on the companion Reference System and Anti-degradation Approach/Natural Source Exclusion Basin Plan Amendment (RSAA/NSE BPA), I appreciate this opportunity to comment on the draft Resolution No. R9-2010-0001, amending the Basin Plan to incorporate the Project I Revised Bacteria TMDLs for 20 Beaches and Creeks.

My comments are presented as specific suggested errata changes to the proposed Resolution and Attachments, focused on ensuring that the understandings developed over several years' work with the Stakeholder Groups on the Technical Reports and RSAA/NSE BPA are not lost in translation. In particular, these proposed errata changes acknowledge the following:

- The limitations of the 2002 data set used to calculate allowable exceedances, which did not include any data on reference creeks (only reference beaches). The Southern California Coastal Waters Research Project (SCCWRP) has developed data since 2002 showing that reference creek exceedances are substantially higher than beach exceedances in both wet and dry weather. For example, Enterococcus geomean exceedance rates in dry weather in Orange County and San Diego County creeks ranged from 75% to 100% (see table excerpt below), compared to lesser exceedances of the single-sample standard, and the 0% exceedance allowed in the TMDL as presented. The dry-weather TMDLs as presented do not recognize that any load allocation for natural creek flows is warranted – essentially denying that the creeks existed before urbanization.

	Exceedance %*		
	E. coli	Enterococci	Total coliform
Daily (single-sample)			
Orange County	12.9%	38.7%	3.2%
San Diego County	5.3%	47.4%	0%
Monthly (geomean)			
Orange County	25%	75%	46.2%
San Diego County	0%	100%	80%

*Excerpt from SCCWRP 2008, *Fecal indicator bacteria levels during dry weather in southern California reference streams,* Tiefenthaler et al.

- With respect to wet weather, a full understanding of the "final" wet weather load allocations in the first approved TMDL I document – wherein the open space load allocations at the critical point of discharge to the beach were modeled as being typically on the order of 50+ times higher than the TMDLs calculated on WQOs without the reference system adjustment - implies that concentrations in reference creeks would be expected to exceed WQOs almost continuously during wet weather (compared to a 22% exceedance frequency at ocean beach receiving waters). When the RSAA/ESA BPA language was developed, it was recognized that the lack of dry or wet weather exceedance frequencies specific to creeks would need to be remedied, and the BPA provisions were intentionally crafted to accommodate this need.
- The TMDL states that the reference condition from Leo Carillo Beach is applied to estimate the allowable exceedance frequency at beaches and creeks in this TMDL. However, the wet-weather exceedance frequency at Leo Carrillo is based on a rain event of 0.l" inches and the following 72 hours, not 0.2" and the following 72 hours, as described in Bacteria TMDL I. It is scientifically invalid to use a reference condition for a different storm size, because the exceedance frequency for storm events of 0.2 inch or greater and 72 hours later is not known (although logic suggests it would likely be higher than for a 0.1" storm threshold). It is recommended that wet weather be defined as any instance of rain 0.1" or greater and the following 72 hours, until and unless data are developed to substantiate a valid reference exceedance frequency for storms of 0.2" or greater.
- Furthermore, the dry-weather reference condition from Leo Carrillo beach was split into summer dry and winter dry seasons by the LARWQCB, in recognition that the reference beach exhibited exceedance days during winter dry conditions (even considering that Leo Carillo's 'winter dry' definition excluded the storms between 0.1" and 0.2", which have been defined as "dry weather" for purposes of the San Diego Bacteria TMDL I). For consistency, scientific accuracy, and fairness, it is recommended that Bacteria TMDL I separate the dry period into summer and winter seasons, instead of setting the dry weather exceedance frequency limit to zero during all dry periods. This is appropriate because winter rains cause the groundwater table to rise and infiltrate more rapidly into streams; and because actual REC-1 use is dramatically more common during summer dry

weather. The allowable exceedance frequencies at Leo Carrillo, which are 3% during winter dry weather and zero percent during summer dry weather, should be applied for Bacteria TMDL I beaches, until and unless data are developed to substantiate a different reference condition.

- Both the TMDL Technical Report and the RSAA/NSE BPA anticipate the re-calculation of both the wet and dry weather TMDLs will be appropriate for certain conditions and may vary among target water bodies, based on better exceedance data and findings of other special studies. For example, certain target water bodies (such as the mouth of San Juan Creek, where large numbers of waterfowl naturally congregate in a small, shallow area) will likely never meet the proposed numeric targets and will need to have recourse to the Natural Source Exclusion approach outlined in the RSAA/NSE BPA.
- Both the TMDL Technical Report and the RSAA/ESA BPA (as well as EPA policy) indicate that compliance can be determinable by adherance to a schedule of BMP improvements and monitoring provisions to be set forward in a Bacteria Load Reduction Plan, to be separately developed by the Copermittees for Board approval within 18 months of the effective date of the TMDL, upon OAL approval. The BLRP provisions may serve as input to the WQBELs for purposes of incorporation into NPDES requirements.
- Neither the TMDL Technical Report nor the RSAA/ESA BPA present any substantiation, justification or peer review of scientific basis for the proposed "hybrid" wet (+ dry) weather 0% exceedance 30-day geomean target that appears in this draft Basin Plan amendment for the TMDL. This proposed compliance standard is inappropriate both conceptually and mathematically, both for beaches and (even more so) for creeks.

In the spirit of teamwork and in order to minimize effort required by RWQCB staff to accommodate the recommended corrections, specific errata languge changes to Resolution No. R9-2010-0001 are detailed below, in order as they appear in the text. This letter is being submitted electronically (hardcopy to follow) to facilitate the changes.

A. **Resolution paragraph 10, page 4**: "……At the time Resolution No. R9-2007-0044 was adopted, allowing exceedances of the REC-1 WQOs during either wet or dry weather was not authorized by the Basin Plan. The San Diego Water Board, however, recognized that exceedances of the REC-1 WQOs during both wet and dry weather was likely, and may be partially due to bacteria loads contributed from natural sources. Therefore, the San Diego Water Board agreed to develop a Reference System Anti-Degradation Approach/Natural Source Exclusion Basin Plan Amendment, which would authorize an allowance for wet or dry weather exceedances of the REC-1 WQOS based on the ~~wet weather~~ natural exceedance frequencies observed in a comparable reference system; and/or based on the effective control of all anthropogenic sources of indicator bacteria, coupled with a demonstration that residual indicator bacteria densities are not indicative of an elevated human health risk. For this reason, adoption of the Bacteria TMDLs Project I Basin Plan amendment was made contingent upon the future consideration of a separate Reference System Antidegradation Approach/Natural Source Exclusion (RSAA/NSE) Basin Plan amendment by the San Diego Water Board. It was assumed

that upon the subsequent adoption of the RSAA/NSE Basin Plan Amendment, Bacteria TMDLs Project I would be appropriately revised and brought back to the San Diego Water Board for re-adoption. The key revision would include incorporation of the reference system approach into the final wet weather TMDLs….."

B. **Resolution paragraph 11, page 4**: "….Specifically, it authorizes the San Diego Water Board to develop bacteria TMDLs that allow exceedances of the ~~single sample maximum bacteria~~ WQOs ~~during wet weather~~ for the purpose of accounting for natural, uncontrollable sources of bacteria (e.g., birds, wildlife, soil, etc.). Such sources, by themselves and in the absence of human activities, have been found to cause exceedances of the ~~single sample maximum~~ WQOs ~~during wet weather~~…."

C. **Resolution paragraph 12, page 5: "**….Additionally, the San Diego Water Board needed to make the revisions that had been committed to upon adoption of the RSAA/NSE Basin Plan amendment, as described in finding 10."

D. **Resolution paragraph 14, page 5**: "….Revisions to the original Bacteria TMDLs Project I Basin Plan amendment include: 1) finalizing the TMDLs to include allowable wet-weather exceedances of the REC-1 WQOs using the reference system approach authorized by the RSAA/NSE Basin Plan amendment adopted under Resolution No. R9-2008-0028 (see finding 11)…."

E. Resolution paragraph 17, page 8: "….Exceedances of bacteria REC-1 WQOs may be allowed within the context of bacteria TMDLs using a reference system approach or natural sources exclusion approach. Re-calculation of the controllable WLAs or LAs and/or re-setting of the exceedance frequency numeric targets is allowable contingent upon the demonstration of more accurate reference system or natural residual exceedance frequencies for specific target water bodies, conditions or seasons, subject to the approval of the San Diego Water Board."

F. Resolution paragraph 18, page 8: "….The numeric targets selected for these bacteria TMDLs are based primarily on the REC-1 WQOs for indicator bacteria contained in the Ocean Plan and/or Basin Plan (finding 16), and allowable wet-weather exceedance frequencies using a reference system approach (findings 11 and 17). Different numeric targets (i.e. numeric WQOs and allowable exceedance frequencies) were used to calculate dry weather TMDLs and wet weather TMDLs, respectively. The numeric targets were selected based on the applicability of the Ocean Plan and/or Basin Plan REC-1 WQOs (i.e., Pacific Ocean shoreline or inland surface water) and the allowable exceedance frequencies of the REC-1 WQOs in ~~available~~ reference systems for the different weather conditions (i.e. wet weather or dry weather), based on data available at the time the TMDL process was initiated.

G.**Resolution paragraph 22, page 10:** "….For developing the dry weather TMDLs, a major underlying assumption ~~is~~ was that there is no discharge of surface runoff, thus no discharge of bacteria, expected from land uses associated with the Caltrans, Agriculture and Open Space land use categories during dry weather. Because no discharge of surface

runoff ~~is~~ was expected from these land use categories during summer or winter dry weather, they were assigned dry weather WLAs and LAs of zero. The dry weather TMDLs were assigned entirely to the Municipal MS4s land use category as dry weather WLAs, meaning only discharges of bacteria loads from the Municipal MS4s land use category to the receiving waters are expected or allowed ~~from the Municipal MS4s land use category~~ during dry weather. In calculating the WLAs and LAs, the possible contribution of subsurface or groundwater flows to bacteria loads in receiving waters during winter or summer dry weather was not accounted for in any land use category. However, an allowable exceedance frequency of 3% was established specifically for winter dry weather in recognition of conditions at the reference beach, where exceedances were observed during winter dry weather due to creek flows and bacteria loads swollen by antecedent rainfall."

H.Resolution paragraph 26, page 11: "…WQBELs may be expressed as numeric effluent limitations, when feasible; other quantifiable metrics, such as as exceedance days in receiving waters; and/or as a best management practice (BMP) program of expanded or better-tailored BMPs. The WQBELs will likely need to include a BMP program to achieve the load reductions required to attain the TMDLs in the receiving waters. Prior to incorporation into the NPDES requirements, the Municipal MS4s and Caltrans will be required to submit Bacteria or Comprehensive Load Reduction Plans outlining a proposed BMP program that will be capable of achieving the necessary controllable load reductions required to attain the TMDLs in the receiving water. The Municipal MS4s and Caltrans will be responsible for reducing their controllable bacteria loads and/or demonstrating that their discharges are not causing exceedances of the numeric WQOs ~~and~~ beyond the allowable exceedance frequencies in the receiving waters, and/or are not causing elevated risks to human health."

I. Resolution paragraph 28, page 12: "…At the end of the dry weather TMDL compliance schedule, the 30-day geometric mean REC-1 WQOs for summer dry weather days must be met 100 percent of the time in the receiving waters; and during winter dry weather days must not be exceeded in the receiving waters more frequently than the allowable exceedance frequencies. At the end of the wet weather TMDL compliance schedule, the single sample maximum ~~and 30-day geometric mean~~ REC-1 WQOs must not be exceeded in the receiving waters more frequently than the allowable exceedance frequencies."

J.Attachment A, paragraph 3, page A6: "…WQBELs may be expressed as numeric effluent limitations, when feasible; other quantifiable metrics such as exceedance days in receiving waters; and/or as a best management practice (BMP) program of expanded or better-tailored BMPs."

K.Attachment A, page A11: - Item #4 is missing something at the end of the sentence, probably the location of the TMDL: "4. Total Maximum Daily Loads (TMDLs) for Total Nitrogen and Total Phosphorus in the..>>>?????"

L. Attachment A, page A13, Footnote 2: "Wet weather days defined as days with rainfall events of 0.1" ~~0.2"~~ or greater and the following 72 hours."

M.Attachment A, page A13, Footnote 3: "Dry weather days defined as days with less than 0.1 ~~0.2~~ inches of rainfall observed on each of the previous 3 days. Winter dry weather days defined as dry weather days between October 1 and April 30. Summer dry weather days defined as dry weather days between May 1 and September 30."

N. Attachment A, page A14, paragraph 2: "…The numeric targets used to calculate summer dry weather TMDLs include a zero percent allowable exceedance frequency of the REC-1 geometric mean WQOs. The numeric targets to calculate winter dry weather TMDLs include a 3 percent allowable excedance frequency of the REC-1 geometric mean WQOs."

O.Attachment A, page A14, paragraph 3: "…Allowable exceedance days are calculated based on the allowable exceedance frequencies and the total number of wet days or winter dry days in a year."

P. Footnote 4, page A14: "In the calculation of the wet weather TMDLs, the San Diego Regional Board chose to apply the 22 percent allowable exceedance frequency as determined for Leo Carillo Beach in Los Angeles County. At the time the wet weather watershed model was developed, the 22 percent exceedance frequency from Los Angeles County was the only reference beach exceedance frequency available. No exceedance frequency data were available at reference creeks in wet weather, but the model suggests that creek wet-weather exceedances may be substantially higher than at beaches. The 22 percent allowable exceedance frequency used to calculate the wet weather TMDLs is justified because the San Diego Region ~~watersheds'~~ beaches' exceedance frequencies will likely be close to the value calculated for Leo Carillo Beach, and is consistent with the exceedance frequency that was applied to beaches by the Los Angeles Regional Board."

Q. Footnote 5, page 14: "Limited water quality data available from San Diego Region reference ~~systems~~ beaches when the TMDL project was initiated, indicated that exceedances of the single sample WQOs during dry weather conditions are uncommon at reference beaches. ~~Furthermore, if the exceedance of the single sample WQOs during dry weather is unlikely, are even more unlikely.~~ More recent data developed by SCCWRP in Orange and San Diego Counties indicate that dry-weather exceedances may seasonally be much more common in reference creeks. Depending on the magnitude and consistency of the single-sample exceedances, exceedances of the geometric mean may be more or less common than single-sample exceedances."

R. Attachment A, Page A18, paragraph 3: "… The concentration based TMDLs and allowable exceedance frequencies will be used to determine compliance with the TMDLs in the receiving waters…."

S. Attachment A, Page 16, footnote (a) to Wet Weather Numeric Targets Table: "(a) Percent of wet days (i.e. rainfall events of 0.1 ~~0.2~~ inches or greater and the following 72 hours)…."

T. Attachment A, page A16, Dry Weather Numeric Targets Table:

"Dry Weather Numeric Targets

Indicator Bacteria	Numeric Target (MPN/100 mL)	Summer Allowable Exceedance Frequency	Winter Allowable Exceedance Frequency
Fecal coliform	200	0%	3%
Total coliform	1,000	0%	3%
Enterococci	35/33	0%	3%

(a). Percent of dry days (i.e., days with less than 0.1 ~~0.2~~ inch of rainfall observed on each of the previous 3 days) allowed to exceed the dry weather numeric targets. Summer is defined as May 1 through September 30 and winter is defined as October 1 through April 30."

U. Attachment A, page A18, paragraph 2: "…the dry weather steady-state model-predicted flows at the critical location during the dry days of the critical wet year in combination with the dry weather numeric targets were used to calculated the mass-based monthly allowable dry weather bacteria loads, or mass-based dry weather TMDLs, for summer dry weather. For the 7 months (October-April) of winter dry weather, the 3% allowable exceedance-day frequency was used to pro-rate the existing excess monthly bacteria load, and added to the summer monthly load based on the numeric targets."

V. Attachment A, page A20, paragraph 2: "…All of the summer dry weather mass-load based TMDLs were calculated using a 0 percent exceedance frequency. All of the winter dry weather mass-load based TMDLs were calculated using a 3 percent exceedance frequency. These allowable exceedance frequencies were used to calculate the numer of wet and dry weather allowable exceedance days during the critical wet year."

W. Attachment A, page A23, paragraph 3: "The summer dry weather mass-load based TMDLs were assigned entirely to discharges from MS4 land uses because the runoff that transports bacteria loads to surface waters during dry weather are expected to occur only in urban areas. The mass load associated with the allowable exceedance frequency of 3% established for winter dry weather is assignable to open space because it represents natural loading from undeveloped reference systems…."

X. Page A24, add to end of paragraph 1 (or add new separate paragraphs): "Ultimately, controllable point and nonpoint sources must reduce their anthropogenic loads so the concentration based wet weather and dry weather TMDLs, which are based on the numeric REC-1 WQOs I the Basin Plan and allowable reference exceedance frequencies, can be met during wet weather and dry weather conditions during each year. Meeting the wet weather and dry weather numeric targets in the ~~discharge and/or~~ receiving water will indicate the TMDLs, WLAs, and/or LAs have been met.

After all anthropogenic sources of indicator bacteria have been controlled such that anthropogenic sources do not cause exceedances of the indicator bacteria water quality objectives, exceedances of the indicator bacteria water quality objectives may alternatively be allowed based on the residual exceedances in the target water body. The residual exceedances in the target water body define the background level of exceedance due to natural sources, under the Natural Sources Exclusion approach allowable under the RSAA/NSE Basin Plan amendment adopted under Resolution No. R9-2008-0028. This approach further requires that natural sources be identified and quantified, and dischargers demonstrate that residual indicator bacteria densities are not indicative of elevated human health risk.

The San Diego Water Board will evaluate the appropriateness of the specific approaches and exceedances or exceedance frequencies to be allowed under any proposed recalculation of WLAs or LAs or revisions of numeric targets using either an alternative reference system model or a natural source exclusion model."

Y. Attachment A, page A27, revisions to selected columns in Table, Summary of Dry Weather Existing and Allowable Indicator Bacteria Loads: *Note, the correction in the first column heading shown below is typographical. The calculated inputs in the other columns are an example based on the first waterbody in the table (San Joaquin Hills HAS and Laguna Hills HSA); these calculations should be conducted for all waterbodies in the table.*

Allowable Numeric Objective Load (Billion MPN/~~year~~**month**	Total Dry Days in Critical Year	Allowable Exceedance Frequency (Winter 7 months Only)	Allowable Dry Exceedance Days in Critical Year (Winter 7 months Only)*	Allowable Exceedance Load (billion MPN/Month, Winter 7 months only)**	Total allowable load = TMDL (billion MPN/month) (Winter/Summer)
227	296	3%	4.38	52.4	279/227
1,134	296	3%	4.38	264	1,398/1,134
40	296	3%	4.38	47.6	87.6/40

*Calculated as 3% x (total dry days in year – 150 summer days).
**Calculated as (existing load – allowable numeric objective load)/30 days x (allowable winter exceedance days/7 months)

Z. Attachment A, page A33, revisions to selected columns in Nonpoint Source/Open Space section of the Table, Dry Weather Fecal Coliform Bacteria Existing Loads, TMDLs, WLA, Las Expressed as Monthly Loads (Billion MPN/month *The calculated inputs are an example based on the first waterbody in the table (San Joaquin Hills HAS and Laguna Hills HSA); these calculations should be conducted for all waterbodies in the table. The data comes from the calculations done above (see comment Y).*

Existing load (Winter/summer)	Load Allocation (winter/summer)	Reduction Required
52.4/0	52.4/0	0%
264/0	264/0	0%
47.6/0	47.6/0	0%

AA. Page A36, bulletpoint #4: "…any discharge to a stormwater conveyance system that is not composed entirely of "storm water", or exempt categories of non-stormwater, is prohibited unless authorized by the Regional Board…."

BB. Page A37, bulletpoint #3,: "The numeric targets for dry weather TMDLs consist of the REC-1 30-day geometric mean WQOs, with ~~and~~ a 0 percent allowable exceedance frequency for summer dry weather and a 3% allowable exceedance frequency for winter dry weather."

CC. Page A37, **bulletpoint #4:** "The TMDL calculations are based on either the single sample maximum WQO (for wet weather) or 30-day geometric mean WQOs (for dry weather), but both the single sample maximum and the 30-day geometric mean numeric WQOs must be met in the receiving waters during dry weather."

DD. Page A37, add additional bulletpoint under Numeric Targets: "Re-calculation of the TMDLs, WLAs or LAs and/or re-setting of the exceedance frequency numeric targets is allowable contingent upon the demonstration of more accurate reference system or natural residual exceedance frequencies for specific target water bodies, conditions or seasons, subject to the approval of the San Diego Water Board."

EE. Page A38, Add to the third bulletpoin under Linkage Analysis: "The dry weather existing mass loads and allowable mass loads (i.e.e, dry weather mass-load based TMDLs) are calculated assuming surface runoff is generated only by anthropogenic activities and discharged from specific land use categories to receiving waters. The possible contribution of subsurface or groundwater flows to bacteria loads in receiving waters during dry weather was not accounted for in any land use category."

FF. Page A41, **paragraph3, bulletpoint 1**: "….WQBELs may be expressed as numeric effluent limitations, when feasible; other quantifiable metrics such as exceedance days in receiving waters; and/or as a BMP program of expanded or better-tailored BMPs."

GG.Page A42, paragraph 2: "…If, however, the receiving water limitations are not being met in the receiving waters, the Phase I MS4s will be responsible for reducing their bacteria loads and/or demonstrating that controllable anthropogenic discharges from the Phase I MS4s are not causing the exceedances, as outlined below in the monitoring for TMDL Compliance section below."

HH. PageA51, and page A52, Tables, Dry Weather Days section of Receiving Water Limitations for Beaches; and page A52, Tables, Dry Weather Days section of Receiving Water Limitations for Beaches: *Change and add selected columns and footnotes:*

Summer Dry Weather Allowable Exceedance Frequency	Winter Dry Weather Allowable Exceedance Frequency
0%	3%
0%	3%
0%	3%

*a. Wet weather days defined as days with rainfall events of ~~0.2~~ 0.1 inches or greater and the following 72 hours.
b. Dry weather days defined as days with less than ~~0.2~~ 0.1 inches of rainfall observed on each of the previous 3 days.

II.Page A52, paragraph 2: "….(i.e., the running geomean on dry weather days in a 30-day period shall not exceed the 30-day geometric mean REC-1 WQOs more than 0 percent of the time in summer dry weather, or 3 percent of the time in winter dry weather."

JJ. Page A53, paragraph 1: "…If at the end of the dry weather TMDL compliance schedule the receiving waters exceed the 30-day geometric mean REC-1 WQOs more than 0 percent of the time in summer or 3% of the time in winter, the municipal MS4s are responsible for…."

KK. Page A53, paragraph 3, compliance with Wet Weather TMDLs: "At the end of the wet weather TMDL compliance schedule, the bacteria densities in the receiving waters for all wet weather days cannot exceed the single sample maximum REC-1 WQOs more than the allowable exceedance frequency. ~~In addition, the bacteria densities must be less than or equal to the 30-day geometric mean REC-1 WQOs 100 percent of the time (i.e, both dry and wet weather days in a 30-day period shall not exceed the 30-day geometric mean REC-1 WQOs more than 0 percent of the time."~~

LL Page A53, paragraph 4: "As described in the minimum monitoring components above, at least one sample should be collected within 24 hours of the end of a storm event that occurs during the rainy season (i.e., October 1 through April 30). Dischargers are expected to propose a wet weather compliance sampling and interpretation protocol in their Bacteria Load Reduction Plans, for approval by the San Diego Water Board. If an alternative protocol is not submitted or approved, the following shall govern: If only one sample is collected for a storm event, the bacteria density for every wet weather day associated with that storm event shall be equal to the results from that one sample. If more than one sample is collected for a storm event, but not on a daily basis, the bacteria density for all the wet weather days not sampled shall be equal to the highest bacteria density result reported from samples collected…."

MM. Page A53, Footnote: "Defined as days with a storm with at least ~~0.2~~ 0.1 inches of rainfall and the 72 hour period after the storm event."

NN. Page A54, paragraph 2: ~~"The data collected for compliance with the dry weather TMDLs, described above, shall be used in addition to the data collected for wet weather with the wet weather TMDLs to calculate the wet weather 30-day geometric mean. If at the end of the wet weather TMDL Compliance Schedule the receiving waters exceed the 300-day geometric mean REC-1 WQOs at any time, all controllable sources are responsible for demonstrating their discharges into the receiving waters are not causing the exceedances, or they will be considered out of compliance."~~

OO. Page A55, next to last paragraph: "Between the effective date of these TMDLs and the end of the TMDL Compliance Schedules, monitoring is also required to demonstrate progress toward achieving and complying with the TMDLs, WLAs, and LAs. Progress can be demonstrated by timely implementation of BMPs identified in the Bacteria Load Reduction Plans, and/or with reductions in exceedance frequencies in the receiving waters until the allowable exceedance frequencies ultimately are achieved at the end of the TMDL Compliance Schedules. Demonstrating progress toward attaining the TMDLs in the receiving waters will be assessed differently for dry weather and wet weather, as proposed and approved in the Bacteria Load Reduction and Monitoring Plans, or as follows if an alternative proposal is not approved:…"

PP. Page A56, Table: Insert into Title of Table: "Modeled Estimate of Critical Year Existing Wet Weather Exceedance Frequencies by Watershed."

QQ. Page A56, last paragraph: "….Because the REC-1 WQOS must be met (subject to allowable exceedance frequencies) throughout the 20 waterbodies addressed by these bacteria TMDLs, monitoring data from these locations and any other beach segments and/or creek monitoring points in the watersheds addressed by these TMDLs may be used to determine compliance."

RR. Page A66, second paragraph: "Full implementation of the TMDLs for indicator bacteria shall be completed as soon as possible, but no later than 10 years from the effective date for both the dry weather and wet weather TMDLs, unless an alternative compliance schedule is approved in conjunction with a Comprehensive Load Reduction Plan, as described below…."

I hope the above detailed recommendations are effective in facilitating appropriate revisions to the draft document to reflect the efforts and understandings from the stakeholder advisory group process. I encourage you to please call or email if you have questions or would like to discuss any of the above comments. I am available via telephone at (949)362-4384 or email npalmer@ci.laguna-niguel.ca.us.

Sincerely,

Nancy R. Palmer
Senior Watershed Manager
City of Laguna Niguel

CITY OF OCEANSIDE
WATER UTILITIES DEPARTMENT

January 22, 2010

Mr. Wayne Chiu
California Regional Water Quality Control Board,
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

Dear Mr. Chiu,

Below are the City of Oceanside comments on the Revised TMDL for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek). We have several major concerns and appreciate your review and response.

1. **Definition of a rain event:** Data from a study at Leo Carrillo Beach (a largely undeveloped "reference" watershed in Los Angeles County) are used to establish a frequency at which beaches and creeks covered by this TMDL are allowed to exceed bacteria water quality objectives during wet weather (22%). Allowable exceedance frequencies are appropriate in TMDLs because numerous studies have found that even reference watersheds that are not impacted by anthropogenic activities sometimes exceed water quality objectives. Exceedance frequencies at Leo Carrillo Beach were calculated based on wet weather days defined as rainfall events of at least "0.1 inch and the following 72 hours" (Resolution No. 2002-002). This TMDL defines wet weather days as "rainfall events of 0.2 inches or greater and the following 72 hours." It is scientifically invalid to apply the wet weather exceedance frequency observed at Leo Carrillo Beach to a TMDL that uses a different definition of wet weather days. The exceedance frequency for rainfall events greater than 0.2 inches is very likely to be different than 22%. Wet weather days in this TMDL should be defined as "any rain event 0.1 inch or greater and the following 72 hours". This will ensure consistency with the Leo Carrillo Beach reference study.

2. **Application of Total Coliform Water Quality Objectives to Creeks:** Footnote C to the tables on Page A16 and footnote F to the table on Page A52 of the proposed Basin Plan Amendment (strikeout/underline version) state that wet and dry weather numeric objectives for total coliform apply at the point in a creek that discharges to a beach, bay, or estuary. The Basin Plan does not contain total coliform water quality objectives applicable to inland surface waters. Language

throughout the Resolution, Basin Plan amendment, and Technical Report should be reviewed and changed to correctly state that total coliform water quality objectives are not applicable in inland surface waters, only at the point in creeks where continual mixing with salt water occurs.

3. **Applicability of TMDL requirements to non-impaired waters and the extension of responsibility to discharges not located within an impaired hydrologic area:** Page A1 of the proposed Basin Plan amendment states: "The TMDLs that have been developed for the Pacific Ocean shorelines are assumed to be applicable to all the beaches located on the shorelines of the hydrologic subareas (HSAs), hydrologic areas (HAs), and hydrologic units (HUs) listed [in a table] above." This statement implies, for example, that all dischargers located anywhere in the San Marcos HA (904.5) will be required to comply with the Revised Bacteria TMDL. In fact, Moonlight Beach is the only segment within the San Marcos HA that is identified as impaired on the 303(d) list. Moonlight Beach, although technically within the boundaries of the San Marcos HA, is hydrologically disconnected from the rest of the HA. The draft Technical Report recognizes this fact in Table 3-1 where Moonlight Beach is shown to have a total drainage area of only 1.43 square miles. The table on Page A61 goes one step further by listing all eight Phase I MS4s in the Carlsbad HU, including the City of Oceanside, as "responsible municipalities" required to comply with TMDL requirements in the San Marcos HA, although the City of Oceanside has no discharges to, nor jurisdiction in, the San Marcos HA. The table implies that any Phase I MS4 located anywhere in the Carlsbad HU will be required to comply with TMDL requirements to address impairments at Moonlight Beach. In fact, only the City of Encinitas discharges to the Moonlight Beach Watershed. When asked at the January 7, 2010, SAG meeting, Regional Board staff indicated that the footnote was worded as intended and that the inclusion of all eight Phase I MS4s within the Carlsbad HU was intentional. The implications of this decision are far reaching. In the San Marcos HA example, seven municipalities would be required to monitor for compliance, and develop and implement load reduction plans, to address bacteria impairments at beaches that are not currently identified as impaired on the 303(d) list. This would constitute a gross misuse of resources when there are so many other impairments requiring attention in the region. To correct this problem in the San Marcos HA example, only the City of Encinitas should be assigned a WLA in the TMDL and only Encinitas should be assigned responsibility for the load reductions required in the TMDL, unless an impairment is determined for the remaining water bodies that can be linked to discharges from other municipalities.

4. **Combining dry and wet data to calculate a wet weather geometric mean:** The proposed Basin Plan amendment (Page A54 of the strikeout/underline version) states that wet weather and dry weather samples will be used together to calculate the wet weather 30-day geometric mean and that no exceedances of the wet weather 30-day geometric mean are allowed. This methodology is not scientifically defensible. The 30-day geometric mean should not be applied to wet

weather samples but only to the dry weather condition. Moreover, wet weather and dry weather samples should not be combined to calculate the 30-day geometric mean.

5. **No allowable exceedance frequency during dry weather:** This TMDL allows no exceedances of bacteria water quality objectives during dry weather days (defined as "days with less than 0.2 inch of rainfall observed on each of the previous 3 days"). However, in other TMDLs where Leo Carrillo Beach is used as a reference system (i.e., Santa Monica Bay Beaches Bacteria TMDL), the dry weather TMDL is split into two seasons: summer dry (0% allowable exceedance frequency) and winter dry (3% allowable exceedance frequency). This is an important distinction because during the winter months, the Leo Carrillo Beach reference system exhibited some exceedances during dry weather days. This TMDL should allow a 3% exceedance frequency during dry weather until a more appropriate frequency can be established based on data collected from a reference system in the San Diego region.

6. **Basin Plan amendments:** Chapter 7 Section (f)(6) of the proposed Basin Plan amendment (page A49 of the strikeout/underline version) recognizes that revisions to the Basin Plan may be necessary in the future. It also specifies conditions that must be met before the Regional Board will initiate a Basin Plan amendment project. Because this TMDL is founded on several critical assumptions and uncertainties, and because several studies with bearing on these assumptions are either planned, ongoing, or completed, stronger language should be included in the Basin Plan amendment that includes a more specific commitment to and timeline for revising the TMDL. The following are a representative sample of the key assumptions and uncertainties upon which the TMDL are based:

    - Assumption that wet weather exceedance frequencies at a reference beach in Los Angeles County are applicable to beaches in the San Diego region.

    - Use of exceedance frequencies from a reference beach to determine allowable exceedance frequencies in inland surface waters, where less mixing, reduced salinity, and other factors would be expected to result in higher bacteria densities, even under natural conditions.

    - Assumption that all flows and bacteria loads during dry weather are anthropogenic and the responsibility of Phase I MS4s to reduce.

    A paragraph should be added at the end of Chapter 7 Section (f)(7) of the proposed Basin Plan amendment (page A50 of the strikeout/underline version) that states: "Any study conducted following the procedures outlined in this paragraph will be considered by the San Diego Regional Water Quality Control Board during the time period specified in Table (Insert Table Number) TMDL Implementation Milestones". Also, on

page A69 in the strikeout/underline version, a row should be added to the TMDL Implementation Milestones Table as follows:

Item	Implementation Action	Responsible Parties	Date
6	San Diego Water Board will reconsider the TMDL to include results of any optional special studies and water quality monitoring data completed by the responsible entities and revise numeric targets, WLAs, LAs and the implementation schedule as needed.	San Diego Water Board	The later of : (1) within 5 years of effective date or (2) within 1 year of receipt of final study results

7. **Monitoring for TMDL Compliance and Compliance Assessment:** Pages A50 and A51 of the Basin Plan Amendment (strikeout/underline version) describe monitoring requirements, including minimum number of stations and minimum sampling frequencies during wet and dry weather. Page A50 also states: "If exceedances of the receiving water limitations are observed in the monitoring data, additional monitoring locations must be added to identify the sources causing the exceedances. ..." Page A54 states: "Because the Phase I MS4s are located at the base of the watersheds and have been identified as the most significant controllable source of bacteria, the municipal Phase I MS4s will have the primary [responsibility] for monitoring the receiving waters. ... The municipal MS4s may demonstrate that their discharges are not causing the exceedances in the receiving waters by providing data from their discharge points to the receiving waters, by providing data collected at jurisdictional boundaries, and/or by using other methods accepted by the San Diego Water Board. Otherwise, at the end of the wet weather TMDL compliance schedule, the municipal Phase I MS4s will be held responsible and considered out of compliance unless other information or evidence indicates another controllable or uncontrollable source is responsible for the exceedances in the receiving waters." The entire monitoring burden under this draft TMDL has been placed on Phase I MS4 dischargers, including monitoring to identify non-Phase I MS4 point and non-point dischargers that have been assigned wasteload allocations (WLAs) and load allocations (LAs) under this TMDL. At a minimum, all dischargers assigned WLAs and LAs under this TMDL should be required to participate in the source identification monitoring if exceedances of receiving water limitations are observed.

8. **TMDL Compliance Timelines:** When the Regional Board originally adopted this TMDL in December 2007, the compliance timeline for achieving wet weather TMDLs was 20 years. In the currently proposed revised TMDL, the compliance timeline has been cut in half to 10 years for all water bodies except Chollas Creek. The TMDL and Tentative Resolution state that if dischargers submit a Comprehensive Load Reduction Plan (CLRP) addressing multiple constituents in addition to bacteria, the compliance timeline may be extended to 20 years for achievement of wet weather TMDLs only. There is no allowance for a timeline

longer than 10 years for achieving the dry weather TMDLs. It is unclear why the compliance timeline for wet weather has been shortened to 10 years for most water bodies. Given the scale, complexity, and cost of the structural and non-structural solutions that will be needed to reduce bacteria loads to the required levels, 20 years is an aggressive timeline to expect compliance with either wet or dry weather TMDLs. The TMDL should be revised to allow for a 20-year compliance timeline for achievement of both wet and dry weather TMDLs.

9. **Assumption that all dry weather flows are anthropogenic.** The assumption that all dry weather flows are due to anthropogenic influence is invalid. Those stream systems influenced by natural groundwater seepage are more likely to flow regardless of anthropogenic influence. Studies by the Southern California Coastal Water Research Project (SCCWRP) have shown that reference systems, including San Mateo Creek in San Diego County, contain natural flows during the dry season (Tiefenthaler, L., E. Stein and G. Lyon. 2008. Fecal indicator bacteria levels during dry weather from Southern California reference streams. SCCWRP Annual Report, Costa Mesa, CA). Technical Report Sections 6, 8, 9, and 11 should provide updated text regarding this assumption.

Thank you for the opportunity to comment. Please contact Ms. Alison Witheridge at (760) 435-5822 with any questions.

Sincerely,

M. A. Lahsaiezadeh

Mo Lahsaie
Clean Water Program Coordinator

This page left intentionally blank

THE CITY OF SAN DIEGO

January 21, 2010

Electronic Delivery to: wchiu@waterboards.ca.gov

Wayne Chiu, Water Resource Control Engineer
Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Dear Mr. Chiu:

Subject: Review and Comment of the Revised Total Maximum Daily Loads (TMDLs) for Indicator Bacteria Project I – Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek), Revised Draft Final Technical Report and Resolution

The City of San Diego (City) Storm Water Department is pleased to provide the San Diego Water Quality Control Board, Region 9 (Regional Board) with comments regarding the Revised Bacteria Project I Draft Final Technical Report dated November 25, 2009. We appreciate the opportunity to provide comments on this regionally important tentative Basin Plan amendment. The City is committed to protecting the beneficial uses of our creeks, bays, and beaches using sound science and cost-effective approaches. Resources to protect these vital assets need to be directed prudently towards protecting Water Quality.

The following general comments are presented as well as specific comments included on the attached table, *City of San Diego Comments on Draft Bacteria Project 1 TMDL (Pending Resolution No. R9-2010-0001)*. These general comments focus on the following areas:

- Inclusion of draft 2008 Regional Board §303(d) de-listed waterbodies in TMDL.
- Inconsistent use of reference condition.
- TMDL re-opener process clarification.
- Compliance points and monitoring program for wet weather.
- Compliance points and monitoring program for dry weather.
- Concentration-based TMDL – load reductions should be allowed to show progress toward TMDL compliance.
- Inclusion of Tecolote Watershed in TMDL – request for inclusion of the City's data for sound science basis.
- Porter-Cologne Water Quality Control Act Required.

Inclusion of Draft 2008 Regional Board §303(d) De-Listed Waterbodies in TMDL

The Bacteria Project I TMDL Revised Technical Report includes waterbody/pollutant combinations recommended for de-listing on the draft 2008 Regional Board§303(d) list. In accordance with the Clean Water Act (CWA), the State Board §303(d) listing process is used to prioritize waterbodies not currently subject to effluent limitations and is to be based on scientific data that indicate impairment. This prioritization process allows for focused use of limited resources to address impairments through TMDL implementation by the municipalities, and other agencies, including the City.

The inclusion of de-listed indicator bacteria and waterbodies in the TMDL is counter to this prioritization process and cost-effective use of our City's resources. It is understood that the timing of the draft Bacteria Technical Report did not coincide with the approval of the most recent draft 2008 Regional Board§303(d) listings. To be consistent with the prioritization process, it is recommended the proposed de-listed indicator bacteria waterbodies be removed from this TMDL.

Inconsistent Use of Reference Condition

Wet Weather Basis: The TMDL states that the reference condition from the Leo Carrillo Beach Reference Study (Leo Carrillo) is applied to estimate the allowable exceedance frequency at beaches and creeks in the TMDL. However, the exceedance frequency at Leo Carrillo is based on a rain event of "0.1 inches and the following 72 hours," as stated in Resolution No. 2002-002. This TMDL is using the Leo Carrillo reference study results while redefining wet days as "0.2 inch of rain and the following 72 hours." It is scientifically invalid to use a reference condition for a different storm size, because the exceedance frequency for storm events of 0.2 inch or greater and 72 hours later is not known. To be consistent with the reference system study, it is recommended that a storm event or wet day be defined as any instance of a rain event 0.1 inch or greater and the following 72 hours.

Dry Weather Basis: The Leo Carrillo reference study was also used to establish the dry weather exceedance frequency limits in the Los Angeles area bacteria TMDLs, as stated in Resolution No. 2002-004. However, the draft technical report Section 4.2.1 states that "little data are available regarding exceedances of Water Quality Objectives (WQOs) in a reference system....the reference system approach may be an option that would allow an exceedance frequency to be included with the dry weather numeric targets in the dry weather TMDLs." It is unclear why a reference system approach is appropriate for wet weather, but not for dry weather. It is recommended that the reference condition for dry weather at Leo Carrillo beach be used in this TMDL. Additionally, a TMDL reopener needs to be included that allows for the incorporation of any future data. It is essential that this process be documented in the TMDL.

In the TMDL, the dry weather exceedance frequency limits are set at zero. However, in the Los Angeles area, TMDLs where the Leo Carrillo system was used as a dry weather reference, the

dry weather TMDL is split into summer dry and winter dry seasons. This is an important distinction because during the winter months, the reference system exhibited exceedance days. It is recommended that the TMDL separate dry period into summer and winter seasons instead of setting the dry weather exceedance frequency limit to zero during all dry periods. This is necessary because rains cause the ground water to increase the water table and infiltrate to the streams. The allowable exceedance frequency at Leo Carrillo is 3% during winter dry weather, and that standard should also apply in San Diego County. The summer dry weather exceedance frequency limit would remain zero using the Leo Carrillo reference study.

In addition, this TMDL defines the exceedance frequency for the wet weather condition, but not the number of allowable exceedance days based on the critical year. Instead, an allowable exceedance frequency is set. The use of the 1993, 90th percentile critical storm year to set the exceedance frequency incorporates critical conditions, but does not define the waste load allocations based on those critical conditions. It is recommended that the Regional Board use the reference condition exceedance frequency and the number of wet days in the critical year at each location within the TMDL to define a set allowance of exceedance days for each year.

TMDL Reopener Process Clarification

The TMDL, Section 4.1.3, states "if watershed specific exceedance frequencies are determined for any of the watersheds addressed in the TMDL, the wet weather TMDLs can be recalculated based on these watershed specific exceedance frequencies." The specific process for amending the TMDL, as well as TMDL reopener schedule, should be incorporated into the TMDL. The City recommends that the following language used in the Santa Monica Bay Beaches TMDL, Resolution 2002-022 be included in this Tentative Resolution:

- Four years after the effective date of the TMDL, the Regional Board shall reconsider the TMDL.
- The four areas of consideration when reconsidering the TMDL shall include:
  - Refine allowable wet weather exceedance days based on additional data on bacterial indicator densities in the wave wash and an evaluation of site-specific variability in exceedance levels,
  - Re-evaluate the 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),
  - Re-evaluate the reference year used in the calculation of allowable exceedance days, and
  - Re-evaluate whether there is a need for further clarification or revision of the geometric mean implementation provision.

Compliance Points and Monitoring Program for Wet Weather

Match Compliance to Risk and Safety: To meet the beneficial use goals and use the City's resources cost-effectively, compliance to the TMDL needs to focus on river segments and coastal

areas where the recreational benefit is consistent with the actual and potential use. The City is committed to this goal and through its ongoing bacteria reduction and public outreach efforts has been able to reduce beach postings by 76% since 2001. However, certain concrete-lined flood channel sections of creeks and streams are not subject to recreational use particularly during wet weather; yet they are still designated as REC-1 waterbodies. These sections should not be part of the wet weather compliance monitoring program, as public safety prohibits access during storm events.

Compliance Monitoring Directed at Human Sources: To use the City's funds cost- effectively, compliance monitoring during wet weather events should focus on follow-up source tracking of human sources.

Compliance Based on Sound Science: Preliminary data presented in the Tecolote Creek Microbial Source Tracking Study suggested that storm water is characterized by higher concentrations of fecal indicator bacteria during the first flush. There is an increasing predominance of enterococcus bacteria associated with plant matter and re-growth later in the storm, which are not known to cause human illness. Compliance measures must be focused on sound science so that Best Management Practices (BMPs) are designed in a cost-effective manner.

Human versus Anthropogenic: Compliance should be measured by addressing human sources of bacteria detected above water quality objectives in wet weather flows at appropriate compliance points. If the purpose of the TMDL is to restore the REC-1 beneficial use so the public can swim, use of the United States Environmental Protection Agency (EPA) bathing standards have been and continue to be followed. This is because the REC-1 bathing standards are based on epidemiologic studies to protect human health from risk of illness from human sewage sources. Monitoring should focus on human sources rather than a broad category of anthropogenic sources, which may not be associated with an unacceptable human health risk. Without focusing monitoring efforts on human sources, extensive public resources would be used to track sources of little or no risk to the public. It is recommended that a tracking program using Quantitative Polymerase Chain Reaction (QPCR) techniques be implemented.

The assumption in the TMDL that all dry weather exceedances may be attributed to the municipal separate storm sewer system (MS4) is invalid. This assumption was demonstrated as incorrect in the Mission Bay (2004) and San Diego River (2006) Bacteria Source Identification Studies, which were conducted for the State Board Proposition 13 Clean Beaches Initiative grants, and the Pacific Beach Point Bacteria Source Identification Study (2006) in coordination with San Diego Coastkeeper. The results of these studies showed that birds and other wildlife are the source of indicator bacteria exceedances during dry weather at beaches. Holding the City and other MS4 dischargers accountable for indicator bacteria exceedances caused by natural sources that were demonstrated in the middle of this TMDL process is inappropriate.

All dry weather flows are not due to anthropogenic influences. Many of the streams in Southern California flow naturally during the dry season. Southern California Coastal Water Research Project (SCCWRP) studies have shown that reference systems have natural flows during the dry season, including San Mateo Creek in San Diego County. Additionally, during winter dry

conditions, nearly all streams in San Diego County exhibit flow due to storm events that raise the groundwater table causing infiltration into the creek beds.

Stated Use of the Dry Weather Geometric Mean is Scientifically Invalid: Attachment A of the Tentative Resolution (page A54) states that the wet weather and dry weather samples will be used together to calculate the wet weather 30-day geometric mean and that no exceedances of the wet weather, 30-day geometric mean are allowed. The allowable exceedance of single sample criteria is zero during dry weather periods, but there is a frequency allowance for wet weather samples. Using the two sets of samples together will most likely result in an exceedance of the 30-day geometric mean, and no exceedances of the geometric mean are allowed. This methodology of combining the two data sets is not scientifically defensible. It is recommended that the 30-day geometric mean only be applied to dry weather samples.

The use of the 30-day wet weather geometric mean is not clear. Page A66 of the Tentative Resolution Compliance Schedule states that, "at the end of the wet weather TMDL compliance schedule, the receiving waters must not exceed the single sample maximum REC-1 WQOs more than the wet weather allowable exceedance frequency." However, the Tentative Resolution page 12, item 28, states, "at the end of the wet weather TMDL compliance schedule, the single sample maximum and 30-day geometric mean REC-1 WQOs must not be exceeded in the receiving water more frequently than the allowable exceedance frequencies." Because there is an allowable exceedance frequency for wet weather single sample compliance, but none for the 30-day geometric mean, it is not clear how the 30-day geometric mean will be used to assess compliance. Any allowable wet weather exceedance day concentration would be included in the 30-day geometric mean, likely resulting in an exceedance of the 30-day geometric mean. Please clarify the use of the wet weather 30-day geometric mean, its definition, purpose, whether or not it will be used as a measure of compliance, and if so, how will it be used.

Compliance Points and Monitoring Program for Dry Weather

Compliance Monitoring Needs to Account for Diversions: The City has invested in a dry weather diversion at the base of the Tecolote Watershed to protect the recreational use of Mission Bay. With no dry weather flows entering Mission Bay from Tecolote Creek, compliance to protect the beneficial use of the waterbody should be directed at monitoring the effectiveness of the diversions rather than any periodic flows in the flood control channel.

Concentration-Based TMDL – Load Reductions should be allowed to Show Progress toward TMDL Compliance

Best Management Practices and Reducing Dry Weather Concentration: The TMDL applies a concentration-based compliance goal, however many BMPs, including low impact development (LID) and irrigation controls, can effectively reduce loads but not concentration (City of Laguna). The compliance goals of the TMDL state that progress toward TMDL implementation

will be based on exceedance frequency reduction. While important, it is also important to include mechanisms to show progress toward TMDL compliance using load reductions.

BMPs and Reducing Wet Weather Concentrations: LID BMPs may be used to reduce runoff volume during storm events, but this will not likely result in decreased concentrations of bacteria. LID can be part of an integrated suite of BMPs to reduce the volume of runoff and pollutant loading including bacteria, but if compliance is focused on concentration, this may discourage the innovative use of these and other more sustainable approaches. If the TMDL allows load reduction goals to show progress toward TMDL compliance, then these approaches would be more widely implemented to address bacteria and the variety of BMPs that may be used.

Compliance Timeline (Integrated Approach): The compliance schedule was 20 years in the previous version of the TMDL, and has now been reduced to ten years for all waterbodies, excepting Chollas Creek. It is stated in the TMDL and Tentative Resolution that if dischargers submit a Comprehensive Load Reduction Plan (CLRP), they may set the compliance schedule greater than ten years for wet weather but must meet dry weather compliance goals within ten years. It is recommended that the compliance schedule be returned to 20 years for both wet and dry compliance, since bacteria is one of the most complicated pollutants to regulate.

Inclusion of Tecolote Watershed in TMDL – Request for Inclusion of Data for Sound Science Basis

Initially the Regional Board did not include Tecolote Creek in this TMDL. Therefore, the City initiated the Tecolote Creek Bacteria Characterization and Source Identification Project in order to assist the Regional Board with the development of a creek specific TMDL. Currently, the City is performing Phase III to assess bacteria storm drain system regrowth and bacterial speciation. The City has insisted on providing project updates to the Regional Board staff. Unfortunately this independent TMDL project was incorporated into this TMDL, effectively nullifying the good faith efforts we have put forth. We are requesting that Tecolote Creek be removed from this TMDL. It is recommended that a TMDL re-opener process for inclusion of new data be defined and a schedule be set to allow for future updates to the TMDL.

The application of outdated land use data has been identified as a potential issue during the review of previous TMDL versions. It is apparent that the land use data was not updated and as new information becomes available, it should be incorporated into the TMDL. Setting a firm re-opener schedule would allow dischargers to update information and improve the TMDLs.

Porter-Cologne Water Quality Control Act

Section 13241 of the act requires the Regional Board to complete a series of steps before adoption of a Basin Plan Amendment. Each Basin Plan Amendment is supposed to incorporate economic considerations. Review of this Tentative Resolution has concluded that this analysis is insufficient. The City of San Diego recommends compliance with all Porter-Cologne requirements.

The City of San Diego encourages the use of sound science to improve and protect water quality. This policy can best be observed at the City's beaches, which have shown a 76% reduction in beach closures. The use of the reference system approach for development of the bacteria TMDL is supported by the City. Compliance with the proposed TMDL will require significant amounts of City resources, and it is important that waterbodies recommended for delisting from the draft 2008 Regional §303(d) list be removed from this TMDL. While the City supports the use of the reference system approach, it must be used appropriately. The TMDL states that the Regional Board is open to modifying the implementation of the TMDL to account for additional data, newly defined reference conditions, or special studies submitted by the dischargers; however, there is no timeline identified in the TMDL implementation section. To assure the City's resources are used in a cost-effective manner to improve water quality, we have provided these comments based on sound scientific approaches. Additionally, the City recommends that the Regional Board conduct an economic analysis to comply with Porter-Cologne requirements.

If you have additional questions, please contact me at (858) 541-4328 or Beverly Morisako at (858) 541-4315.

Sincerely,

Ruth Kolb
Program Manager

KM\rk

Enclosure: City San Diego Comments on Draft Bacteria Project 1 TMDL (Pending Resolution No. R9-2010-0001)

cc: Kris McFadden
Beverly Morisako
Drew Kleis
Bill Harris

ATTACHMENT
CITY OF SAN DIEGO COMMENTS ON PENDING RESOLUTION NO. R9-2010-0001
1-21-2010

CITY OF SAN DIEGO COMMENTS ON DRAFT BACTERIA PROJECT 1 TMDL (PENDING RESOLUTION NO. R9-2010-0001)				
Technical Report Section	**Page**	**Section Title/Topic**	**Reason for Proposed Changes/Comments**	**Comments/Proposed Changes**
Tentative Resolution				
35	15	Economic Analysis	"The San Diego Water Board has considered the costs..."	It is recommended that the Regional Board comply with the Porter-Cologne requirements and incorporate economic considerations. Please perform the economic analysis and provide the details in the Tentative Resolution.
1. Executive Summary				
1	2	Table 1-1. Bacteria-Impaired Water Quality Limited Segments	Several waterbodies have been proposed for delisting from the 2008 303(d) List, including San Dieguito Fecal Coliform and Enterococcus, Miramar Reservoir HA Fecal Coliform and Enterococcus, several beaches in the Scripps HA, and Fecal Coliform and Enterococcus at Dog Beach.	It is recommended that the waterbodies already meeting bacteria standards be removed from the TMDL.
1	4	Paragraph 3, first sentence	"In general, controllable point and nonpoint sources generating less than 5 percent of the total loads (e.g., Caltrans and/or Agriculture) were assigned WLAs and LAs equal to their existing loads, resulting in no load reduction requirements."	Please cite a reference or explain the rationale for assigning WLAs and LAs equal to existing loads based on a 5% rule
1	NA	Margin of Safety	The executive summary outlines most requirements of the TMDL, but does not include the Margin of Safety (MOS) or public participation.	Please incorporate information regarding the MOS (explicit, implicit, and why), as well as information on public participation.
1	NA	Reference System Approach	The City of San Diego supports the reference system approach	The City of San Diego supports the use of a reference system approach for the development of the Bacteria Project I TMDL.
2. Introduction—No comments				

ATTACHMENT
CITY OF SAN DIEGO COMMENTS ON PENDING RESOLUTION NO. R9-2010-0001
1-21-2010

CITY OF SAN DIEGO COMMENTS ON DRAFT BACTERIA PROJECT 1 TMDL (PENDING RESOLUTION NO. R9-2010-0001)				
Technical Report Section	**Page**	**Section Title/Topic**	**Reason for Proposed Changes/Comments**	**Comments/Proposed Changes**
2	NA	Reference System Approach	The City of San Diego supports the reference system approach	The City of San Diego supports the use of a reference system approach for the development of the Bacteria Project I TMDL.
3. Problem Statement				
3.2	19	Table 3-1. Beach and Creeks Addressed in this TMDL Analysis	The TMDL includes water bodies that are recommended for delisting from the 2008 303(d) list.	Developing and implementing TMDLs for waterbodies that are meeting water quality standards is prohibitive with the additional effort and costs required for TMDL compliance monitoring and reporting. The Clean Water Act 303(d)(1)(C) requires establishing TMDLs for waterbodies on the 303(d) List in accordance with the priority ranking. CWA 303(d)(1)(3) requires estimating TMDLs for all waterbodies for the purposes of developing information only. It is recommended that water bodies delisted from the 303(d) list be removed from the TMDL.
3.3	22	Table 3-2. Beneficial Uses of the Impaired Waters	Tecolote and Chollas Creeks are both designated as REC-2 beneficial use and a potential REC-1 beneficial use.	Please clarify the application of REC-1 standards to waterbodies designated as only having a potential REC-1 beneficial use.

ATTACHMENT
CITY OF SAN DIEGO COMMENTS ON PENDING RESOLUTION NO. R9-2010-0001
1-21-2010

CITY OF SAN DIEGO COMMENTS ON DRAFT BACTERIA PROJECT 1 TMDL (PENDING RESOLUTION NO. R9-2010-0001)				
Technical Report Section	**Page**	**Section Title/Topic**	**Reason for Proposed Changes/Comments**	**Comments/Proposed Changes**
4. Numeric Target Selection				
4.1.3	32	Allowable Exceedance Frequency for the Reference System Approach Paragraph 1	The 22% exceedance frequency used to calculate the wet weather TMDLs is based on a rain event of 0.1 inch, and the definition of a wet event is 0.2 inch in this TMDL.	Please revise the wet weather day definition to 0.1 inch.
4.1.3	32	Paragraph 1	The TMDL states that if the reference condition for wet weather is found to be different for watersheds in this TMDL compared to the Los Angeles TMDLs, then a request to amend the TMDL may be made.	• Please define the methodology for amending the TMDL, and include a schedule for a TMDL re-opener. The following items should be considered when re-opening the TMDL as found in the Santa Monica Bay Beaches TMDL, Resolution No. 2002-022: • Refine allowable wet weather exceedance days based on additional data on bacterial indicator densities in the wave wash and an evaluation of site-specific variability in exceedance levels, • Re-evaluate the reference system selected to set allowable exceedance levels, including an evaluation of natural variability in exceedance levels in the reference system(s), • Re-evaluate the reference year used in the calculation of allowable exceedance days, and • Re-evaluate whether there is a need for further clarification or revision of the geometric mean implementation provision.

ATTACHMENT
CITY OF SAN DIEGO COMMENTS ON PENDING RESOLUTION NO. R9-2010-0001
1-21-2010

CITY OF SAN DIEGO COMMENTS ON DRAFT BACTERIA PROJECT 1 TMDL (PENDING RESOLUTION NO. R9-2010-0001)				
Technical Report Section	**Page**	**Section Title/Topic**	**Reason for Proposed Changes/Comments**	**Comments/Proposed Changes**
4.1.4	33	Summary of Wet Weather Numeric Targets for Mass-Load Based Calculations Paragraphs 2 and 4	Note: "All waterbodies in the San Diego Region designated with REC-1 beneficial use are assumed to have a "designated beach" usage frequency." [Enterococcus= 61 MPN/100 mL, Enterococcus geometric mean=33 MPN/100mL]] Tecolote and Chollas Creeks are designated "potential REC-1" beneficial use, with a Basin Plan category of "designated beach." Dischargers must show that the usages are less frequent to apply the higher (less stringent) standard of 104 MPN/100mL for single sample WQO.	Please define the process for changing the usage frequency of a creek in the Basin Plan including the amount and type of data necessary to generate a Basin Plan Amendment.
4.2.1	34	Allowable Exceedance Frequency for Dry Weather Paragraph 1	Note: "...if adequate data are collected to characterize dry weather flows and bacteria densities using a statistical approach, the reference system approach may be an option that would allow an exceedance frequency to be included with the dry weather numeric targets in the dry weather TMDLs."	The Leo Carrillo Beach reference study is currently used in Los Angeles for both the wet weather and dry weather TMDLs . It is recommended that a dry weather reference approach using Leo Carrillo data also be incorporated into this dry weather TMDL.
4.2.1	34	Table 4-2. Wet Weather Numeric Targets	The table lists the allowable wet weather exceedance frequency as 22% of the wet days.	An exceedance day approach allows for a direct relationship to waste load allocations, versus a variable number of exceedance days based on an allowable exceedance frequency. A set number of exceedance days also relates directly to the critical year, when the greatest threat to water quality is likely to occur. Using an exceedance frequency approach is unnecessarily conservative. It is recommended that an exceedance day approach be adopted, with a set number of allowable exceedance days based on the critical year.
5. Data Inventory and Analysis				
5.1.1	37	Water Quality Data Paragraph 1	The bacteria data used were collected from 1999 through 2002.	It is recommended that the most recent bacteria data be included in the TMDL assessment.

ATTACHMENT
CITY OF SAN DIEGO COMMENTS ON PENDING RESOLUTION NO. R9-2010-0001
1-21-2010

CITY OF SAN DIEGO COMMENTS ON DRAFT BACTERIA PROJECT 1 TMDL (PENDING RESOLUTION NO. R9-2010-0001)				
Technical Report Section	**Page**	**Section Title/Topic**	**Reason for Proposed Changes/Comments**	**Comments/Proposed Changes**
5.1.1	38	Table 5-1. Inventory of Data and Information Used for the Source Assessment of Bacteria	The land use data used in the TMDL development is from SANDAG 2000 which is outdated.	A comparison of the land use proportions for each watershed area was made between the 2000 and 2009 SANDAG data. An increase in low-density residential and decrease in open space was observed in San Dieguito, Miramar, Scripps, and lower San Diego River. It is recommended that the most recent land use data be applied when estimating load contributions from land uses.
5.3	46	Analyses of Beach Water Quality Versus Magnitude of Streamflow	The text states that a "statistical comparison" of flow versus bacteria density was completed to evaluated historical effects of high- and low-flow conditions. It is not clear from the text what statistics were used.	Please clarify what the statistical comparison was and what the results mean. There appears to be no correlation between high or low flows and bacteria concentrations, as stated in the text.
6. Source Analysis				
6.1.1	50	Wet Weather Transport	It appears, from Appendix J, that build-up and wash-off rates were utilized from a SCCWRP study in Santa Monica Bay. The wash-off information was specific to 8 land use types. However, the allocation of total loads back to specific land uses was based solely on apportioning the load back to the percentage of each land use within a watershed area.	Bacteria contributions during wet weather are different for different land use types, with some contributing greater concentrations than others. Taking the total load and apportioning the land use contribution back to the proportion of land use in a watershed does not account for the differences in loading from each land use type. Although land use specific build-up and wash-off values were used to estimate the total load, how were the land use specific load estimates validated? Please clarify the methodology for apportioning loads back to land uses.
7. Linkage Analysis				
7.1.1.d	55	Constituents Paragraph 2	"First-order die-off is likely the most important dynamic process to simulate in the San Diego Region, despite observations that bacteria re-grow in low flow conditions."	There are studies currently underway to estimate the amount of re-growth of bacteria occurring in the MS4. It is recommended that data from these studies be incorporated into the TMDL when it is re-opened in the future.

ATTACHMENT
CITY OF SAN DIEGO COMMENTS ON PENDING RESOLUTION NO. R9-2010-0001
1-21-2010

CITY OF SAN DIEGO COMMENTS ON DRAFT BACTERIA PROJECT 1 TMDL (PENDING RESOLUTION NO. R9-2010-0001)				
Technical Report Section	**Page**	**Section Title/Topic**	**Reason for Proposed Changes/Comments**	**Comments/Proposed Changes**
7.2	55	Wet Weather Modeling Analysis	Although the build-up and wash-off of bacteria for specific land uses was used in the model, land use-specific wet weather data are available to estimate load contributions during wet weather events.	Data exist that estimate observed bacteria load contributions per acre for land uses and may be used in conjunction with build-up/wash-off estimates to ensure that estimated load contributions from specific land uses are as accurate as possible. It is recommended that more precise land use-based load estimates be incorporated into the TMDL when it is re-opened at a future date.
7.3	56	Dry Weather Modeling Analysis Paragraph 1	"A statistical relationship was established between stream flow bacteria densities, and areas of each land use."	Please identify which statistics were used and how they represent the linkage between source contributions and in-stream response. Please clarify the use of statistics to link stream flow bacteria densities and land use.
8. Allocation and Reduction Calculations				
8.1.3	61	Table 8-2. Allowable Wet Weather Exceedance Days in the Critical Period (1993) for Watersheds Affecting Impaired Waterbodies	The statement "allowable wet weather exceedance days in the critical period (1993)" is repeated throughout the section. However, it is not explicitly stated that this is the number of allowable exceedance days for any calendar year moving forward with the TMDL.	It is recommended that the TMDL be modified to include an allowable number of exceedance days for compliance with the TMDL based on the critical condition.
8.1.6	64	Allocation of Wet Weather Bacteria Mass Loads to Point and Nonpoint Sources Paragraph 2	If concentrated animal feeding operations (CAFOs) are regulated as point source discharges, why are there no monitoring data associated with the facilities? They are included in the TMDL as controllable non-point sources due to no data available to estimate their bacteria load.	It is recommended that an effort should be made to quantify the bacteria load from the CAFOs.
9. Total Maximum Daily Loads and Allocations				
9.3.3	89	Alternative Enterococcus wet weather TMDLs	"moderately to lightly used area" compared to "frequently"	Please define the process and data requirements for implementing the beach usage frequency change

ATTACHMENT
CITY OF SAN DIEGO COMMENTS ON PENDING RESOLUTION NO. R9-2010-0001
1-21-2010

CITY OF SAN DIEGO COMMENTS ON DRAFT BACTERIA PROJECT 1 TMDL (PENDING RESOLUTION NO. R9-2010-0001)				
Technical Report Section	**Page**	**Section Title/Topic**	**Reason for Proposed Changes/Comments**	**Comments/Proposed Changes**
10. Legal Authority for TMDL Implementation Plan—No comment				
11. Implementation Plan				
11.2.2.1	100	Point Sources	Numeric Targets: wet weather consists of REC-1 single sample maximum WQOs and 22% allowable exceedance frequency. Dry weather consists of REC-1 30-day geometric mean WQOs and 0% exceedance frequency.	It is recommended that the allowable number of exceedance days be set based on the critical year as shown in Tables 9-1 through 9-4c.
11.2.2.1	102	Fourth bullet	No surface runoff is assumed during dry weather, and therefore the entire dry weather bacteria load is allocated to the MS4	This assumption is invalid and several studies have shown that dry weather bacterial exceedances are also caused by sources other than the MS4, such as birds.
11.2.2.1	102	Load Reductions	"The load reductions required to meet the mass-load based TMDLs, WLAs, and LAs are based on reducing the loads compared to pollutant loads from 2001 to 2002."	Please clarify this statement because the fourth bullet under this heading explicitly states that "The load reductions needed to meet the WLAs for point sources and the LAs for nonpoint sources are assumed to be achieved when the numeric targets are met in the receiving waters."
11.2.2.1	103	Load Reductions	"...CAFOs, and any other unidentified point sources were not assigned WLAs, which is equivalent to being assigned a WLA of zero."	Please clarify how these load allocations will be implemented and verified.
11.2.6	114	Basin Plan Amendments Paragraph 2	"Revisions to the Basin Plan typically require substantial evidence and supporting documentation to initiate the Basin Plan Amendment process. Given the severely limited resources available to the San Diego Water Board for developing Basin Plan amendment projects, developing the evidence and documentation to initiate a Basin Plan amendment will be the responsibility of the dischargers and/or other parties interested in amending the requirements or provisions implementing these TMDLs."	Please clarify the process for amending the Basin Plan, including the amount of data necessary and the process to petition the Regional Board. It would be beneficial to schedule a TMDL re-opener to address proposed changes.

ATTACHMENT
CITY OF SAN DIEGO COMMENTS ON PENDING RESOLUTION NO. R9-2010-0001
1-21-2010

CITY OF SAN DIEGO COMMENTS ON DRAFT BACTERIA PROJECT 1 TMDL (PENDING RESOLUTION NO. R9-2010-0001)				
Technical Report Section	**Page**	**Section Title/Topic**	**Reason for Proposed Changes/Comments**	**Comments/Proposed Changes**
11.3	116	Monitoring for TMDL Compliance and Compliance Assessment	Monitoring: wet weather monitoring at least once within 24 hours of the end of a storm event that occurs between October 1st and April 30th.	Sampling each wet weather event may be cost prohibitive, and a subset of wet weather events each year should be prescribed or allowed if dischargers wish to incorporate a prescribed monitoring program in their CLRP or BLRP. It is recommended that the number of wet weather monitoring events be set by the dischargers.
11.3	116	first complete bullet	"Dry weather monitoring should occur at least on a monthly basis, and may be required weekly."	At a minimum, to calculate a geometric mean, 5 samples per 30 days must be collected. Please define the process for using a single monthly sample to assess TMDL compliance.
11.3	119	Paragraph 2	Exceedance frequency calculation	It is recommended that the TMDL should set the number of allowable exceedance days at a site instead of an exceedance frequency calculated every year.
11.3	119	Paragraph 3	30-day wet weather geometric mean	It is recommended that the calculation of the 30-day geometric mean for compliance with the wet weather TMDL not include dry weather days. If separate dry day wet season exceedance criteria are set as recommended then the 30-day geometric mean should not be calculated.
11.4.6	126	Identification of Natural Versus Anthropogenic Sources of Bacteria	Section 11.4.3 states: "Indicator bacteria are used to measure the risk of swimmer illness because they have been shown to indicate the presence of human pathogens, such as viruses, when human bacteria sources are present." And: "The risk of contracting a water-borne illness from contact with urban runoff devoid of sewage, or human-source bacteria is not known."	It is recommended to use the identification of human versus non-human sources of bacteria since non-human bacteria sources have not been demonstrated to affect human health and the analysis is less costly.
11.5.2	135	Paragraph 2	BLRPs or CLRPs are due to the Regional Board within 18 months	The City of San Diego supports submission of the BLRPs and/or CLRPs 18 months after the TMDL effective date.
11.5.2	136	Tables 11-6 and 11-7 Compliance Schedules	TMDL compliance must be achieved for both wet and dry weather 10 years after TMDL effective date	Please provide the rationale for changing the TMDL compliance schedule from 20 years to 10 years.

ATTACHMENT
CITY OF SAN DIEGO COMMENTS ON PENDING RESOLUTION NO. R9-2010-0001
1-21-2010

CITY OF SAN DIEGO COMMENTS ON DRAFT BACTERIA PROJECT 1 TMDL (PENDING RESOLUTION NO. R9-2010-0001)				
Technical Report Section	**Page**	**Section Title/Topic**	**Reason for Proposed Changes/Comments**	**Comments/Proposed Changes**
12. Environmental Analysis, Environmental Checklist, and Economic Factors—no comment				
13. Necessity of Regulatory Provisions—no comment				
14. Public Participation				
14	NA	Tecolote Creek	The City of San Diego initiated contact with the Regional Board staff beginning in during the first quarter of 2008. The following meetings/projects occurred: • City begins talking with Regional Board about Tecolote Phase I study 1st Quarter 2008 • City requests data used in TMDL development for comparison to Phase I study results – June 2008 • Final Tecolote Creek Phase I report produced – August 2008 • City begins collaboration with SCCWRP (review of work plan) – September 2008 • City presents results of Phase I study and presents outline for Phase II study and asks for Regional Board input – October 9, 2008 • City presents preliminary results of Phase II study to Regional Board –April 17, 2009 • Final Tecolote phase II report produced – June 2009	It is recommended that the data collected in support of the Tecolote TMDL be incorporated into the final TMDL prior to final adoption of the TMDL.
Appendix J –Wet Weather Model Configuration, Calibration and Validation				
J	NA	Tecolote Creek	The USGS stations used for hydrology calibration and validation are not representative of the Tecolote watershed. The selected stations are for very large watersheds, located far up the watershed, or located in Riverside or Orange County. None of these stations adequately represent the features associated with Tecolote, such as size, topography, soil classification, and land use combination.	It is recommended that the model used to estimate the existing exceedance frequency for wet weather be calibrated on Tecolote or similar type watershed.

ATTACHMENT
CITY OF SAN DIEGO COMMENTS ON PENDING RESOLUTION NO. R9-2010-0001
1-21-2010

CITY OF SAN DIEGO COMMENTS ON DRAFT BACTERIA PROJECT 1 TMDL (PENDING RESOLUTION NO. R9-2010-0001)				
Technical Report Section	**Page**	**Section Title/Topic**	**Reason for Proposed Changes/Comments**	**Comments/Proposed Changes**
Appendix M – Wet Weather Model Hydrology Calibration and Validation Summary Statistics				
M	NA	Calibration statistics	The "error in 10% highest flows" and "error in storm volumes" does not meet the "recommended criteria" (stated as 15% and 20%, respectively) for the majority of the sites used for comparison during either the calibration period, validation period, or both periods. In some cases, the errors are two to three times greater than the recommended criteria.	It is recommended that the model be better calibrated in order to more accurately represent the hydrology of San Diego.
Appendix N – Comparison of Wet Weather Modeling Results to Observed Densities				
N	NA	Tables N-8 through N-14	The LSPC model results do not accurately correlate to the observed data (see tables on N-8 through N-14). Many of the model values are several magnitudes different from the observed data. The model does not appear to be validated. Errors in the pollutant model maybe related to the significant errors in the hydrology model (see comments relating to Appendix M).	It is recommended that criteria be stated for the accuracy of the model, and the model be calibrated so that, in general, the modeled values meet the criteria.
Appendix U - Response to Comments II				
Appendix U	U-24	Comment 306	A comment was made regarding the use of land use specific water quality data and the implications to the TMDL WLAs.	It is recommended that the land-use-specific water quality data that have been collected within the Tecolote Watershed be used for comparisons against model predictions.
Appendix U	U-38	Comment 327	The comment was made that up to date land use data should be used. The response was that San Diego Water Board Staff and stakeholders should investigate the possibility when the final TMDL was being revised.	Please include the most current land use data in the TMDL provide rationale for why newer data were not used.
Appendix U	U-1	List of Persons Submitting Comments	The City of San Diego is not listed as having provided comments. Section 2 – Comment Number and Categories lists the City of San Diego as providing comment.	Please add the City of San Diego to the list of contributors.

ATTACHMENT
CITY OF SAN DIEGO COMMENTS ON PENDING RESOLUTION NO. R9-2010-0001
1-21-2010

CITY OF SAN DIEGO COMMENTS ON DRAFT BACTERIA PROJECT 1 TMDL (PENDING RESOLUTION NO. R9-2010-0001)				
Technical Report Section	**Page**	**Section Title/Topic**	**Reason for Proposed Changes/Comments**	**Comments/Proposed Changes**
Appendix U	U-8	Comment 287	In a response to a query regarding the practicalities of a natural source exclusion approach, six categories are provided as a general framework.	The inclusion of source identification studies, together with epidemiological studies would be impossible to attain both practically and financially.
Appendix U	U-26	Comment 309	Comment was made regarding the impact of non-anthropogenic bacteria sources on MS4 discharges.	Recent investigations in Tecolote Creek watershed indicate that biofilm growth within the MS4 can comprise communities of fecal indicator bacteria, but that these populations are rarely of fecal origin. Please provide methodology or process for how will these data be used under a natural source exclusion approach.
Appendix U	U-26	Comment 310	Comment was made regarding the use of REC-1 designations during storm events.	The SWQCB response did not fully address the association between public health risk, designation and TMDLs. Please clarify the REC-1 designation during storm events.

CITY OF SANTEE

January 22, 2010

Mr. David Gibson
Executive Officer
California Regional Water Quality Control Board, San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Subject: Comments on Total Maximum Daily Loads for Indicator Bacteria Project I – Twenty Beaches and Creeks in the San Diego Region

Dear Mr. Gibson:

The City of Santee, California ("City") respectfully submits this letter to the San Diego Regional Water Quality Control Board ("Regional Board") to convey the City's formal written comments on the Total Maximum Daily Loads for Indicator Bacteria Project I – Twenty Beaches and Creeks in the San Diego Region ("TMDL").

Once adopted, the TMDL will have direct impacts on the activities of municipalities that own and operate Large Municipal Separate Storm Sewer Systems (MS4s) in San Diego County. As a regulated Large MS4 operator, the City has an interest in the development of an effective and environmentally sound TMDL. The City has reviewed the TMDL and applauds the Regional Board's attempts to increase the level of water quality protection at beaches and creeks in the region. However, the City has significant concerns regarding several aspects of the TMDL, and the TMDL adoption process. The City is aware that the County of San Diego has also reviewed and will be submitting comments on the latest revisions to the TMDL. The City fully supports the County's comments and intends them to supplement those set forth below. Our suggested revisions are listed below. Additional comments regarding the need for these revisions is included in the attached comment table.

SUGGESTED REVISIONS

1): Revise the TMDL to set the baseline for dry weather flows and exceedances at 2001 to 2002 levels. Revise the TMDL to allow ultimate compliance to be measured on a load reduction basis

2): Designate Forester Creek as a REC-2 water body, and revise the WLAs assigned to it based on this designation. Designate other inland surface waters including the San Diego River

as "Infrequently Used Full Body Contact" water bodies, and revise the WLAs assigned for those bodies based on the this designation.

3): Revise the TMDL to clarify that the MS4 dischargers, including the City, will not be presumed responsible for all discharges to a water body if that water body is not meeting the TMDL's limits. Instead, the relevant sections of the TMDL on pages A 52 through A 57 should be revised to state:

> If at the end of the TMDL compliance schedule the receiving waters exceed the 30-day geometric mean REC-1 WQOs, the Regional Board will issue investigative orders, enforcement actions, WDRs, or conditional waivers of WDRs as necessary to determine the source of the exceedances.
>
> In addition Include "groundwater seepage" in the list of natural sources in the paragraph on A16 labeled (c) Source Analysis.

4): Revise the maximum loads and exceedance percentages for inland water bodies so that they are based on data from an inland reference system, and so that they reflect their frequency of use.

5): Revise the TMDL so that a wet weather day is defined as any rain event 0.1 inch or greater and the following 72 hours

6): Revise the TMDL to allow a 3% exceedance frequency during dry weather until a more appropriate frequency can be established based on data collected from a reference system in the San Diego region

7): Revise the last paragraph on page A 48 of the TMDL to state:

> The San Diego Water Board may issue subsequent investigative orders to confirm items in the BLRPs or CLRPs. The BLRPs or CLRPs must be capable of achieving the WLAs for the bacteria TMDLs. The CLRPs may also include requirements designed to restore the beneficial uses in receiving waters for other impairing pollutants in the watershed, and achieving the goals and objectives of any other water quality improvement projects included in the CLRPs within the time frame of the compliance schedule.

8): Revise the method by which the City will be required to calculate the 30-day geometric mean so that the calculation method does not mix wet weather and dry weather data.

9): Revise the TMDL to allow for a 20-year compliance timeline for the achievement of both wet and dry weather TMDLs.

10): Remove all water bodies that are not listed on the current 303(d) list for the San Diego Region, or are candidates to be removed from that list from the TMDL.

11): Revise the TMDL and its associated technical report to include a more in-depth analysis of the economic costs the TMDL will impose on the dischargers, including the cost of

designing, implementing, and maintaining permanent BMPs that extract and treat surface water for bacteria, and to give greater consideration to the present, and probable future beneficial uses of water bodies subject to the TMDL.

CONCLUSION

The City appreciates your attention to its comments and intends them to be a constructive part of the ongoing, open dialogue between the public and the Regional Board. Such a dialog is necessary to the development of an efficient and effective TMDL. The City is committed to the goal of water quality improvement, and wants to work with the Regional Board to achieve that goal. To that end, if you should have any questions regarding this letter, or the City's position on the TMDL, please do not hesitate to contact us.

Sincerely,

Pedro Orso-Delgado, P.E.
Deputy City Manager/Development Services Director
City of Santee, California

Encl: Table

City of Santee Comments
TMDL for Indicator Bacteria
January 22, 2010

#	Item	Comment	Suggested Revision
1	**Compliance should be measured on a load reduction basis to allow cities to implement and receive credit for effective BMPs that benefit the watershed**	The TMDL will require the City to establish a baseline bacteria level from data gathered between 2001 and 2002. This is appropriate as it allows the cities to receive credit for any reductions achieved since that time. However, page A 54 of the TMDL states: For the dry weather TMDLs, available historical monitoring data from the year 2002 to the effective date of these TMDLs should be used to calculate the "existing" dry weather exceedance frequency of the 30-day geometric mean REC-1 WQOs for each watershed. This language conflicts with the 2001 to 2002 baseline established elsewhere in the TMDL. More importantly however, it would effectively punish the City for bacteria reductions it has made in the watershed since 2005. As the Regional Board is aware, the City has invested several million dollars restoring Forester Creek. The improvements in Forester Creek have resulted in reduced bacteria levels downstream of the restoration project. The City should not be punished for making improvements in the watershed by being forced to comply with what would amount to an artificially low discharge standard. The above quoted language should therefore be revised to set the baseline data used to calculate the "existing" dry weather exceedance frequency at levels from 2001 to 2002. This will prevent the City from being punished for its efforts to improve regional water quality. The City is also concerned with how credit is allocated for restoration projects and other bacteria reducing best management practices ("BMPs"). The decision to change the TMDL's compliance measure from a load based measure to a concentration based measure could preclude the use of future BMPs to reduce bacteria loads. In some cases the only effective BMPs to control bacteria require	Revise the TMDL to set the baseline for dry weather flows and exceedances at 2001 to 2002 levels. Revise the TMDL to allow ultimate compliance to be measured on a load reduction basis.

[1] Federal Regulations allow a TMDL to "be expressed in terms of either mass per time, toxicity, or other appropriate measure." (40 C.F.R. § 130.2(i).) It is the City's position that this does not expressly authorize the Regional Board to issue a concentration based TMDL, and that by measuring ultimate compliance with the TMDL by bacteria concentration in the receiving waters, the Regional Board may be violating the Clean Water Act.

		removal and treatment, or diversion and treatment of water. Such BMPs reduce overall loads, but could increase concentrations in a given water body. This is especially true for inland creeks and streams that do not get the benefit of dilution from the ocean. Overall, the City and other potential dischargers need the flexibility to implement BMPs that will improve water quality throughout the region. To allow this, the TMDL should be revised to allow ultimate compliance with the TMDL to be measured on a load reduction basis.[1] [1] Federal Regulations allow a TMDL to "be expressed in terms of either mass per time, toxicity, or other appropriate measure." (40 C.F.R. § 130.2(i).) It is the City's position that this does not expressly authorize the Regional Board to issue a concentration based TMDL, and that by measuring ultimate compliance with the TMDL by bacteria concentration in the receiving waters, the Regional Board may be violating the Clean Water Act.	
2	***A heightened Rec-1 Standard is being imposed on non-Rec-1 water bodies***	The TMDL is imposing a Rec-1 Designated Beach Area standard for a number of inland creeks and water bodies that do not warrant this designation. As a result, the TMDL will impose a heightened standard on these water bodies that is not necessary to protect the beneficial uses of these water bodies, or the environment in general. The TMDL recognizes that it is over-inclusive: In some cases, the "designated beach" category may be over-protective of water quality because of the infrequent recreational use in the impaired freshwater creeks. The recreational usage frequency in these freshwater creeks may correspond to the "moderately to lightly used areas" category, which has an enterococci freshwater REC-1 single sample maximum WQO of 108 MPN/100mL. Before the less stringent enterococci single sample maximum saltwater REC-1 WQO may be applied to a freshwater creek, the Basin Plan must be amended to designate a lower usage frequency (i.e., "moderately to lightly used area") for each freshwater creek. If information and evidence are provided to justify the "moderately to	Designate Forester Creek as a REC-2 water body, and revise the WLAs assigned to it based on this designation. Designate other inland surface waters including the San Diego River as "Infrequently Used Full Body Contact" water bodies, and revise the WLAs assigned for those bodies based on the this designation.

		lightly used area" usage frequency for a freshwater creek, and the designated usage frequency of the freshwater creek is amended to "moderately to lightly used area" in the Basin Plan, the wet weather TMDLs that were calculated in a watershed that was modeled with a freshwater creek using the enterococci saltwater REC-1 WQOs can be implemented instead. (TMDL, A15.) This places an unnecessary burden on the Cities. The inland water bodies deemed likely to be designated as being lightly used should be treated as such anyway. Water bodies, including Forester Creek, for which there is no body contact, because the shallow depth or lack of water prevents such contact, should be appropriately designated at REC-2. A high standard has been set to get these changes made in the future. This would be an excessive diversion of resources from improving the water bodies that are going to be used by the public, to creeks that do not require the same level of attention, simply to get the requirements at these unused creeks reduced. Not only is this a waste of resources, imposing this higher standard on inland surface bodies without evidence that it is necessary to achieve the water quality objectives is an abuse of discretion. Lastly, the TMDL dismisses the over-inclusive nature of the designation of inland creeks as high use areas on the grounds that a Basin Plan amendment would be required to allow the Regional Board to treat these water bodies in any other way. (TMDL A22.) The fact that the proposed TMDL is itself a Basin Plan Amendment appears to be lost in the minutia. Sufficient evidence of the average daily and seasonal use of these water bodies could easily be provided by the regulated parties. The proposed TMDL therefore could, and should incorporate a new designation for all such water bodies, with new LAs and WLAs based on inland surface water data. These revisions should start with Forester Creek, which the TMDL now treats as a heavily used beach, but which in reality receives no body contact use.	

City of Santee Comments
TMDL for Indicator Bacteria
January 22, 2010

3	***There is no meaningful Natural Source Exclusion***	The TMDL does not include a meaningful natural source exclusion for discharges that cause exceedances of the TMDL limits. When a water body subject to the TMDL is not meeting the TMDL requirements, the City will be required to reduce its bacteria discharges, or prove that its discharges are not causing the exceedances. (TMDL A42, A53.) If neither condition is met, the City will be considered out of compliance with the TMDL. This is an unmanageable standard. Numerous uncontrollable sources of bacteria have been deemed "controllable sources" in the TMDL. These sources include bacteria loads discharged from Low Density Residential, High Density Residential, Commercial/Institutional, Industrial/Transportation, Military, Parks/Recreation, and Transitional land use types that are included in the Municipal MS4s category. (TMDL A17.) They also include bacteria loads discharged from Agriculture, Dairy/Intensive Livestock, and Horse Ranch land use types are included in the Agriculture category. (*Id.*) In many cases, the discharges from these sources will not come from end of pipe discharges from the City's MS4. The City will nevertheless be charged with controlling and/or demonstrating that these difficult to pinpoint sources are causing the exceedances. The City lacks the authority to regulate many of the above listed sources. The natural sources, including some not listed above, are diffuse and may lie beyond the City's jurisdiction. Some of the other listed sources are state or local agencies. California law clearly limits a city's ability to regulate state agencies within its jurisdiction. (*See* Cal. Gov. Code § 53091; *see also Hall v. Taft* (1956) 47 Cal.2d 177 [holding that when the State engages in sovereign activities it is not subject to local regulations unless the California Constitution says it is, or the legislature has consented to it].) Pursuant to the Clean Water Act, background pollutant loads such as those listed above are to be included in a TMDL's load allocation and not attributed to point source dischargers. (*See* 40 C.F.R. § 130.2(g).) Moreover, the history of the Clean Water Act demonstrates that Congress and the EPA intended cities and other	Revise the TMDL to clarify that the MS4 dischargers, including the City, will not be presumed responsible for all discharges to a water body if that water body is not meeting the TMDL's limits. Instead, the relevant sections of the TMDL on pages A 52 through A 57 should be revised to state: If at the end of the TMDL compliance schedule the receiving waters exceed the 30-day geometric mean REC-1 WQOs, the Regional Board will issue investigative orders, enforcement actions, WDRs, or conditional waivers of WDRs as necessary to determine the source of the exceedances. In addition Include "groundwater seepage" in the list of natural sources in the paragraph on A16 labeled (c) Source Analysis.

		MS4 dischargers to regulate urban runoff rather than agricultural sources and other diffuse and non-point source discharges. Indeed, when issuing the MS4 Permit regulations in 1990, EPA stated, "it is the intent of EPA that [stormwater] management plans and other components of the programs focus on the urbanized and developing areas of the county." (55 Fed. Reg. 47989, 48041 (Nov. 16, 1990).) The urban discharge focus is reflected in the San Diego Region Basin Plan which discusses the problem of stormwater runoff in terms of urbanization and cites to EPA Guidance limiting regulation of stormwater to urban sources. (*See* San Diego Basin Plan, pp. 4-78, 4-79.) Consequently, under both the Clean Water Act, and state law, the Regional Board lacks the authority require the City to regulate discharges that are beyond its authority to control. As a practical matter, this standard is too high. It is not clear what proof of responsibility will be acceptable to the Regional Board to demonstrate that all controllable sources have been removed. A more efficient approach would be to classify all natural sources (including groundwater seepage) as natural sources, and if the bacteria limits are not being met at the end of the TMDL implementation period, verify the loads from natural sources as part of an overall source investigation that includes all potentially responsible dischargers. The presumption that City is responsible for all bacteria levels in a watershed must be removed. Not only is such a presumption impractical, but it holds the City responsible for natural conditions and discharges from other entities in a manner that would appear to violate state and federal law.	
4	***Maximum loads and exceedance percentages for inland water***	The model upon which the TMDL is based relies on a limited data set that focuses on exceedances at beaches and rivermouths. This data was extrapolated to develop bacteria levels for inland locations without taking into account the different conditions at inland water bodies, including reduced flow a lack of tidal influence. It is necessary to use data from inland creeks to assess the baseline percentage of exceedances for these locations, as it is likely these will be vastly different from those	Revise the maximum loads and exceedance percentages for inland water bodies so that they are based on data from an inland reference system,

	bodies should have been developed with data from inland water bodies, and need to be revised.	observed on the coast. In addition, data used from inland sources should be used in calculating the numeric targets, as the use of concentrations (particularly those collected at beaches and rivermouths) skew the targets to be attainable on the coast, but not inland, even if the loads inland are the same or less.	and so that they reflect their frequency of use.
5	***The definition of "Wet Weather" needs to be revised to match relevant modeling data.***	Much of TMDL's technical analysis is based on data from a study of conditions at Leo Carrillo State Beach. The Regional Board used this date to establish a frequency at which beaches and creeks covered by this TMDL are allowed to exceed bacteria water quality objectives during wet weather. Exceedance frequencies in the Leo Carrillo watershed were calculated based on wet weather days defined as rainfall events of at least "0.1 inch and the following 72 hours" (Resolution No. 2002-002). In contrast, the TMDL defines wet weather days as "rainfall events of 0.2 inches or greater and the following 72 hours." It is scientifically invalid to apply the wet weather exceedance frequency observed at Leo Carrillo Beach to a TMDL that uses a different definition of wet weather days. The exceedance frequency for rainfall events greater than 0.2 inches is very likely to be different than 22%. Wet weather days in this TMDL should be defined as "any rain event 0.1 inch or greater and the following 72 hours."	Revise the TMDL so that a wet weather day is defined as any rain event 0.1 inch or greater and the following 72 hours.
6	***A zero exceedance WLA is not reasonably***	The TMDL will impose a zero exceedance discharge requirement on the City during periods of dry weather. The zero exceedance discharge requirement is problematic because the dry weather discharge limitations are so low that they are not reasonably achievable. This would be the case even if the City could control 100% of	Revise the TMDL to allow a 3% exceedance frequency during dry weather until a more

	achievable.	its dry weather discharges because other entities, including agricultural operations, natural groundwater seeps, and other state agencies contribute dry weather flows to the region's watersheds. One of the major underlying assumptions of the TMDL is that these entities and land uses will not have dry weather flows. (TMDL, Finding 22.) This assumption fails to account for background discharges during dry weather that are uncontrollable by the Cities. Moreover, studies by the Southern California Coastal Water Research Project (SCCWRP) have shown that reference systems, including San Mateo Creek in San Diego County, contain natural flows during the dry season. (Tiefenthaler, L., E. Stein and G. Lyon. 2008. Fecal indicator bacteria levels during dry weather from Southern California reference streams. SCCWRP Annual Report, Costa Mesa, CA). In order to avoid the negative ramifications of this assumption, the TMDL needs to be revised to either: 1) raise the overall dry weather standard so that exceedances will not occur, or 2) allow a number of exceedance days, in an approach similar to the wet weather portions of the TMDL. There have been numerous comments submitted on this issue throughout the TMDL development process. However it is worth reiterating that the basis for imposing this zero discharge requirement in the TMDL is legally and factually deficient, particularly when applied to inland surface water bodies. As stated above, studies by the Southern California Coastal Water Research Project (SCCWRP) have shown that reference systems, including San Mateo Creek in San Diego County, contain natural flows during the dry season. There is simply no basis for assuming that natural conditions do not result in dry weather flows. Moreover, by assuming that all dry weather flows are caused by municipal discharges, the TMDL will hold the City responsible for controlling non-point sources of pollution, discharges that are beyond its responsibility under the Clean Water Act. Additionally, the City has no authority control discharges from other entities, including local agencies and Indian tribes, that may be contributing to dry weather	appropriate frequency can be established based on data collected from a reference system in the San Diego region.

		flows. California law applies a "rule of reason" to flood control issues that requires cities to accept surface water flows from neighboring property owners. (*Locklin v. City of Lafayette* (1994) 7 Cal.4th 327, 349.) Thus the City cannot refuse to accept drainage from adjacent jurisdictions. The City likewise lacks authority over the conduct of state and local agencies within its jurisdiction. These entities are exempt from many conditions in the TMDL. (*See* Cal. Gov. Code § 53091; *see also Hall v. Taft* (1956) 47 Cal.2d 177 [holding that when the State engages in sovereign activities it is not subject to local regulations unless the California Constitution says it is, or the legislature has consented to it].) The TMDL's attempt to hold the City responsible for such discharges is especially frustrating given that many of the entities implicated by this requirement are required to obtain their own NPDES permits, and thus should be regulated directly by the Regional Board. The Regional Board's failure to regulate discharges from these entities should not be imputed to the City. The Regional Board's attempt to impose responsibility for these discharges on the City is arbitrary, capricious, and without justification. A quick solution to this issue could include allowing a 3% exceedance frequency during dry weather, based on data from the Leo Carrillo Beach reference system, until a more appropriate frequency can be established based on data collected from a reference system in the San Diego region.	
7	**The TMDL implies that BLRPs will require Cities to develop plans that cover more than**	At the bottom of page A48, the TMDL states that BLRPs or CLRPS "must be capable of achieving the WLAs for the bacteria TMDLS, restoring the beneficial uses in receiving waters for other impairing pollutants in the watershed, and achieving the goals and objectives of any other water quality improvement projects included in the BLRPs or CLRPs within the time frame of the compliance schedule." According to other passages in the TMDL, BLRPs are intended to address only bacteria loads, and would not include the other items in the paragraph quoted above. This appears to be a typographical error. Please revise this portion of the	Revise the last paragraph on page A 48 of the TMDL to state: The San Diego Water Board may issue subsequent investigative orders to confirm items in the BLRPs or CLRPs. The BLRPs or CLRPs must be

	Bacteria.	TMDL to clarify that the more comprehensive requirements apply to CLRPs only.	capable of achieving the WLAs for the bacteria TMDLs. The CLRPs may also include requirements designed to restore the beneficial uses in receiving waters for other impairing pollutants in the watershed, and achieving the goals and objectives of any other water quality improvement projects included in the CLRPs within the time frame of the compliance schedule.
8	***The process for developing the geometric mean is flawed and should be revised.***	The TMDL states that wet weather and dry weather samples will be used together to calculate the wet weather 30-day geometric mean and that no exceedances of the wet weather 30-day geometric mean are allowed. This methodology is flawed, the 30-day geometric mean should not be applied to wet weather samples but only to the dry weather condition. Moreover, wet weather and dry weather samples should not be combined to calculate the 30-day geometric mean. The City therefore requests that the TMDL be revised to remove the 30-day geometric mean requirement.	Revise the method by which the City will be required to calculate the 30-day geometric mean so that the calculation method does not mix wet weather and dry weather data.
9	***The TMDL compliance timelines need to be***	When the Regional Board originally adopted this TMDL in December 2007, the compliance timeline for achieving wet weather TMDLs was 20 years. In the currently proposed revised TMDL, the compliance timeline has been cut in half to 10 years for all water bodies except Chollas Creek. The TMDL and Tentative Resolution	Revise the TMDL to allow for a 20-year compliance timeline for the achievement of both

	revised.	state that if dischargers submit a Comprehensive Load Reduction Plan (CLRP) addressing multiple constituents in addition to bacteria, the compliance timeline may be extended to 20 years for achievement of wet weather TMDLs only. There is no allowance for a timeline longer than 10 years for achieving the dry weather TMDLs. It is unclear why the compliance timeline for wet weather has been shortened to 10 years for most water bodies. Given the scale, complexity, and cost of the structural and non-structural solutions that will be needed to reduce bacteria loads to the required levels, 20 years is an aggressive timeline to expect compliance with either wet or dry weather TMDLs. The TMDL should be revised to allow for a 20-year compliance timeline for achievement of both wet and dry weather TMDLs.	wet and dry weather TMDLs.
10	***Delisted water bodies, and delisting candidate water bodies should be removed from the TMDL***	If adopted, the TMDL will apply to a number of water bodies that are either not on the current Clean Water Act 303(d) list, or are candidates for delisting. Including these water bodies in the TMDL will require resources to be allocated to plan implementation, plan development, and bacteria monitoring. It is the City's belief that resources used for TMDLs should be directed to where waters are impaired. Moreover, including delisted water bodies in the TMDL would appear to violate the Clean Water Act. Section 303(d) of the Clean Water Act requires the State to develop a list of those water bodies for which the effluent limitations required by the CWA are not stringent enough to implement the applicable water quality objective. (33 USC § 1313(d)(1)(A).) Section 303(d) further requires the State to establish a priority ranking for these water bodies, taking into account the severity of the pollution and the uses to be made of such waters. (*Id.*) Lastly, Section 303(d) requires the State to establish, and in accordance with their respective priority rankings, the total maximum daily load "for the waters identified in" the 303(d) list. The Clean Water Act does not allow for the development of TMDLs that are not on a 303(d) list. Under the right circumstances, the Regional Board may have the discretion to	Remove all water bodies that are not listed on the current 303(d) list for the San Diego Region, or are candidates to be removed from that list from the TMDL.

		amend its Basin Plan to impose restrictions related to any pollutant it deems necessary. However, any time the Regional Board imposes requirements more stringent than federal law, the Regional Board must comply with applicable state law requirements. (*See City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613.) In this case that means compliance with California Water Code section 13000, 13241, and 13263 (discussed below) and Article XIII B, Section 6 of the California Constitution, which requires that any Regional Board requirements imposed on local government entities that are not explicitly required by federal law must be funded by the state. (*See County of Los Angeles v. Commission on State Mandates* (2007) 150 Cal.App.4th 898, 915-916.) Practically speaking any water bodies that are not on the 303(d) list, or are candidates for delisting from the 303(d) list should be removed from the TMDL. There is no reason to impose monitoring and other program related costs on dischargers for water bodies that are not impacted for bacteria. Including these water bodies in the TMDL would represent an abuse of discretion on the part of the Regional Board. To avoid this outcome the City requests that the Regional Board remove from the TMDL, specifically the table on page A12, those water bodies that are not listed on the current 303(d) list for the San Diego Region, or are candidates to be removed from that list.	
11	***Water Code section 13241 factors were not adequately considered***	The Regional Board has not considered the factors required by California Water Code sections 13000, 13241, and 13262. Any time the Regional Board amends its Basin Plan, it must consider the following factors: (a) Past, present, and probable future beneficial uses of water. (b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.	Revise the TMDL and its associated technical report to include a more in-depth analysis of the economic costs the TMDL will impose on the dischargers, including the cost of designing, implementing, and maintaining

		(c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area. (d) Economic considerations. (e) The need for developing housing in the region. (f) The need to develop and use recycled water. (Cal. Water Code § 13241.) Of the above listed factors, the economic considerations can be the most difficult to navigate. In *City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, the California Supreme Court defined the economic impact associated with a Regional Board action as the "discharger's cost of compliance." (*Id.* at 618, 625.) To date, the Regional Board has failed to conduct an adequate analysis of the factors listed in Water Code section 13241, including the economic impacts to the City. As a result, the Regional Board has failed to fully consider the economic costs associated with the TMDL. The TMDL's only findings on economic impacts are as follows: 35. **Economic Analysis**: The San Diego Water Board has considered the costs of the reasonably foreseeable methods of compliance with the load and wasteload allocations specified in these TMDLs. These compliance methods involve implementation of structural and non-structural controls. Surface water monitoring to evaluate the effectiveness of these controls will also be necessary. Additional analysis in the TMDL Technical Report and other Appendices are minimal and do not explicitly recognize that some form of diversion and treatment will be required to meet the zero discharge limitations for dry weather flows. Region-	permanent BMPs that extract and treat surface water for bacteria, and to give greater consideration to the present, and probable future beneficial uses of water bodies subject to the TMDL.

		wide, costs associated with compliance with the new TMDL are likely to run into the hundreds of millions of dollars. Before the Regional Board imposes this obligation on the public, it needs to openly consider the direct economic costs placed on each discharger, including the City. The purpose of Water Code section 13241 is to ensure that the public has an opportunity to have an honest, open discussion about the ramifications, costs, and benefits of a Regional Board's decision to modify Basin Plan requirements. The far reaching nature of the TMDL is just one example of why such factors need to be considered and discussed openly. Sidestepping these considerations not only violates Section 13241, but more importantly denies the public opportunity to determine what ramifications the TMDL could have for the region. The TMDL should therefore include a more in-depth analysis of the economic costs the TMDL will impose on the dischargers, including the cost of designing, implementing, and maintaining permanent BMPs that extract and treat surface water for bacteria. The TMDL should also give greater consideration to the present, and probable future beneficial uses of water bodies subject to the TMDL. As stated above, many inland surface water bodies are subject to the same bacteria standards as heavily used public beaches, despite the fact that they are not currently, and are unlikely to ever be used in that manner. Lastly, any portion of the TMDL or its implementation plan exceeds the requirements of federal law, are subject to Article XIII B, Section 6 of the California Constitution. Article XIII B requires that any Regional Board requirements imposed on local government entities that are not explicitly required by federal law must be funded by the state. (*See County of Los Angeles v. Commission on State Mandates* (2007) 150 Cal.App.4th 898, 915-916.)	

City of Vista

January 21, 2010

Mr. Wayne Chiu
California Regional Water Quality Control Board,
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

Subject: City of Vista Comments on Revised TMDL for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek)

Dear Mr. Chiu,

The purpose of this letter is to express the City of Vista's support for the comments submitted by the County of San Diego related to the Revised TMDL for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek).

The comments addressed by the County are:

1. Definition of a rain event.
2. No allowable exceedance frequency during dry weather.
3. Basin Plan amendments.
4. Monitoring for TMDL Compliance and Compliance Assessment.
5. TMDL Compliance Timelines.
6. Combining dry and wet data to calculate a wet weather geometric mean.
7. Application of Total Coliform Water Quality Objectives to Creeks.
8. Applicability of TMDL requirements to non-impaired waters.
9. Assumption that all dry weather flows are anthropogenic.

Specifically, the City is most concerned about #8. In the San Marcos HA, the City of Vista, as well as several other Copermittees, is listed as Responsible Parties. In this HA, the impairment is entirely within one jurisdiction and the responsibility for compliance and development of implementation plans should rest with that jurisdiction. As drafted, this table includes many jurisdictions that do not contribute drainage to the impaired water body. The table referenced is on page A59-62 of the draft resolution. The City respectfully requests that the Responsible Parties listed in the table be verified for accuracy prior to adoption.

600 Eucalyptus Avenue • Vista, California 92084 • (760) 726-1340 • www.cityofvista.com

Thank you for the opportunity to comment on the draft resolution and technical report. Please contact me at (760) 726-1340 x1373 with any questions.

Sincerely,

Paul Hartman
Stormwater Program Manager
Water Quality Protection Program

cc: Lawrence Pierce, Director of Engineering
Sudi Shoja, Assistant Director of Engineering

ORANGE COUNTY PublicWorks
Our Community. Our Commitment.

Jess A. Carbajal, Director

OC Watersheds
2301 N. Glassell St.
Orange, Ca
92865

Telephone: (714) 955-0600
Fax: (714) 955-0638

January 25, 2010

Dave Gibson, Executive Director
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego CA 92123-4340

SUBJECT: Revised Total Maximum Daily Loads for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek)

Dear Mr. Gibson:

The OC Public Works Department, OC Watersheds Program appreciates the opportunity to submit comments on the Revised Total Maximum Daily Loads for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek) (Revised Beaches and Creeks TMDL). We have participated in the development of the Revised Beaches and Creek TMDL from the beginning of the project in 2004 and have remained active members of the Stakeholder Advisory Group. We appreciate staff's efforts to revise the TMDL and believe much progress has been made with the document. However, there are several areas where the text requires clarification and edits to remain true to the understandings built between the stakeholders and Regional Board staff over the last six years.

In an effort to keep the TMDL adoption process on a timely schedule, we have focused our attention on Tentative Resolution No. R9-2010-001 and Attachment A to Resolution No. R9-2010-001, and where possible have formatted our comments as proposed errata. Comments on the Revised Draft Final Technical Report "Revised Total Maximum Daily Loads for Indicator Bacteria Project I – Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek) (Draft TSR) have been previously discussed with staff at the January 7, 2010 stakeholder meeting and are included here for inclusion in the administrative record.

We also support and include for reference the comments submitted separately by the Cities of Laguna Niguel, Dana Point and San Diego.

Comments and suggested errata:

1. Tentative Resolution No. R9-2010-001, page 3, section 7. Relationship Between Bacteria and Pathogens, second sentence should be revised as follows: "Humans may be exposed to these waterborne pathogens through recreational water use or by harvesting and consuming filter-feeding shellfish <u>in waters impacted by human sewage</u>. Bacteria have been historically used as indicators of human sewage and associated pathogens because 1) the presence of pathogens and the probability of disease are directly correlated with

January 25, 2010
Mr. Dave Gibson

the density of indicator bacteria in waters used for recreation or shellfish harvesting in waters known to be impacted by human sewage…"

2. Tentative Resolution No. R9-2010-001, page 6, section 15. Bacteria Impaired Waters Included in Revised Bacteria TMDLs Project I Table and Attachment A, page A1 table: The table should be revised to include the specific areas of impairment designated in the original 2002 Clean Water Act §303(d) list as shown below:

Watershed	Type of Listing	Waterbody Name [a]	Number of Listings	Impairment located at
Lower San Juan HSA (901.27)	Creek	San Juan Creek	3	*North Beach Creek, San Juan Creek (large outlet), Capistrano Beach, South Capistrano Beach at Beach Road.*
	Estuary	San Juan Creek (mouth)		
	Shoreline	Pacific Ocean Shoreline, Lower San Juan HSA [b]		

3. Tentative Resolution No. R9-2010-001, page 6, section 15. Bacteria Impaired Waters Included in Revised Bacteria TMDLs Project I; and Attachment A, page A1, second paragraph should be revised as follows: "…The TMDLs that have been developed for the Pacific Ocean shorelines are ~~assumed to be~~ applicable to ~~all~~ the ~~beaches located on the shorelines of~~ areas which were designated as and remain impaired in the hydrologic subareas (HSAs), hydrologic areas (HAs), and hydrologic units (HUs) listed above. It is recognized that several shoreline areas have been recommended for de-listing in the 2008 Clean Water Act Sections 305(b) and 303(d) Integrated Report for the San Diego Region approved by the San Diego Water Board on December 16, 2009. As long as water quality objectives are met at shoreline locations, these TMDL requirements will not apply and compliance and monitoring will be maintained through NPDES Permits and Waste Discharge Requirements.
4. Tentative Resolution No. R9-2010-001, page 9, section 19. Sources of Bacteria, second paragraph, 4th sentence should be revised as follows: "…Some ~~D~~discharges of bacteria from the Municipal MS4s, Caltrans, and Agriculture land use categories are assumed to be anthropogenic in origin and considered controllable. Some discharges from the Municipal MS4s may result from natural sources and transported through pipes and conveyance channels via infiltrating groundwater and are not considered controllable."
5. Tentative Resolution No. R9-2010-001, page 10, section 22. Allocation of TMDLs to Point Sources and Nonpoint Sources, second paragraph should be revised as follows: "~~For~~ When the dry weather TMDLs were originally calculated, a major underlying assumption ~~is~~ was that there is no discharge of surface runoff, thus no discharge of bacteria, expected from land uses associated with the Caltrans, Agriculture, and Open Space land use categories during dry weather. Because no discharge of surface runoff ~~is~~ was expected from these land use categories during dry weather, they were assigned dry weather WLAs and LAs of zero. The dry weather TMDLs were assigned entirely to the Municipal MS4s land use category as dry weather WLAs, meaning only discharges of bacteria loads to the receiving waters are expected or allowed from the Municipal MS4s land use category during dry weather."

January 25, 2010
Mr. Dave Gibson

6. Tentative Resolution No. R9-2010-001, page 13, section 29 should be revised as follows: "Compliance with WLAs and LAs: Ultimately, the TMDLs in the receiving waters will be met when the dischargers responsible for controllable sources meet their assigned WLAs and LAs and natural sources of bacteria and resulting exceedences are accounted for. When all discharges from controllable sources meet their assigned WLAs and LAs, the beneficial uses in the receiving waters should be restored and compliance with the TMDLs should be achieved. The TMDLs are calculated based on numeric targets consisting of the numeric bacteria REC-1 WQOs and allowable exceedance frequencies. Discharges from controllable sources that can meet the numeric bacteria REC-1 WQOs and allowable exceedance frequencies in their effluent are not expected to cause exceedances of the numeric targets in the receiving waters. However, exceedences may occur from natural sources in wet and dry weather. The Southern California Coastal Water Research Project (SCCWRP) has produced technical reports examining dry weather fecal indicator bacteria levels in natural reference creeks throughout Southern California from May 2006 – May 2007. Findings include a total of 18.2% of the fecal indicator bacteria samples from the sites exceeded daily (single sample) water quality standards and a total of 39% of enterococcus samples exceeded the 30-day geomean objectives. If the TMDLs are attained in the receiving waters, the assumption will be that the controllable sources are in compliance with their assigned WLAs and LAs. Otherwise, the dischargers responsible for controllable sources of bacteria must provide evidence and demonstrate to the San Diego Water Board that their discharges are not causing exceedances of the numeric WQOs and allowable exceedance frequencies in the receiving waters."
7. Tentative Resolution No. R9-2010-001, page 15, section 35. Economic Analysis: The section should indicate whether the San Diego Water Board considers the estimated $50,000 - $973,000,000 to treat 10% of a watershed reasonable and acceptable. Even the cursory economic analysis that was conducted for this TMDL predicts astronomical costs of compliance given the modeled reductions needed for dry and wet weather.
8. Attachment A, page A14, footnote 5 should be revised as follows: "Available water quality data from the San Diego Reference Systems when the TMDL modeling was conducted indicated that exceedences of the single sample WQO during dry weather conditions were uncommon. Furthermore, it was assumed if the exceedence of the single sample WQOs during dry weather ~~is~~ was unlikely, exceedences of the geometic mean ~~are~~ were even more unlikely. Subsequently the Southern California Coastal Water Research Project (SCCWRP) has produced technical reports examining dry weather fecal indicator bacteria levels in natural reference creeks throughout Southern California from May 2006 – May 2007. Findings include a total of 18.2% of the fecal indicator bacteria samples from the sites exceeded daily (single sample) water quality standards and a total of 39% of enterococcus samples exceeded the 30-day geomean objectives. Data from the two studies clearly show that a 0 percent allowable exceedance frequency for either the single sample or geomean WQO is not supported by current scientific data."
9. Attachment A, page A15, first paragraph should be revised as follows: "…The "designated beach" usage frequency has the ~~most conservative and protective~~ lowest enterococci REC-1 WQOs in the Basin Plan." This change is appropriate since the same level of risk protection is provided by each of the enterococcus REC-1 WQOs based on the usage frequency of the location. The standards provide swimmers at low use beaches have the same level of protection as those at high use beaches.

10. Attachment A, page A16; second table, footnote c should be revised as follows: "Total Coliform 30-day geometric mean WQO for REC-1 at beaches ~~and the point in creeks that discharge to beaches~~." This change is appropriate because the Basin Plan does not contain Total Coliform standards for freshwater creeks.
11. Attachment A, page A16, (c) Source Analysis should be revised as follows: "In rural and undeveloped areas, bacteria are assumed to be washed off the land surface primarily by wet weather flows directly to surface waters. However, SCCWRP Technical Report 542 examined dry weather fecal indicator bacteria levels in natural reference creeks throughout Southern California from May 2006 - May2007 and documented exceedences of both single sample and geometic mean REC-1 WQOs when surface flows from precipitation did not occur. Discharges from…"
12. Attachment A, page A19, (1) Concentration Based TMDLs should be revised as follows: "An allowable exceedence frequency is included as part of the wet weather numeric target…"
13. Attachment A, page A37, (A) Point Sources, Numeric Targets, third bullet should be revised as follows: "The numeric targets for dry weather TMDLs consist of the REC-1 30-day geometric mean WQOs and a 0 percent allowable exceedence frequency. In 2007 SCCWRP produced technical reports examining dry weather fecal indicator bacteria levels in natural reference creeks throughout Southern California from May 2006 – May 2007. Findings include a total of 18.2% of the fecal indicator bacteria samples from the sites exceeded daily (single sample) water quality standards and a total of 39% of enterococcus samples exceeded the 30-day geomean objectives. Data from the two studies clearly show that a 0 percent allowable exceedance frequency for either the single sample or geomean WQO is not supported by current scientific data and an allowable exceedence frequency for dry weather WQOs should be considered."
14. Attachment A, page A41, first paragraph should be revised as follows: "The available data reported by the Phase I MS4s and the results of the technical TMDL analysis indicate that discharges into and from MS4s ~~are~~ may be in violation of the discharge prohibitions and receiving waters limitations above if said discharges come from controllable anthropogenic sources. It has yet to be determined what portion of discharges into and from MS4s originate from natural, uncontrollable sources and processes."
15. Attachment A, page A41, last bullet should be revised as follows: "Compliance schedule for Phase I MS4s to attain, to the maximum extent practicable (MEP), the MS4 WLA and TMDLs in the receiving waters."
16. Attachment A, page A41, last paragraph should be revised as follows: "The Phase I MS4s will be required to submit Bacteria Load Reduction Plans (BLRPs) or Comprehensive Load Reduction Plans (CLRPs) outlining a proposed BMP program that will, to the MEP, be capable of achieving the necessary load reductions required to attain the TMDLs in the receiving waters…"
17. Attachment A, page A42, first paragraph should be revised as follows: "Ideally, the Phase I MS4s and Caltrans will develop and coordinate the elements of their BLRPs and CLRPs together in watersheds where both entities contribute to the water quality problem."
18. Attachment A, page A44, 4th paragraph should be revised as follows: "Because POTWs and wastewater collection systems have been assigned WLAs of zero, no discharges of bacteria are expected or allowed under the wet weather TMDLs or dry weather TMDLs.

If discharges of bacteria from POTWs and/or wastewater collection systems do occur as a result of sanitary sewer overflows and result in WQO exceedences, these exceedences will not apply to other dischargers compliance status." This change is appropriate because it is reasonably foreseeable that accidental discharges from POTWs and/or wastewater collection systems may occur and the resulting WQO exceedences should not contribute to findings of non-compliance of dischargers unrelated to the POTW or wastewater collection system.

19. Attachment A, page A50, (i) Monitoring for TMDL Compliance and Compliance Assessment, second sentence should be revised as follows: "When all discharges from controllable sources meet their assigned WLAs and LAs, natural sources of bacteria are accounted for, and the numeric targets…"
20. Attachment A, page A50, (i) Monitoring for TMDL Compliance and Compliance Assessment, first bullet should be revised as follows: "If exceedences of the receiving water limitations are observed in the monitoring data, additional monitoring locations, or other source identification tools ~~must~~ may be added to identify the sources causing the exceedences, if the cause is unknown. ~~An adequate number of additional monitoring locations and frequency of monitoring must be added to identify the sources causing the exceedences in the receiving water.~~ The additional monitoring locations or other source identification tools ~~must~~ may also be used to demonstrate that the bacteria loads from the sources identified have been addressed and are no longer causing exceedences in the receiving waters.
21. Attachment A, page A50, (i) Monitoring for TMDL Compliance and Compliance Assessment, second bullet should be revised as follows: "If exceedences of the receiving water limitations are observed in the monitoring data, additional monitoring locations, or other source identification tools ~~must~~ may be added to identify the sources causing the exceedences, if the cause is unknown. ~~An adequate number of additional monitoring locations and frequency of monitoring must be added to identify the sources causing the exceedences in the receiving water.~~ The additional monitoring locations or other source identification tools ~~must~~ may also be used to demonstrate that the bacteria loads from the sources identified have been addressed and are no longer causing exceedences in the receiving waters."
22. Attachment A, page A50, (i) Monitoring for TMDL Compliance and Compliance Assessment, third bullet: "Wet weather monitoring following two storms per rainy season (i.e., October 1 through April 30) should occur at least once within 24 hours of the end of ~~a~~the storm event ~~that occurs during the rainy season (i.e., October 1 through April 30).~~
23. Attachment A, page A53, first paragraph should be revised as follows: "Discharges from other sources (i.e., Caltrans, Agriculture, POTWs, Wastewater Collection Systems, and Open Spaces) during dry weather are not expected and/or not allowed (i.e., WLA = 0 or LA = 0). If discharges of bacteria from these sources do occur and result in WQO exceedences, these exceedences will not apply to other dischargers (i.e., MS4s) compliance status."
24. Attachment A, page A53, 2. Compliance with Wet Weather TMDLs, first paragraph should be revised as follows: "At the end of the wet weather TMDL compliance schedule, the bacteria densities in the receiving waters for all wet weather days cannot exceed the single sample maximum REC-1 WQOs more than the allowable exceedence frequency. ~~In addition, the bacteria densities must be less than or equal to the 30-day~~

~~geometric mean REC-1 WQOs 100 percent of the time (i.e., both dry and wet weather days in a 30-day period shall not exceed the 30-day geometric mean REC-1 more than 0 percent of the time).~~ " This change is appropriate because wet weather TMDL compliance is based upon an allowable 22% single sample exceed frequency not the 30 day geometric mean with no exceedance frequency.

25. Attachment A, page A54, third paragraph should be revised as follows: "If controllable sources other than dischages from the municipal Phase I MS4s are identified before or after the end of the wet weather TMDL Compliance Schedules as causing the exceedences, the identified exceedences will not apply to the MS4s compliance status, and those controllable sources will be responsible for reducing their bacteria loads and/or demonstrating that discharges from those sources are ~~not~~ no longer causing the exceedences."
26. Attachment A, page A54, fourth paragraph should be revised as follows: "…Progress can be demonstrated with reductions in exceedence frequencies in the receiving water, reductions in flows to the receiving water, iterative implementation of BMPs or other metrics, until the allowable exceedence frequencies ultimately are achieved at the end of the TMDL Compliance Schedules."
27. Attachment A, page A54, 1. Measuring Progress Toward Attaining Dry Weather TMDLs: "For the dry weather TMDLs, available historical monitoring data from the year 2002 ~~to the effective date of these TMDLs~~ should be used to calculate the "existing" dry weather exceedence frequency of the 30-day geometric mean REC-1 WQOs for each watershed." Calculating the "existing" dry weather exceedence frequency with data beyond 2002 will wipe out any recognition of the progress and iterative BMPs achieved under MS4 programs and other watershed initiatives from 2003 to the present. The County and cities have been working diligently on reducing bacteria loads from the initial 303(d) listings and deserve the compliance credit and recognition of these efforts and the related significant financial investment.
28. Attachment A, page A57, (j) TMDL Compliance Schedule, first paragraph, last sentence should be revised as follows: "After the controllable sources achieve their assigned WLAs and LAs and natural sources of bacteria are accounted for, the TMDLs in the receiving waters will be met and beneficial uses restored.
29. Attachment A, page A57, (j) TMDL Compliance Schedule, second paragraph, first sentence should be revised as follows: "Until the dischargers achieve their assigned WLAs and LAs and natural sources of bacteria are accounted for, the beneficial uses of the waterbodies addressed by this project will likely remain impaired~~, and the dischargers will continue violating one or more Basin Plan waste discharge prohibitions.~~
30. Attachment A, page A65, first paragraph, second sentence should be revised as follows: "~~Several of the segments or areas in the list above~~The following segments or areas have been proposed for ~~delisted~~ delisting for one or more indicator bacteria species ~~or redefined~~ in the 2008 303(d) List by the San Diego Water Board:
Pacific Ocean Shoreline, San Joaquin Hills HSA, at Crescent Bay Beach
Pacific Ocean Shoreline, Laguna Beach HSA, at Bluebird Canyon
Pacific Ocean Shoreline, Laguna Beach HSA, at Dumond Drive at Victoria Beach
Pacific Ocean Shoreline, Laguna Beach HSA, at Laguna Beach at Cleo Street
Pacific Ocean Shoreline, Laguna Beach HSA, at Laguna Beach at Laguna Hotel
Pacific Ocean Shoreline, Laguna Beach HSA, at Laguna Beach at Main Beach
Pacific Ocean Shoreline, Aliso HSA, at Aliso Beach –middle

Pacific Ocean Shoreline, Aliso HSA, at Aliso Beach –north
Pacific Ocean Shoreline, Aliso HSA, at Blue Lagoon
Pacific Ocean Shoreline, Dan Point HSA, at Aliso Beach at West Street
Pacific Ocean Shoreline, Dan Point HSA, at Dana Strands Surfzone at Dana Strands Rd
Pacific Ocean Shoreline, Dan Point HSA, at Salt Creek outlet at Monarch Beach
Pacific Ocean Shoreline, Dan Point HSA, at South of Salt Creek outlet at Salt Creek Service Road
Pacific Ocean Shoreline, Dan Point HSA, at Table Rock
Pacific Ocean Shoreline, Dan Point HSA, at Thousand Steps Beach
Pacific Ocean Shoreline, Lower San Juan HSA, at North Beach Creek
Pacific Ocean Shoreline, San Clemente HA, at Capistrano Shores at North Ole Hanson Beach
Pacific Ocean Shoreline, San Clemente HA, at Riviera Beach
Pacific Ocean Shoreline, San Clemente HA, at San Clemente City Beach at Linda Lane
Pacific Ocean Shoreline, San Clemente HA, at San Clemente City Beach at Mariposa Lane
Pacific Ocean Shoreline, San Clemente HA, at San Clemente City Beach at Pier
Pacific Ocean Shoreline, San Clemente HA, at San Clemente City Beach at South Trafalgar St Beach
Pacific Ocean Shoreline, San Clemente HA, at San Clemente City Beach at South Trafalgar Canyon outlet
Pacific Ocean Shoreline, San Clemente HA, at South Capistrano Beach at Beach Road
Pacific Ocean Shoreline, San Clemente HA, at South Capistrano County Beach
"…also include delist segments in San Diego County.

31. Attachment A, page A65, first paragraph, last sentence should be revised as follows: "The TMDLs that address the creeks and Pacific Ocean shorelines identified in the 2002 303(d) List are assumed to be applicable to all the beaches ~~located on the shorelines of the hydrologic subareas (HSAs), hydrologic areas (Has), and hydrologic units (Hus) listed above, or~~ as listed individually in the 2008 and future 303(d) Lists.
32. Attachment A, page A70, (k) TMDL Implementation Milestones table: revise the date ~~As needed after effective date~~ to "5 years after effective date" for the following Implementation Actions:

    14. Amend discharge conditions of appropriate waivers to be consistent with the requirements for complying with the TMDLs and Agriculture LAs;
    15. Issue individual or general WDRs or Basin Plan prohibitions consistent with the TMDLs and LAs for controllable nonpoint sources discharges not eligible for conditional waivers;
    17. Enroll Phase II MS4s identified as significant sources of bacteria to receiving waters under State Water Board general WDRs and NPDES requirements;
    18. Issue individual or general WDRs and NPDES requirements consistent with the TMDLs and WLAs for specific Phase II MS4s or category of Phase II MS4s;
    19. Take enforcement actions against controllable point sources and nonpoint sources to attain compliance with the WLAs and LAs.

    These changes are appropriate since the assumption that the MS4s are the largest discharger of bacteria has been made based on the MS4s being the only dischargers currently required to submit monitoring data for their dischargers. A timely

commitment to investigate and address discharges from known entities, such as Phase II MS4s and Agriculture is needed to ensure that TMDL reductions and timelines are met.

33. Draft Technical Staff Report (TSR), Section 1 Executive Summary, page 4, 5th paragraph, 1st line states: "For the dry weather TMDLs, the discharges and bacteria loads from land uses associated with CalTrans, Agriculture and Open Space land uses are expected to be zero. This is because there is no flow source that is expected during dry weather to wash off of these land uses." And Draft TSR, Section 1 Executive Summary, page 6, Numeric Targets 3rd bullet: "The numeric targets for dry weather TMDLs consist of the REC-1 30-day geometric mean WQOs and a 0 percent allowable exceedence frequency." These statements are not supported by current scientific studies completed by SCCWRP. See comments 6, 8, 11, and 13 above. All references to a 0 percent allowable exceedence frequency in dry weather should be removed.
34. Draft TSR, Section 1 Executive Summary, page 7, Allocations 6th bullet: The assumption that there is no runoff from agricultural land is unsupported and highly suspect give practical experience.
35. Draft TSR, Section 1 Executive Summary, page 7, Allocations 7th bullet #1: Just because a source is subject to regulation does not mean that it is controllable.
36. Draft TSR, Section 1 Executive Summary, page 8, Load Reductions, 1st paragraph states: "The WQBELs will likely consist of receiving water limitations (based on the numeric targets) and require the implementation of a BMP program to achieve the TMDLs in the receiving waters….Ideally, the Phase I MS4s and CalTrans will develop and submit their BLRPs or CLRPs together." This is a significant revision from the previous version of the TMDL and from the assurances given to members of the Stakeholder Advisory Group that the WQBELs would consist of an iterative BMP program.
37. Draft TSR, Section 2 Introduction, page 16, 3rd paragraph – The text should include a discussion of the Natural Sources Exclusion.
38. Draft TSR, Section 3, Problem Statement, pg 21 – "The listing of Pacific Ocean shorelines on the 2002 303(d) List are assumed to be applicable to all beaches located on the shorelines of the HSAs and HAs listed above". This assumption is baseless. The 2002 list specifically indicated the beaches that are impaired. This assumption is also inconsistent with the Stormwater Monitoring Coalition recommendations for the limited coastal area representative of coastal monitoring locations.
39. Draft TSR, Section 4 Numeric Target Selection, pg 32 states: "The natural sources exclusion approach can only be used to account for exceedences of bacteria WQOs after the responsible dischargers demonstrate that all anthropogenic sources have been *eliminated*…" In next paragraph the text states "…the natural sources exclusion approach also requires *control* of indicator bacteria from anthropogenic sources…" (emphasis added). It is our understanding from discussions with Deborah Jayne your staff that the Natural Sources Exclusion Approach requires control, not elimination of anthropogenic sources. The text should be revised accordingly.
40. Draft TSR, Section 11 Implementation Plan, page 147, bottom paragraph should be revised as follows: "Existing dischargers ~~are~~ <u>may be</u> violating one or more of these Basin Plan prohibitions.

January 25, 2010
Mr. Dave Gibson

Thank you for your consideration of these comments. We look forward to resolving the above issues with you and being able to highlight the cooperative work on TMDL development at the February 10th hearing.

If you have any questions regarding these comments, please contact Amanda Carr at (714) 955-0650.

Very truly yours,

Chris Crompton, Manager
Environmental Resources

cc: South Orange County NPDES Permittees

This page left intentionally blank

County of San Diego

DEPARTMENT OF PUBLIC WORKS

JOHN L. SNYDER
DIRECTOR

5201 RUFFIN ROAD, SUITE D
SAN DIEGO, CALIFORNIA 92123-4310
(858) 694-2055 FAX: (858) 694-8928
Web Site: www.sdcounty.ca.gov/dpw/

RICHARD E. CROMPTON
ASSISTANT DIRECTOR

January 22, 2010

Dave Gibson, Executive Officer
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego CA 92123-4340

RE: REVISED BACTERIA TMDL, PROJECT I FOR BEACHES AND CREEKS

Dear Mr. Gibson:

Thank you for the opportunity to comment on the *Revised Total Maximum Daily Loads for Indicator Bacteria, Project I*. We feel strongly that the enclosed comments and suggestions for change are all reasonable and, if incorporated, would allow the TMDL to move forward after many years of delay. It is not our intention to further delay development or implementation of the TMDL. However, we must emphasize how critical it is that the TMDL be based on sound science and contain a reasonable process for re-visiting assumptions once better data become available. This TMDL is unprecedented in its scale. It addresses 20 different water bodies and a total watershed area of over 1,700 square miles. As a large municipality with jurisdiction in multiple watersheds affected by the TMDL, the County is keenly interested in ensuring that the TMDL allows us to move forward with cost-effective implementation approaches based on sound science and reasonable expectations for success. We hope you find our suggestions useful.

Please contact Todd Snyder, Watershed Planning Manager, at (858) 694-3482 or todd.snyder@sdcounty.ca.gov, with questions about these comments.

Sincerely,

Todd Snyder for

Cid Tesoro, LUEG Program Manager
Department of Public Works

County of San Diego Comments and Proposed Changes to the Revised Bacteria TMDL, Project I
January 22, 2010

Issue	Comments	Proposed Change(s)
1. A stronger commitment to and timeline for future TMDL revisions are necessary.	The TMDL recognizes that revisions to the Basin Plan may be necessary in the future (page A49). However, because this TMDL is founded on several critical assumptions, and because studies with bearing on these assumptions are either planned, ongoing, or already complete, stronger language should be included in the Basin Plan amendment to require a more specific commitment to and timeline for revising the TMDL to ensure that it is consistent with the most current science and available data from the San Diego region. The following is a representative sample of the critical TMDL assumptions that warrant reconsideration in the near future: 1. Exceedance frequencies observed at a reference beach are used to establish allowable exceedance frequencies for inland surface waters (creeks), where less mixing, reduced salinity, and other factors are expected to yield higher bacteria densities, even under natural conditions. Studies conducted by the Southern California Coastal Waters Research Project (SCCWRP) subsequent to the 2002 data set used to develop this TMDL show that reference creek exceedances are substantially higher than reference beach exceedances during both wet and dry weather. 2. All flows and bacteria loads during dry weather are assumed to be anthropogenic and the responsibility of Phase I MS4s to reduce. SCCWRP studies show that reference creeks in southern California often flow during dry weather, even in	A paragraph should be added at the end of Chapter 7 Section (f)(7) of the proposed Basin Plan amendment (page A50) stating: "Any study conducted following the procedures outlined in this paragraph will be considered by the San Diego Water Board during the time period specified in Table (Insert Table Number) TMDL Implementation Milestones". A row should be added to the TMDL Implementation Milestones Table (page A69) to state: ▪ Implementation Action: San Diego Water Board will reconsider the TMDL to include results of any optional special studies and water quality monitoring data completed by the responsible entities and revise numeric targets, WLAs, LAs and the implementation schedule as needed. ▪ Responsible Parties: San Diego Water Board ▪ Date: Within five years of the effective date of the TMDL or within one year of receipt of final study results, whichever is later

County of San Diego Comments and Proposed Changes to the Revised Bacteria TMDL, Project I
January 22, 2010

Issue	Comments	Proposed Change(s)
	the absence of anthropogenic inputs. 3. Dischargers other than Phase I MS4s do not need to reduce bacteria loads in order to meet water quality objectives in the receiving waters. Monitoring required by this TMDL may show that non-Phase I MS4 dischargers must reduce bacteria loads in order to meet concentration-based objectives in receiving waters. 4. US EPA will publish updated bacteria standards for receiving waters no later than 2012. This TMDL may need to be revised to incorporate the latest scientific information as reflected in EPA's revised standards.	
2. Compliance monitoring under the TMDL should not be the sole responsibility of Phase I MS4s.	The entire compliance monitoring burden under the TMDL has been placed on Phase I MS4 dischargers, including monitoring necessary to identify the contributions of non-Phase I MS4 dischargers, some of which are even assigned wasteload allocations (WLAs) or load allocations (LAs) under this TMDL (i.e., Caltrans and agriculture). (see pages A50-A54)	At a minimum, the paragraph beginning "Because the Phase I MS4s are located at the base of the watersheds …" should be written to specify that all dischargers assigned WLAs and LAs under this TMDL are required to participate in compliance monitoring.
3. The definition of a rain event should be changed from 0.2 inch to 0.1 inch.	Data from a study at Leo Carrillo Beach (a reference watershed in Los Angeles County) are used to establish a frequency at which beaches and creeks covered by this TMDL can exceed bacteria water quality objectives during wet weather (22%). Allowable exceedance frequencies are appropriate in this TMDL because numerous studies have found that even reference watersheds unimpacted by anthropogenic activities sometimes exceed bacteria	Wet weather days in this TMDL should be defined as any rain event 0.1 inch or greater and the following 72 hours. This will ensure consistency with the Leo Carrillo Beach reference study. This applies to: • Resolution pg. 9, footnotes 20 and 21 • Attachment A Tables A26-35 • Attachment A A51 tables

County of San Diego Comments and Proposed Changes to the Revised Bacteria TMDL, Project I
January 22, 2010

Issue	Comments	Proposed Change(s)
	water quality objectives. Exceedance frequencies at Leo Carrillo Beach were calculated based on wet weather days defined as rainfall events of at least 0.1 inch and the following 72 hours. This TMDL defines wet weather days as rainfall events of 0.2 inches or greater and the following 72 hours. It is scientifically invalid to apply the wet weather exceedance frequency observed at Leo Carrillo Beach to this TMDL, which uses a different definition of wet weather. The exceedance frequency for rainfall events greater than 0.2 inches is unknown, but likely to be different than 22%.	• Technical Report Table 4-2 • Technical Report Table 4-4 • Technical Report Sec 4.1.3 Paragraph 1 • Technical Report Section 5.2.1 page 44 • Technical Report Table 9-1 • Technical Report Table 9-3 • Technical Report Footnote 74 and 76 on page 116 • Technical Report Table 11-1 and 11-2 • Technical Report Footnote 77 on page 118 • Technical Report Footnote 78 on page 119
4. The TMDL should not require compliance with total coliform water quality objectives in creeks or inland waterways.	The TMDL states that wet and dry weather numeric objectives for total coliform apply at the point in a creek that discharges to a beach, bay, or estuary. The San Diego Basin Plan does not contain total coliform water quality objectives applicable to inland surface waters, only to marine waters.	Language throughout the Resolution, Basin Plan Amendment, and Technical Report should be reviewed and changed to correctly state that total coliform water quality objectives are not applicable in inland surface waters, only at the point in creeks where continual mixing with salt water occurs. This applies to: <u>Attachment A</u> ▪ A16 (footnote C) ▪ A52 (footnote F) ▪ A56 Table <u>Technical Report</u> • Table 9-1 • Table 9-2a • Table 9-3 • Table 9-4b • Table 11-3

County of San Diego Comments and Proposed Changes to the Revised Bacteria TMDL, Project I
January 22, 2010

Issue	Comments	Proposed Change(s)
5. The TMDL should include allowable exceedance frequencies for dry weather similar to those established for wet weather.	This TMDL allows no exceedances of bacteria water quality objectives during dry weather days (defined as days with less than 0.2 inch of rainfall observed on each of the previous 3 days). In other TMDLs where Leo Carrillo Beach is used as a reference system (i.e., Santa Monica Bay Beaches Bacteria TMDL), the dry weather TMDL is split into two seasons: summer dry (0% allowable exceedance frequency) and winter dry (3% allowable exceedance frequency). This is a scientifically sound approach because studies have found that reference beaches and creeks do sometimes exceed water quality objectives during dry weather. A recent study published by SCCWRP (Tiefenthaler, L., E. Stein and G. Lyon. 2008. Fecal indicator bacteria levels during dry weather from Southern California reference streams. SCCWRP Annual Report, Costa Mesa, CA) confirms that exceedances of bacteria water quality objectives do occur during dry weather conditions in Southern California reference streams, including San Mateo Creek in San Diego County.	The TMDL should allow a 3% exceedance frequency during dry weather conditions until a more appropriate frequency can be established based on data collected from a reference system in the San Diego region. This applies to: • Attachment A A14, 1st paragraph & footnote 5 • Attachment A A27-A28, Table • Technical Report Section 11.2.2.1, under "numeric targets" 3rd and 4th bullets, page 100 • Technical Report page 118 1st paragraph
6. The TMDL compliance timelines should be extended.	When the Regional Board originally adopted this TMDL in December 2007, the compliance timeline for achieving wet weather TMDLs was 20 years. In the revised TMDL, the compliance timeline has been cut in half to 10 years for all water bodies except Chollas Creek. It is unclear why this was necessary. The TMDL and Tentative Resolution state that if dischargers submit a Comprehensive Load Reduction Plan (CLRP) that addresses multiple constituents in addition to bacteria, the compliance timeline may be extended to 20 years	The TMDL should be revised to allow for a 20-year compliance timeline for achievement of both wet and dry weather TMDLs. (see pages A66-A69) This also applies to: • Technical Report Section 11.5

County of San Diego Comments and Proposed Changes to the Revised Bacteria TMDL, Project I
January 22, 2010

Issue	Comments	Proposed Change(s)
	for achievement of wet weather TMDLs only. However, CLRPs are not defined well enough for dischargers to understand how compliance would be determined if they decide to develop CLRPs. There is no allowance for a timeline longer than 10 years for achieving the dry weather TMDLs. According to Table 3-1 in the Technical Report, this TMDL is applicable to 1,738 square miles of Orange and San Diego Counties. Since the TMDL has been revised to require compliance with concentration-based water quality objectives, compliance is now potentially enforceable throughout the entire extent of these 1,738 square miles. Given the scale, scope, complexity, and cost of the structural and non-structural solutions likely to be needed to reduce bacteria loads to required levels, 20 years is an extremely aggressive compliance timeline and should not be reduced any further. A longer compliance timeline is appropriate in that 20 water bodies are covered under this TMDL. Most TMDLs cover only one water body. The County of San Diego, for example, will be required to reduce bacteria loads simultaneously in six watersheds.	
7. The TMDL should not require bacteria load reductions or additional monitoring in unimpaired watersheds.	Page A1 of the proposed Basin Plan amendment states: "The TMDLs that have been developed for the Pacific Ocean shorelines are assumed to be applicable to all the beaches located on the shorelines of the hydrologic subareas (HSAs), hydrologic areas (HAs), and hydrologic units (HUs) listed [in a table] above." This statement implies that all dischargers located anywhere in the San	The City of Encinitas is the only Phase I MS4 that should be assigned responsibility for load reductions and compliance monitoring in the San Marcos HA. The text and table on page A1 should be revised to state that the TMDL in the San Marcos HA only applies to the 1.43 square mile Moonlight Beach drainage area. All other Phase I MS4s should be

County of San Diego Comments and Proposed Changes to the Revised Bacteria TMDL, Project I
January 22, 2010

Issue	Comments	Proposed Change(s)
	Marcos HA (904.5) will be required to comply with the requirements of the TMDL. In fact, Moonlight Beach is the only segment within the San Marcos HA that is identified as impaired on the 303(d) list. Moonlight Beach is hydrologically disconnected from the rest of the San Marcos HA. The draft Technical Report recognizes this fact in Table 3-1 where Moonlight Beach is shown to have a total drainage area of only 1.43 square miles. The table on Page A61 goes one step further by listing eight Phase I MS4s as "responsible municipalities" that will be required to comply with TMDL requirements in the San Marcos HA. These eight municipalities represent all of the Phase I MS4s within the Carlsbad HU. The table implies that any Phase I MS4 located anywhere in the Carlsbad HU will be required to comply with the requirements of this TMDL. In fact, the City of Encinitas is the only Phase I MS4 discharger to Moonlight Beach. When asked at the January 7, 2010, SAG meeting, Regional Board staff indicated that this footnote was worded as intended and that the inclusion of all eight Phase I MS4s within the Carlsbad HU was intentional. The implications of this decision are far reaching. Seven municipalities in the San Marcos HA will be required to monitor for compliance, and to develop and implement load reduction plans, to address bacteria impairments at beaches and creeks that are not currently identified as impaired by bacteria on the 303(d) list. This would constitute a gross misuse of resources when there are so many other impairments requiring attention in the region.	removed from the table on Page A61. Regional Board staff should review the other HSA, HA, and HU designations to ensure that monitoring and load reduction activities are not being required for entities discharging to non-impaired water bodies.

County of San Diego Comments and Proposed Changes to the Revised Bacteria TMDL, Project I
January 22, 2010

Issue	Comments	Proposed Change(s)
8. Further clarification is needed regarding how TMDL compliance will be determined.	The TMDL has been revised so that compliance will be determined based on achievement of concentration-based water quality objectives rather than waste load allocations and load allocations. If WLAs and LAs will not be used to determine compliance, why are they included in the TMDL? Also, it is unclear how non-compliance with water quality objectives at a beach will impact upstream dischargers. Currently, it appears that upstream dischargers would be determined to be out of compliance even if they could demonstrate that they are meeting their assigned WLAs or LAs.	The 1st paragraph on page A51 should be revised to allow for a determination of compliance if dischargers can demonstrate that they are complying with assigned WLAs and LAs, even if receiving waters are exceeding the applicable water quality objectives. This also applies to: • Attachment A A25 – A35 • Technical Report. Section 9.1, last sentence of first paragraph • Technical Report: Table 9-1 through Table 9-4c, Table 9-5 • Technical Report: Section 11.2.2.1, Load reductions (page 102)
9. Geometric means should not be used to assess TMDL compliance during wet weather.	Item 28 of the Tentative Resolution states: "at the end of the wet weather TMDL compliance schedule, the single sample maximum and 30-day geometric mean REC-1 WQOs must not be exceeded in the receiving water more frequently than the allowable exceedance frequencies." The proposed Basin Plan amendment (Page A54) states that wet weather and dry weather samples will be used together to calculate the wet weather 30-day geometric mean and that no exceedances of the wet weather 30-day geometric mean are allowed. This methodology is not scientifically defensible. The 30-day geometric mean should not be applied to wet weather samples but only to the dry weather condition. Moreover, wet weather and dry weather samples should not be combined to calculate the 30-day geometric mean.	Wet weather compliance should not be assessed using a geometric mean. It is more appropriate to use the single sample maximum since rain events are episodic in nature. All references to the use of a geometric mean for calculating wet weather compliance should be removed. This also applies to: • Attachment A, A51 Table • Attachment A, A53, 2. *Compliance with wet weather TMDLs* • Attachment A, A66 final paragraph • Technical report page 3 2nd paragraph • Technical report page 6 3rd bullet point • Technical report page 44 Section 5.2.1

County of San Diego Comments and Proposed Changes to the Revised Bacteria TMDL, Project I
January 22, 2010

Issue	Comments	Proposed Change(s)
		• Technical report page 101 1st bullet • Technical report page 119 1st paragraph and 3rd paragraph • Technical Report page 1191st paragraph • Technical report Table 11-2 footnote (c) • Technical Report page 119 1st paragraph

Heal the Bay

1444 9th Street
Santa Monica CA 90401

ph 310 451 1550
fax 310 496 1902

info@healthebay.org
www.healthebay.org

January 22, 2010

Mr.Wayne Chiu
California Regional Water Quality Control Board,
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA, 92123-4340
Via Email: wchiu@waterboards.ca.gov

Subject: Comments on San Diego's Tentative Resolution Amendment Draft for the Revised Technical Report on Total Maximum Daily Loads for Indicator Bacteria: Project I – Beaches and Creeks in San Diego Region dated November 25, 2009 ("Draft TMDL")

Dear Mr. Chiu:

On behalf of Heal the Bay, a non-profit organization dedicated to protecting Southern California's coastal waters, we submit the following comments on the above referenced Draft TMDL. We appreciate the opportunity to comment.

I. Reference-Based approach (percentage-based) for setting waste load allocations.

Heal the Bay supports using the reference beach approach for determining a 22% allowable exceedance frequency during wet weather and 0% exceedance frequency during dry weather in the Draft TMDL. As noted, this reference system approach was taken in the Santa Monica Bay Beaches Dry and Wet Weather Bacteria TMDLs adopted by the Los Angeles Regional Water Quality Control Board and ensures that bacteriological water quality is at least as good as that of a reference system. However, we do not understand the logic in basing wet weather "exceedances" on REC-1 *single sample* maximums and dry weather exceedances on the REC-1 *geometric mean*. Instead, we urge the Regional Board to use the single sample maximum standards to identify both wet and dry weather allowable exceedances, as is the case with the Santa Monica Bacteria TMDL. So please add the single sample maximum for dry weather as well. In addition as discussed in further detail below, all Ocean Plan Standards must be met at all times for compliance purposes, including the geometric mean standards for Total coliform, Fecal coliform and Enterococcus. This is discussed in the Draft TMDL (see page A53,section 2) but it is not explicit in the targets. Also does the Regional Board plan to develop a reference location within the Region, rather than using Leo Carillo Beach in Los Angeles County? Although the Regions may have some similarities, it would be prudent to develop a site within the Region to account for any differences.

Of note, the implementation strategy based on reducing mass-load is confusing and not protective of human health. It is unclear how monthly (billion MPN/month) and annual (billion MPN/year) loads calculations will help to implement bacteria TMDL compliance. Typically, a

Heal the Bay

1444 9th Street
Santa Monica CA 90401

ph 310 451 1550
fax 310 496 1902

info@healthebay.org
www.healthebay.org

few samples a month are collected for beaches and there is rarely flow monitoring of storm drains and creeks. A few grab samples without accurate flow measures are not conducive to determining accurate loading estimates. The approach should be discussed in more detail.

II. Numeric target objectives should be expanded to include all Ocean Plan Standards.

The Draft TMDL provides only a rolling 30-day geometric mean numeric target for dry weather. However, the Ocean Plan includes a total of seven water quality standards for indicator bacteria. These standards specifically include a rolling 30-day geometric mean for total coliform, fecal coliform, and enterococcus as well as a single sample limit for total coliform, fecal coliform, and enterococcus, in addition to a fecal-to-total coliform ratio. In several instances the Draft TMDL discusses additional bacteria standards ("Compliance with the wet weather TMDLs in the receiving water is based on the frequency that the wet weather days in any given year exceed the wet weather numeric objective, but 30-day geometric mean must also be met." Draft TDML at A51) but this is not reflected in the numeric targets. When any standard is exceeded, the REC-1 beneficial use is impaired. It is imperative numeric targets include all seven Ocean Plan bacteria standards, for greatest public health protection.

III. Numeric limits should not be based on frequency of use.

Frequency of use should not be considered in determining numeric targets. The Draft TMDL states that dischargers' commented that for impaired creeks the "designated beach" approach may be over protective of water quality, due to infrequent use. Further, the Draft TMDL states, "If sufficient evidence can be provided to the San Diego Water Board that can demonstrate the usage frequency for one or more of the six impaired creeks falls under the "Lightly Used Full Body Contact Recreation" or "Infrequently Used Full Body Contact" usage frequency, the Basin Plan may be amended to designate one or more of the creeks with the "moderately to lightly used area" usage frequency." Heal the Bay opposes this approach and believes impaired creeks should have the same protection standards, regardless of recreation frequency. This approach does not favor maintaining appropriate water quality standards, and is unacceptable for infrequent bathers to be subject to deficient public health protection. If the REC-1 use does not exist for particular receiving waters, then a UAA may be performed to change the REC-1 use.

IV. Compliance schedules should be moved forward for final dry and wet weather targets.

The Draft TMDL proposes a final dry and wet weather compliance target date of 10 years, with the option to move the wet weather compliance date to 20 years if a multiple TMDL implementation approach is pursued. The timeframe appears excessive, especially for meeting final dry weather targets. The dry weather period is the most critical period from a public health perspective. The Santa Monica Bay, Marina del Rey and San Pedro Bay Beaches Bacteria TMDLs require final dry weather targets to be met three years after adoption for the AB411 time period and 6 years for winter dry weather. Since this deadline has past, we have seen great improvements in beach water quality in Santa Monica Bay. Many municipalities in Los Angeles County have implemented best management practices such as dry weather diversions and treatment facilities to improve beach water quality. Thus we urge the Regional Board to split the dry weather into two distinct periods (AB411 dry and winter dry) and move the compliance date forward. In addition 20 years is excessive for complying with wet weather WLAs. Heal the Bay

Heal the Bay

1444 9th Street
Santa Monica CA 90401

ph 310 451 1550
fax 310 496 1902

info@healthebay.org
www.healthebay.org

would like to see compliance date moved to 18 years which is consistent with the Santa Monica Bay Bacteria TMDL.

V. Enforcement of compliance milestones should be clarified.

Specific milestones for achieving bacteria TMDL compliance should be implemented and enforced by the Regional Board. Multiple milestones, with set compliance dates, should be *required* by the Regional Board for all responsible dischargers. The language in the Draft TMDL waivers on its intent. For instance, the Draft TMDL states both "*if* the TMDL Compliance Schedules include interim milestones" (page A55) and then later provides interim milestones in the tables on page A67. Please provide clarification that milestones are required and identify them specifically in the compliance schedule.

VI. Monitoring for TMDL compliance.

The TMDL describes compliance monitoring. We urge the Regional Board to include a statement to require point zero monitoring locations. The definition used by Los Angeles County of 'point zero' monitoring states, "The term *wave wash* is defined as the point at which the storm drain or creek empties and the effluent from the storm drain initially mixes with the receiving ocean water, this term is also referred to as *point zero."* Point zero monitoring ensures that the highest levels of indicator bacteria area captured in the sample which is critical for public health protection. People definitely swim and surf directly in front of flowing storm drains and creeks. Additionally, we urge the Regional Board to require that water monitoring during summer months (AB411 period) be conducted at least weekly, for the necessary evaluation of compliance progress.

Thank you for the opportunity to submit comments. If you have any questions, please contact us at 310-451-1500.

Sincerely,

Mark Gold, D. Env.
President
Heal the Bay

Kirsten James, MESM
Water Quality Director

Amanda Griesbach, MS
Water Quality Scientist

This page left intentionally blank

January 22, 2010

Mr. Wayne Chiu
San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123
VIA ELECTRONIC MAIL: wchiu@waterboards.ca.gov

Re: Support for the Adoption of the Revised Total Maximum Daily Loads for Indicator Bacteria, Project I -Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek) into the Basin Plan

Dear Mr. Chiu:

San Diego Coastkeeper (Coastkeeper) submits these comments on the proposed Revised Draft Total Maximum Daily Loads for Indicator Bacteria (TMDL). Coastkeeper is a non-profit organization working to protect the San Diego region's waters for the people and wildlife that depend on them through community outreach, education, and advocacy to promote stewardship of clean water and healthy ecosystems. Coastkeeper has been an active participant in the Stakeholder Advisory Group (SAG) since its inception. Nearly eight years after the initial investigative order was issued, including four years of SAG input on this process, we are eager to have the Basin Plan Amendment move forward so focus can be turned towards implementing actions that will improve water quality. Our specific remaining concerns are highlighted below.

1. Incorporation of RSAA and NSEA Into TMDLs

Over the course of this TMDL process, Coastkeeper has expressed numerous concerns in regards to the NSEA, the RSAA, and the implementation of the 22% allowable exceedance frequency. Coastkeeper understands that there are natural sources of bacteria and that the focus of this TMDL should be to eliminate the anthropogenic sources to restore beneficial uses of the beaches and creeks in the region. We acknowledge that limited data are currently available, especially for local watersheds.[1] However, an adequately studied and defensible reference system for the San Diego region is needed. Before the Regional Board can be certain the natural exceedance frequency determined for the Arroyo Sequit Watershed (specifically Leo Carillo Beach) can be applied to San Diego and Orange County watersheds subject to the Bacteria TMDL, we must be confident the watershed characteristics are sufficiently similar. In the absence of a concrete set of criteria articulated in the BPA or Technical Report for developing a local reference system, it is critical to identify key points to be addressed in determining an appropriate and effective reference system for the San Diego region.

a. *Incorporation of stakeholder input in developing a local reference system dataset*.

In response to comments made by Coastkeeper on May 13, 2008, Regional Board staff indicated that stakeholders would be involved in the determination of which reference systems to use for the final TMDL. Specifically, Board staff indicated that "we will once again engage the stakeholders before final decisions about which reference system to use and throughout the process of calculating the revised TMDL"[2]. We are disappointed the reference system was chosen without SAG input, simply incorporating the Los Angeles Region reference system. However, we are confident adequate data will be collected in the near future, and look forward to working with staff to incorporate it.

[1] For example, at the local "reference" watersheds, San Mateo Creek and San Onofre State Beach, only 5 or 6 samples were taken to measure exceedance frequency. *Technical Report* (clean), p. 31, Table 4-1.
[2] Regional Board Staff Response to Additional Comments sent via email by Coastkeeper. May 14, 2008.

b. *Direct measurements of human indicators must be incorporated into the process.*

Although a watershed may be 95 percent undisturbed, this fact alone does not mean all exceedances of water quality objectives are due to natural sources. In SCCWRPs 2006 study, *Microbiological water quality at non-human impacted reference beaches in southern California during wet weather*, indicators of human sources were found in three instances[3]. The indicator chosen for this study was one that directly measured the presence of human viruses, but would not detect when other human pathogens like bacteria were present**.** It is likely that if additional direct measures were chosen, more indications of human sources would have been detected. For example, recent research into the human genetic markers of *Bacteroides,* a gastrointestinal bacterium, has already proven useful in tracing human sources of bacteria in coastal and freshwater systems[4]. The *Bacteroides* indicator has been used to detect the presence of human sources in SCCWRPs 2008 study on fecal indicator bacteria levels during dry weather[5]. Thus, we feel it would be an important additional component of any reference watershed analysis. As the process moves forward, staff must normalize the natural exceedance frequency to the underlying human loading in reference systems**.** This must also entail a source identification analysis to ensure the exceedance frequency is indeed a natural occurrence and not partially related to anthropogenic impacts.

c. *Reference system approach must incorporate key biophysical factors into exceedance frequency*

In SCCRWPs 2006 study[6], certain biophysical factors were found to correlate to the exceedance frequency. For example, the study found the exceedance frequency in reference watersheds was correlated to watershed size. Moving forward, the Regional Board staff must identify a way to incorporate important environmental factors like watershed size into the natural exceedance frequency. Given the variability in the size and variable flow rates of the watersheds in the applicable area, it is critical to evaluate such variables in choosing a reference system. Other basic factors that need to be considered include a full land use analysis, temporal variability and seasonal variability.

d. *Staff needs to clarify definition of wet weather.*

The Leo Carillo study based a natural exceedance rate on a storm event definition of one inch of rain. In contrast, this TMDL uses a wet weather definition of two inches, yet does not modify the 22% natural exceedance frequency from the Leo Carillo study. Staff needs to articulate how this discrepancy will impact the calculation of exceedance frequencies in the implementation phase of this TMDL. A calculation of natural exceedance based on a one-inch definition of rain will increase the number of wet days because more days will meet the criteria. Thus, if more wet days occur, any exceedances that would have been attributable to dry weather are actually considered wet weather in the reference system. This results in more allowable exceedance days.

Though the co-permittees may feel it is inequitable to apply the two-inch rain standard for delineating wet weather, it may have resulted in a higher exceedance frequency calculation. Nonetheless, if co-permittees are concerned wet-weather days are defined by one inch of rainfall for calculation but not implementation, the one-inch standard must be applied across the board to all instances in which wet weather is defined. Thus, co-permittees would be required to prepare for wet-weather events of one inch of rainfall.

---

[3] Griffith, J., K. Schiff, and G. Lyon. 2006. *Microbiological water quality at non-human impacted reference beaches in southern California during wet weather*. Southern California Coastal Water Research Project December 2006 Technical Report 495. In this study, SCCWRP measured the presence of human enterovirus in samples to detect whether there was an influence of human sources in the receiving waters.

[4] (e.g. Santoro, A. and A. Boehm. 2007. *Frequent occurrence of the human-specific Bacteroides fecal marker at an open coast marine beach: relationship to waves, tides and traditional indicators*. Environmental Microbiology 9 (8): 2038 –2049)

[5] Tiefenthaler, L, E. Stein, G. Lyon. 2008. *Fecal Indicator Bacteria (FIB) Levels During Dry Weather from Southern California Reference Streams.* SCCWRP Technical Report 542. January 2008.

[6] Griffith, et al. 2006.

Moreover, if the co-permittees are concerned about lack of consistent application of a reference system and exceedance frequency calculated using different standards, the application of a completely removed and foreign reference system should also invalidate the application of the LARWQCB-derived frequency.

e. *Incorporation of natural exceedance frequency into wet weather TMDL is not properly justified*

Over the course of this process, Coastkeeper has provided detailed comments on our concerns regarding how the allowable exceedance loads were quantified using the natural exceedance frequency. These concerns have gone largely unaddressed and thus we incorporate by reference our previous comments[7] (see Appendix 1). Some of our concerns include:

i. The determination of numbers of wet days is too broad

In Appendix I, Staff defines 'wet days'[8] as days with 0.2 in of rain plus the following 72 hours, regardless of whether those days actually receive any precipitation. This overly broad definition of wet days inappropriately inflates the potential number of allowable exceedance days.

ii. The calculation of the allowable exceedance load into the wet weather TMDL is not justified

The approach used to calculate the allowable exceedance load from the allowable exceedance days is arbitrary and not fully justified. Appendix I states that "the days with the highest loads were chosen as the allowable exceedance days because the highest loads in most of the watersheds correspond to open space land uses where bacteria loads are generated from natural sources"[9]. No data are provided to support this assertion that open space areas have the largest loads and that the sources are necessarily natural. Open space areas do have anthropogenic impacts even if the land has not been highly modified (e.g. uncollected pet waste).

By including an overly broad definition of wet days and a calculation of allowable loads that is biased towards removing the highest loads from WLAs, staff has created a TMDL that errs on the side of giving co-permittees too much leeway and does not go far enough to protect water quality.

While we have reservations regarding the incorporation of the 22% allowable exceedance frequency developed for the Arroyo Sequit watershed into this TMDL, at this time we do not believe that there is sufficient data to support any other number for natural exceedance frequency. Sampling has been conducted at too few sites in the San Diego/Orange County region over too short a time period. The most conservative approach would therefore be to provide no allowable exceedance frequency until adequate data for an appropriate reference watershed is available and vetted through the SAG.

For a reference dataset to be complete it must, at a minimum, have sufficient sampling sites and frequencies to be a statistically robust. Of the two studies conducted by SCCWRP[10] on this issue, one was focused on wet weather patterns for only two sampling years for a total of five sampling events at each site[11]. The other was focused on dry weather for one sampling year. Also, the reference dataset must encompass sufficient inter-annual sampling in the same locations to account for differences in water years. As it stands now, we have a relatively sparse dataset for four sites in the San Diego/Orange County region. The currently available research conducted by SCCWRP, while a good foundation, is still too limited in its scope to provide the information necessary to determine a realistic and defendable natural exceedance

[7] Gabriel Solmer, San Diego Coastkeeper , to Phil Hammer San Diego Regional Water Quality Control Board *Second Stakeholder Advisory Group Draft Technical Report for Implementation Provisions for Indicator Bacteria WQOs* February 5th, 2008.
[8] Revised Draft Technical Report, Appendix I, pg I-9
[9] Revised Draft Technical Report, Appendix I, pg I-11.
[10] Griffith et al 2006, and Tiefenthaler et al 2008
[11] Griffith et al 2006.

frequency for the San Diego region. The studies raise more questions than they answer and we cannot wait any longer to take action to restore the beneficial uses of our beaches and shorelines.

2. Compliance schedules and timelines

According to the Technical Report and BPA, permittees will be given eighteen months for the preparation of their load reduction plans ('BLRPs' or 'CLRPs'). This extended timeframe for the development of a plan to initiate action seems unjustified, particularly in light of the delay in the approval of this TMDL. Permittees have known since 2007 that load reduction plans would be a cornerstone of implementing this TMDL. The delay caused by procedural issues relating to natural exceedance frequencies should not affect the development of plans to implement BMPs to control loading.

Additionally, we are disappointed with the lengthy 10+ year timeframe for the compliance schedule. Waiting a decade for final compliance is too long – these are ten years during which local residents and tourists' health will continue to be at risk. At a minimum, the compliance schedule should require interim reductions sooner than four years. The only required interim milestone is the 50 percent in five years. We believe that the 25 percent reduction milestone should not be optional ("The Regional Board may also include additional milestones for achieving exceedance frequency reductions (e.g., 25 and 75 percent"[12]). It should be a requirement. There is no justification for further delaying those reductions.

3. Inappropriate distinction between Anthropogenic Sources and Controllable Sources

Coastkeeper's February 5th 2008 comment letter outlined our concerns with the Technical Report and the Basin Plan Amendment's inappropriate conflation of the terms anthropogenic and uncontrollable. The revised version of the Technical Report continues to conflate these terms. We therefore, reiterate our concern made during the SAG process as well as our letter from February 5th, 2008. As we have already pointed out, whether a bacteria source is controllable is unrelated to its source. The purpose of RSAA and NSEA is to "address circumstances where natural uncontrollable sources of indicator bacteria are the cause of exceedances of indicator bacteria water quality objectives."[13] Thus, the BPA and Technical Report exempt "uncontrollable" anthropogenic sources from regulation. This language confusion continues with the Technical Reports interchangeable use of 'natural' and 'uncontrollable'[14].

Therefore, we recommend that Staff correctly and consistently use these terms throughout the Technical Report, BPA, and supporting Appendices.

Coastkeeper appreciates the opportunity to comment on the proposed BPA. As a member of the SAG, we understand the extensive work and planning that has gone into the development of this BPA. We look forward to receiving your response and seeing the final work product.

Sincerely,

Gabriel Solmer

Gabriel Solmer
Legal Director

[12] Revised Draft Technical Report, 11.5.2 Compliance Schedule, pg 220.
[13] Draft Technical Report, *Implementation Provisions for Indicator Bacteria WQOs*, February 29, 2008, p. 2
[14] Revised Draft Technical Report, Section 11.4.6. pg 210

APPENDIX 1

February 5, 2008

Phil Hammer
Environmental Scientist

San Diego Regional Water Quality Control Board
9174 Sky Park Court, Suite 100
San Diego, CA 92123
858-627-3988

Re: Second Stakeholder Advisory Group Draft Technical Report for Implementation Provisions for Indicator Bacteria WQOs

Dear Mr. Hammer:

Please accept the following comments on behalf of San Diego Coastkeeper for the Second Stakeholder Advisory Group Draft Technical Report for the Addition of Implementation Provision for Indicator Bacteria Water Quality Objectives to Account for Loading from Natural Uncontrollable Sources within the Context of a Total Maximum Daily Load (Draft Technical Report).

Throughout the Draft Technical Report the term anthropogenic sources is defined inconsistently. Coastkeeper recommends that the definition be standardized throughout the document. Additionally, the definition of anthropogenic sources should not be defined to include only those sources of indicator bacteria that result from controllable human activities. Anthropogenic sources are caused or produced by humans. Whether a bacteria source is controllable is a factor distinct from the source. The definition of anthropogenic sources should remain constant regardless of its ability to be controlled.

It is unclear from the Draft Technical Report whether the monitoring at San Onofre shown in Table 2 (p. 8) will be used to calculate exceedances of target water bodies. Coastkeeper is concerned that the number of samples taken is too low and suggests that the measurements taken at San Onofre not be used as for developing a reference approach.

Coastkeeper is also concerned that the NSEA description is vague and may not result in protection of beneficial uses. Generally, we agree with peer review commenter Professor Holden in his apprehension of the NSEA approach. Specifically, we suggest a more detailed compliance mechanism and agree that source identification is important in determining whether anthropogenic sources have been controlled. Additionally, a incorporation of rapid indicator test would be useful for NSEA and for water quality generally.

Because the SHELL TMDL is being developed separately, it is inappropriate to adopt a Basin Plan Amendment (BPA) allowing for an NSEA for the SHELL TMDL through this process. As noted in the response to the Peer Review Comment 9 by Professor Holden, REC-1 and REC-2 beneficial uses are treated differently than the SHELL beneficial use. The response also states that application of NSEA to SHELL has been removed from the Draft Technical Report due to recent efforts by the State Water Resources Control Board (State Board) to review the application of the beneficial use. Since the Draft Technical Report does not address the SHELL TMDL, adopting the NSEA for this beneficial use as a BPA would be premature.

Coastkeeper agrees that natural background bacteria is beneficial under certain circumstances, such as regrowth on beach wrack. However, we are concerned with defining uncontrollable bacteria sources as those that are anthropogenic and for which BMPs have been implemented. As mentioned above, changing the definition of "anthropogenic sources" is inappropriate. In addition, it is unclear how BMP implementation will protect beneficial uses and how the success of those BMPs will be measured. We are concerned with the possibility that those sources that are controllable will be designated as uncontrollable after BMPs are implemented, possibly inadequately addressing the bacteria sources.

Also, applying NSEA only after all anthropogenic sources of indicator bacteria have been controlled is a vague standard. The Technical Draft Report states that NSEA use is not expected to occur immediately because of the difficulty in proving control of these sources. As noted by Professor Holden, it is unclear how this demonstration will be made and whether this will be truly indicative of control of anthropogenic sources.

The summary of RSAA and NSEA application (p. 14) states that RSAA will be applied only to certain waters and NSEA to others. However, because an explanation for this designation is lacking, Coastkeeper suggests that the reasoning for this distinction be provided.

The explanation in Section 5.1.1 is unclear and vague. Clarification of "indicator bacteria conditions" would be ideal. Also, Coastkeeper considers land use a valid factor in characterization of a water body. We suggest that in characterizing a water body more conditions rather than fewer be applied in order to ensure application of the correct reference water body to the target body.

The calculation exceedance for wet weather TMDLs is of concern because it includes the number of wet days that occur at the target water body under the critical wet weather condition. Multiplying the target water body daily flow by the water quality objective, then adding the sum of the highest daily exceedance loads corresponding to the number of allowable exceedance days seems to be artificially inflating the TMDL. Adding the highest daily loads and using the number of wet days at the critical condition inflates the allowable exceedance number. Using average flows on average rain days or minimum daily loads would be more appropriate. Furthermore, section 5.1.5 states that the "daily exceedance loads" will be used in calculating TMDLs, but it is unclear for which water body the exceedance loads are being measured. We hope that the exceedance load is measured at the water body with the lowest exceedance in order to comply with the anti-degradation policy. Coastkeeper also suggests that the Draft Technical Report explain how the exceedance probability is calculated.

Section 5.1.6 states that ensuring that anthropogenic sources of bacteria are controlled will be necessary for implementation of TMDLs under the RSAA. The reader is referred to sections 5.3.1 and 5.3.2, which detail the NSEA approach. In order to accurately address anthropogenic source control through RSAA, the Draft Technical Report should include the NSEA discussion in the appropriate section (the RSAA section). Because, the NSEA approach to anthropogenic source control is expected to take some time for implementation, the Draft Technical Report should outline a more specific method of compliance for control anthropogenic sources of indicator bacteria. The weight of evidence approach is a vague standard and should not allow for uncontrollable anthropogenic sources unless they are shown to be uncontrollable. For example, the Draft Technical Report describes shedding during swimming as an uncontrollable anthropogenic source. However, there are ways to control human shedding such as showering before entering a water body.

Implementation of RSAA for dry weather TMDLs is calculated to allow excess exceedance. Though the method of calculation is confusing, it appears that by multiplying the average water quality for the target water body by the average daily flow of the target water body, the exceedance load is skewed. The exceedance frequency for a target water body is the same as the reference water body exceedance frequency. However, multiplying the exceedance

frequency by the water quality of the target water body results in an exceedance load that is not reflective of the reference water body water quality. If the target water body water quality is poorer than the reference water body, which presumably it is, the exceedance load is not reflective of natural sources. Rather, this approach allows exceedance for the same number of days as the reference water body, but at a much higher concentration. The response to Comment 17 (p. 9) admits that the TMDL incorporates additional loads based on the reference system exceedance frequency. However, it should also reflect the exceedance magnitude.

The BPA for implementation provisions (Appendix I, p. 6) states that under the RSAA and anti-degradation approach, the permitted level of exceedance is either the observed level of exceedance in the reference system or the target water body, whichever is less. This language is not reflective of the calculations in the Draft Technical Report. The observed level of exceedance, within the dry weather TMDL context, only accounts for frequency, not magnitude or level. The wet weather TMDL is also not reflective of the BPA language. The wet weather TMDL calculates the number of exceedance days from critical years, which are the wettest and therefore have a higher probability of exceedance. The use of the highest daily exceedance loads in calculation of the TMDL is inappropriate. Coastkeeper suggests that the lowest or average exceedance loads should be used in order to truly reflect the BPA language.

Generally, Coastkeeper finds the Draft Technical Report to be somewhat fragmented and redundant. Streamlining the text and omitting some of the Executive Summary or Introduction text would help create a more readable and coherent document. Repetition in the document also creates a greater possibility for errors. Such errors occur when changes are made in one part of the document without making the changes in a corresponding section elsewhere in the document. For example, the definition of anthropogenic sources is found throughout the document, but inconsistently.

Thank you for your consideration of our comments.

Sincerely,

Gabriel Solmer
Legal Director
San Diego Coastkeeper

Phone: (858) -569-6005
Fax: (858)-569-0968
www.sierraclubsandiego.org

San Diego Chapter
Serving the Environment in San Diego and Imperial Counties
8304 Clairemont Mesa Boulevard, #101
San Diego, California 92111

January 18, 2010

California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340
Attn: Mr. Wayne Chiu

Subject: Tentative Resolution R9-2010-0001 to Amend the San Diego Water Quality Basin Plan To Incorporate the Revised Total Maximum Daily Loads for Indicator Bacteria, Project I, Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek)

Dear Members of the Board:

The development of the Tentative Resolution R9-2010-0001 and the accompanying Draft Technical Document by staff with inputs by the stakeholders is a significant achievement towards restoring the beneficial uses of the bacteria impaired beaches and creeks in the San Diego Region. Thousands of persons both local and tourists come to enjoy these beaches each year. Clean beaches not only safeguard human health but also assure continued economic benefits to the tourist industry.

Our review of the Draft Technical Report has found the acronym for "most probable number" MPN misspelled as "MNP" on page 63 and 68 for a total of 13 times.

We strongly recommend that you adopt the Tentative Resolution R9-2010-0001 and the corrected Draft Technical Report.

Thank you.

Sincerely,

Ed Kimura

Edward Kimura
Chair Water Committee
Sierra Club
San Diego Chapter

This page left intentionally blank

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

January 22, 2010

Wayne Chiu
San Diego Regional Water Quality Control Board
9174 Sky Park Court
San Diego, CA 92123-4340

Dear Wayne,

The U.S. Environmental Protection Agency appreciates the opportunity to review the revised TMDLs for Indicator Bacteria, Project I – Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek), and the associated implementation plan. Thank you for your hard work in revising the TMDLs and producing TMDLs that clearly describes the appropriate allocations, seasonal variations and steps towards achieving water quality targets and protection of beneficial uses. The revised TMDLs meet all federal regulatory requirements.

Below, we provide comments and request clarification on several items in the tentative basin plan amendment (BPA) and the Technical TMDL Report.

1) ***Exceedence Frequency***. Like other bacterial indicator TMDLs (i.e., Santa Monica Bay, Los Angeles Harbor, Malibu Creek, etc.), these TMDLs uses the reference system approach and exceedence days as a way to account for the "natural, and largely uncontrollable sources of bacteria (e.g., bird and wildlife feces) in the loads generated in the watersheds and at the beaches that can, by themselves, cause exceedences of WQOs". However, whereas other bacteria TMDLs establish a fixed number of allowable exceedence days per year for each waterbody, the San Diego Bacteria TMDLs set an exceedence ***frequency***. Specifically, the reference system approach is used to calculate the wet weather TMDLs by allowing a 22 percent exceedance frequency of the single sample maximum WQOs for REC-1, and the dry weather TMDLs are calculated using a zero percent allowable exceedance frequency. Although the concept is exactly the same and the TMDLs describe the calculation of exceedence days clearly (i.e., multiplying the exceedence frequency by the number of wet days for the critical period), the TMDLs lack an explanation of how compliance is determined (BPA, Pg. 53-56 and Technical TMDL Report, Section 11.3). Since each waterbody will have a variable number of exceedence

days each year, when and how will compliance be assessed. Each permittee would not be able to evaluate their compliance until after the wet weather or dry weather period ends. Would regional board evaluate compliance at the end of each year or a determined wet and dry weather period? We strongly urge the regional board to provide a more detailed description of compliance determination to increase the success of dischargers' efforts towards attaining the water quality targets.

2) ***Compliance Determination and TMDLs Goals (BPA and Technical TMDL Report)***. These TMDLs establishes two primary goals: meeting the (1) exeedence frequency based on the numeric targets and (2) total maximum mass loads (MPN/year). Although a detailed explanation of exceedence frequency and required follow-up compliance monitoring is provided, the TMDLs are deficient in describing how and when mass loads need to be achieved. For instance, is compliance evaluation determined by meeting both the number of allowable exceedence days for a described period ***and*** the mass-based Total Allowable Load requirements (BPA, Tables on Pg A25-28)? We strongly recommend further explanation of how both goals will be evaluated for compliance determination during the TMDL Compliance Period.

3) ***Finding 3: Definition of Total Maximum Daily Load (BPA, Pg. 2 and A5, paragraph 5)***. We suggest inclusion of additional language in the last sentence to read, "For the purpose of developing information for all waters not identified on the 303(d) List, states are also required to estimate the total maximum daily load with seasonal variations and margin of safety." The current use of the single word, "TMDL", implies the development of a complete TMDL Technical Report including an implementation plan; Section 303(d)(3) only defined the requirement to develop and estimate three elements of the TMDL, as described above.

4) ***Finding 4: Water Quality Standards Interpreted in TMDLs with Numeric Targets (BPA, Pg. 2 and A5, paragraph 6)***. We recommend In addition to clarifying that "numeric targets and TMDLs interpret water quality standards", but are not themselves water quality standards, we suggest that this section be expanded. The additional description should describe that numeric targets and TMDLs become enforceable requirements when included in WDR regulatory mechanisms (e.g., NPDES permits, Municipal stormwater MS4 permits, etc.).

5) ***Finding 7: Relationship Between Bacteria and Pathogens (BPA, Pg. 3)***. In support of your conclusion on identifying a correlation between pathogens and the probability of disease, we suggest adding the following citations:
   a) 2004 EPA Beach Act Rule;
   b) USEPA. 1984. Health effects criteria for fresh recreational waters. EPA-600/1-84-004.

6) ***Numeric Targets Section (BPA Pg A15)***. Please provide more specific details on the type of information and evidence needed to justify the "moderately to lightly used area" usage frequency for a freshwater creek, as required by dischargers.

7) ***Numeric Targets Section (BPA Pg A15-16)***. The rationale on setting the Single Sample Maximum bacterial indicator concentrations as the wet weather targets, and geometric means as the dry weather targets should be included in the basin plan amendment; this rationale is currently provided in the Technical TMDL Report on Pg 29-30.

8) ***Source Analysis Section (BPA Pg. A17)***. We recommend including a description on controllable and uncontrollable sources of bacteria, as described on Pg 4 of the Technical TMDL Report, to be added in the Basin Plan Amendment. We recommend the following specific language be added to the BPA as follows:

"Nonpoint sources were separated into controllable and uncontrollable categories. Controllable nonpoint sources are identified by land use types and coverages. Controllable nonpoint sources include land uses associated with agriculture, dairy/intensive livestock, and horse ranches (collectively referred to as agriculture land uses). These were considered controllable because the land uses are anthropogenic in nature, and load reductions can be reasonably expected with the implementation of suitable management measures. Uncontrollable nonpoint sources include loads from open recreation, open space, and water land uses (collectively referred to as open space land uses). Loads from these areas are considered uncontrollable because they come from mostly natural sources (e.g. bird and wildlife feces)."

9) ***Wet Weather TMDL Allocations (BPA, Pg. A21 and Technical TMDL Report)***: Discharges from controllable land use categories that do not contribute more than five percent of the total existing mass load for all three indicator bacteria, the WLA or LA is set equal to the existing mass loads. Please provide a rationale for the use of five percent as the dividing line to set acceptable existing mass loads and critical contribution of mass loads from controllable sources.

10) ***Margin of Safety (BPA Pg. A24).*** The discussion on Margin of Safety considerations for developing wet weather and dry weather targets are extremely helpful to further explain how the selected targets are conservative and should protect water quality. We suggest the following two paragraphs be included in the Margin of Safety Section in the BPA:

"Because bacteria in wet weather runoff and streamflows have a quick travel time, and therefore, a short residence time in the waterbodies, the REC-1 single-sample maximum WQOs were determined to be most appropriate for calculating the wet weather TMDLs. The numeric targets used for the wet weather mass-load based and concentration based TMDLs are assumed to be conservative by utilizing the most stringent REC-1 single sample maxmimum WQOs contained in the Ocean Plan and/or Basin Plan. (Technical TMDL Report, Pg. 72)"

"Because dry weather conditions have flows and bacteria loads much smaller in magnitude than wet weather conditions, do not occur from all land use types, and are more uniform than stormflow, the REC-1 30-day geometric mean WQOs were determined to be most appropriate for the dry weather TMDLs. The numeric targets used for the dry weather mass-load based and concentration based TMDLs are assumed to be conservative

by utilizing the most stringent REC-1 30-day geometric mean WQOs contained in the Ocean Plan and/or Basin Plan. (Technical TMDL Report, Pg. 76).

11) ***Alternative TMDL Compliance Schedules (BPA, Pg. A68 and Technical TMDL Report).*** This Implementation Plan provides an alternative extended compliance period of up to 20 years for wet weather bacteria TMDLs for those dischargers who undertake load reduction programs for multiple pollutant constituents. This discussion does not clarify if this extended compliance period will require subsequent regional board or EO approval. We recommend further clarification of the process for which such an extended time period is allowed.

These TMDLs state NPDES permitted discharges are not a source in the watershed and have therefore set waste load allocations equal to zero. As recognized in the submittal, if sources currently assigned a load allocation are later determined to be point sources requiring NPDES permits, those load allocations will be treated as wasteload allocations for purposes of determining appropriate water quality based effluent limitations pursuant to 40 CFR 122.44(d)(1).

The proposal to express the San Diego Region Twenty Beaches and Creeks (including Tecolote Creek) Bacteria TMDLs and allocations on an exceedence frequency and mass load basis is consistent with federal regulatory requirements. Furthermore, the implicit margin of safety in the TMDLs appropriately addresses the uncertainties related to the linkage analysis. EPA finds the proposed San Diego Region Twenty Beaches and Creeks (including Tecolote Creek) TMDLs have provided reasonable technical analysis using the best available data, information and scientific tools. In addition, multiple lines of evidence were considered and provided for all proposed TMDLs.

We hope the regional board will promptly approve the San Diego Region Twenty Beaches and Creeks (including Tecolote Creek) TMDLs. If you have any questions concerning these comments, please call me at (213) 244-1803.

Sincerely yours,

Cindy Lin, D.Env.
Water Division