Response to Comments on the Total Maximum Daily Loads
for Bacteria in the Long Beach City Beaches and Los Angeles River Estuary
November 30, 2011 Public Notice
March 26, 2012

COMMENTORS

1. Rutan and Tucker, LLP ..... (54 pages)
2. City of Long Beach ..... (14 pages)
3. Flow Science ..... (28 pages)
4. Heal the Bay and Santa Monica Bay Keeper ..... (10 pages)
5. Joyce Dillard..... (2 pages)

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January 13, 2012

VIA ELECTRONIC MAIL (COMMENTS ONLY) &
OVERNIGHT MAIL (COMMENTS & EXHIBITS)

Karin Graves (WTR-2)
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

Re: Legal Comments on Draft TMDL for Bacteria for Long Beach City Beaches and Los Angeles River Estuary

Dear Ms. Graves:

The comments and exhibits included herewith are being submitted on behalf of the City of Signal Hill ("City") in connection with the proposed Total Maximum Daily Loads (TMDL) for Bacteria for Long Beach City Beaches and the Los Angeles River Estuary. While the City recognizes the importance of addressing bacteria on beaches within Long Beach, and thus supports the issuance of a TMDL for bacteria for Long Beach City Beaches, Signal Hill has a number of legal and technical concerns with the proposed TMDL as it relates to the Los Angeles River Estuary. The City's legal comments are included herewith, but separate technical comments will be submitted under separate cover on behalf of Signal Hill by Flow Science, Inc.

Because of the number of lengthy exhibits, the exhibits are being forwarded to you on a CD via Overnight Mail only. Should you have any questions or need any additional information with respect to the enclosed comments and exhibits, please do not hesitate to contact the undersigned.

Thank you for your attention to this matter.

Sincerely,

RUTAN & TUCKER, LLP

Richard Montevideo

RM:paj
Enclosures: (1) Legal Comments On U.S. EPA's Proposed Total Maximum Daily Loads for Bacteria for Long Beach City Beaches and Los Angeles River Estuary
(2) Index of Exhibits
(3) CD of Exhibits 1-27 to Legal Comments

cc: Kenneth Farfsing

Legal Comments on U.S. EPA's Proposed Total Maximum Daily Loads For Bacteria for Long Beach City Beaches and Los Angeles River Estuary

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Submitted on behalf of the City of Signal Hill

January, 2012

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TABLE OF CONTENTS

		Page
I.	INTRODUCTION	1
II.	SUMMARY OF SIGNIFICANT TMDL REQUIREMENTS	1
III.	THE PROPOSED BACTERIA TMDL FOR THE LA RIVER ESTUARY IS CONTRARY TO LAW BECAUSE THE LAR ESTUARY IS NOT LISTED ON THE STATE'S 303(d) LIST AS BEING IMPAIRED FOR BACTERIA	5
IV.	THE PROPOSED BACTERIA TMDL FOR THE LAR ESTUARY IS CONTRARY TO LAW BECAUSE IT DOES NOT PROPERLY IDENTIFY OR ADDRESS NATURAL SOURCES OF BACTERIA AND IS OTHERWISE INCOMPATIBLE WITH THE BASIN PLAN	8
V.	THE PROPOSED BACTERIA TMDL FOR THE LAR ESTUARY IS CONTRARY TO LAW BECAUSE ITS LINKAGE ANALYSIS IS DEFICIENT AND BECAUSE IT WILL BE IMPOSSIBLE TO COMPLY WITH ITS TERMS	10
VI.	THE PROPOSED BACTERIA TMDL FOR THE LAR ESTUARY IS NOT PRESENTLY SUITABLE FOR CALCULATION	13
VII.	THE PROPOSED BACTERIA TMDL IS DEFICIENT BECAUSE IT FAILS TO REFLECT THAT IT MAY BE COMPLIED WITH THROUGH THE USE OF A BEST MANAGEMENT PRACTICES APPROACH, RATHER THAN THROUGH STRICT COMPLIANCE WITH NUMERIC EFFLUENT LIMITS	17
VIII.	THE PROPOSED BACTERIA TMDL IS DEFICIENT AS IT FAILS TO INCLUDE AN ECONOMIC ANALYSIS IN ACCORDANCE WITH APPLICABLE FEDERAL AND STATE LAW	28
IX.	THE PROPOSED BACTERIA TMDL IS IMPROPER AS THERE HAS BEEN A LACK OF INTERGOVERNMENTAL COORDINATION WITH ITS DEVELOPMENT	37
X.	CONCLUSION	39

I. INTRODUCTION

These Comments are being submitted on behalf of the City of Signal Hill ("City" or "Signal Hill") in response to the United States Environmental Protection Agency's ("EPA's") proposed Total Maximum Daily Loads ("TMDLs") for Long Beach City Beaches and the Los Angeles River Estuary ("Bacteria TMDL" or "TMDL"). For the following reasons, the City respectfully requests that EPA not adopt the proposed Bacteria TMDL, and that it specifically follow the process set forth under the Clean Water Act (33 USC § 1251 et seq. – hereafter ("CWA" or "Act") before developing any TMDL for the Los Angeles River Estuary ("LAR Estuary"). The City further requests that EPA address all of the legal deficiencies with the TMDL as described below, as well as those raised in the technical comments being submitted by Flow Science, Inc., on behalf of Signal Hill, before adopting any TMDL for the LAR Estuary.

II. SUMMARY OF SIGNIFICANT TMDL REQUIREMENTS

According to the TMDL, the "***exceedance day-based waste load allocations will be incorporated into . . . all NPDES–regulated municipal stormwater discharges in the direct drainages,*** including the City of Long Beach MS4 Permit and the City of Signal Hill." (TMDL Report, p. 53.) "***Compliance monitoring will be in the receiving water for numeric targets.***" (*Id.*) The TMDL also provides that "an implementation plan will be developed by the LARWQCB [Los Angeles Regional Water Quality Control Board – thereafter "Regional Board"] when it incorporates these TMDLs into its Water Quality Control Plan ("Basin Plan"). (*Id.* at p. 1.)

The proposed TMDL will thus result in a series of monitoring and waste load allocation requirements being imposed upon the City of Signal Hill, and Signal Hill,

therefore, has a vested interest in ensuring that the TMDL is properly developed, both technically and legally, and is in compliance with applicable law.

With respect to the LAR Estuary specifically, the TMDL Report provides that, "***the LAR Estuary has not been identified as impaired by the LARWQCB***" for bacteria (TMDL Report, p. 8). Similarly, and for this same reason, the Consent Decree entered into by EPA for the development of TMDLs for the Los Angeles Region, does ***not*** require the adoption or the development of a TMDL for bacteria for the LAR Estuary. (*Id.* at p. 8.) Instead, as admitted in the TMDL Report: "*Under the Consent Decree, US EPA must establish LBC Beach Bacteria TMDLs by March 2012.*" (*Id.*, p. 2.) EPA does not assert that an LAR Estuary Bacteria TMDL is required by the Consent Decree, and nor does a review of the Consent Decree itself show that any such requirement exists.

Further, under the TMDL there are two primary drainages addressed which are referred to as the "direct drainages." These direct drainage includes the LAR Estuary Direct Drainage and the Long Beach City ("LBC") Beaches Direct Drainage. The TMDL also identifies adjacent drainages to both the LAR Estuary and LBC Beaches, which include the San Gabriel River and the Los Angeles River drainages. It provides that the Los Angeles River "*drains to the LAR Estuary and directly contributes both flow and bacteria load to the LAR Estuary*," and that discharges to the LAR Estuary from the Los Angeles River, "*unless otherwise addressed, will likely continue to cause, or contribute, to impairment to the Estuary itself, and the LBC Beaches.*" (TMDL Report, p. 5.) And, in fact, there is no dispute that the LA River is the primary source of bacteria to the LAR Estuary:

> "**The LAR Estuary is heavily impacted by the LAR** [Los Angeles River], so much so, that large booms have been

> installed with the intention to collect trash before LAR Flow enters the [Los Angeles] estuary. Along with the flow, **it can be assumed that the LAR contributes significant concentrations of bacteria to the estuary** and ultimately, the LBC Beaches. Other than LAR, sources of bacteria in the estuary include wildlife (predominately bird and water fowl) and MS4 discharges." (TMDL Report, p. 8)

In fact, EPA has also recognized that "*flow from the LAR itself is the primary source of loading to the estuary.*" (*Id.*) Understanding that the LA River is the primary source of loading to the estuary, and that there is no legal impairment of the LAR Estuary as a result of bacteria (the estuary is not listed for bacteria on the State's 303(d) list), there is simply no legal basis for adopting a Bacteria TMDL for the LAR Estuary at this time. Rather than relying upon a 303(d) listed impairment of the LAR Estuary to support the establishment of the TMDL, instead EPA makes the unsupported claim that "*nonetheless the LAR Estuary has been found to be impaired through data analysis*," and as such was "*included*" in the TMDL "*as an unaddressed source of bacteria that has the potential to impact the LBC Beaches.*" (*Id.* at p. 8)

Beyond the fact that the LAR Estuary has not been listed as impaired by the State of California for bacteria on its 303(d) list, and that the Los Angeles River is known to be the primary source of bacteria to the LAR Estuary, it is also clear from the TMDL Report that the other major sources of bacteria to the LAR Estuary are natural sources *e.g.*, birds and water fowl. According to the TMDL:

> **"bird watching is a common activity in the estuary, particularly in the Golden Shore Marine Biological Reserve, located along the eastern bank of the LAR Estuary. This nine-acre reserve developed in 1997 as mitigation for surrounding development, offers unique habitat and has been identified as one of the best bird-watching locations in the region."**

(TMDL Report at p. 7; *see also* p. 31 ["*Birds were identified as a potential source of bacteria to lower reaches of the Los Angeles River*," with the TMDL recognizing *"that the lower seven-miles of the River are one of the most important shore bird stopover sites in Southern California (LARWQCB 2010a). In addition bird watching is a common activity in the LA River Estuary, particularly in the Golden – Shore Marine Biological Reserve, located along the eastern bank of the estuary. This nine-acre reserve ... offers unique habitat and has been identified as one of the best bird watching locations in the region.*").]

In light of the significant natural sources of bacteria to the LAR Estuary, both from discharge from the LA River and from discharges from birds and water fowl directly to the LAR Estuary, it is important to recognize the State's policy for addressing natural sources of pollutants, as explained in the Basin Plan for the Los Angeles Region. According to the TMDL Report, under the Basin Plan, "*it is not the intention of the Regional Board to require treatment or diversion of natural water bodies or to require treatment of natural sources of bacteria from undeveloped areas.*" (*Id.* at p. 18.) It is, similarly important to recognize EPA's acknowledgement within the subject TMDL that "*information sufficient to quantify all naturally–occurring sources of indicator bacteria does not exist at this time.*" (*Id.* at 18.)

Understanding the above background, along with the other information referenced in the TMDL Report, Signal Hill respectfully submits that the TMDL cannot lawfully be approved at this time, and specifically opposes the issuance of any Bacteria TMDL for the LAR Estuary.

III. THE PROPOSED BACTERIA TMDL FOR THE LA RIVER ESTUARY IS CONTRARY TO LAW BECAUSE THE LAR ESTUARY IS NOT LISTED ON THE STATE'S 303(d) LIST AS BEING IMPAIRED FOR BACTERIA.

As described in the TMDL Report, the Regional Board has identified over 700 water body – pollutant combinations in the LA Region "*where TMDLs would be required. [Citation]. These are referred to as listed or 303(d) listed water bodies or water body segments.*" (TMDL Report, p. 2) EPA also recognizes in its TMDL Report that section 303(d) of the CWA requires each State to first "*identify those waters within its boundaries for which the effluent limitations are not stringent enough to implement any water quality objective applicable to such waters*," and thereafter that the States must then establish a priority ranking of waters on the 303(d) list of impaired water bodies and then establish TMDLs for such waters. (TMDL Report, p. 1; *also see* 33 U.S.C. § 1313(d)(1) & (2).)

CWA section 1313(d)(2) provides that: "*Each state shall submit to the administrator from time to time ... for his approval the waters identified and the loads established under paragraphs (1)(A), (1)(B), (1)(C), and (1)(D) of this subsection.*" Section 133(d)(1)(C) then requires each state to establish:

> **for the waters identified in paragraph (1)(A) of this subsection in accordance with the priority ranking, the total maximum daily load, for those pollutants which the administrator identifies under section 1314(a)(2) of this title as suitable for such calculation.** (33 U.S.C. § 1313(d)(1)(C), emphasis added.)

Under the CWA, TMDLs are thus to be established by the State to address the listed impaired water body. Once developed the TMDLs must be submitted by the state to EPA for approval. Once approved by EPA, the TMDL is to be incorporated into the State's Continuing Planning Process, and enforced as effluent limitations through

NPDES permits. (33 U.S.C. § 1313(d)(1)(f)(2); *see also, e.g.*, 40 C.F.R. § 130.2(h); *Dioxin/Organochlorine Ctr. v. Clark*, (9th Cir. 1995) 57 F.3d 1517, 1520 [citing 40 C.F.R. § 130.2 (discussing TMDL process)]; *and Communities for a Better Environment v. State Board* (2003) 109 Cal.App.4th 1089, 1095-96.) However, without the first step in the process, *i.e.,* the listing of the water body for the particular pollutant in issue, in this case, bacteria, there can be no enforceable TMDL under the Clean Water Act.

As the courts have found, "*a reasonable interpretation of the statute [the Clean Water Act] is that* ***after the state has compiled that 303(d) list****, it must* ***then establish TMDLs*** *for those waters 'in accordance with the priority ranking.' ... The development of TMDLs to correct the pollution is obviously a more intensive and time-consuming project than simply identifying the polluted waters, as the EPA has indicated.*" (*BayKeeper v. Whitman* (9th Cir. 2003), 297 F.3d 885, 877, emphasis added.) In short, under the CWA's plain terms, a state must ***first*** compile the 303(d) list, and may ***then*** establish the TMDLs for those listed waters in accordance with its priority ranking. (33 U.S.C. § 1313(d).) The 303(d) listing and TMDL processes are, therefore, sequential processes, and the CWA does not allow for the development of an enforceable TMDL for an ***unlisted*** water body for a particular pollutant, such as bacteria, for the LAR Estuary. Further, the problem is compounded here when it is recognized that the "primary" source of the offending pollutant is an adjacent water body, *i.e.,* the Los Angeles River, that is already subject to a Bacteria TMDL.

Not only does the CWA not authorize the adoption of an enforceable TMDL for an "unlisted" water body, it includes express language indicating that, under the present circumstances, such a TMDL would be inappropriate. Specifically, the CWA contains a

separate procedure for the development of "informational" TMDLs when a water body has not first been listed as being impaired. However, under the CWA, when developing "informational" TMDLs, the states may only establish an informational "total maximum daily load ... at a level ***that would assure protection and propagation of a balanced indigenous population of fish, shellfish, and wildlife***." (33 U.S.C. § 1313(d)(3), emphasis added.)

The CWA, moreover, does not allow EPA to then review and approve an informational TMDL. In short, informational TMDLs are developed by the states only, are not submitted to EPA for review or approval, and EPA has no ability to either develop or approve such a TMDL. As explained by the Court in *Pronsolino v. Marcus,* 91 F.Supp.2d 1337, 1344 (N.D. Cal. 2000), *aff'd* 291 F.3d 1123 (9th Cir. 2002), ***"The informational TMDLs were not subject to EPA review. EPA was not authorized to review or to issue the 'informational' TMDLs."*** Finally, under Section 1313(d)(3), informational TMDLs can only lawfully be developed to address the protection and propagation of a "*balanced indigenous population of fish, shellfish and wildlife*." (33 U.S.C. §1313(d)(3).)

Accordingly, a review of the language in subsections 1313(d)(1), (2) and (3), demonstrates not only that the EPA has no authority to establish a bacterial TMDL for the LAR Estuary at this time, *i.e.*, for a pollutant and water body that is not first listed as being impaired, and also that it has no authority to adopt even an informational TMDL for such a water body. Moreover, under the present circumstances where the identified beneficial use is not indigenous "fish, shellfish, and wildlife," even the State of California has no authority in this instance to establish even an informational TMDL. Because the

LAR Estuary has not been listed by the State of California as being impaired for bacteria, EPA's proposed bacteria TMDL for the LAR Estuary is contrary to law. Comment 1

IV. THE PROPOSED BACTERIA TMDL FOR THE LAR ESTUARY IS CONTRARY TO LAW BECAUSE IT DOES NOT PROPERLY IDENTIFY OR ADDRESS NATURAL SOURCES OF BACTERIA AND BECAUSE IT IS OTHERWISE INCOMPATIBLE WITH THE BASIN PLAN.

The TMDL Report recognizes that the LAR Estuary offers a unique habitat to a wide variety of wildlife and that the "***best bird-watching is a common activity in the LA River Estuary***." (EPA TMDL Report, p. 31.) Moreover, the TMDL acknowledges that flow from the LA River itself "***is a primary source of loading to the Estuary***" (p. 16), and that "***the lower seven-miles of the [LA] River is one of the most important shore bird stopover sites in Southern California" (p. 31), along with the fact that the Los Angeles River "contributes significant concentrations of bacteria to the estuary.***" (*Id.* at 8.)

EPA also admits in the TMDL Report that "***information sufficient to quantify all naturally-occurring sources of indicator bacteria does not exist at this time***," and further that with respect to the LAR Estuary, the "***total coliform geometric mean WQO [water quality objective] was exceeded 100 percent of the time***." (*Id.* at 18.)

Understanding that natural loads of bacteria exists in both the lower reaches of the Los Angeles River and in the LA River Estuary itself, in developing any TMDL for bacteria for the LAR Estuary, it is essential that the actual bacteria "load" from non-point sources and natural background sources first be properly and accurately quantified. EPA's failure to even quantify the natural and non-point sources of bacteria to the LAR Estuary, and thereafter link the bacteria in the estuary to such sources, prevents EPA from lawfully adopting a bacteria TMDL for the Estuary at this time.

Under the CWA, by definition, a TMDL includes the sum of the individual waste load allocations for point sources and load allocations "for nonpoint sources," plus "natural background." (40 C.F.R. § 130.2(i).) The federal regulations provide that waste discharges from sources that are not currently regulated by an NPDES permit are required to be addressed by the "load" allocation component of the TMDL. (*See* 40 C.F.R. § 130.2(g) [Definition of Load Allocation ("LA")].)

EPA's material failure to quantify the non-point sources and natural background bacteria loads to the LAR Estuary for the subject TMDL (along with its failure to develop proper load allocations for such sources of bacteria – discussed further below), will therefore result improperly in the entire burden for addressing natural sources of bacteria and non-point sources being borne by Signal Hill and Long Beach, and is an approach that is contrary to the process and requirements set forth under the Clean Water Act.

The deficiencies in the TMDL with respect to the natural sources and non-point sources of bacteria is particularly egregious in light of the provisions in the Basin Plan that the State of California is not requiring "*the treatment or diversion of natural sources of bacteria from undeveloped areas. Such requirements, if imposed ... could adversely affect the valuable aquatic life and wildlife beneficial uses supported by natural water bodies in the region.*" (TMDL Report, p. 13.)

The proposed bacteria TMDL is therefore arbitrary and capricious, and not in accordance with law, because it fails to quantify or account for bacteria coming from natural sources and other non-point sources, and because it ignores the import of the proviso in the Basin Plan that treating natural sources of bacteria could adversely affect

wildlife and aquatic life. Because the TMDL seeks to reduce the amount of bacteria in the LAR Estuary so as to allow for human recreational uses in the Estuary, without recognizing that such an effort is inherently inconsistent with the existing bird and water fowl uses of both the LAR Estuary and the lower portions of the Los Angeles River, a TMDL for the LAR Estuary cannot lawfully be adopted at this time. Comment 2

V. THE PROPOSED BACTERIA TMDL FOR THE LAR ESTUARY IS CONTRARY TO LAW BECAUSE ITS LINKAGE ANALYSIS IS DEFICIENT AND BECAUSE IT WILL BE IMPOSSIBLE TO COMPLY WITH ITS TERMS.

As recognized in the TMDL Report, under the CWA a TMDL is made up of the individual waste load allocations for point sources, load allocations for non-point sources, along with natural background. (TMDL Report, p. 2.) The combination of the individual waste load allocations for point sources, load allocations for non-point sources and natural background, are not to exceed the total loading capacity for the water body for the pollutant in question. (*Id.*) In addition, in developing a TMDL, in order to determine the effects of the various sources of the pollutant in question on the subject water body, ***"it is necessary to determine the assimilative capacity of the receiving water." "The technical analysis of the relationship between pollutant loading from the identified sources or the response of the waterbody to this loading is referred to as the linkage analysis."*** (*Id.* at 33.)

In this case, as referenced above, the TMDL recognizes that there is presently insufficient information that exists to fully determine the amount of bacteria loading from natural sources. (*Id.* p. 18.) For this reason, almost by definition, the linkage analysis in the TMDL is defective.

In addition, the load allocations set forth under the TMDL (which include wildlife sources, other animal sources, as well as re-growth and human sources from the

homeless and recreators within the water bodies), appear to have been established with little or no substantive linkage analysis, and specifically no analysis of the relationship between the proposed load allocations and the actual natural and nonpoint sources of bacteria.

Third, the TMDL's waste allocations established for MS4 Permits, such as Signal Hill, set "single sample minimums" for daily and weekly sampling of monitored sites. (TMDL Report, p. 48.) The TMDL Report provides that the exceedance day-waste load allocations are to be incorporated into the NPDES Permits, including the MS4 NPDES Permit for Signal Hill, that "*[c]ompliance monitoring will be in the receiving water for numeric targets*" (*id.* at p. 53) and that "*[f]or the estuary the numeric targets will apply in the ambient water. These targets apply during both dry and wet-weather since there is water contact recreation throughout the year.*" (*Id. at 17.)*

Finally, the TMDL provides that: "*WLAs for the MS4 Permittees will be equal to allowable exceedance days of the single sample maximum.*" (*Id.* at 42.) As discussed in Signal Hill's technical comments, the TMDL's analysis of the loads from point sources of bacteria, namely direct drainage to the LAR Estuary, is entirely deficient as there appears to be virtually no substantive linkage analysis of the relationship between the bacteria in the estuary and the bacteria attributed to the point sources of bacteria to the Estuary.

For example, without any discussion of the issue, the TMDL appears to assign to Signal Hill and Long Beach the responsibility for all natural sources of bacteria existing on lands within their jurisdiction, including apparently all bird and other natural sources of bacteria, as well as re-growth. (*See* TMDL Report, p. 42.) ["***Lands not covered by***

the MS4 Permit ... are assigned to LAs."].) The linkage analysis is clearly deficient, and without a proper linkage analysis, the TMDL cannot be lawfully adopted.

In addition, in light of the fact that *"[c]ompliance monitoring will be in the receiving water for numeric targets," that "for the estuary the numeric targets will apply in the ambient water"* (TMDL Report, p. 17), requiring compliance with the waste load allocations is setting Signal Hill up for failure, and is requiring compliance with an impossible and completely unattainable set of numeric limits. In fact, as written, it does not appear Signal Hill could comply with the TMDL even if bacteria within its discharges were reduced to zero (which is an impossibility).

Finally, particularly with the wet weather component of the TMDL, there is no identified, nor known means by which bacteria within rainwater flows can safely be diverted or otherwise treated to comply with the proposed waste load allocations within the TMDL. Nor does EPA identify any methods of compliance with the wet or dry weather components of the TMDL. Similarly, neither the Regional nor State Boards have been able to identify any legitimate means of addressing bacteria in rainwater flows when these same Boards developed the bacteria TMDL for the Los Angeles River.

Evidence of the fact that the wet weather component of the TMDL is impossible to comply with is reflected in the Basin Plan itself. Specifically, for many portions of the LA River, the Regional Board has adopted what is referred to as a "High Flow Suspension" policy. This "High Flow Suspension" or "HFS" Policy, in effect, suspends the applicable water quality objectives for the relevant portion of the Los Angeles River, and is a clear recognition by the State and Regional Boards that, in many instances, it is

simply not possible to comply with water quality objectives during significant rain events. It is also a recognition that it is often dangerous to be recreating in storm drain channels during such events, a fact evidenced by annual rescue operations in the LA River.

Yet, for reasons that remain unclear, the State and Regional Boards have failed to apply the HFS Policy to any portion of the Estuary, even though this same reasoning would apply to the LAR Estuary. Specifically, it is clearly dangerous to be swimming or otherwise recreating in the LAR Estuary during significant storm events, and importantly, it is impossible to meet the water quality objectives for bacteria in the LAR Estuary during such storm events. The TMDL is arbitrary and contrary to law.[1] Comment 3

VI. THE PROPOSED BACTERIA TMDL FOR THE LAR ESTUARY IS NOT PRESENTLY SUITABLE FOR CALCULATION.

Under Section 1313(d)(1)(C), a TMDL is only to be established when the pollutant at issue is "***suitable for such calculation***," and then only at a level ***necessary*** to implement the applicable water quality standards." (33 U.S.C. § 1313(d)(1)(C) (emph. added).) Further, under the express language of the CWA, by definition a TMDL is required to be a total maximum "daily" load. (33 U.S.C. § 1313(d); *also see Friends of the Earth v. EPA* (D.C. Court 2006) 446 F3d 140, 148 ["daily means nothing other than daily"].)

Moreover, based on a 1978 EPA Rule, a TMDL is "***suitable for calculation***" only under "***proper technical conditions***." (43 Fed. Reg. 60662, emph. added.) "Proper

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[1] It should be also recognized that the majority of the City of Signal Hill's discharges to the LAR Estuary are through pump stations operated by the County of Los Angeles and/or the Los Angeles County Flood Control District. As such, Signal Hill simply has no control over a large portion of its discharges to the LAR Estuary. This lack of control over such discharge is further evidence of the impossibility for Signal Hill to comply with the terms of the TMDL.

technical conditions" require "the availability of the analytical methods, modeling techniques and data base necessary to develop a technically defensible TMDL." (43 Fed. Reg. 60662.)

The need for "proper technical regulations" to exist before establishing a TMDL is also demonstrated in an August 9, 2001 EPA Ruling. There, EPA delayed implementation of a July 13, 2000 TMDL Rule because of concerns expressed by the regulated community that "***there is not enough data to support TMDLs, that some pollutants are not suitable for TMDL calculation, that the section 303(d) lists are not based on scientifically-defensible data, or that the delisting criteria are too inflexible***." (66 Fed. Reg. 41817, 41819; emph. added.) Despite comprehensive efforts to address the problem and extensive public comment on the issue, the unresolved concerns resulted in EPA again delaying (66 Fed. Reg. 41817, 41819) and thereafter abandoning its proposed Rule, because the controversial regulations could not serve as an "efficient and effective TMDLs program without significant revisions." (68 Fed. Reg. 13609.)

In addition, as reaffirmed by the U.S. Court of Appeals for the District of Columbia in *Friends of the Earth, Inc. v. EPA* (D.C. Circuit 2006) 446 F.3d 140, if a total maximum daily load of a particular pollutant for a particular water body is not "suitable for calculation," it is not proper for EPA to adopt the TMDL. (*Id.* at 146, invalidating "non-daily 'daily' loads" and recommending that EPA reconsider its position that "all pollutants ... are suitable for the calculation of total maximum daily loads".)

In *Friends of the Earth,* EPA conceded "that nothing forecloses the agency from reconsidering" its general position that "all pollutants" are suitable for the calculation of

TMDLs, with the Circuit Court holding that *"[g]iven that EPA's entire justification for establishing non-daily loads is that certain pollutants are unsuitable for daily load limits, we are at a loss as to why it neglected this straightforward regulatory fix in favor of the tortured argument that 'daily' means something other than daily."* (*Id* at 146.) To date, however, EPA has failed to heed the Circuit Court's recommendation, *i.e.,* it has failed to "reconsider [ ] its position" that all pollutants are suitable for calculation. (*Id.*)

In recognizing the importance of following the "rule of law," EPA's Administrator recently stressed the need to rigorously adhere to sound science, stating:

> **Science must be the backbone for EPA programs. The public health and environmental laws that Congress has enacted depend on rigorous adherence to the best available science.** The President believes that when EPA addresses scientific issues, it should rely on the expert judgment of the Agency's career scientist and independent advisors. When scientific judgments are suppressed, misrepresented or distorted by political agendas, Americans can lose faith in their government to provide strong public health and environmental protection.
>
> **The laws that Congress has written and directed EPA to implement leave room for policy judgments. However, policy decisions should not be disguised as scientific findings. I [the new EPA Administrator] pledge that I will not compromise the integrity of EPA's experts in order to advance a preference for a particular regulatory outcome**.
>
> (Exhibit "1," EPA Administrative January 23, 2009 Memorandum to EPA to All Employees, p. 1.)

As discussed above, the TMDL Report provides that "*information sufficient to quantify all natural occurring sources of indicator bacteria does not exist at this time.*" (TMDL Report, p. 18.) Yet, as other portions of the TMDL Report reflect, the natural bacteria loads represent a significant portions of the total bacteria load. (*See, e.g.,* TMDL Report, p. 31 ["... ***The lower seven-miles of the [Los Angeles] River are part***

of the most important shore bird stopover sites in Southern California (LARWQCB, 2010a). In addition bird watching is a common activity in the LAR Estuary."]; and p. 8 ["***The LAR Estuary is heavily impacted by the LAR ... Along with the flow, it can be assumed that the LAR contributes significant concentrations of bacteria to the estuary and ultimately, the LBC beaches.*** *Other than the LAR, sources of bacteria to the estuary include wildlife (predominantly birds and water fowl) and MS4 discharges.*"].) Thus, from the discussion in the TMDL Report, it is apparent that the MS4 discharges to the LAR Estuary represent a small portion of the total bacteria load; yet Signal Hill will clearly need to incur significant costs to comply with the waste load allocations in the TMDL for the LAR Estuary.

For example, with regard to the LAR Estuary, EPA acknowledges that: "*the total coliform geometric mean WQO was exceeded 100 percent of the time....*" (*Id.* at 16.) Yet the TMDL Report fails to link and quantify the source of the bacteria for any point or non-point source, nor for any natural source, undoubtedly because it does not have sufficient information and data to quantify the source loads. (See, e.g., TMDL Report, p. 18.) Because "***science must be the backbone for EPA Programs***" and "***policy decisions should not be disguised as scientific findings***," the subject TMDL should not be adopted until the science has been determined to be sound and the data gaps filled.

It is also important to recognize that neither the load allocations, nor the waste load allocations in the TMDL, are in the form of a "load," let alone a "daily load." Instead, the load and waste load allocations have been based entirely on exceedances of specific numeric targets within a single sample. (*See, e.g.,* TMDL Report, p. 48.)

Specifically in Table 6-3 of the TMDL, a single exceedance of a "daily" or "weekly" sampling event for the summer dry season would automatically result in an exceedance of the numeric target, and thus, an exceedance of the proposed waste load allocation. (*Id.*) Similarly, although there are "allowable exceedance days" for the winter dry season and the wet season, still the TMDL is based on the existence of the amount of bacteria in a single sample, rather than on the total maximum "daily" load that may be discharged. (*See* 33 U.S.C. § 1313(d)(1)(C).)

Accordingly, in light of the admitted lack of information necessary to establish the TMDL, and given the insufficient analysis and quantification of natural sources and non-point sources of bacteria, as well as the scant analysis conducted on the quantity of bacteria resulting from point sources of bacteria, combined with the lack of any total maximum "daily" load in the TMDL, the Bacteria TMDL is contrary to both the clear "daily" load requirements of the CWA, and the CWA requirement that a TMDL be "suitable for calculation" before it is adopted. (*Id.*) Comment 4

VII. THE PROPOSED BACTERIA TMDL IS DEFICIENT BECAUSE IT FAILS TO REFLECT THAT IT MAY BE COMPLIED WITH THROUGH THE USE OF A BEST MANAGEMENT PRACTICES APPROACH, RATHER THAN THROUGH STRICT COMPLIANCE WITH NUMERIC EFFLUENT LIMITS.

The proposed Bacteria TMDL provides for a single sample target, with a limited number of allowable exceedance days for both daily and weekly sampling, and requires compliance with "exceedance–day targets at the point of discharge," albeit somehow through "compliance monitoring in the receiving water." (TMDL Report, p. 53.) The TMDL further provides that "[f]or the Estuary the numeric targets will apply in the ambient water." (*Id.* at 17.)

Thus, from the TMDL Report, it appears EPA intends the TMDL to be enforced as a strict numeric effluent limit, rather than through the use of maximum extent practicable ("MEP") compliant best management practices ("BMPs"). (*See* 33 U.S.C. § 1342(p)(3)(B).) At a minimum, there is nothing in the TMDL Report to suggest that compliance with the WLAs can be deemed achieved through the implementation of BMPs that are consistent with the maximum extent practicable standard.

In *BIA of San Diego County v. State Board* (2004) 124 Cal.App.4th 866, 874, the California Court of Appeal acknowledged that the CWA is to be applied differently to municipal stormwater dischargers than to industrial stormwater dischargers, finding as follows:

> In 1987, Congress amended the Clean Water Act to add provisions that specifically concerned NPDES permit requirements for storm sewer discharges. [Citations.] In these amendments, enacted as part of the *Water Quality Act of 1987*, Congress distinguished between industrial and municipal storm water discharges. . . With respect to *municipal* storm water discharges, Congress clarified that the EPA has the authority to fashion NPDES permit requirements to meet water quality standards without specific numeric effluent limits and instead to impose "controls to reduce the discharge of pollutants to the maximum extent practicable."

(*Id.*, citing 33 USC § 1342 (p)(3)(B)(iii) *and Defenders of Wildlife v. Browner* (9th Cir. 1999) 191 F.3d 1159, 1163 ("*Defenders*") (bolding added, italics in original).)

In *Defenders*, the Ninth Circuit recognized the different approach taken by Congress for Stormwater, finding that "***industrial discharges must comply strictly with state water-quality standards," while Congress chose "not to include a similar provision for municipal storm-sewer discharges.***" (191 F.3d at 1165; (emphasis added).) The Court found that "because 33 U.S.C. § 1342(p)(3)(B) is not

merely silent regarding whether municipal discharges must comply with 33 U.S.C. § 1311," but instead section 1342(b)(3)(B)(iii) [of the CWA] ***"replaces the requirements of § 1311 with the requirement that municipal storm-sewer dischargers 'reduce the discharge of pollutants to the maximum extent practicable...,'"*** "the statute unambiguously demonstrates that Congress did not require municipal storm-sewer discharges to comply strictly with 33 U.S.C. § 1311(b)(1)(C)." (*Id.* at 1165.)

Understanding the differences recognized by Congress in the Clean Water Act, in a November 22, 2002 Guidance Memorandum on *"Establishing Total Maximum Daily Load ("TMDL") Waste Load Allocations ("WLAs") for Stormwater Sources and NPDES Permit Requirements Based On Those WLAs,"* (Exhibit "2" hereto), EPA explained that for NPDES Permits regulating stormwater discharges, any water quality-based effluent limits for such discharges should be "***in the form of BMPs and that numeric limits will be used only in rare instances.***" (Exhibit "2," EPA Guidance Memo, p. 6.) EPA recommended that "for NPDES-regulated municipal ... dischargers effluent limits, effluent limits should be expressed as best management practices (BMPs), rather than as numeric effluent limits." (Exhibit "2," at p. 4.) In fact, EPA went so far as to find as that:

> If it is determined that a BMP approach (including an iterative BMP approach) is appropriate to meet the stormwater component of the TMDL, **EPA recommends that the TMDL reflect this**. (*Id.* at 5.)

EPA explained its recommendation that a Stormwater TMDL reflect the fact that it is to be implemented through the use of a BMP approach, rather than the use of numeric limits, as follows:

> 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**. (*Id.* at 4, emphasis added.)

EPA recognized that under CWA, section 1342(p)(3)(B)(iii), and the regulations, specifically 40 C.F.R. § 122.44(k)(iii), for stormwater NPDES permits, water quality based effluent limits ("WQBELs") taken from the waste load allocations in a TMDL "may be expressed in the form of best management practices ("BMPs")," and that "if BMPs alone adequately implement the WLAs, additional controls are not necessary." (Exhibit "2," p. 2.)

In EPA's November 12, 2010 Memorandum entitled "*Revisions to the November 22, 2002 Memorandum Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Stormwater Sources and NPDES Permit Requirements Based on those WLAs*," EPA asserted that: *"NPDES Permitting authorities should use numeric effluent limitations where feasible as these types of effluent limitations create objective and accountable means for controlling stormwater discharges."* (Exhibit "3" hereto, p. 3.)

However, in light of the many oral and written comments initially provided to EPA in response to its 2010 Memorandum, EPA issued a March 17, 2011 Notice of Public Comment (Exhibit "4") to solicit public comments on its November 12, 2010 Memorandum. In its Notice, EPA claimed that it "plans to make a decision by August

15, 2011 to either retain the Memorandum without change, to reissue with revisions, or to withdraw it." (Exhibit "4", p. 1.) Also, in its March 17, 2011 Notice, EPA found as follows:

> EPA emphasizes that the discussion in the November 12, 2010 Memorandum is intended solely as guidance to regulatory authorities as they implement CWA Programs. . . . Thus, it does not impose legally binding requirements on EPA, States or the regulated community, not does it confer legal rights or impose legal obligations upon any member of the public. In the event of a conflict between the discussion in this document and any statute or regulation, this document would not be controlling.

(Exhibit "4", p. 2) To date, EPA has not made a decision on whether it will retain, revise or withdraw its November 12, 2010 Memorandum.

In response to EPA's March 17, 2011 Notice, Signal Hill and other Cities submitted comments on the propriety or lack thereof of EPA's 2010 Memorandum. (See Exhibit "5," April 18, 2011 Comments on the propriety of EPA's November 12, 2010 Memorandum, exclusive of the exhibits thereto.) For the reasons set forth in Exhibit "5," Signal Hill respectfully assert that the 2010 Memorandum should be rescinded by EPA and that the 2002 Memorandum should remain in place, unchanged. (See Exhibit "2".)

In sum, Signal Hill respectfully request that any TMDL that is ultimately adopted for bacteria for the LBC Beaches and the LAR Estuary include clear direction to permit writers that the wasteload allocations within the TMDL may be complied with through the use of deemed compliant iterative BMPs, and that numeric limits need not be required to be included in any municipal NPDES Permits.

In a February 11, 1993 Memorandum issued by the State Board's Office of Chief Counsel by Elizabeth Jennings, subject *"Definition of Maximum Extent Practicable,"*

(Exhibit "6," the Office of Chief Counsel provided guidance on determining whether a best management practice ("BMP") was consistent with the maximum extent practicable or "MEP" standard. The Memorandum concluded that the following factors may be useful in this determination:

1. Effectiveness: Will a BMP address a pollutant of concern?
2. Regulation Compliance: Is the BMP in compliance with storm water regulations as well as other environmental regulations?
3. Public acceptance: Does the BMP have public support?
4. Cost: Will the cost of implementing the BMP have a reasonable relationship to the pollution control benefit to be achieved?
5. Technical feasibility: Is the BMP technically feasible considering soils, geography, water resources, etc.?

(Exhibit "6," Jennings Memo, p. 4-5.)

Further, as reflected in a letter dated August 22, 2003, from EPA Headquarters to the Honorable Bart Doyle, EPA made it clear that it will "continue to work with the Regional Board ***to make sure that they consider different implementation methods for TMDLs***," and that, with respect to EPA's November 22, 2002 Guidance Memorandum, EPA has "worked closely with all ten Regions on this memo and ***expects that it will be followed by the states.***" (Exhibit "7," August 27, 2003 Letter, p. 2.)

Similarly, in a recent EPA-issued draft technical document entitled "*TMDLs Stormwater Handbook, November, 2008*" (Exhibit "8," hereafter "Draft Handbook"), EPA seeks "to provide information to TMDL practitioners and NPDES stormwater permit writers" on various subjects, including:

- TMDL implementation plans including best management practice (BMP) and other stormwater management strategy recommendations
- Approaches for translating TMDL WLAs and implementation recommendations into NPDES stormwater permit requirements and implementation strategies.

(Exhibit "8," p. 1.)

The Draft Handbook is designed to assist in the development of "TMDL implementation plans that connect WLAs and stormwater permits by either (1) including specific recommendations (*e.g.*, performance standards, management measures) for implementing WLAs, or (2) providing technical information for permit writers and permittees on how to analyze, select, and implement provisions to implement the WLAs." (*Id.*) The Draft Handbook specifically references and quotes from the EPA Guidance Memo referenced above, and provides that: ***"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."*** (Exhibit "8," p. 133 (emphasis added.)

Furthermore, in a Report issued by the National Research Council ("NRC") entitled "*Assessing the TMDL Approach to Water Quality Management,*" 2001 (*see* Exhibit "9"), the NRC concluded as follows:

> Many debates in the TMDL community have centered on the use of "phased" and "iterative" TMDLs. Because these terms have particular meanings, this report uses a more general term – adaptive implementation. Adaptive implementation is, in fact, the application of the scientific method to decision-making. It is a process of taking actions of limited scope commensurate with available data and information to continuously improve our understanding of a problem and its solutions, while at the same time making progress toward attaining a water quality standard. (Exhibit "9," p. 90.)

In a recent Appellate Court decision from the State of Oregon, *Tualatin River Keepers, et al. v. Oregon Department of Environmental Quality* (2010) 235 Ore. App. 132 ("*Tualatin River*"), the Oregon Court of Appeal looked at, among other issues, the need for waste load allocations contained within developed TMDLs to be enforced as strict numeric limits within a municipal NPDES Permit under Oregon law. The petitioners in that case argued that the Oregon Department of Environmental Quality ("DEQ") had erred because it issued a permit that did not "incorporate waste load allocations as enforceable effluent limits." (*Id.* at 137.) The Oregon Court discussed the purpose of a TMDL, noting it is required to be established for pollutants and waters of the State that are identified pursuant to Section 1313(d) of the CWA, and went on to address petitioners' contention that the TMDLs were required under State law to have been incorporated into the Permit as a "enforceable effluent limitation." (*Id.* at 147-48.)

What was not even argued in *Tualatin River Keepers* was that federal law required a TMDL to be incorporated into a municipal NPDES Permit as a "numeric effluent limitation." Instead, the Court found that under the CWA, best management practices were considered to be a "type of effluent limitation," and that such best management practices were authorized to be used pursuant to the CWA, section 33 U.S.C. § 1342(p) as a means of controlling "storm water discharges." (*Id.* citing 33 U.S.C. § 1342(p) and 40 CFR § 122.44(k)(2)-(3).)

The Court in *Tualatin* went on to conclude that the State did not require that TMDLs be enforced through the use of numeric effluent limits, finding as follows:

> The applicable TMDLs in this case set forth specific waste load allocations for municipal storm water. The permits at issue, in turn, indicate the bodies of water for which TMDLs and wasteload allocations have been established and

> reference the specific TMDL for those bodies of water. **The permits provide in the "adaptive management" section that, "[w]here TMDL wasteload allocations have been established for pollutant parameters associated with the permittee's [municipal separate storm sewer system] discharges, the permittee must use the estimated pollutant load reductions (benchmarks) established in the [storm water management plan] to guide the adaptive management process." ... Adequate progress toward achieving assigned wasteload allocations will be demonstrated through the implementation of best management practices that are targeted at TMDL-related pollutants."** Pursuant to that section, permittees must evaluate progress toward reducing pollutant loads "through the use of performance measures and pollutant load reduction benchmarks developed and listed in the [stormwater management plan]."
>
> * * *
>
> **Although the permits do not themselves include numeric wasteload allocations like those set forth in the TMDLs, the TMDL wasteload allocations are clearly referenced in the permits, and the permits require implementation of best management practices, set forth in the storm water management plans, to make progress towards meeting those wasteload allocations. Again, best management practices are a type of effluent limitation that is used in municipal storm water permits.** *See* 40 CFR § 122.44(k)(2)-(13). Furthermore, the permits incorporate benchmarks, through incorporation of the storm water management plan, which are specific pollutant load reduction goals for the permittees. Those measures are "permit requirements" that properly incorporate the TMDL wasteload allocations.

(*Id.* at 148-49, emphasis added.) The Oregon Appellate Court opinion confirms established authority that numeric limits are not required as a means of implementing wasteload allocations in a TMDL incorporated into a municipal stormwater permit.

In addition, it has long since been the policy of the State of California not to require the use of strict numeric limits for stormwater dischargers, but rather to apply the MEP standard through an iterative BMP process. (*See, e.g.*, Exhibit "10," State Board

Order No. 91-04, p. 14 ["There are ***no numeric objectives*** *or* ***numeric effluent limits*** required at this time, either in the Basin Plan or any statewide plan that apply to storm water discharges." p. 14]; Exhibit "11," State Board Order No. 96-13, p. 6 ["***federal laws does not require*** the [San Francisco Reg. Bd] to dictate the specific controls."]; Exhibit "12," State Board Order No. 98-01, p. 12 ["Stormwater permits must achieve compliance with water quality standards, but they may do so by requiring implementation of BMPs ***in lieu of numeric water quality-based effluent limitations***."]; Exhibit "13," State Board Order No. 2000-11, p. 3 **["*In prior Orders this Board has explained the need for the municipal storm water programs and the emphasis on BMPs in lieu of numeric effluent limitations.*"]**; Exhibit "14," State Board Order No. 2001-15, p. 8 ["While we continue to address water quality standards in municipal storm water permits, we also continue to believe that ***the iterative approach***, which focuses on timely improvements of BMPs, is appropriate."]; Exhibit "15," State Board Order No. 2006-12, p. 17 ["***Federal regulations do not require numeric effluent limitations for discharges of storm water***"]; Exhibit "16," *Stormwater Quality Panel Recommendations to The California State Water Resources Control Board – The Feasibility of Numeric Effluent Limits Applicable to Discharges of Stormwater Associated with Municipal, Industrial and Construction Activities*, June 19, 2006, p. 8 ["***It is not feasible at this time to set enforceable numeric effluent criteria for municipal BMPs and in particular urban dischargers***."]; and Exhibit "17"an April 18, 2008 letter from the State Board's Chief Counsel to the Commission on State Mandates, p. 6 ["***Most NPDES Permits are largely comprised of numeric limitations***

for pollutants. . . . Stormwater permits, on the other hand, usually require dischargers to implement BMPs."].)

In sum, neither State nor federal law or policy provide for the incorporation of WLAs as strict numeric limits into an MS4 Permit. To the contrary, both EPA and the State have long recognized that numeric limits should only be incorporated into an MS4 Permit in "rare instances," with the State Board's Numeric Effluent Limits Panel concluding that "it is not feasible at this time to set enforceable numeric effluent criteria for municipal BMPs and in particular urban dischargers." (Exhibit "15," p. 8.) Adopting the proposed Bacteria TMDL without language confirming that, with respect to the Signal Hill and the other municipal permittees, the TMDL is not to be implemented through the use of strict numeric effluent limits but instead through the use of an iterative BMP approach, is arbitrary and capricious action.

In the case of *Divers' Environmental Conservation Organization v. State Water Resources Control Board (Divers' Environmental)* (2006) 145 Cal.App.4th 246, the plaintiff brought suit claiming that an NPDES Permit issued to the United States Navy by the San Diego Regional Board was contrary to law because it did not incorporate wasteload allocations ("WLAs") from a TMDL as numeric effluent limits into the Navy's permit. After discussing the relevant requirements of the Clean Water Act, as well as governing case authority, the Court of Appeal acknowledged that in regulating stormwater permits, EPA ***"has repeatedly expressed a preference for doing so by the way of BMPs, rather than by way of imposing either technology-based or water quality-based numerical limitations."*** (*Id.* at 256.) The Court went on to find that "***it is now clear that in implementing numeric water quality standards, such as***

those set forth in CTR, permitting agencies are not required to do so solely by means of a corresponding numeric WQBEL's." (*Id.* at 262.)

Even in the February 11, 1993 Memorandum issued by the State Board's Office of Chief Council, subject "*Definition of Maximum Extent Practicable*" (Exhibit 6), the Office of the Chief Council recognized that the intent of Congress in establishing the maximum extent practicable ("MEP") standard was to include a requirement "to reduce the discharge of pollutants, rather than totally prohibit such discharge," and that Congress presumably applied an MEP Standard, rather than a strict numeric standard with the "knowledge that ***it is not possible*** for municipal dischargers to prevent the discharge of all pollutants in stormwater." (Exhibit 6, p. 2.) Comment 5

VIII. THE PROPOSED BACTERIA TMDL IS DEFICIENT AS IT FAILS TO INCLUDE AN ECONOMIC ANALYSIS IN ACCORDANCE WITH APPLICABLE FEDERAL AND STATE LAW.

The federal regulations to the CWA require that ***economic*** factors be considered when EPA or the State identifies controls needed to achieve water quality goals, that financial arrangements for treatment facilities be provided for, that a ***fiscal and economic analysis*** be conducted for nonpoint source BMPs, and that the ***financial capability*** of the implementing agencies be considered in carrying out any Water Quality Management Plan (WQM Plan) for nonpoint source discharges. (40 C.F.R. § 130.6(c).) Moreover, under the federal regulations, TMDLs are an important part of the State's WQM Plan. (*See* 40 C.F.R. § 130.6(c)(1).)

Federal regulations provide that the WQM Plans are to be used "to direct implementation" (40 C.F.R. § 130.6(b)), and that such plans are to "draw upon the water quality assessments to identify priority point and nonpoint water quality problems, consider alternative solutions and recommend control measures, including the ***financial***

and institutional measures necessary for implementing recommended solutions." (*Id,* emph. added.) The regulations, therefore, expressly recognize that the implementation of WQM Plans (which Plans are to specifically include Total Maximum Daily Loads), must include a consideration of "the financial and institutional measures necessary for implementing" the requirements of the Plan. (*Id.*)

The federal regulations also mandate the consideration of specific implementation measures necessary to carry out the WQM Plan, "including ***financing***, the time needed to carry out the plan, and the ***economic***, social and environmental impacts of carrying out the plan in accordance with section 208(b)(2)(E)." (40 C.F.R. § 130.6(c)(6), emph. added.) Specifically for "urban stormwater," the WQM Plan is required to include an "[i]dentification of BMPs for urban stormwater control to achieve water quality goals and ***fiscal analysis of the necessary capital and operations and maintenance expenditures*** in accordance with section 208(b)(2)(A) of the Act." (40 C.F.R. § 130.6(c)(4)(iii)(G), emph. added.)

For nonpoint sources, which for purposes of the regulation appear to include "urban stormwater," the regulation requires that "***[e]conomic***, institutional, and technical factors shall be considered in a continuing process of identifying control needs and evaluating and modifying the BMPs as necessary to achieve water quality goals." (40 C.F.R. § 130.6(c)(4), emph. added.) The federal regulations even require the identification of agencies necessary to carry out the WQM plan along with a demonstration of their "***financial capability***" and "specific activities necessary to carry out their responsibilities" under section 208 of the Act. (40 C.F.R. § 130.6(c)(5).)

In a January 7, 2000 Guidance Document issued by EPA Region 9, entitled *"Guidance for Developing TMDLs in Califomia,"* EPA described "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." (*See* Exhibit "18," hereafter "EPA Guidance for California TMDLs," p. 1.) Attached to the EPA Guidance for California TMDLs is an Opinion Memorandum from the Office of the Chief Counsel, California State Water Resources Control Board, entitled *"Economic Considerations in TMDL Development and Basin Planning,"* from Sheila K. Vassey, Office of Chief Counsel, to Stefan Lorenzato, TMDL Coordinator ("Vassey Memo"), which EPA describes as a ***"memorandum addressing economic analysis requirements under State law."*** (Exhibit "18," p. 22; emph. added.)

As discussed in the Vassey Memo, in California, there is an affirmative duty to consider economics when adopting water quality objectives, and California 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***," where the economic consequences of adopting the proposed objective are potentially significant. (Exhibit "18," Appendix A, Vassey Memo, p. 3.)

Attached to the Vassey Memo, but not included within EPA's guidance for California TMDLs, is a separate State of California Office of Chief Counsel Memo (*see* Exhibit "19" hereto), dated January 4, 1994 from William R. Attwater, Chief Counsel, to Regional Water Board Executive Officers and Attorneys, and entitled *"Guidance on Consideration of Economics in the Adoption of Water Quality Objectives,"* (hereafter

"Attwater Memo"). The Attwater Memo identifies various legal requirements compelling a consideration of economics in the development of a TMDL in California, where it provides that:

> 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 discussion could be included in the staff report or resolution for the proposed amendment. (Exhibit "19," Attwater Memo, pp. 1-2.)

Further, the Attwater Memo expressly references the general policies and factors mandated by California Water Code section 13000, and confirms that water quality is to 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." (Exhibit "19," Attwater Memo, p. 3, n. 3; emphasis in original.)

The Attwater Memo reinforces this analysis in its discussion of Senate Bill 919 adopted in 1993, where it states that the California Environmental Quality Act ("CEQA") analysis "must take into account a reasonable range of factors, including ***economics***" (*Id* at 4; emph. added), and sets forth the following series of recommendations and comments regarding "economics":

> 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 alternative.

. . . 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 challenge, 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.

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." [Citation omitted.]

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.
>
> 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 discernable from the record**. This reasoning could be included in the staff report or in the resolution adopting a proposed water quality control plan amendment. (Exhibit "19," pp. 4-6.)

Moreover, a series of other reports included with these comments shows that the economic impacts and other costs to strictly comply with numeric effluent limits, whether through a TMDL or otherwise, will be severe. *See,* for example, Exhibit "20," a report entitled *"An Economic Impact Evaluation of Proposed Stormwater Treatment for Los Angeles County,"* dated November 2002, prepared by the University of Southern California, School of Engineering and School of Policy, Planning and Development (hereafter the "USC Study") showing that the capital costs alone for advanced treatment of storm water flows range from ***$43.7 billion*** to treat flows from about 70% of the historical average annual storm events to ***$283.9 billion*** for 97% of the expected storm events, and also concluding that such extremely costly treatment measures will "generate significantly negative economic consequences for our region." (Exhibit "20," p. 1.)

Also see Exhibit "21," a report entitled *"Financial and Economic Impacts of Stormwater Treatment Los Angeles County NPDES Permit Area,"* presented to the California Department of Transportation Environmental Program, Report ID# CTSWRT98-72, dated November 1998 and prepared by Stanley R. Hoffman Associates ("Caltrans Study"). Exhibit "21" shows it will cost $53.6 billion in capital costs alone to install storm water treatment facilities to comply with the State's water quality objectives.

Further see a report entitled *"Cost of Storm Water Treatment for the Los Angeles NPDES Permit Area,"* June, 1998, by Brown & Caldwell, prepared for the California Department of Transportation (Exhibit "22"); and a report entitled *"Cost of Storm Water Treatment for California Urbanized Areas,"* October, 1998, prepared by Brown & Caldwell for the California Department of Transportation (Exhibit "23"), showing similar costs to the costs projected in the Caltrans Study.

Attached hereto and marked as Exhibit "24" is a copy of another report entitled "*NPDES Storm Water Cost Survey*," Brian K. Currier, Joseph M. Jones, and Glenn L. Moelle, California University, Sacramento, dated January 2005. Included as Appendix H to Exhibit "24," is a report entitled *"Alternative Approaches to Storm Water Quality Control,"* Joseph S. Divinney, Sheldon Kamieniecki and Michael Strenstrom, University of Southern California, Center of Sustainable Cities, dated 2004. Also enclosed and attached as Exhibit "25" is a report entitled *"Review of NPDES Stormwater Cost Survey, Including Appendix H: Alternative Approaches to Storm Water Quality Control."* Signal Hill requests that EPA consider such studies at this time, in developing an appropriate Bacteria TMDL for the LBC Beaches and the LAR Estuary.

In addition, EPA should consider a report entitled *"A Guide to Consideration of Economics Under the California Porter-Cologne Act,"* David Sunding and David Zilberman, University of California, Berkeley, March 31, 2005, before adopting the subject TMDL (a copy of this Report is attached hereto and marked as Exhibit "26"), as well as a report entitled *"LA County Water Policy Research,"* by Charlton Research Company (a copy of which is enclosed herewith and marked as Exhibit "27").

In Exhibit "26," the authors reviewed the requirements of the California Porter-Cologne Act regarding the need to consider "economics" and the other factors under Water Code section 13241, and concluded that:

> **While the requirement to consider economics under Porter-Cologne is absolute, the legislature and the courts have done little to particularize it. This report is an attempt to fill the gap and provide the Boards with guidance as to how economics can and should be considered as required by Porter-Cologne. We write from our perspective as professional economists and academics who have engaged in water quality research, and who have extensive experience with the application of economics to environmental regulation.** (Exhibit "26," p. iv; emph. added.)

The study of Messrs. Sunding and Zilberman, and their research and conclusions should be evaluated before EPA adopts the subject TMDL, and true consideration must be given to the impacts created by adoption of the TMDL, including any proposed implementation measures and the inclusion or lack thereof of MEP compliant BMPs to comply with the Bacteria TMDL. Consideration should further be given to the conclusion of these authors that:

> **Water quality regulations are necessary in a state like California, and a careful analysis of their consequences can provide a roadmap for investment of scarce resources. Ideally, our recommended approach will increase the transparency of the rule-making process under Porter-Cologne. Further, it is our hope that adoption of the approach could help avoid the legal and political conflicts that have adversely affected recent water quality protection efforts in the State.** (Exhibit "26," p. v.)

In October of 2002, the Charlton Research Company conducted an opinion survey throughout Los Angeles County on the public's willingness to pay new storm water fees and taxes. (Exhibit "27.") The survey was funded by the Los Angeles

County Public Works Department and the Los Angeles County Sanitation Districts, and involved a telephone survey of 600 likely voters in the Los Angeles Area. The "willingness to pay" section of the survey illustrates how difficult it would be for local governments to reach the two-thirds (67%) voter approval requirement under California's Proposition 218 for new storm water taxes and fees, with the survey results showing, among other findings, that:

> (i) only 44% of those surveyed supported increased taxes (24% strongly supported it and 20% only somewhat supported it);
>
> (ii) a majority of those surveyed did not favor new taxes, and when asked whether they favored various revenue sources, residents opposed all options tested, including a utility tax increase (68% opposed this), a property tax increase (65% opposed this), and a sales tax increase (62% opposed this). 59% opposed fines and 57% opposed fees on consumer goods;
>
> (iii) only 50% of those surveyed stated they would be willing to pay at least $1 per month in new taxes (25% would not even support a $1 per month increase in taxes, and 24% did not know);
>
> (iv) 65% would support an additional 50¢ on a package of cigarettes; and
>
> (v) 60% of those surveyed felt that Los Angeles County should spend tax money on law enforcement and health care, while only 32% felt that the tax money should be spent on storm water cleanup.

The subject Bacteria TMDL is completely devoid of an economic analysis or any analysis of the financial capability of the point source discharges to comply with the waste load allocations the TMDL; nor is there any discussions of the fiscal and economical analysis or the financial capability of any party to address any non-point source aspect of the Bacteria TMDL. There is also no discussion of the cost to install

necessary capital improvements, nor to meet operational and maintenance expenditures. In fact, there is no economic analysis whatsoever included in the TMDL Report that analyzes the cost to comply with the TMDL with respect to the LAR Estuary or otherwise.

Finally, the TMDL lacks any discussion of the ability of the discharges to ever comply with the wet weather components of the TMDL. In short, the Bacteria TMDL in issue is completely devoid of any economic, financial or other fiscal analysis of any kind, and nor is there any discussion of the benefits to be obtained from achieving the TMDL levels within the LAR Estuary. Accordingly, for this reason the proposed TMDL is arbitrary, capricious and contrary to law. Comment 6

IX. THE PROPOSED BACTERIA TMDL IS IMPROPER AS THERE HAS BEEN A LACK OF INTERGOVERNMENTAL COORDINATION WITH ITS DEVELOPMENT.

Under the CWA, the process for establishing BMPs and a program to control nonpoint source discharge, is to include inter-governmental coordination and public participation to identify best management practices, as well as measures to control nonpoint sources so as "to reduce, to the maximum extent practicable, the level of pollution resulting" from such nonpoint sources. (33 U.S.C. § 1329(a)(1)(C).) Similarly, EPA's Guidance for California TMDLs provides: "***EPA strongly encourages*** the State to develop detailed work plans to guide the technical analysis and ***stakeholder participation aspects of the TMDL before starting the TMDL.***" (Exhibit "18," p. 19, emph. added.)

The record on this TMDL is devoid of any evidence showing a sincere consultation with municipalities in the development of the subject TMDL, particularly including the City of Signal Hill. Nor is there any evidence of inter-governmental

coordination or prior public participation in the process of developing either the load or waste load allocations set forth in the TMDL.

In EPA's Draft Handbook, EPA recognizes that the process for developing TMDLs typically includes:

> **Stakeholder involvement and public participation to engage affected parties and solicit input, feedback and buy-in for a successful TMDL. This process can occur throughout the TMDL development (and implementation) process.** (Exhibit "8," Draft Handbook, p. 5.)

Finally, in the EPA Administrator's Memorandum to all EPA Employees, she noted the importance of public trust and connecting with local agencies in meeting their environmental responsibilities:

> **Public trust in the Agency demands that we reach out to all stakeholders fairly and impartially, that we consider the views and data presented carefully and objectively, and that we further disclose the information that forms the basis for our decisions. . . .**
>
> **We must take special pains to connect with those who have been historically underrepresented in EPA decision making, including, . . . small business, cities and towns working to meet their environmental responsibilities. Like all Americans, they deserve an EPA with an open mind, a big heart and a willingness to listen.**
>
> (Exhibit "1," Memo to EPA Employees, p. 2; emph. added.)

Given the magnitude of the economic, physical and environmental impacts of the TMDL, and the admittedly limited data upon which it has been based, as well as the lack of a minimum "daily" load, EPA has failed to meet its obligation to coordinate the development of the TMDL with local agencies, including specifically Signal Hill. Comment 7

X. CONCLUSION

For the foregoing reasons, as well as those set forth in the technical comments being submitted on behalf of the City of Signal Hill, Signal Hill respectfully requests that the proposed Bacteria TMDL not be adopted until such time as the various legal and technical deficiencies with the TMDL have been fully addressed.

Respectfully submitted,

RUTAN & TUCKER, LLP

Richard Montevideo

LIST OF EXHIBITS IN SUPPORT OF LEGAL COMMENTS ON U.S. EPA'S PROPOSED TOTAL MAXIMUM DAILY LOADS FOR BACTERIA FOR LONG BEACH CITY BEACHES AND LOS ANGELES RIVER ESTUARY
Submitted by Rutan & Tucker
January 2012

DESCRIPTION	EXHIBIT NO.
EPA January 23, 2009 Memorandum to All EPA Employees from EPA Administrator – Designate	1
EPA Guidance Memorandum, Subject: Establishing Total Maximum Daily Load (TMDL) Waste Load Allocations (WLAs) for Stormwater Sources and NPDES Permit Requirements Based On Those WLAs, November 22, 2002	2
EPA's November 12, 2010 Memorandum entitled "Revisions to the November 22, 2002 Memorandum Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Stormwater Sources and NPDES Permit Requirements Based on those WLAs."	3
March 17, 2011 EPA Notice of Public Comment on the Environmental Protection Agency's November 12, 2010 Memorandum	4
April 18, 2011 Comments on the propriety of EPA's November 12, 2010 Memorandum	5
February 11, 1993 Memorandum issued by the State Board's Office of Chief Counsel, Elizabeth Jennings, subject *"Definition of Maximum Extent Practicable"*	6
Letter dated August 22, 2003, from EPA Headquarters to the Honorable Bart Doyle	7
"TMDLs Stormwater Handbook, November, 2008"	8

LIST OF EXHIBITS IN SUPPORT OF LEGAL COMMENTS ON U.S. EPA'S PROPOSED TOTAL MAXIMUM DAILY LOADS FOR BACTERIA FOR LONG BEACH CITY BEACHES AND LOS ANGELES RIVER ESTUARY Submitted by Rutan & Tucker January 2012	
DESCRIPTION	**EXHIBIT NO.**
Report issued for Congress by the National Research Council ("NRC") in 2001, entitled "*Assessing the TMDL Approach to Water Quality Management*"	9
State Board Order No. 91-04	10
State Board Order No. 96-13	11
State Board Order No. 98-01	12
State Board Order No. 2000-11	13
State Board Order No. 2001-15	14
State Board Order No. 2006-12	15
Stormwater Quality Panel Recommendations to The California State Water Resources Control Board – The Feasibility of Numeric Effluent Limits Applicable to Discharges of Stormwater Associated with Municipal, Industrial and Construction Activities, June 19, 2006	16
April 18, 2008 letter from the State Board's Chief Counsel to the Commission on State Mandates	17
Guidance for Developing TMDLs in California, EPA Region 9, January 7, 2000	18

LIST OF EXHIBITS IN SUPPORT OF LEGAL COMMENTS ON U.S. EPA'S PROPOSED TOTAL MAXIMUM DAILY LOADS FOR BACTERIA FOR LONG BEACH CITY BEACHES AND LOS ANGELES RIVER ESTUARY Submitted by Rutan & Tucker January 2012	
DESCRIPTION	**EXHIBIT NO.**
A Memorandum from Sheila K. Vassey, Senior Staff Counsel, Office of Chief Counsel, dated October 27, 1999, to Stefan Lorenzato, Subject: *Economic Considerations in TMDL Development and Basin Planning*, with enclosed Memorandum from William R. Attwater, Office of Chief Counsel, State Water Resources Control Board, Subject: *Guidance on Consideration of Economics in the Adoption of Water Quality Objectives*, dated January 4, 1994	19
An Economic Impact Evaluation of Proposed Stormwater Treatment for Los Angeles County, prepared by the University of Southern California, November 2002	20
Financial and Economic Impacts of Storm Water Treatment Los Angeles County NPDES Permit Area, Stanley R. Hoffman Associates, November 1998	21
Costs of Storm Water Treatment for the Los Angeles NPDES Permit Area, prepared for the California Department of Transportation, by Brown & Caldwell, June 1998	22
Costs of Water Treatment for California Urbanized Areas, prepared for the California Department of Transportation by Brown & Caldwell, Draft October 1998	23
NPDES Storm Water Cost Survey, prepared for the California State Water Resources Control Board by Office of Water Programs, California State University, Sacramento, January 2005	24
Review of NPDES Storm Water Cost Survey, prepared for the Coalition for Practical Regulation, by Richard Watson & Associates, May 2005	25

LIST OF EXHIBITS IN SUPPORT OF LEGAL COMMENTS ON U.S. EPA'S PROPOSED TOTAL MAXIMUM DAILY LOADS FOR BACTERIA FOR LONG BEACH CITY BEACHES AND LOS ANGELES RIVER ESTUARY Submitted by Rutan & Tucker January 2012	
DESCRIPTION	**EXHIBIT NO.**
A Guide to Consideration of Economics under the California Porter-Cologne Act, by David Sunding and David Zilberman, University of California, Berkeley, March 31, 2005	26
LA County Water Policy Research conducted October, 2002, by Charlton Research Company	27

Response to Comments on the Total Maximum Daily Loads
for Bacteria in the Long Beach City Beaches and Los Angeles River Estuary
November 30, 2011 Public Notice
March 26, 2012

RESPONSE TO COMMENTS

This document includes USEPA's response to comments submitted in response to the November 30, 2011 Public Notice of the Draft Long Beach City Beaches and Los Angeles River Estuary Indicator Bacteria TMDL. The comment letter submitted is provided on USEPA Region 9's website with highlighted comment notations added to the original letter to identify the end of each comment (eg., USEPA is responding to the specific comment immediately above the numbered "Comment" in yellow bold). Any change that is made to the TMDL in response to the comments is indicated in the response. If no change is noted in the response, then no change was deemed necessary in the TMDL. Please see (http://www.epa.gov/region9/water/tmdl/progress.html) for individual comment letters.

1. Comments from Rutan and Tucker, LLP, Submitted on Behalf of the City of Signal Hill

Response to Comment 1:
EPA does not agree that the TMDL inappropriately addresses those bacterial loads that reach Long Beach City Beaches through the Los Angeles River Estuary, and consequently contribute to the beach's impairment.

To ensure that TMDLs for bacteria at the beaches are "established at levels necessary to attain and maintain" standards as required by 40 CFR 130.7(c)(1)), EPA cannot confine its analysis to only those bacterial loads flowing from outfalls located at the beaches. Loads that contribute to the subject impairment must be accounted for, even if those loads reach the beaches after passing through upstream tributaries such as the Los Angeles River Estuary.

EPA's long-held position is that TMDLs are to address impaired waters holistically, and are to consider pollution sources whose contribution to the impairment is indirect. See, e.g.: Congressional Research Service Report for Congress, Clean Water Act and TMDLs (Sept. 11, 1997) ("According to EPA, a TMDL provides a holistic view of a watershed, measuring the effect of each pollution source on the entire system."); EPA, Notice for the Establishment of the Total Maximum Daily Load (TMDL) for the Chesapeake Bay, 76 FR 549 (Jan. 5, 2011); and EPA, Notice of Proposed Rule, addressing storm water discharges, 63 FR 1536, 1596 (Jan. 9, 1998) ("Through the TMDL analysis, the relative contribution of storm water discharges within a watershed will be determined.")

Case law makes clear that TMDLs apply to all loads to an impaired water, whether those loads (1) are discharged directly to that water or (2) reach the impaired water indirectly, as through a tributary. A TMDL needs to account for such loads comprehensively to ensure that the cumulative impacts of the various sources contributing to the impairment are addressed. See, e.g.: Dioxin/Organochlorine Center v. Clarke, 57 F.3d 1517, 1520 (9th Cir. 1995) ("A TMDL

defines the specified maximum amount of a pollutant which can be discharged or 'loaded' into the waters at issue from all combined sources. Thus a TMDL represents the cumulative total of all 'load allocations' which are in turn best estimates of the discrete loading attributed to nonpoint sources, natural background sources, and individual wasteload allocations …."); American Wildlands v. Browner, 260 F.3d 1192, 1194 (10th Cir. 2001) ("A TMDL defines the specified maximum amount of a pollutant which can be discharged into a body of water from all sources combined."); City of Arcadia v. State Water Resources Control Board, 38 Cal. Rprt. 3d 373, 380, 400 (Ct. App., 4th Dist. 2006) ("'A TMDL defines the specified maximum amount of a pollutant which can be discharged or 'loaded' into the waters at issue from all combined sources ….'"); City of Arcadia v. U.S. Environmental Protection Agency, 265 F. Supp. 2d 1142, 1147 (N.D.Cal. 2003) ("On September 19, 2001, the Los Angeles Regional Board adopted TMDLs for trash for the Los Angeles River watershed."); Pronsolino v. Marcus, 91 F.Supp.2d 1337, 1340, 1345 (N.D.Cal. 2000) ("Overall, the TMDL for the Garcia River called for a sixty percent reduction of sediment …. The TMDL set the total maximum amount of sediment loading at an average of 552 tons per square mile per year and allocated portions of this total load to various categories of nonpoint sources in the Garcia River watershed …."); San Francisco BayKeeper v. Whitman, 297 F.3d 877, 880 (9th Cir. 2002) ("The TMDL calculations are to ensure that the cumulative impacts of multiple point source discharges and nonpoint source pollution are accounted for."); Idaho Sportsmen's Coalition v. Browner, 951 F.Supp. 962, 965 (W.D.Wash. 1996) ("The TMDL calculations help ensure that the cumulative impacts of multiple point source discharges are accounted for, and are evaluated in conjunction with pollution from other nonpoint sources."); Alaska Center for the Environment v. Reilly, 762 F.Supp. 1422, 1424 (W.D.Wash.,1991) (same); Assateague Coastkeeper v. Maryland Department of the Environment, 28 A.3d 178, 184, 208-09 (Md. App. 2011) ("A Total Maximum Daily Load ('TMDL') is the sum of pollutants a body of water can absorb from all point and non-point sources, plus a margin of safety, and still meet water quality standards for its designated uses.", "Maryland's TMDLs apply a watershed-based approach, which considers all potential pollutant sources as explained above and estimates load reduction targets for those sources necessary for the attainment of State water quality standards."); Asarco Inc. v. State of Idaho, 69 P.3d 139, 142 (Id. 2003) ("In contrast to the NPDES permitting system, which focuses on individual point source dischargers, the TMDL calculation considers the water quality of the receiving waterbody and the cumulative impacts of multiple sources of pollution."); In re Cities of Annandale and Maple Lake NPDES/SDS Permit Issuance For the Discharge of Treated Wastewater, 731 N.W.2d 502, 508 (Minn. 2007) ("A total maximum daily load (TMDL) is the sum of pollutants a body of water can absorb from all point and nonpoint sources, plus a margin of safety, and still meet water quality standards for its designated uses."); and Riverkeeper, Inc. v. Planning Bd. of Town of Southeast, 2003 WL 2004173 (N.Y.Sup. 2003) (emphases added).

See also: California Administrative Code provisions 14 CCR §§ 916.12, 936.12, and 956.12, referring to "303(d) Listed Watersheds"; Anacostia Riverkeeper, Inc. v. Jackson, 798 F.Supp.2d 210, 213, 237, and 249 (D.D.C. 2011) ("The polluted state of the Anacostia render it unfit for the uses that the District and Maryland have designated the watershed to support, including contact recreation (e.g., swimming), secondary contact recreation (e.g., boating), …."; "… the Final TMDL uses the District's chosen depth as the target criterion when developing maximum loads throughout the watershed."; and "… the Court next turns to the manner in which the total maximum daily discharge is allocated among the various sources of pollution throughout the

watershed.");and Ohio Valley Environmental Coalition, Inc. v. Hobet Mining LLC, 723 F.Supp.2d 886 (S.D.W.Va.2010) (case involving alleged violations due to discharges to tributary of river; noting that "[t]he Mud River watershed is subject to a Total Maximum Daily Load") (emphases added).

If the comment contends that some of the loads or allocations in the TMDL are rendered invalid because they are characterized as being "for" the Los Angeles River Estuary, EPA does not agree. As explained in the TMDL and its appendices: the Long Beach City Beaches and the Los Angeles River Estuary are contaminated by fecal pollution; the Long Beach City Beaches identified by California as impaired under CWA sec. 303 are located along the shoreline of San Pedro Bay; those impaired beaches extend for over 4 miles beginning at the point that the Los Angeles River Estuary enters San Pedro Bay; the beaches and estuary are located within the same hydrologic unit of the Basin Plan; the water quality objectives that apply to the estuary are not being met; bi-weekly (or more frequent) monitoring data in the estuary conducted during May – September in 2009 and 2010 indicated that the total coliform geometric mean water quality objective was exceeded 100 percent of the time, and the enterococcus objective was exceeded 31 percent of the time; monitoring sites for the impaired beaches closer to the estuary generally had higher bacteria (enterococcus, fecal coliform and total coliform) geometric means compared to monitoring sites farther from the estuary; and bacteria loads in the estuary contribute to the beaches' impairment, and, unless addressed, will likely continue to contribute to their impairment. As TMDL, sec. 5, states, "The purpose of the TMDL's linkage analysis is to quantify the maximum allowable bacteria loading that can be received and assimilated at the LBC beaches and LAR Estuary, <u>thus ensuring the beaches will still attain the WQOs associated with their applicable beneficial uses</u>." (emphasis added).

EPA understands that the State of California does not object to the TMDLs' characterization of the loads and allocations associated with the estuary, and the State remains free to establish a revised or additional TMDL for the bacterial loads in it. However, given the severity of the beaches' impairment, and the contribution of the bacterial loads from the estuary to that impairment, EPA believes that inclusion of the loads and allocations associated with the estuary is warranted.

Response to Comment 2:
EPA does not agree that it has inadequately evaluated the bacteria load from natural and non-point sources to the Los Angeles River Estuary or to the Long Beach City Beaches. EPA does not agree that its evaluation of such loads (1) will improperly result in the entire burden for addressing natural and non-point sources being borne by the cities or Signal Hill and Long Beach; or (2) is contrary to Clean Water Act requirements. EPA does not agree that it has ignored or violated the Los Angeles Regional Water Quality Control Board's Basin Plan provisions addressing natural sources of bacteria or the estuary's or beaches' designated uses.

EPA used the "reference system/antidegradation approach" to establish the TMDL's loads. As explained in the TMDL, that approach recognizes that natural sources of bacteria contribute to elevated concentrations in the subject waters. See, TMDL, secs. 1.2, 2.3.2, and 3.1. Under that approach, and specifically "to account for natural sources", the single sample bacteria objective

may be exceeded a certain number of days that are calculated using monitoring data for bacteria levels at a reference location. TMDL, sec. 1.2. As the TMDL further explains, application of the criteria upon which the number of allowable single sample maximum exceedance days is based thus "allows the Regional Board to avoid imposing requirements to treat natural sources of bacteria from undeveloped areas" and "This approach, including the allowable exceedance levels during dry weather and wet weather, is consistent with that used in other bacteria TMDLs previously approved in this region." See, TMDL, secs. 3.1 and 3.2.

See also, Regional Board Basin Plan Resolution 2002-22, referring to the "reference system/antidegradation" and "natural sources exclusion" approaches, and stating: "These approaches recognize that there are natural sources of bacteria, which may cause or contribute to exceedances of the single sample objectives for bacterial indicators." And see, Regional Board Basin Plan Resolution R2007-017, Attachment A, regarding the State's TMDL addressing bacteria in the Harbor Beaches of Ventura County (Kiddie Beach and Hobie Beach), in which the Regional Board explains its use of the "reference system/antidegradation approach" in that TMDL, and states "This approach recognizes that there are natural sources of bacteria that may cause or contribute to exceedances of the bacteriological objectives and that it is not the intent of the Regional Board to require treatment or diversion of natural coastal creeks or to require treatment of natural sources of bacteria from undeveloped areas."

The natural and non-point sources of bacterial loads to the Los Angeles River Estuary and the Long Beach City Beaches are further addressed in the TMDL at sec. 4.2.2 and Appendix B.

EPA does not agree that the TMDL will improperly result in the entire burden for addressing natural and non-point sources being borne by the cities of Signal Hill and Long Beach. First, the efforts of a variety of other jurisdictions that are implementing the State-established TMDL for the Los Angeles River upstream of the Los Angeles River Estuary will also reduce bacterial loads in the estuary. Second, the State will determine how the TMDL will be implemented. See, Pronsolino v. Marcus, 91 F.Supp.2d 1337, 1355 (N.D.Cal.2000), aff'd, 291 F.3d 1123 (9th Cir.2002).

Response to Comment 3:
EPA does not agree that there is insufficient information to establish the TMDL, that the TMDL's linkage analysis renders it invalid, or that the TMDL violates the Clean Water Act because it is excessively stringent.

A TMDL is not rendered invalid because it uses estimates. See: Dioxin/Organochlorine Center v. Clarke, 57 F.3d 1517, 1520, and 1523 (9th Cir. 1995) (stating that " … a TMDL represents the cumulative total of all 'load allocations' which are in turn best estimates of the discrete loading attributed to nonpoint sources, natural background sources, and individual wasteload allocations"; and upholding TMDL that relied upon EPA's estimate of fish tissue dioxin concentration which will be brought about by the TMDL); Assateague Coastkeeper v. Maryland Dept. of Environment, 28 A.3d 178, 208-09 (Md. App. 2011) (acknowledging that the State's TMDLs addressing nutrient- and bacteria- impairments includes "an estimate of the baseline agricultural landuse load", and "estimates load reduction targets … necessary for the

attainment of State water quality standards."); Sierra Club v. Hankinson, 939 F.Supp. 865, 867 (N.D.Ga. 1996) ("A TMDL includes best estimates of pollution from nonpoint sources and natural background sources …, pollution from point sources …, and a margin of safety."); and Sierra Club, North Star Chapter v. Browner, 843 F.Supp. 1304, 1307 (D.Minn. 1993) ("A TMDL includes the best estimates of pollution from nonpoint sources or natural background sources …, the amount of pollution from specific point sources …, and a margin of safety."). See, also: EPA, Notice of Proposed Rule, 63 FR 1536, 1596 (Jan. 9, 1998) ("TMDL analyses include estimates of loadings from storm water discharges."); EPA, Notice of Proposed Water Quality Guidance for the Great Lakes System, 58 FR 20802, 20935 (Apr. 16, 1993) ("If the ambient monitoring indicates continued exceedances of water quality standards, the TMDL should be revised to include more stringent allocations. Such phased TMDLs are appropriate when nonpoint sources are present because it is currently very difficult to accurately estimate nonpoint source loadings and reductions that can be achieved through implementation of nonpoint source controls."); and Memorandum dated Nov. 22, 2002, from Robert H. Wayland, Director, Office of Wetlands, Oceans and Watersheds, regarding Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs ("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.").

Consequently, the statement that "there is presently insufficient information that exists to fully determine the amount of bacteria loading from natural sources", as the TMDL acknowledges, does not render invalid the TMDL or the linkage analysis in it.

See also, responses to comments from Susan Paulsen and Vada Yoon, Flow Science Incorporated, for City of Signal Hill.

EPA does not agree that the TMDL has assigned "to Signal Hill and Long Beach the responsibility for all natural sources of bacteria existing on lands within their jurisdiction, including apparently all bird and other natural sources of bacteria, as well as re-growth." If the comment contends that such a duty was created by the sentence in the draft TMDL to which the comment refers (i.e., "Lands not covered by the MS4 Permit … are assigned to LAs."), EPA does not agree, nor fully understand the basis for the contention. EPA notes that in most circumstances, if the contributions from non-MS4 areas are omitted when a load allocation is calculated, the resultant allocation would be less (i.e., more stringent) than if the contribution is included. EPA believes that a reduction to the load allocation was not sought by the comment, and EPA has not recalculated the load allocation in response it. As noted above, the State will determine how the TMDL will be implemented. See, Pronsolino v. Marcus, 91 F.Supp.2d 1337, 1355 (N.D.Cal.2000), aff'd, 291 F.3d 1123 (9th Cir.2002).

EPA concludes that the TMDL's linkage analysis and its appendices adequately describe the relationship between pollutant loading from identified sources and the waterbodies' response to that loading, and appropriately quantifies the maximum allowable bacteria loading that can be received in the waters and still allow the State's standards to be met. See particularly, TMDL sec. 5, and TMDL Appendices B and C.

As the Ninth Circuit directs, "'A TMDL defines the specified maximum amount of a pollutant which can be discharged or 'loaded' into the waters at issue from all combined sources.' …. The TMDL 'shall be established at a level necessary to implement the applicable water quality standards ....' § 303(d)(1)(C)." Pronsolino v. Nastri, 291 F.3d 1123, 1127-28 (9th Cir. 2002) (emphasis added). EPA has sought to establish the present TMDL at that level. See also: City of Arcadia v. State Water Resources Control Board, 38 Cal. Rptr. 3d 373 (4th Dist. 2006) (addressing contention that TMDL was unattainable); and City of Arcadia v. U.S. Environmental Protection Agency, 265 F. Supp. 2d 1142 (N.D. Cal. 2003) (addressing contention that TMDL itself caused economic injury).

Response to Comment 4:
EPA does not agree that bacteria is unsuitable for calculation in the context of Clean Water Act sec. 303(d)(1)(c).

EPA has identified "all pollutants, under proper technical conditions, as being suitable for the calculation of total maximum daily loads." EPA, Notice, Total Maximum Daily Loads under Clean Water Act, 43 FR 60662 (Dec. 28, 1978). EPA has further explained that "'Proper technical conditions' refers to the availability of the analytical methods, modeling techniques and data base necessary to develop a technically defensible TMDL." Id. Cf., Pronsolino v. Marcus, 91 F.Supp.2d 1337, 1344 (N.D.Cal. 2000) ("EPA long ago stated that 'all' pollutants were suitable for such calculation"), aff'd, 291 F.3d 1123 (9th Cir. 2002). EPA concludes that analytical methods, modeling techniques, and data are amply available to develop a TMDL to address the bacterial-related impairments in the Long Beach City Beaches and Los Angeles River Estuary, and that the resultant TMDL is technically defensible. EPA has reported that, since 1995, States and EPA have established over 10,000 TMDLs for pathogens. See, http://iaspub.epa.gov/waters10/attains_nation_cy.control?p_report_type=T#causes_303d , a result consistent with the conclusion that such pollutants are suitable for calculation in a TMDL. See also, City of Arcadia v. State Water Resources Control Bd., 38 Cal.Rptr.3d 373 (Cal. App. 4 Dist. 2006) (rejecting contention that trash was unsuitable for calculation in a TMDL).

EPA does not agree that it has failed to consider Friends of the Earth, Inc. v. EPA, 446 F.3d 140 (D.C. Cir. 2006). See, e.g., memorandum dated Nov. 15, 2006, from Benjamin H. Grumbles, Assistant Administrator, regarding "Establishing TMDL 'Daily' Loads in Light of the Decision by the U.S. Court of Appeals for the D.C. Circuit in Friends of the Earth, Inc. v. EPA, et al., No. 05-5015, (April 25, 2006) and Implications, for NPDES Permits". See also, TMDL, sec. 3.1.

Response to Comment 5:
EPA does not agree that adding provisions to the TMDL to indicate that its loads may be attained using best management practices alone is needed or appropriate.

EPA has offered some recommendations regarding the TMDL's implementation. See, TMDL, sec. 7. However, when making its recommendations, EPA has sought to respect the State's and EPA's respective roles after the TMDL is established. In particular, EPA is mindful that the

State has the primary role in implementing TMDLs, and the State's role requires exercise of its discretion regarding the methods by which the loads and allocations will be met. See:

> *Pronsolino v. Nastri, 291 F.3d 1123, 1140 (9th Cir. 2002) (rejecting challenge to EPA-established TMDL, and stating: "The Garcia River TMDL identifies the maximum load of pollutants that can enter the Garcia River from certain broad categories of nonpoint sources if the river is to attain water quality standards. It does not specify the load of pollutants that may be received from particular parcels of land or describe what measures the state should take to implement the TMDL. Instead, the TMDL expressly recognizes that 'implementation and monitoring' 'are state responsibilities' and notes that, for this reason, the EPA did not include implementation or monitoring plans within the TMDL."; and "California chose both if and how it would implement the Garcia River TMDL. States must implement TMDLs only to the extent that they seek to avoid losing federal grant money; there is no pertinent statutory provision otherwise requiring implementation of § 303 plans or providing for their enforcement." (emphasis in original)); and*
>
> *Pronsolino v. Marcus, 91 F.Supp.2d 1337, 1355, 1356 (N.D. Cal.2000) ("California is free to select whatever, if any, land-management practices it feels will achieve the load reductions called for by the TMDL. California is also free to moderate or to modify the TMDL reductions, or even refuse to implement them, in light of countervailing state interests. Although such steps might provoke EPA to withhold federal environmental grant money, California is free to run the risk."; "This conferred a large degree of discretion on the states in how and to what extent to implement the TMDLs for nonpoint sources ….").*

See also: Missouri Soybean Ass'n v. U.S. Environmental Protection Agency, 289 F.3d 509, 511 (8th Cir. 2002) ("States may then use a variety of regulatory techniques to implement the TMDL standards."); and Sierra Club v. Meiburg, 296 F.3d 1021, 1026, 1028-31 (11th Cir. 2002) (noting "the clear distinction between TMDLs and implementation plans", and stating: "The Act generally leaves regulation of non-point source discharges through the implementation of TMDLs to the states."; "Neither [CWA sec 303(d)(1)(C)] nor [40 CFR 130.2(i)] includes implementation plans within the meaning of TMDLs. The two are different, and the statute and regulation incorporated into the definition part of the consent decree reflect that difference. A TMDL is defined to be a set measure or prescribed maximum quantity of a particular pollutant in a given waterbody, see 40 C.F.R. § 130.2(i), while an implementation plan is a formal statement of how the level of that pollutant can and will be brought down to or kept under the TMDL." (footnotes omitted); and "Of course, the national policy and objectives relating to clean water are most reliably embodied in the Act itself which puts the responsibility for implementation of TMDLs on the states.")

In light of those considerations, and the existing guidance that EPA has already issued regarding the drafting of permit limits after TMDLs have been established, EPA concludes that adding a provision to the TMDL to indicate that "the TMDL is not to be implemented through the use of strict numeric effluent limits", as sought by the comment, is inappropriate, and additional recommendations regarding the TMDL's implementation are unneeded.

Response to Comment 6:
EPA does not agree that the TMDL fails to comply with requirements related to economic analysis.

As explained in response to Comment 3 above, a TMDL must be established at a level necessary to implement the applicable water quality standards. See, CWA, sec. 303(d)(1)(C); 40 CFR 130.7(c), and Pronsolino v. Nastri, 291 F.3d 1123, 1127-28 (9th Cir. 2002). EPA has sought to establish the TMDL at that level.

Neither the CWA nor Federal rule requires that an EPA-established TMDL include an economic analysis of the type sought in the comment. While 40 CFR 130.6(c)(4 and 6) identify economic factors as an item to be considered by the State when it implements some elements of its water quality management planning responsibilities, 40 CFR 130.7(c)(1) does not mandate economic consideration when a TMDL is established. Rather, 40 CFR 130.7(c)(1) specifically calls for "TMDLS in accordance with sections 303(d) and (e)(3)(C) of the Act and § 130.7 of this part."

See also, City of Arcadia v. U.S. Environmental Protection Agency, 265 F. Supp. 2d 1142 (N.D. Cal. 2003) (addressing contention that TMDL itself causes economic injury); and City of Arcadia v. State Water Resources Control Board, 38 Cal. Rptr. 3d 373 (4th Dist. 2006) (addressing contention that TMDL was unattainable).

The State guidances referenced in the comment deal with State law and are not binding on EPA. The State may obviously consider economic impacts when it determines how best to implement the TMDL.

Response to Comment 7:
EPA does not agree that it has given insufficient opportunity for public participation in the TMDLs' development. Prior to the public notice of the draft TMDLs on November 30, 2011, USEPA met via teleconference with representatives of the City of Long Beach on multiple occasions, and with representatives of the City of Signal Hill on November 9, 2011. On December 12, 2011, USEPA met with stakeholders and others to further discuss the details of the Long Beach and LAR Estuary TMDLs. On December 29, 2011, USEPA also participated in a teleconference with representatives of municipalities and the Regional Board staff to answer additional questions regarding the draft TMDLs. On January 4, 2012 USEPA met via teleconference with stakeholders to discuss modeling questions and concerns. USEPA provided a 45-day comment period on the draft TMDLs. Consideration of the comments received has led to revisions to the TMDLs; e.g., modification to the dry weather modeling, and sub-basin modifications to more accurately describe the direct drainage to the LAR Estuary.

CITY OF LONG BEACH

DEPARTMENT OF PUBLIC WORKS

333 West Ocean Boulevard 9th Floor • Long Beach, CA 90802 • (562) 570-6383 • Fax (562) 570-6012

January 17, 2012

Karin Graves (WTR-2)
U.S. EPA Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: City of Long Beach Comments and Questions on the Draft Beaches and Estuary TMDL

Dear Ms. Graves:

The City of Long Beach appreciates the opportunity to work with the United States Environmental Protection Agency, Region IX (US EPA), the Los Angeles Regional Water Quality Control Board (Board) and other Stake Holders on the development of the draft Beaches and Estuary Total Maximum Daily Load (TMDL).

While we agree that the Los Angeles River plays a significant role in controlling water quality conditions along the City of Long Beach, San Pedro Bay beaches, there is no reasonable justification for combining these two very unique regions into a single TMDL. The Los Angeles River Estuary (LARE) and the City of Long Beach beaches are both physically and ecologically different entities.

The LARE has areas that are heavily used by birds and was recognized as providing an important habitat for migrating birds along the Pacific Flyway. The LARE also contains the Golden Shores Marine Reserve that is known as good location for viewing an abundance of birds. The LARE also is directly linked to the Los Angeles River and does not contain any recreational beaches. The unique conditions that exist within the LARE necessitate use of a reference site that reflects those conditions. It should be clear that the magnitude of natural sources within the estuary is not well represented by the open coastal beach conditions found at Leo Carillo Beach. As a minimum, a reference estuary site needs to be considered even if it may not be considered the perfect reference condition and has some input from developed areas. In addition, a large portion of the LARE consists of Engineered Channels, which should be subject to the High Flow Suspension of bacterial water quality.

In contrast, the San Pedro Bay beaches located along the City of Long Beach shoreline are heavily used for recreational bathing. Water quality along these beaches is indirectly linked to discharges from the Los Angeles River. Both tides and wind influence the degree to which water from the Los Angeles River impacts water quality at the beach face. Available data for the estuary are limited to dry weather receiving water samples taken near the Queensway Bridge that were not accompanied by other water quality measurement such as salinity that would be helpful in assessing sources and another set was bacterial water quality measurements taken in the center of the Los Angeles River plume near the mouth of the estuary. Loading estimates within this

region are limited to those derived from modeling efforts that have some clear problems in representing the real world conditions in such a complex area.

The Los Angeles River Estuary is not subject to the revised Consent Decree that requires establishment of a TMDL by March 2012. There is time available to allow for collection of data that would allow for a better assessment of sources and their relative importance within the LARE. Separating the LARE bacterial TMDL would provide valuable time needed to assess various options for addressing this segment of the Los Angeles River system. If the LARE is not separated from the Beaches TMDL, recommendations should be included that would effectively separate the two regions with separate Implementation Plans. In addition, it would be critical that Section 5 (Linkages) incorporates a discussion of direct loads to the LARE from the Los Angeles River. Section 7 (Implementation and Monitoring Recommendations) should further emphasize the direct linkage between the Los Angeles River Bacteria TMDL and the ability to attain water quality goals within both the LARE and in waters fronting the City of Long Beach, San Pedro Bay beaches.

Long Beach contends that any TMDL for the Los Angeles River Estuary be done in conjunction with the recently approved TMDL for the Los Angeles River, and not be included in the beach TMDL. Due to natural river flows, all factors that impact the Los Angeles River north of the estuary will inevitably have a direct impact on the estuary itself. This relationship necessitates that any TMDL guidelines for the estuary must be explored in tandem with the development of an implementation plan for the Los Angeles River bacteria TMDL, and cannot be separated. This process requires that a proposed bacteria TMDL for the Los Angeles River Estuary be considered separately from the TMDL process for Long Beach city beaches.

Due to the proximity of Long Beach city beaches to the Los Angeles River, water quality that swimmers experience at these locations is linked to discharges from the Los Angeles River. This assertion is substantiated by computer modeling studies accepted by the United States Army Corps of Engineers in 2010. The Corps, in partnership with the City of Long Beach, is in the process of exploring feasible opportunities to improve water quality, restore the ecosystem, and enhance recreational opportunities at Long Beach city beaches via the East San Pedro Bay Ecosystem Restoration study. This project has completed the reconnaissance study phase, and is currently in the feasibility study phase. However, the LA River is only one of the influences on water quality in Bay. Given that the LA River will have its own Bacteria TMDL, the Beaches TMDL should address the other influences, so that each area (the LA River and the Beach area) can be looked at holistically and independently

SPECIFIC COMMENTS

- Page 4. Section 2.1 GEOGRAPHICAL SETTING. – The impaired segment shown in Figure 2-1 suggests that the impaired segment of the watershed includes the shoreline of the Harbor. To our knowledge there is no indication that these waters should be considered as impaired. In fact, dry weather monitoring at the northeast entrance to the Harbor in 2007 indicated that this region typically had the lowest concentrations of fecal indicator bacteria in the region. Comment 1

- Page 5. Section 2.1.1.1 LBC Direct Drainage – This Section should indicate that dry weather flows from these watersheds discharge to sand at the inland side of the beach and that current data suggests that these flows are not sufficient to be measurable as a load to the beach face. Comment 2

- Page 7. Section 2.1.1.2 Los Angeles River Estuary – Discharges from subbasins 7, 8, 9 and 16 identified in Figure 2-4 actually drain to the north side of Willow and are considered part of the Los Angeles River Reach 1. They should be removed from this TMDL and the associated loading estimates since they are already covered in the Los Angeles River Bacteria TMDL. Comment 3

- Page 13, Table 3-1. – Total Coliform has an asterisk for both the Single Sample Criteria and the Rolling 30-Day Geometric Mean. We assume that the asterisk for the Geometric Mean is an error? Comment 4

- Page 20, last sentence in paragraph "LAR loads during the summer- and winter-dry weather conditions are relatively small and do not appear to reach the impaired beach segment (Appendix D)." This statement is clearly wrong and is based upon use of an uncalibrated EFDC model without appropriate modifications to address the complex interaction between the Los Angeles River Plume and the influence of wind. The model is only set up to represent the "surface waters" as the top 25 percent of the water column while the actual river plume as it leaves the estuary is in the upper 1-2 feet during dry conditions. Average salinities measured in the center of the Los Angeles River Plume and at the mouth of the Los Angeles River Estuary ranged from 25 to 26 parts per thousand during the intensive 30-day and 24-hour microbial source investigations conducted by Kinnetic Laboratories, Inc. during dry conditions in late 2007. As noted elsewhere in the TMDL, salinity measured along the beaches was clearly impacted by Los Angeles River during dry weather. Comment 5

- Page 24 and 25. – Please identify the date of the photographs in Figure 4-5 and the outfalls represented. It also would be helpful to comment on any observed discharges when the photographs were taken. Comment 6

- Page 26, first paragraph. City of Long Beach MS4 permit was established on June 30, 1999 (not renewed). Comment 7
- Page 28, second paragraph on bilgewater and ballast water. TMDL states that large ship docking areas are located near the southern corner of the LAR Estuary/Queensway Bay. It should also be noted that the discharge of bilgewater and ballast water to Harbor waters is prohibited. Comment 8

- Page 28-29 4.2.1.4 Sanitary Sewer Overflows and Private Lateral Sewer Overflows. – A table listing the geographical locations, timing, volumes and classification of SSO and PLSO events would be helpful. Comment 9

- Page 32, Section 4.2.2.5 Re-growth, Resuscitation and Persistence, last sentence. The last sentence of this section suggests that the reference system process used to develop this TMDL considers natural sources. While we recognize that the reference system

process is an effort to consider natural sources, it should also be clear that issues such as the sustained elevation of indicator bacteria along the recreational beaches that occurred after the September 2007 storm event are not conditions that are adequately addressed by the reference system approach used in the TMDL. Large quantities of duckweed and organic debris from the Los Angeles River watershed persisted both on the beach and in the recreational waters long after the storm event and were suspected as supporting the persistence of indicator bacteria in the region. Comment 10

- The model does not appear to have been run during the September/October time periods when there was an intensive data set consisting of salinity, temperature and indicator bacteria that would have been useful in validating the model. Comment 11

- Page 34-35, 5.1 Dry Weather Analysis and Appendix D. The basis for estimation of dry weather flow rates from direct discharge areas appear to severely overestimate actual flow rates. The argument that the Stein and Ackerman (2007) regional dry weather flow estimates are more robust than local measurements is inaccurate. The high r^2 of 0.96 for the 6 watersheds is HIGHLY leveraged by a single 1200 sq. km. watershed.

  It is important to consider that all storm drains were visited during each of the 30-day study and any observed flow was measured. Consistent flows were only observed at the Molino drain so that set of data is likely to be most accurate. Flow data from field sheets have been provided in a spreadsheet format for each storm drain visit. Sheets were never completed for SD-4 but the site was visited during each of the 30-days to determine if any flow was present. No flow was observed at that site throughout the 30-day study.

  Table 5-1 lists flows that are much higher than KLI measured during our 30-day monitoring effort (Kinnetic Laboratories, Inc. 2009). The appendices mention that flows actually measured at Molino were lower than those estimated from the Stein and Ackerman (2007) regression but failed to note that differences were over an order of magnitude higher when using the Stein and Ackerman regression.

  For instance the model suggests 114 liters per minute are coming out of the Molino Avenue drain while the microbial source surveys (Kinnetic Laboratories, Inc. 2009) measured an average of 5.5 liters per minute at this site and much less at the other sites.

  Additional flow measurements have been taken at storm drains entering Colorado Lagoon and at the Belmont Pump Station. Measurements in storm drains entering Colorado Lagoon were taken over a period of several weeks to quantify flows for design of a low-flow diversion. The Belmont Pump Station measurements are data from meter installed to measure dry weather discharges through a low flow diversion. In both cases dry weather flow rates were measured at approximately 100 gallons/day/acre. This is still higher than most flow rates measured along the beach storm drains. Although these flow rates are much higher than those measured at the storm drains along the beach, they are still much less than those used in Table 5-1. We recommend that actual measurements from the 30-day study be used to provide a more realistic estimate of flow rates at sites covered by this TMDL. Comment 12

Belmont Pump Station and Colorado Lagoon Watershed
Estimated Low-flow Comparison

Location	Estimated Average GPD	Actual GPD	Total Watershed (Acres) Area	Total Gallons Per Acre Per Day
Belmont Pump Station	15,215	20,000	203	98.52
Colorado Lagoon	118,364	N/A	1,172	100.99

Source: Eric Lopez, City of Long Beach;

GPD - Gallons Per Day

Belmont Pump Station watershed consists of 80% residential, 7% institutional, 5% commercial and 8% other.

Colorado Lagoon watershed consists of 66% residential, 19% open space, 11% commercial and 4% other.

- Table 5-1 should also be modified to include calculated dry weather flows and loads coming from the Los Angeles River in order to provide a better perspective on the importance of these loads and subsequent impacts to the beaches. Instead of providing flow measurements in two different units, please incorporate concentrations of *E. coli* used for the loading calculations. Comment 13

- Page 39, Table 5-2. Please incorporate modeled loads from the Los Angeles River. Comment 14

- Page 52, 7.5 General Industrial Stormwater Permits. This section mentions that EPA suggests that compliance with WLAs for the existing Long Beach City Beach ocean sites and the estuary is demonstrated by meeting exceedance day targets at the point of discharge (POD). Please clarify that the POD for Long Beach City Beaches would be at the existing monitoring locations with the recreational waters. Also clarify what is meant by POD within the estuary waters. Comment 15

Appendix A

Page 4 of 63, Table 2. The footnotes for total coliform should refer to the single sample criterion. Comment 16

Page 5 of 63, Figure 2 and Page 24 of 63, Figure 11. The location of the Los Angeles River Estuary monitoring site associated with the Section 2.3 is not depicted on Figure 2. The correct location is closer to the mouth of the estuary between the Queen Mary and Shoreline Harbor. The site depicted on Figure 2 is the Queensway Bridge site monitored in 2009 and 2010. Comment 17

Photos of trash and debris from the eastern end of the beaches

Page 8 of 63, Enterococcus monitoring. The higher geometric means of *Enterococcus* measured at LB-72nd Place (B11) relative to adjacent beaches to the west was suggested as to indicate either contamination from a local source or from sources associated with the Alamitos Bay/San Gabriel River waters. Wind-induced transport of surface waters and floatables from the Los Angeles River should be a primary consideration. This end of the beach receives significant quantities of trash and debris that is transported primarily by the local wind patterns. This is shown in the photographs below that were taken during dry weather surveys in 2007. Although it was stated that wind was incorporated in the modeling effort, the vertical stratification used in the model was insufficient to address the impacts of wind-induced transport. A further discussion of wind and the effects on a surface water plume in the upper 1-2 feet should be incorporated. Comment 18

Page 14 of 63. The paragraph discussing Figure 6 once again disregards wind transport as a potential factor. Comment 19

Pages 16 and 17 of 63, Table 8. Discussions regarding fecal coliform measurements at beach stations or lack of fecal coliform measurements in the estuary should recognize that the City of Long Beach program actually measures *E. coli* using Colilert and then multiplies the results by a factor of 1.3 to estimate fecal coliform. AB411 monitoring in Los Angeles County and Ventura County measure *E. coli* using Colilert and report it directly as fecal coliform. Los Angeles County previously performed a comparison study of fecal coliform and *E. coli* and found that differences were not statistically significant. Comment 20

Page 20 of 63, Figure 10. This figure incorrectly identifies the subbasin located along the peninsula and up to Belmont Pier as directly discharging to the beaches. This subbasin goes to a pump station in Alamitos Bay. Comment 21

Page 22 of 63 Table 12 Freshwater stations: Dry weather mass emission summary statistics. - It is worth noting that the Belmont Pump Station no longer discharges during the summer dry weather periods. It now has been diverted to the sanitary system. Comment 22

Page 25 of 63, first paragraph, last sentence. It is inferred that the high bacterial concentrations at the Molino outfall and in the pond fronting the outfall are directly linked to water quality at the beach during dry weather conditions. This was not evident from the source investigation conducted along these beaches (City of Long Beach, 2009). The last paragraph also suggests that "Post-rain event elevations suggest that storm drains may be influencing the water quality of nearshore waters". This independent analysis of the data failed to consider the large amounts of trash and organic debris discharged from the Los Angeles River during the first storm of the season and the persistence of the trash and organic debris in the water after the storm event.

Molino Storm Drain during 2007 dry weather surveys

Some elevations of *Enterococcus* concentrations were noted at the larger storm drains during more extreme tides but these excursions were minor in comparison to persistent sources that were introduced in one major pulse from the river. Comment 23

Appendix B

Page 2 of 22, last paragraph - The last sentence indicates that storm drains within the direct drainage contributed considerable bacteria loads to the LBC beaches during dry weather. This statement infers a direct connection between the storm drains and beaches. Please clarify that the storm drains discharge to the sand at distances of 200 to 300 feet from the beach and that studies have been unable to locate any direct pathway to the beach face except during wet weather conditions or extreme high tides were receiving waters occasionally overflow the berm in the sand and enters the channel maintained to direct wet weather flows. Comment 24

Page 3 of 22, Figure 3 and text. Areas and graphic need modified to eliminate subbasins 7, 8, 9, and 16 from the Estuary watershed. Comment 25

Appendix C

Page 2 of 12, last paragraph - refer to comment on Appendix B page 2 of 22. This section uses the same incorrect statement. Comment 26

Page 5 of 12, Figure 4 and text - This issue is addressed in the main body of the TMDL. Flow estimates based upon Stein and Ackerman 2007 far exceeds measured values. Previous comments provide appropriate flow data. The single data point for 1200 km^2 creates a false impression introduces extreme leverage to the regression. Comment 27

Page 9 of 12, Table 4. Both the text and table disregard the fact that the dry weather loads from the storm drains discharge directly to the beaches are located 200 to 300 feet from the beach face and that is no indication that these discharges have any substantial impact on water quality at the beach face. Comment 28

The City is committed to dedicating the resources required to properly address and mitigate legitimate issues associated with this Beaches and Estuary TMDL. Prior to dedicating the significant amount of resources required for this undertaking, however, the City asks that the US EPA consider the comments and concerns discuss above to be addressed in the TMDL. Should you have questions regarding this letter, please contact Mr. Anthony Arevalo at 562-570-6023 or at anthony.arevalo@longbeach.gov. We look forward to your response to our comments and concerns.

Sincerely,

Mark Christoffels, PE
Deputy Directory of Public Works/City Engineer

Cc: Pat West, City Manager
Michael Conway, Director of Public Works
Anthony Arevalo, Storm Water/Environmental Compliance Officer

Response to Comments on the Total Maximum Daily Loads
for Bacteria in the Long Beach City Beaches and Los Angeles River Estuary
November 30, 2011 Public Notice
March 26, 2012

RESPONSE TO COMMENTS

This document includes USEPA's response to comments submitted in response to the November 30, 2011 Public Notice of the Draft Long Beach City Beaches and Los Angeles River Estuary Indicator Bacteria TMDL. The comment letter submitted is provided on USEPA Region 9's website with highlighted comment notations added to the original letter to identify the end of each comment (eg., USEPA is responding to the specific comment immediately above the numbered "Comment" in yellow bold). Any change that is made to the TMDL in response to the comments is indicated in the response. If no change is noted in the response, then no change was deemed necessary in the TMDL. Please see (http://www.epa.gov/region9/water/tmdl/progress.html) for individual comment letters.

2. Mark Christoffels, Deputy Director of Public Works & City Engineering, City of Long Beach

Response to Comment 1:
Commentor indicates that: Figure 2-1 in the TMDL suggests that the impaired segment of the watershed includes the shoreline of the Harbor; to the commenter's knowledge, there is no indication that the shoreline of the Harbor should be considered as impaired; and dry weather monitoring at the northeast entrance to the Harbor in 2007 indicated that this region typically had the lowest concentrations of fecal indicator bacteria in the region.

Figure 2-1 is based on California's listing of Long Beach City Beach as a water quality limited segment for which a TMDL is still required, and a map from the State Water Resources Control Board which identifies the entire segment from the mouth of the LA River to Alamitos Bay, (including the Harbor shoreline) as impaired.

It is not clear from the comment which monitoring location or specific data is being referenced. While this comment may have been referencing a single month of sampling in 2007, the analysis in these TMDLs included the evaluation of 11 years of data and impairments along the entire beach segment, including the mouth of the LA River. Analysis of all data showed general spatial trends. Spatially, monitoring sites located closer to the Los Angeles River and Estuary generally had higher bacteria (enterococcus, fecal coliform and total coliform) geometric means compared to monitoring sites farther from the Los Angeles River and Estuary. See Table 2-3 in the TMDL and Appendix A for further description of USEPA's analysis.

Response to Comment 2:
USEPA agrees that dry weather flows from the watersheds referenced by the commenter discharge to sand at the inland side of the beach, and US EPA has added the following sentence

to TMDL Section 2.1.1.1: "Storm drain outlets are located on the beach 200-300 feet above the water's edge."

However, USEPA finds that dry weather flows from those outlets may convey bacterial loads to the receiving waters, and consequently USEPA has not further revised TMDL Sec. 2.1.1.1 as sought by the comment. In support of its finding that that dry weather flows from those outlets may convey bacterial loads to the receiving waters, EPA notes that data spreadsheets from the September monitoring period include comment notes that describe 50 ft long meandering channels flowing from outfall SD3, and ponds in front of storm drain SD1 as large as 35' x 11', and 10' in diameter.

In addition these notes describe "damp sand extending from outlet to shore" and a "picture taken showing recent evidence of storm water discharge out to the beach" by SD5. (Files provided to USEPA by email in January 2012.) Under wet weather discharges are influenced significantly by rain events which increase storm drain flow drastically. Under dry weather there is the potential for illicit discharges to sporadically increase storm drain flow. Thus, there is reasonable potential for the storm drain discharges to reach the water, and it would be inaccurate to state that these loads never reach the ocean water on the beach.

Response to Comment 3:
USEPA has confirmed with the Los Angeles Regional Water Quality Control Board staff that subwatersheds 7, 8, 9, and 16 are included in the Los Angeles River Bacteria TMDL. Therefore, these areas have been removed from the LAR Estuary direct drainage. All maps, tables, loading estimates, analyses, and discussion have been modified accordingly in the TMDL report and associated appendices.

Response to Comment 4:
USEPA has revised Table 3-1.

Response to Comment 5:
USEPA disagrees that the statement regarding the spatial extent of the dry weather loads from the LAR is incorrect, as this statement was based on review of the EFDC model results. These results show that the concentrations along the beaches are low during dry weather and do not appear to be influenced by the LAR. USEPA believes that: the model's assumptions regarding the depth of the surface layer are reasonable and support the qualitative assessments described in Appendix D. The EFDC model was previously calibrated for hydrodynamics, including salinity, which included the influence of wind. The salinity calibration presented comparisons of modeled and observed top and bottom salinity (Appendix I of LARWQCB, 2011); therefore, it is expected to reasonably predict hydrodynamics throughout the water column, including the surface layer. It is also important to note that the total depth in the EFDC model near the LAR Estuary and LBC beaches was 0-10 meters and the surface layer is the top 25% of this (or 0-2.5 meters). The representation of the surface layer in the area along the beach is also in the 0-2.5 meter range, consistent to the "upper 1-2 feet during dry conditions" referred to in the comment.

The comment also refers to salinity measurements at the LAR Estuary mouth and along the beach during 2007. Unfortunately, since the EFDC model does not cover this time period, it is not possible to make a direct comparison between the model results and monitoring data. To address the concern raised in the comment, USEPA revised Section 4.1.1 of the TMDLs to clarify that the analysis relied on model results and there are uncertainties associated with the results.

Response to Comment 6:
The photographs in Figure 4-5 were taken on November 13, 2011, and individual outfalls were between South 5th Place and South 16th Place. The date and location description for the photographs was added to Figure 4-5 on page 25 of the TMDLs. Photographer observed ponds in front of several of the storm drains as well as a wet sandy channel suggesting flow of water from the storm drain to the ocean water.

Response to Comment 7:
The sentence on page 26, first paragraph was modified to state: "City of Long Beach MS4 permit was revised on June 30, 1999…"

Response to Comment 8:
Comment noted. USEPA added the following sentence to the third paragraph on page 29:"Discharge of bilgewater and ballast water to Harbor waters is prohibited."

Response to Comment 9:
Language describing, and a table listing, the geographical locations, date, volumes and classification of Sanitary Sewer Overflows and Private Lateral Sewer Overflows was added to Section 5.2.1.4 of the TMDLs.

Response to Comment 10:
USEPA has chosen a reference beach approach which accounts for natural sources and is consistent with the Regional Board's approach for setting water quality targets in bacteria TMDLs. The reference beach dataset for Leo Carrillo includes 6 years worth of data (November 2004 – October 2010) which considers a wide range of seasons, years and natural sources that vary throughout these periods. Please see Response to Comment 2 from Rutan and Tucker for the City of Signal Hill, and Response to Comment 2 from Heal the Bay and Santa Monica Baykeeper.

Response to Comment 11:
Both the LSPC and EFDC models were run for complete years, including September and October. The EFDC model time period (2002-2005) did not cover the September 2007 data

collection effort by the City of Long Beach (City of Long Beach, 2009). Extending the EFDC modeling time period was not possible during this effort.

Response to Comment 12:
Dry weather flow calculations for the LBC beaches were originally calculated based on the best available technical approach. USEPA did evaluate a regression equation excluding the 1200 square kilometer watershed. Use of this equation ultimately did not have a significant impact on the calculated dry weather flow; therefore, this watershed was included in the analysis (note: this approach is also consistent with other TMDLs in the Los Angeles area). It is important to note that the dry weather flow data mentioned in the comment were not provided to USEPA when we initially solicited data to support TMDL development in June 2010; therefore, dry weather flow analyses using these data could not have been included in the draft TMDL.

USEPA appreciates the recent submission of local dry weather flow data (provided to USEPA by email on February 14, 2012). We have used these data to revise the dry weather flow and loading calculations, as shown in the March 2012 versions of the TMDL report and Appendix C. Specifically, USEPA recalculated the dry weather flows by incorporating the area-weighted dry weather flow data from the Colorado Lagoon and Belmont Pump drainage areas, which spanned four different dry weather seasons. USEPA determined the dry weather flow data from the LBC beaches storm drains (provided to USEPA by email in January 2012) was not warranted because the data only represented a brief period of time (a single dry weather month in September 2007). Also, these data were not presented in the 30-day study report (City of Long Beach, 2009); therefore, it was uncertain whether final quality assurance checks had been performed on the dataset).

Response to Comment 13:
USEPA has incorporated a discussion of loads from the Los Angeles River TMDL in the report; however, we are have not appended Table 5-1 to include this information. We did not want to create confusion in the future by presenting exact values. Specifically, if revisions are made to one of the two TMDL reports in the future, the other TMDL report could then contain incorrect loading values. As requested in the comment, Table 5-1 has been updated to include the concentrations used for the loading calculations.

Response to Comment 14:
Consistent with the response to Comment #13, USEPA has incorporated a discussion of loads from the Los Angeles River TMDL in the report; however, we have not appended Table 5-2 to include this information. We did not want to create confusion in the future by presenting exact values. Specifically, if revisions are made to one of the two TMDL reports in the future, the other TMDL report could then contain incorrect loading values.

Response to Comment 15:
USEPA has recommended (not mandated) that compliance with WLAs for the existing Long Beach City Beach City ocean sites and the estuary be demonstrated by meeting exceedance day targets at the point of discharge. However, USEPA believes that the Regional Board should determine the exact monitoring locations and monitoring frequency, particularly with respect to monitoring the impacts of discharges authorized by general stormwater permits. USEPA recommends that compliance with the TMDLs' numeric targets be measured in the ambient water at existing and future monitoring locations, which includes the "existing monitoring locations within the recreational waters".

Response to Comment 16:
See response to Comment 4 above.

Response to Comment 17:
USEPA agrees with the comment and has revised Appendix A. Specifically, clarification that the LARE station shown in Figure 2 was sampled by the Council for Watershed Health (and is not co-located with the LAR Estuary station sampled by the City of Long Beach) has been added to Table 2, the caption of Figure 11, and the text of section 2.3 in Appendix A.

Response to Comment 18:
Wind effects on the surface water plume are certainly a possibility, but have not been specifically studied and quantified along the LBC beaches. The comment also notes that the modeling effort was insufficient to address the impacts of wind-induced transport. The discussion that the comment is originally referring to does not consider any of the modeling, as Appendix A was developed to present empirical data review and analyses. In addition, the EFDC model was used simply as a qualitative source assessment tool. The model was previously calibrated for hydrodynamics, including salinity (where comparisons of modeled and observed top and bottom salinity were performed [Appendix I of LARWQCB, 2011]); therefore, it is expected to reasonably predict hydrodynamics throughout the water column, including the surface layer (note: The total depth near the LAR Estuary and LBC beaches was 0-10 meters; the surface layer is the top 25% of this or 0-2.5 meters. Therefore, the vertical stratification in the area along the beach, where recreation and monitoring occur, is expected to be sufficient for the qualitative assessments described in Appendix D). To address the concern expressed in the comment that wind has the potential to transport bacteria contamination to the beaches, text has been added to page 8 of Appendix A; however, a direct link cannot currently be made between wind-induced transport of surface waters (contributing bacteria contamination) from the Los Angeles River over to the eastern edge of the LBC beaches.

Response to Comment 19:
See response to comments 5 and 18.

Response to Comment 20:
USEPA appreciates the clarification on how fecal coliform results are determined. Text has been added to the monitoring discussion on pages 4 and 15-17 of Appendix A to clarify the fecal coliform measurements and their relationship to E. coli.

Response to Comment 21:
USEPA agrees that the eastern portion of the peninsula drains to the pump station in Alamitos Bay. Figure 10 of Appendix A has been revised to accurately reflect the drainages.

Response to Comment 22:
USEPA appreciates the information in the comment that the Belmont Pump Station no longer discharges during the summer dry weather period. Text has been added to Section 2.2 and footnotes have been added to Tables 12-13 of Appendix A to clarify this point.

Response to Comment 23:
Please see response to Comment #2 above.

Response to Comment 24:
Please see response to Comment #2 above.

Response to Comment 25:
Please see response to Comment #3 above.

Response to Comment 26:
Please see response to Comment #2 above.

Response to Comment 27:
Please see response to Comment #12 above.

Response to Comment 28:
Please see response to Comment #2 above.

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January 16, 2012

Karin Graves
WTR-2
U.S. Environmental Protection Agency
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Subject Technical comments pertinent to *Draft Long Beach City Beaches and Los Angeles River Estuary TMDL for Indicator Bacteria*
FSI 037033

Dear Ms. Graves,

On behalf of the City of Signal Hill, Flow Science is pleased to provide comments on technical issues related to the proposed *Draft Long Beach City Beaches and Los Angeles River Estuary TMDL for Indicator Bacteria*. The City's primary concerns relate to the Draft TMDL's failure to consider natural bacterial water quality in estuaries and fundamental flaws in the application of the reference beach approach to the Los Angeles River Estuary. We are also concerned that the Draft TMDL does not acknowledge or account for the fact that by far the largest source of flow and bacterial loading to the Los Angeles River Estuary is not direct drainage to the estuary but the Los Angeles River itself.

We appreciate the opportunity to provide comments. Please contact me at (626) 304-1134 with any questions or requests for additional information.

Sincerely,

Vada Kyonga Yoon, D.Env.
Project Scientist

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Vice President and Senior Scientist

TECHNICAL COMMENTS

US EPA Region IX released Draft *Long Beach City Beaches and Los Angeles River Estuary TMDL for Indicator Bacteria* (hereafter referred to as the Draft TMDL) on November 30, 2011. The Cities of Signal Hill and Long Beach will be regulated by the Draft TMDL and are located in the direct drainage to the Los Angeles River (LAR) Estuary; the City of Long Beach is also located in the direct drainage to Long Beach City Beaches. The City of Signal Hill does not discharge directly to the coastal beaches. Flow Science was retained to review and provide technical comments on the Draft TMDL on behalf of City of Signal Hill. These comments focus on issues pertinent to the direct drainages to the Los Angeles River Estuary, and the direct drainage referred to in the remainder of the document indicates the direct drainage to the LAR Estuary.

Summary of Draft TMDL

The Draft TMDL implements numeric targets for the bacterial water quality in the Los Angeles River (LAR) Estuary and Long Beach (LB) City beaches based on the Basin Plan bacteria objectives for REC-1 in marine waters (see **Table 1**[1]).

The Draft TMDL applies a reference system approach, and waste load allocations (WLAs) are expressed in terms of "allowable exceedance days," i.e., the number of days water quality is allowed to exceed water quality objectives. Exceedances are allowed during wet weather and winter dry weather conditions, while no exceedance days are allowed for summer dry weather (see **Table 2**). The allowable exceedance days are evaluated using single sample maximum (SSM) targets, not the rolling 30-day geometric mean (geomean) targets. The allowable exceedance days were calculated using the exceedance probability of a reference beach (Leo Carrillo Beach). Although watershed modeling (LSPC) and harbor modeling (EFDC) were conducted and are described in appendices to the Draft TMDL, none of the modeling results were used to calculate the WLAs. Load allocations (LAs) are assigned as zero to lands not covered by a MS4 permit[2].

Concerns with Draft TMDL

Unfortunately, it does not appear that the Draft TMDL was developed based on sound science, and it is deficient in two key respects. First, the Draft TMDL fails to consider natural bacterial water quality in estuaries—in fact, estuaries are unique because they serve as key habitat for a large population of wildlife, including birds and waterfowl, which are sources of indicator bacteria. Because background data were not available for estuaries, the Draft TMDL applies "allowable exceedance days" derived using a single reference beach (Leo Carrillo Beach) to the LAR Estuary. The reference beach does not exhibit the characteristics of the estuary, and thus is not a suitable reference location for the LAR Estuary.

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[1] Tables are provided in Attachment A.

[2] Such as the US Forest Service lands, California Department of Parks and Recreation lands, or National Park Service lands. LAs of zero days for areas near onsite waste treatment systems and for natural sources, a beachside dog zone, a marina, waterfowl, sediment re-growth and persistence and human sources (recreators or homeless persons). (p. 42 in the Draft TMDL)

Second, the Draft TMDL does not consider the fact that by far the largest source of flow and bacteria loading to the LAR Estuary is not direct drainage to the estuary but the Los Angeles River itself during both dry- and wet-weather conditions. Although the Regional Board has adopted a TMDL for bacteria in the Los Angeles River, the requirements of that TMDL differ from those of the Draft TMDL for the LAR Estuary; even if the Los Angeles River Bacteria TMDL is successfully implemented, the Los Angeles River will continue to cause non-attainment within the LAR Estuary. Because these two important factors are not addressed within the Draft TMDL, compliance with the Draft TMDL is likely infeasible. Specific concerns are addressed in the remainder of this document.

Issue 1. The LAR Estuary should not be included in the Draft TMDL for the LB City Beaches.

1.1 The Draft TMDL fails to account for the fact that estuaries are different than coastal beaches.

An estuary is defined as "a partially enclosed body of water (such as bays, lagoons, sounds or sloughs) where two different bodies of water [freshwater and salt water] meet and mix"[3]. Estuaries are unique and typically play a vital role in the environment such as: 1) estuaries are constantly changing areas of transition; 2) rivers provide nutrients, organic matter, and sediments to estuaries; 3) estuaries can filter some pollutants and runoff; 4) estuaries provide a safe haven and protective nursery for small fish, shellfish, migrating birds, and coastal shore animals[4].

The beneficial uses assigned to the LAR Estuary (**Table 3**) reflect the unique nature of the LAR Estuary and its use as a habitat for various types of wildlife, which, as detailed more fully below, contribute to the presence of bacteria in the estuary. In recognition of the unique nature of estuaries, bacteria water quality objectives and management measures for estuaries should differ from those for coastal beaches.

However, the Draft TMDL did not account for the unique bacterial water quality in estuaries. Data for the LAR Estuary presented in the Draft TMDL are limited, including only data that were collected at a single monitoring location in the LAR Estuary (beneath Queensway Bridge) during two summer dry-weather periods in 2009-2010. Data for winter dry weather and wet weather are absent from the Draft TMDL.

Consequently, the Draft TMDL provides little or no information regarding the existing loads within the LAR Estuary itself and the load reduction that would be required to attain water quality standards within the estuary. In short, there is no assurance that implementing actions to control bacteria in direct discharges to the estuary (or actions to eliminate those discharges altogether) would result in attainment of water quality standards within the estuary. Comment 1

1.2. The reference beach approach in the Draft TMDL lacks a sound scientific basis.

[3] From estuaries.noaa.gov
[4] Summarized from estuaries.noaa.gov

The Draft TMDL gives no special consideration to how to assess bacterial water quality in the estuary or how to develop a TMDL that would support the various beneficial uses in the estuary. The reference system used in the Draft TMDL is not based on reference estuaries but on a single reference "coastal beach" (Leo Carrillo Beach), which is located on the Pacific Ocean near Malibu. Ocean beaches, including Leo Carrillo Beach, have very different characteristics than estuaries in general and than the LAR Estuary specifically. In particular, Leo Carrillo Beach drains directly to the ocean, not to an estuary, and has very different physical characteristics.

At p. 18 of Draft TMDL, three alternatives were briefly discussed:

- Alternative 1. strict application of the water quality objectives with no allowable exceedances
- Alternative 2. a natural source exclusion approach
- Alternative 3. a reference system approach with allowable exceedances.

Alternative 2, the natural source exclusion approach, could be used to account for the natural sources of bacteria such as waterfowl in estuaries. However, EPA staff did not recommend Alternative 2 because "information sufficient to quantify all naturally-occurring sources of indicator bacteria does not exist at this time" (p. 18 of the Draft TMDL) . EPA staff instead utilized Alternative 3, the reference system approach.

However, there is no evidence that sufficient information to apply Alternative 3 to the LAR Estuary exists at this time. Studies to assess reference bacterial water quality conditions have been conducted only for beaches in Southern California (e.g., Griffith et al. 2009), not for estuaries. To our knowledge, no data or studies are available to assess reference bacterial water quality conditions within estuaries, and the conditions in the LAR Estuary differ from those at Leo Carrillo Beach in significant and important ways. Thus, proper application of both Alternative 2 (natural sources exclusion approach) and Alternative 3 (reference system approach) would require additional research and study.

Because natural sources and upstream river flows contribute the majority of bacteria in the LAR Estuary, Alternative 1 is not a feasible alternative. Flow Science recommends consideration of a fourth alternative, which would require the elimination of anthropogenic sources of bacteria in dry weather discharges to the estuary. Comment 2

1.3. The Draft TMDL does not account for natural source contribution to bacteria in the LAR Estuary and requires permittees to control these uncontrollable natural sources.

The LAR Estuary is well known for its large population of birds and waterfowl, as acknowledged in the Draft TMDL:

> "Due to this diverse environment, estuaries provide habitat to a wide variety of wildlife. In the LAR Estuary, the soft bottom and rock rip-rap used to stabilize banks, offer one of the more diverse environments within the LAR system. For this reason, bird watching is a common activity in the estuary, particularly in the Golden Shore Marine Biological Reserve, located along the eastern bank of the LAR Estuary. This nine-acre reserve, developed in 1997 as mitigation for surrounding development, offers unique habitat and has been identified as one of the best bird-watching locations in the region." (p. 7 in the Draft TMDL; emphasis added)

See **Figures 1 and 2**[5], which were taken in December of 2011 in Los Angeles River at Willow Street and which show the large population of birds that is regularly present in the LAR Estuary. That this large population of birds and waterfowl is a source of bacteria in the LAR Estuary was acknowledged by the Draft TMDL:

> "Birds were identified as a potential source of bacteria to lower reaches of the Los Angeles River. Specifically, the [Los Angeles River] TMDL states that the lower seven-miles of the River are one of the most important shorebird stopover sites in southern California (LARWQCB, 2010a)...Due to the proximity to these areas, it is likely that birds are also a potential source of bacteria to the LBC beaches. In addition, research has documented the presence of FIB in feces of seagulls (Grant et al., 2001) and pigeons (Oshiro et al., 1995) that tend to congregate near shorelines. Furthermore, research conducted in Avalon Bay indicated bird feces as a potentially significant source of bacteria relative to other nuisance flows (Boehm et al., 2003) and research conducted on LBC beaches concluded that ponds fronting storm drains along the impaired LBC beaches were found to be heavily utilized by birds which contributed to significant increase in concentrations of enterococcus bacteria (City of Long Beach, 2009)." (p. 18 in the Draft TMDL)

Birds and waterfowl have been implicated in bacterial water quality exceedances in a variety of water bodies (see, e.g., Abulreesh et al. 2004; Choi et al. 2003; Grant et al. 2001; Griffith et al. 2009), and local studies in the water bodies of the Los Angeles region in addition to those cited in the Draft TMDL have also provided similar results. One of the most relevant studies was the CREST Bacteria Source Identification study (CREST 2008), which demonstrated that natural non-human sources (e.g., wildlife, birds, and/or re-growth in sediments) were likely responsible for exceedances of water quality in Reach 2 of the Los Angeles River, upstream of the LAR Estuary. The CREST study showed that a large increase

[5] Figures are provided in Attachment B.

in concentrations of indicator bacteria occurred without a concomitant increase in human-specific bacteria (determined using human-specific bacteroidales), indicating the increase was due to non-human natural sources.

Although the Draft TMDL acknowledges that birds are natural sources of bacteria in the LAR Estuary, the reference beach approach is not suitable to address bacterial water quality exceedances due to these and other uncontrollable natural sources. The Draft TMDL did not examine the number of existing exceedances that were due to uncontrollable natural sources in the estuary. Despite the numerous studies that show natural sources themselves could cause exceedances of bacterial water quality objectives, the Draft TMDL assigns zero exceedance day to load allocations (LAs) for natural sources. Allowable exceedance days set as waste load allocations (WLAs) were also calculated without consideration of the large bird population in and adjacent to the LAR Estuary.

Wildlife and other non-human, natural sources are beyond the control of permittees. It would not be desirable or possible to remove the large population of wildlife in the LAR Estuary. As presented in **Table 3**, beneficial uses for the LAR Estuary include habitat for wildlife and migratory aquatic organisms, and the Los Angeles Regional Board historically has recognized that control of certain non-human sources (e.g., birds, wildlife) is undesirable.

In the Los Angeles Basin Plan (as amended by Resolution No. 2002-022), the Board has proposed a "natural sources exclusion approach" so that control of these sources is not required:

> "These [natural sources exclusion] approaches recognize that there are natural sources of bacteria, which may cause or contribute to exceedances of the single sample objectives for bacterial indicators. They also acknowledge that it is not the intent of the Regional Board to require treatment or diversion of natural water bodies or to require treatment of natural sources of bacteria from undeveloped areas. Such requirements, if imposed by the Regional Board, could adversely affect valuable aquatic life and wildlife beneficial uses supported by natural water bodies in the Region."

Flow Science recommends that a natural sources exclusion approach be implemented in the Draft TMDL for the LAR Estuary by focusing on the control and elimination of human sources of bacteria.
Comment 3

1.4. The Los Angeles River is the main source of bacteria to the LAR Estuary.

The Draft TMDL was developed without consideration of the overwhelmingly dominant impacts of discharge from the Los Angeles River to the LAR Estuary. As noted in the Draft TMDL and accompanying Appendix A to the Draft TMDL, water quality in the LAR Estuary is primarily influenced by the upstream river discharge:

> "The LAR Estuary is heavily impacted by the LAR, so much so, that large booms have been installed with the intention to collect trash before LAR flow enters the estuary.

> Along with the flow, it can be assumed that the LAR contributes significant concentrations of bacteria to the estuary and ultimately, the LBC beaches." (p. 8 in the Draft TMDL)
>
> "Recently a Heal the Bay report (2010) identified the Los Angeles River as a major source of bacterial contamination to the LBC beaches, stating that Long Beach water quality is dependent on rainfall and runoff volumes from the Los Angeles River." (p. 3 in Appendix A to the Draft TMDL)

Especially during wet weather, almost all water in the estuary segment will be from upstream river discharges (to illustrate this point, see the data presented in **Table 4)**. As shown in **Table 4**, the measured total discharge from the Los Angeles River to the LAR Estuary during wet weather during Water Year (WY) 2010 was approximately 97% of the total inflow to the LAR Estuary, while the discharge from the direct drainage contributed only about 3% of the total inflow. Similarly, the wet weather bacteria loading from the Los Angeles River is estimated to be 99.55% of total loading to the estuary, or more 200 times larger than the bacteria loading from the direct discharge to the LAR Estuary.

The Los Angeles River is expected to be the dominant source of flows to the LAR Estuary during dry weather conditions as well. Dry weather flows from the direct drainage are expected to be negligible compared to dry weather flows within the Los Angeles River because the land surface area that drains directly to the LAR Estuary is approximately seventy (70) times smaller than the area that drains to the Los Angeles River at Wardlow Rd. (see **Table 4**). In addition, no publicly owned treatment works (POTWs) drain directly to the LAR Estuary, while POTWs contribute the majority of dry-weather flows in the Los Angeles River. The median dry weather flow in the Los Angeles River at Wardlow Rd. is 145 cfs[6], and the median flow and the combined design flow of the three POTWs that drain to the Los Angeles River are 111 cfs and 169 cfs respectively[7].

By contrast, the dry weather flow rates from the watersheds that drain directly to the LAR Estuary appear to have been greatly overestimated (dry weather flows in direct drainage to the estuary are presented in Appendix C to the Draft TMDL). The dry weather flow rates for the sixteen sub-basins that drain to the LAR Estuary were estimated by USEPA to range from 0.8 to 149 cfs; the combined flow for the sixteen sub-basins was estimated within the Draft TMDL to be 594 cfs (obtained by adding the values in Table 2 at p. 7 in Appendix C). However, four of the sub-basins (sub-basins 7, 8, 9, and 16) discharge to the freshwater portion of the Los Angeles River, north of Willow St. As noted in detail below, it is not credible that dry weather flows from the subwatersheds draining directly to the LAR Estuary would more than four times higher than dry weather flows in the Los Angeles River at Wardlow St., when the drainage area is about seventy (70) times smaller than the drainage area of the Los Angeles River and when there are no POTW flows in the area draining directly to the LAR Estuary.

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[6] See p. 5 in Attachment to Resoultion R 2007-014 'Revision of the Implementation Plan for Discharges from Tilman, LA-Glendale, and Burbank POTWs in the Los Angeles River and Tributaries Metals TMDL' for additional detail.
[7] The Tillman, LA-Glendale, and Burbank POTWs have a combined design flow of 169 cfs; see p. 5 in Attachment to Resoultion R 2007-014 'Revision of the Implementation Plan for Discharges from Tilman, LA-Glendale, and Burbank POTWs in the Los Angeles River and Tributaries Metals TMDL' for additional detail.

The LAR Bacteria TMDL was approved by State Water Board on November 1, 2011, and contains implementation schedules that span from 15 years to 20 years depending on the specific reach of the river (pp. 16-22 in Resolution No. R10-007). If bacteria loads in the Los Angeles River continue to exceed water quality objectives over a 15- to 20-year timeframe, water quality objectives within the LAR Estuary will not be attained over this timeframe, given the fact that direct drainages to the estuary contribute only a small fraction of flow and bacteria loads in the estuary. Because flows and water quality in the LAR Estuary are so strongly linked to flows and water quality in the Los Angeles River, it is inappropriate, from a scientific perspective, to address bacteria in the LAR Estuary in a vacuum. As noted below and in separate legal comments, the LAR Estuary is not listed as impaired and is not included in the Consent Decree, and these considerations, combined with the technical problems with developing a bacteria TMDL for the Estuary separate from the Los Angeles River, dictate that the Estuary TMDL not be adopted at this time. .

Because the LAR is the dominant source of flow and bacteria to the LAR Estuary, water quality objectives will not be attained in the LAR Estuary unless the upstream river discharge is fully accounted for, and unless activities in watershed draining to the Los Angeles River upstream of the estuary are coordinated with activities within the area tributary to the estuary.

Recommendations

- *Flow Science recommends that the LAR Estuary be removed from the current Draft TMDL.*
- *If it continues to be included in the current Draft TMDL, Flow Science recommends quantifying flow rates and bacteria loading from the upstream river to the LAR Estuary. Flow Science also recommends adding calculations to the Draft TMDL to compare these quantities with flow rates and loads resulting from direct drainages to the LAR Estuary. Flow Science also recommends that the Draft TMDL be amended to specify that timeframes for compliance within the LAR Estuary should be consistent with timeframes for compliance as provided in the Los Angeles River Bacteria TMDL (i.e., 20 years).*
- *Flow Science recommends consideration of a fourth alternative that would focus on reducing anthropogenic sources of bacteria in discharges to the estuary in dry weather flows.*

Comment 4

Issue 2. Compliance with the Draft TMDL during wet weather conditions is impossible.

The LAR Bacteria TMDL, which was approved by the State Board on November 1, 2011, incorporates the high flow suspension that applies to the engineered portions of the LAR. The high flow suspension suspends water quality objectives that apply to REC-1 and REC-2 beneficial uses during and following storm events that produce rainfall amounts of 0.5 inches or more.[8]

[8] High Flow Suspension: The High Flow Suspension shall apply to water contact recreational activities associated with the swimmable goal as expressed in the federal Clean Water Act section 101(a)(2) and regulated under the REC-1 use, non-contact water recreation involving incidental water contact regulated under the REC-2 use, and the associated bacteriological objectives set to protect those activities. Water quality objectives set to protect (1) other

However, the Basin Plan indicates that the high flow suspension does not currently apply to the LAR Estuary, even though the Basin Plan identifies the estuary as an engineered channel (see Footnote W to **Table 5**).

During wet-weather, achieving water quality objectives within the estuary would likely require treatment of estuary waters before they flows out of the estuary. However, the volume of water that passes through the LAR Estuary is far too large to capture, treat, and discharge back to the estuary. **Table 6** presents daily flow rates measured at LAR at Wardlow Rd. (Stream Gage F319-R) for the wet-weather days in the water year 2010 (note that the high flow suspension would not have applied to some of these events, as **Table 6** presents data for days with rain amounts greater than 0.1 inch). Daily discharge flow rates range up to 9,306 million gallons per day, a volume of water large enough to fill 111 Rose Bowls (as shown in Column E of **Table 6**).

Because the high flow suspension applies to the LAR, exceedances of water quality criteria in the LAR are allowed during significant storm events, and these flows would enter the LAR Estuary untreated and in exceedance of water quality criteria. However, even wet weather flows from storm events smaller than the thresholds that would trigger the high flow suspension are very large. Testimony presented during the adoption hearings for the LAR Bacteria TMDL indicated that there are currently no known means of complying with the LAR Bacteria TMDL during even smaller wet weather events. Thus, it is anticipated that bacteria levels in inflows from the LAR to the LAR Estuary will exceed water quality criteria during all wet weather conditions.

Recommendations

- *Flow Science recommends that the LAR Estuary be removed from the current Draft TMDL.*
- *If it remains within the Draft TMDL, Flow Science recommends that USEPA add a recommendation to the Regional Board that a high flow suspension be adopted for the LAR Estuary as soon as possible, and that any implementation of the Draft TMDL recognize the connection to the LAR, the implementation timeframes adopted in the LAR Bacteria TMDL, and the difficulty of compliance during wet weather conditions.*

Comment 5

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recreational uses associated with the fishable goal as expressed in the federal Clean Water Act section 101(a)(2) and regulated under the REC-1 use and (2) other REC-2 uses (e.g., uses involving the aesthetic aspects of water) shall remain in effect at all times for waters where the (ad) footnote appears in Table 2-1a. The High Flow Suspension shall apply on days with rainfall greater than or equal to ½ inch and the 24 hours following the end of the ½-inch or greater rain event, as measured at the nearest local rain gauge, using local Doppler radar, or using widely accepted rainfall estimation methods. The High Flow Suspension only applies to engineered channels, defined as inland, flowing surface water bodies with a box, V-shaped or trapezoidal configuration that have been lined on the sides and/or bottom with concrete. The water bodies to which the High Flow Suspension applies are identified in Table 2-1a in the column labeled "High Flow Suspension" (p. 2-2 in Amendments to the Basin Plan Chapter 2)

Issue 3. The boundary of the LAR Estuary is unclear and differs from that used in different regulatory documents.

The boundary of the LAR Estuary that is presented in different regulatory documents differs from the boundary used in the Draft TMDL, causing significant confusion. In the Draft TMDL, the estuary is defined as the section from Willow Street to Queensway Bay, as shown in **Figure 3**, but little explanation for this definition is provided.

> "The LAR Estuary connects the Los Angeles River to San Pedro Bay. It begins where the concrete-lined river ends near Willow Street and flows to Queensway Bay before entering San Pedro Bay." (p. 7 in the Draft TMDL)

The upper boundary of Willow Street is consistent with a map in Basin Plan (Figure 2-8 at p. 2-29 of Basin Plan Chapter 2 June 13, 1994).

However, the upper boundary of the estuary that was defined in Appendix D to the Draft TMDL is at Ocean Blvd., downstream of Willow Street (**Figure 4**). In SWRCB's 2010 Integrated Report (Clean Water Act Section 303(d) List/305(b) Report), the LAR Estuary extends only to Ocean Blvd. (**Figure 5**). The Ocean Blvd. boundary is also used in the Harbor Toxics TMDL (**Figure 6**), and the Port of Los Angeles and Port of Long Beach also take Ocean Blvd. as the upper boundary of the LAR Estuary (p. 42 of Water Resources Action Plan – Final Report August 2009).

The lower (downstream) boundary of the LAR Estuary is defined in the Draft TMDL as occurring in Queensway Bay, though it does not specifiy exactly where in the bay. However, the Basin Plan indicates that Long Beach Harbor extends up to Queensway Bridge, rather than ending at the mouth of River (**Figure 7**). According to Basin Plan, the LAR Estuary ends at Queensway Bridge where the upstream boundary of the harbor occurs.

Recommendations

- *Flow Science recommends that the LAR Estuary be defined as that reach extending from Ocean Blvd. to the Queensway Bridge, consistent with other TMDLs and other regulatory documents.*
- *Alternatively, Flow Science recommends that the Draft TMDL be amended to provide a clear rationale for the boundaries of the LAR Estuary and to reconcile discrepancies in the estuary boundary among the various regulatory documents listed above.*

Comment 6

Issue 4. Estimated wet- and dry-weather bacterial loadings and bacterial source assessment to the LB beaches are flawed and are not used to compute the WLAs.

The linkage analysis component of a TMDL typically connects pollutant load to the water quality targets and protection of beneficial uses of the listed waterbodies; it is also used to assess the assimilative capacity of the waterbodies, which will in turn assist developing load and wasteload allocations. The

linkage analysis of the Draft TMDL presents estimates of wet- and dry-weather bacterial loadings for *E. coli* from the direct drainage to the LAR Estuary. Additional detail regarding the load estimates can be found in Appendices B and C to the Draft TMDL.

However, neither the wet-weather nor dry-weather load estimations were calibrated or validated against measurements; this was confirmed during a conference call with Tetra Tech on January 4, 2012. In addition and as detailed above, the bacteria loadings were estimated only for the direct drainage to the estuary, and the loads from the upstream river were omitted from the linkage analysis.

The Draft TMDL concludes that the LAR Estuary is a source of bacteria to the LB beaches based on source assessment modeling conducted using the EFDC model; details of the modeling are presented in Appendix D to the Draft TMDL. By contrast to the load estimates for the LAR Estuary (in Linkage Analysis and Appendices B and C), which was done only for *E. coli* loading from the direct drainage, the source assessment modeling estimates bacterial loading from the Estuary to the LB beaches including only the upstream river discharge of *enterococcus*, and excluding discharge from the direct drainage to the LAR estuary (i.e., the discharge regulated by the Draft TMDL). Like the wet and dry weather load estimations, this modeling was also neither validated nor calibrated.

Specific concerns regarding the information presented in the modeling appendices are summarized below.

Comment 7

4.1 .Appendix B wet weather load estimation

To estimate wet weather bacterial loading from the direct drainage to the LAR Estuary, USEPA's Loading Simulation Program C++ (LSPC) was used. During the conference call on Jan 4, 2012, it was confirmed that the LSPC model used in the Draft TMDL is identical to one used in the LAR Bacteria TMDL. Specific concerns regarding the estimation of wet weather loads include (but are not limited to) the following:

a) The wet-weather load was estimated for *E. coli*. Water quality objectives for *E. coli* apply to the freshwaters of the region, but do not apply to marine waters, and are not applied in the Draft TMDL to estuary waters. Monitoring data are not available for *E. coli* within the LAR Estuary. No rationale was found in the Draft TMDL for the selection of this bacterial indicator, and use of this indicator prevents model results from being validated and calibrated against monitoring data.
b) No bacteria data are available from the direct drainage. Instead, bacterial concentrations for different land use types were used to estimate the wet-weather bacteria concentrations. The Draft TMDL does not provide the source of the bacteria concentrations. Thus, it is not possilble to verify whether the bacterial concentrations used in the wet-weather load estimation are representative for the direct drainage.
c) No wet-weather flow data from the direct drainage were available, and no data collection was conducted for the development of the Draft TMDL. Modeled wet-weather flows from the direct drainage were neither calibrated nor validated due to the lack of measured flow data. It is

unknown whether the model-estimated wet-weather flow rates are accurate or not due to the lack of validation and calibration.

d) The wet weather bacteria loading from the upstream river discharge was not examined and was not compared to the bacteria loading from the direct drainage. As shown in **Table 4** and as discussed above, it appears that the bacteria loadings from direct drainage to the LAR Estuary are orders of magnitude smaller than loadings from the LAR.

Comment 8

4.2. Appendix C dry weather load estimates

The dry-weather load estimate was also neither validated nor calibrated against measurements. Neither dry weather flow data nor bacteria concentration data are available from the direct drainage to the Estuary. Instead, the correlation between dry weather flows and urban areas in watersheds (Stein and Ackerman 2007) was used to estimate dry weather flow rates from the direct drainage area. Bacteria concentration data were taken from a storm drain that drains to the LB City Beaches (not to the estuary). Then, the estimated dry-weather flow was multiplied by the bacteria concentration in order to calculate the dry-weather bacteria load from the direct drainage to the estuary. No further modeling was conducted for the dr**y**-weather load estimation. Concerns with this analysis approach are detailed below.

a) The correlation using data from Stein and Ackerman (2007) is not strong and the number of data points is too small. This correlation is also outdated and likely overestimates the dry-weather flow rates because it does not account for the recent efforts to reduce dry-weather discharges by cities. For instance, water use in City of Long Beach has declined from 167 gallon per capita per day (GPCD) in 1980 to 100 GPCD in 2010 (**Figure 8**); dry weather discharges are anticipated to have declined by roughly the same amount.

b) As discussed previously, the estimated dry weather flow from the direct drainage to the LAR Estuary is unreasonably high. Appendix C to the Draft TMDL indicates that dry weather flows directly to the LAR Estuary were estimated to be 594 cfs, four times higher than the measured median dry weather flow of the Los Angeles River at Wardlow Rd. (145 cfs), and seventeen (17) times higher than the "median flow from the stormdrains and tributaries" to the Los Angeles River at Wardlow (34 cfs)[9]. Because flow rates for direct discharges to the LAR Estuary have been grossly overestimated during dry weather conditions, bacteria loadings, which are calculated using flow rates and bacteria concentrations, will also have been grossly overestimated.

c) Dry-weather flow in the LAR is dominated by discharges from POTWs that discharge treated wastewater to the Los Angeles River upstream of Wardlow Rd.; 76% of total dry weather inflow to the LAR Estuary is the discharged from the POTWs[10]. The fact that POTW discharges are approximately six (6) times larger than dry weather flows within the Los Angeles River at Wardlow St. further indicates that dry weather flows in direct drainage to the LAR Estuary, which do not include POTW flows, have been greatly overestimated.

[9] See p. 5 in Attachment to Resoultion R 2007-014 'Revision of the Implementation Plan for Discharges from Tilman, LA-Glendale, and Burbank POTWs in the Los Angeles River and Tributaries Metals TMDL' for further details.
[10] The median flows for the LAR at Wardlow and from three POTWs are 145 cfs and 111 cfs respectively. See the reference cited in Footnote 11 for further details.

d) The bacteria concentration data that were used to estimate the dry-weather loading to the LAR Estuary are from a single storm drain that discharges not to the estuary but to the beaches. To quantify loads to the LAR Estuary, bacteria concentrations and flow rates in discharges to the LAR Estuary should be measured directly.
e) The dry-weather loading does not account for local sources of bacteria (e.g., birds and dogs) within the LAR Estuary.

Comment 9

4.3. Appendix D Source assessment to LB Beaches

Appendix D presents a "qualitative" evaluation of bacteria sources to the LB beaches that was obtained using the EFDC model for both wet and dry weather (p. 2 in Appendix D to the Draft TMDL). The bacteria loading from the LAR Estuary was estimated using LACDPW enterococcus data from a single monitoring station in the Los Angeles River at Wardlow Road (S10), upstream of Willow Street and the LAR Estuary. The location from which data were collected was confirmed during the conference call with Tetra Tech on January 3, 2012. The EFDC model was then used to transport these flows (and associated bacteria loads) through the Harbor area, and concentrations of bacteria at the LB Beaches were estimated from model results. Based on the modeling results, the Draft TMDL concludes that "loading from the LAR passes through the LAR Estuary and can reach the LBC beaches during wet weather events (especially extremely large events), depending on wind and tidal influences." (p. 20 in the Draft TMDL)

a) In contrast to other modeling and estimated dry and wet weather loading, the EFDC modeling assesses the impact of river flows upstream of the LAR Estuary but excludes the direct drainage to the LAR Estuary (i.e., excludes those flows regulated by the Draft TMDL).
b) Local sources of bacteria within the estuary (e.g., wildlife) were not evaluated.
c) The modeling was based on enterococcus, which cannot be directly related to *E. coli*, which was used for the wet and dry weather load estimates.
d) The modeling was not calibrated or validated.

Recommendations

- *As detailed above, Flow Science recommends that the LAR Estuary be removed from the current Draft TMDL.*
- *Flow Science recommends that the models be calibrated and/or validated with data describing flow rates and bacteria loads to the LAR Estuary.*
- *Flow Science recommends that both the wet-weather and dry-weather loadings from the upstream river to the LAR Estuary be measured or computed, so that models can be used to evaluate the relative importance of the LAR Estuary to any exceedances that may be caused primarily by the LAR.*
- *Flow Science recommends that the dry-weather load estimates of Appendix C be redone prior to adoption of the Draft TMDL to correct serious errors. Both flow and bacteria loading both from the upstream river and from the direct drainage should be recalculated, so that the relative contribution of the LAR to the estuary can be accurately assessed.*

Comment 10

ATTACHMENT A

Table 1. Marine REC-1 water quality objectives established for the Long Beach City Beaches and the Los Angeles River Estuary. Modified from Table 2-2 at p. 12 of the Draft TMDL

	Single sample maximum (CFU/100ml)	Rolling 30-day geometric mean (CFU/100ml)
E. coli	N/A*	N/A
Fecal coliform	400	200
Enterococcus	104	35
Total coliform**	10,000	1,000

*N/A: not applicable

**Total coliform shall not exceed 1,000/100ml, if the ratio of fecal to total exceeds 0.1

Table 2. Allowable exceedance days[A] of the single sample maximum for daily and weekly sampling based on the reference year (modified from Table 6-3 at p. 48 in the Draft TMDL).

Monitoring Location	Summer Dry		Winter Dry		Wet	
	Daily	Weekly	Daily	Weekly	Daily	Weekly
Los Angeles River Estuary	0	0	9	2	17	3
Leo Carrillo Beach[B]	0	0	9	2	17	3
Long Beach City Beach, 3rd Place[C]	0	0	9	2	17	3

[A] Exceedance day calculations are rounded up to the next whole number (e.g., 0.2 days = 1 full exceedance day). Exceedances of the geometric mean numeric target are not allowed. Permittees other than the MS4 permittees and Caltrans are assigned zero (0) days of allowable exceedance days for all time periods and for all monitoring locations.

[B] The reference beach that was used to calculate the number of allowable exceedance days. Leo Carrillo Beach is located in Malibu.

[C] One of monitoring locations in LB City Beach is presented for the comparison with the LAR Estuary and the reference beach. All three monitoring locations have been assigned the same number of allowable exceedance days.

Table 3. Beneficial uses at Long Beach City Beaches and Los Angeles River Estuary. From Table 2-1 at p. 10 in the Draft TMDL.

Waterbody Name	Hydrologic Unit	Beneficial Uses[1]
Long Beach City Beaches	405.12	REC 1 (E); REC 2 (E); NAV (E); COMM (E); MAR (E); WILD (E); SPWN (Eas)2; SHELL (E)
Los Angeles River Estuary	405.12	IND (E); REC 1 (E); REC 2 (E); NAV (E); COMM (E); EST (E); MAR (E); WILD (E); RARE (Ee) [2]; MIGR (Ef) [2]; SPWN (Ef) [2]; SHELL (P); WET (E)

1. Beneficial uses include: Industrial Service Supply (IND), Navigation (NAV), Contact (REC-1) and Non-contact Recreation (REC-2), Commercial and Sport Fishing (COMM), Estuarine Habitat (EST), Marine Habitat (MAR), Wildlife Habitat (WILD), Rare, Threatened, or Endangered Species Habitat (RARE), Migration of Aquatic Organisms (MIGR), Spawning, Reproduction and/or Early Development (SPWN), Shellfish Harvesting (SHELL) and Associated Wetlands (WET).
2. Eas: Early spawning; Ee: one or more rare species utilize for foraging and/or nesting; Ef: aquatic organisms utilize for spawning and early development (including migration areas which are heavily influenced by freshwater inputs).

Table 4. Estimates of flow and bacteria loadings from the direct drainage to the Los Angeles River (LAR) Estuary and from the LAR in wet weather.

Drainage	Source	Drainage area in acre	Total wet-weather discharge in acre-ft (percent)	Existing wet-weather load for *E. coli* in MPN/day[H]
The direct drainage to the LAR Estuary[A]	Appendices B and C to the Draft TMDL[C]	7,446	5.3×10^{3} [E] (3.4%[F])	1.38×10^{14} [I] (0.45%[J])
LAR at Wardlow Road (Station No. S10)[B]	LACDPW monitoring data from WY 2010[D]	528,000	1.5×10^{5} [G] (96.6%[F])	3.08×10^{16} [K] (99.55% [J])

A. This area is shown in Figure 1 of Appendix B to the Draft TMDL and includes 16 storm drain sub-basins (LARE-1 through LARE-16).

B. Los Angeles County Department of Public Works (LACDPW) LAR monitoring station (S10), which is located between Willow Street and Wardlow Road in the City of Long Beach.

C. Appendices B and C contain wet weather estimates and dry weather estimates, respectively.

D. Flows are from LACDPW hydrologic report (http://dpw.lacounty.gov/wrd/report) and bacterial loads are from NPDES stormwater monitoring report (http://dpw.lacounty.gov/wmd/NPDES/report_directory.cfm) for Water Year (WY) 2010 (from Oct 1, 2009 through Sep 30, 2010).

E. Converted from 6.53×10^{9} (liter), from Figure 13 in Appendix B to the Draft TMDL. This figure was generated from LSPC model results.

F. Fraction of the total discharge from each source: 3.4%+96.6%=100%.

G. Calculated as the sum of daily discharges for wet weather days. Available runoff measurements at the LACDPW stream gage station (Stream Gage F319-R at location S10) are daily mean runoff values. A total of 47 wet weather days were identified in WY2010, using the method in Appendix B: "wet-weather days were designated as those days receiving equal to, or greater than, 0.1" of precipitation, as well as the following three days" (p. 5 of Appendix B). See **Table 6** for daily discharge for these days.

H. The estimated daily load at S10 is a mean of LACDPW's load estimates of four storm events in WY 2010 (i.e., Oct 13, 2009, Dec 7, 2009, Dec 11, 2009, and Jan 17, 2010) presented in NPDES stormwater monitoring report (see Footnote D above). Note that the modeled wet-weather load in Appendix B is in MPN per day while LACDPW's wet-weather load estimates for four storm events are in MPN per storm event. The duration of the storm events varies from 14 to 132 hours. However, no correlation between the durations and the estimated loads is observed for the storm events. Thus the estimated load per storm event and the modeled load per day were compared here.

I. Modeled wet weather load presented in Table 4 of Appendix B to the Draft TMDL.

J. Fraction of the total bacteria load from this source: 0.45%+99.55%=100%.

K. No LACDPW monitoring data are currently available for *E. coli*. A conversion factor of 0.77 (Garcia-Armisen et al. 2007) was used to translate fecal coliform loads to *E. coli* loads.

Table 5. Recreational beneficial uses and high flow suspension of Los Angeles River watershed; modified from Table 2-1a of Basin Plan Amendment.

Waterbody in Los Angeles River Watershed	Hydro Unit No.	REC1	REC2	High flow suspension applies
Los Angeles River Estuary[c,w]	405.12	E	E	**No**
Los Angeles River to Estuary	405.12	E	E	Yes
Los Angeles River	405.15	E	E	Yes
Los Angeles River	405.21	E	E	Yes
Compton Creek	405.15	E	E	No

[c] Coastal water bodies which are also listed in Coastal Features Table (2-3) or in Wetlands Table (2-4).

[w] These areas are engineered channels. All reference to Tidal Prisms in Regional Board documents are functionally equivalent to estuaries.

Table 6. Daily discharges measured at the Los Angeles River below Wardlow (Stream Gage F319-R) for 47 wet- weather days in WY 2010[A].

Column A	Column B	Column C	Column D	Column E
No.	Date	Daily mean discharge[B]		# Rose Bowls[C]
		cfs	mgd	
1	13-Oct-09	339	219	3
2	14-Oct-09	3,980	2,572	31
3	15-Oct-09	178	115	2
4	16-Oct-09	128	83	1
5	17-Oct-09	126	81	1
6	7-Dec-09	2,100	1,357	17
7	8-Dec-09	179	116	2
8	9-Dec-09	123	79	1
9	10-Dec-09	123	79	1
10	11-Dec-09	1,190	769	10
11	12-Dec-09	4,040	2,611	31
12	13-Dec-09	1,210	782	10
13	14-Dec-09	158	102	2
14	15-Dec-09	135	87	2
15	13-Jan-10	163	105	2
16	14-Jan-10	127	82	1
17	15-Jan-10	123	79	1
18	16-Jan-10	123	79	1
19	17-Jan-10	135	87	2
20	18-Jan-10	7,570	4,892	58
21	19-Jan-10	3,610	2,333	28
22	20-Jan-10	10,300	6,657	79
23	21-Jan-10	5,720	3,697	44
24	22-Jan-10	3,720	2,404	29
25	23-Jan-10	558	361	5
26	24-Jan-10	172	111	2
27	25-Jan-10	160	103	2
28	5-Feb-10	1,290	834	10
29	6-Feb-10	14,400	9,306	111
30	7-Feb-10	534	345	5
31	8-Feb-10	292	189	3
32	9-Feb-10	1,560	1,008	12
33	10-Feb-10	335	217	3
34	11-Feb-10	169	109	2
35	12-Feb-10	166	107	2
36	27-Feb-10	4,620	2,986	36
37	28-Feb-10	355	229	3
38	1-Mar-10	185	120	2
39	2-Mar-10	203	131	2
40	6-Mar-10	900	582	7
41	7-Mar-10	1,090	704	9
42	8-Mar-10	161	104	2
43	9-Mar-10	145	94	2
44	12-Apr-10	2,780	1,797	22
45	13-Apr-10	156	101	2
46	14-Apr-10	140	90	2
47	15-Apr-10	140	90	2

A. The wet weather days were defined consistent with the Draft TMDL: "wet-weather days were designated as those days receiving equal to, or greater than, 0.1" of precipitation, as well as the following three days" (p. 5 of Appendix B to the Draft TMDL).
B. Daily mean discharge measurements at Stream Gage F319-R and precipitation measurements at are from LACDPW 2009-2010 Hydrologic Report available at http://dpw.lacounty.gov/wrd/report.
C. Rose Bowl Stadium can hold approximately 84 million gallons of water (http://www.rosebowlstadium.com/RoseBowl_general-info.php)

ATTACHMENT B

Figure 1. Birds in the Los Angeles River north of Willow Street. Courtesy of John Hunter. The photograph was taken in December 2011.

Figure 2. Birds in the Los Angeles River south of Willow Street. Courtesy of John Hunter. The photograph was taken in December 2011.

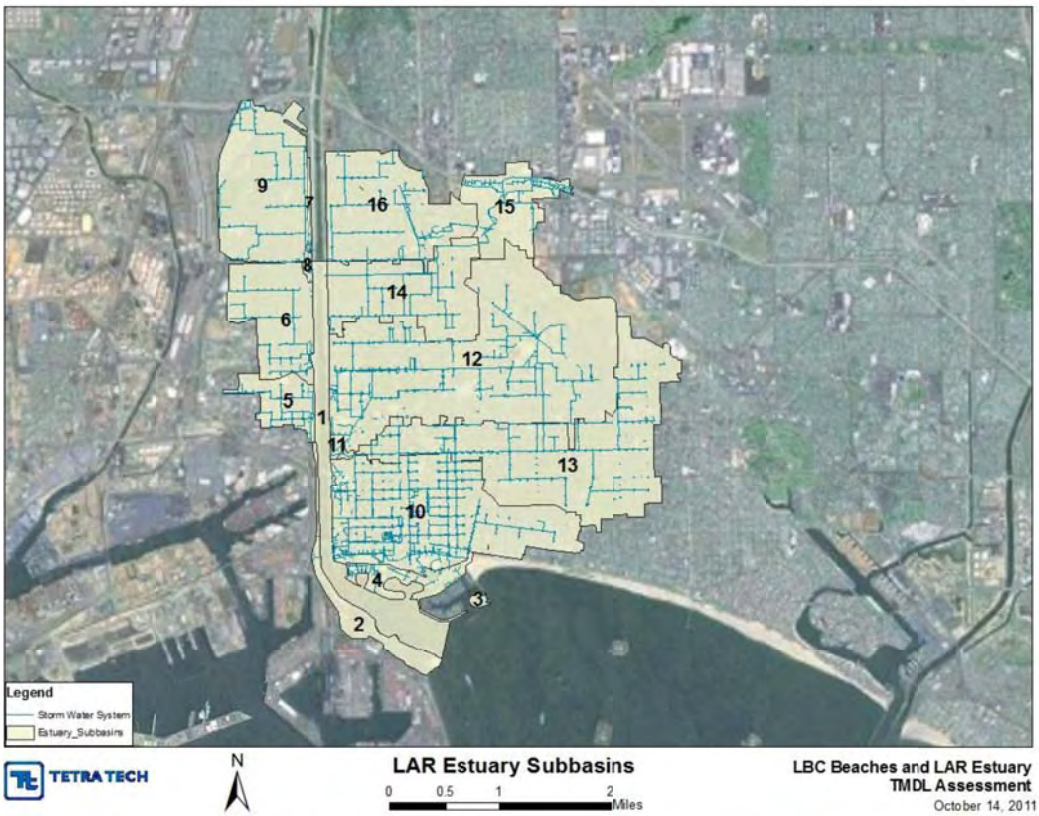

Figure 3. The boundary of the LAR Estuary in Figure 2-4 'LAR Estuary direct drainage delineation of storm drain basins' at p. 7 in the Draft TMDL. Note that the estuary is shown as extending to Willow Street.

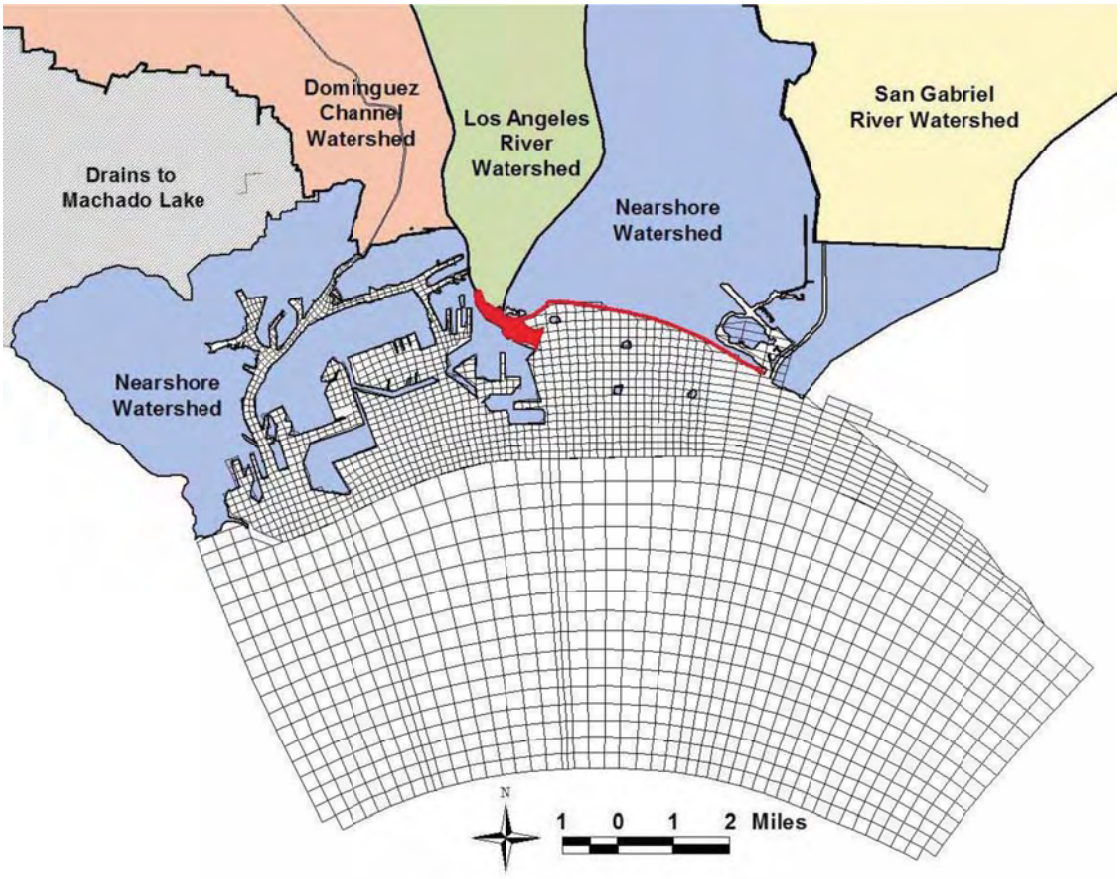

Figure 4. The boundary of the LAR Estuary in Figure 3 'EFDC grid for the Los Angeles/Long Beach Harbors and San Pedro Bay' at p. 4 in Appendix D to the Draft TMDL. The LAR Estuary extends to Ocean Blvd.

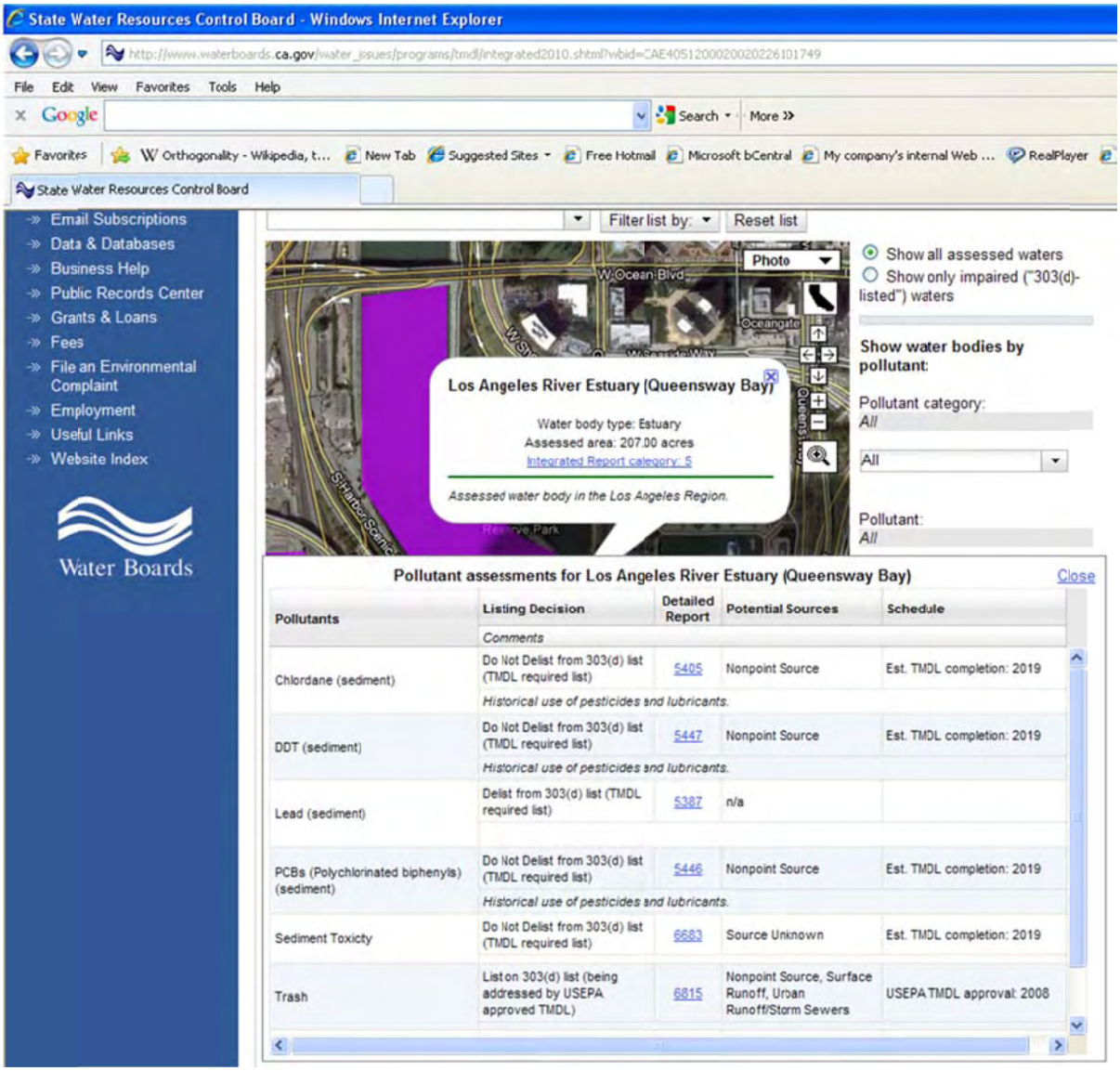

Figure 5. The boundary of the LAR Estuary in a map of SWRCB's 2010 Integrated Report (Clean Water Action Section 303(d) List/305(b) Report). Note that the estuary is shown as extending to Ocean Blvd. The LAR Estuary is not listed as impaired for bacteria water quality . Available at http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml?wbid=CAE405120002002022610174 9.

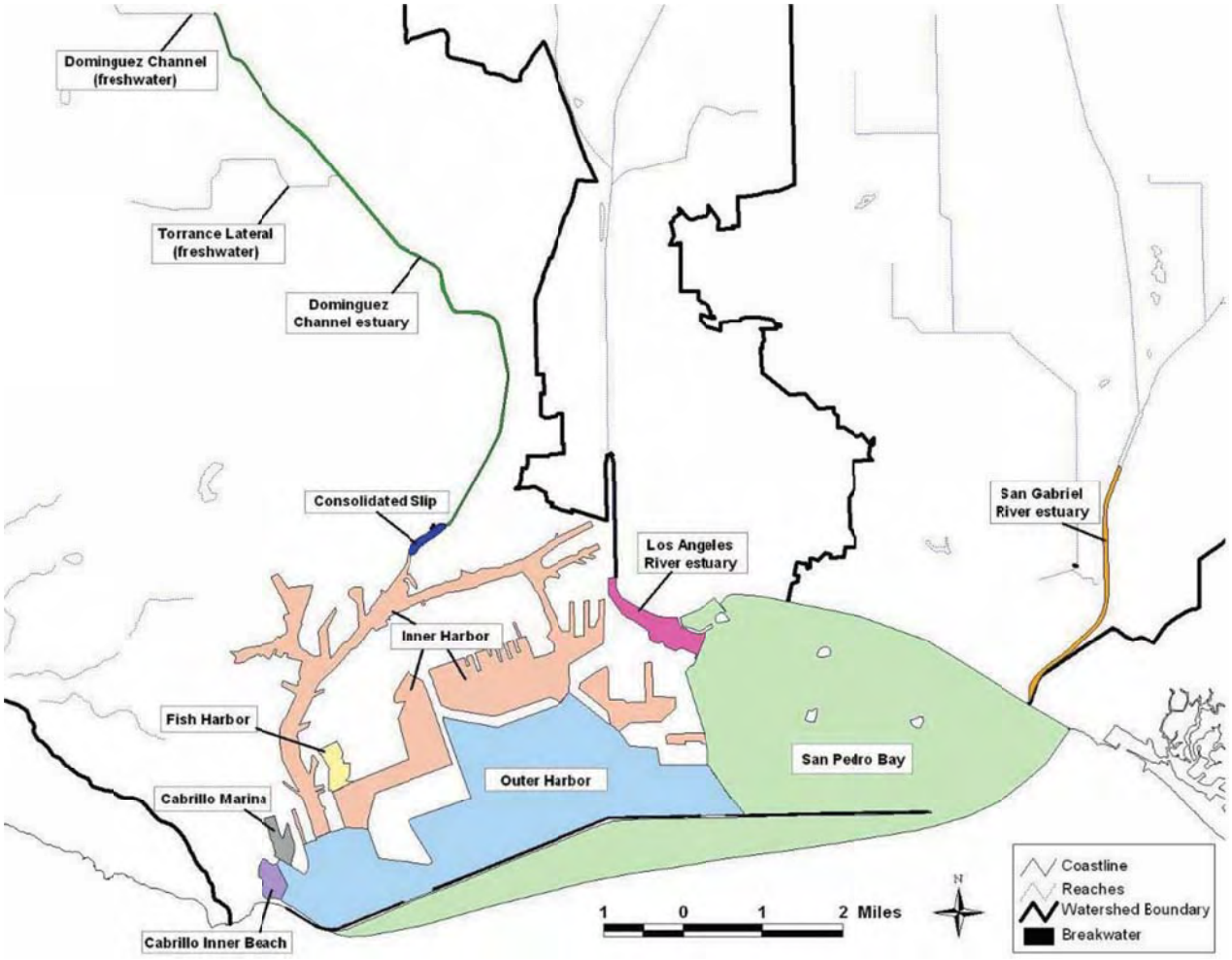

Figure 6. The boundary of the LAR Estuary in Figure 2-1 'Dominguez Channel and greater Los Angeles and Long Beach harbor waters' at p. 12 in the Harbor Toxics TMDL. The area in red indicates the Los Angeles River Estuary extends to Ocean Blvd.

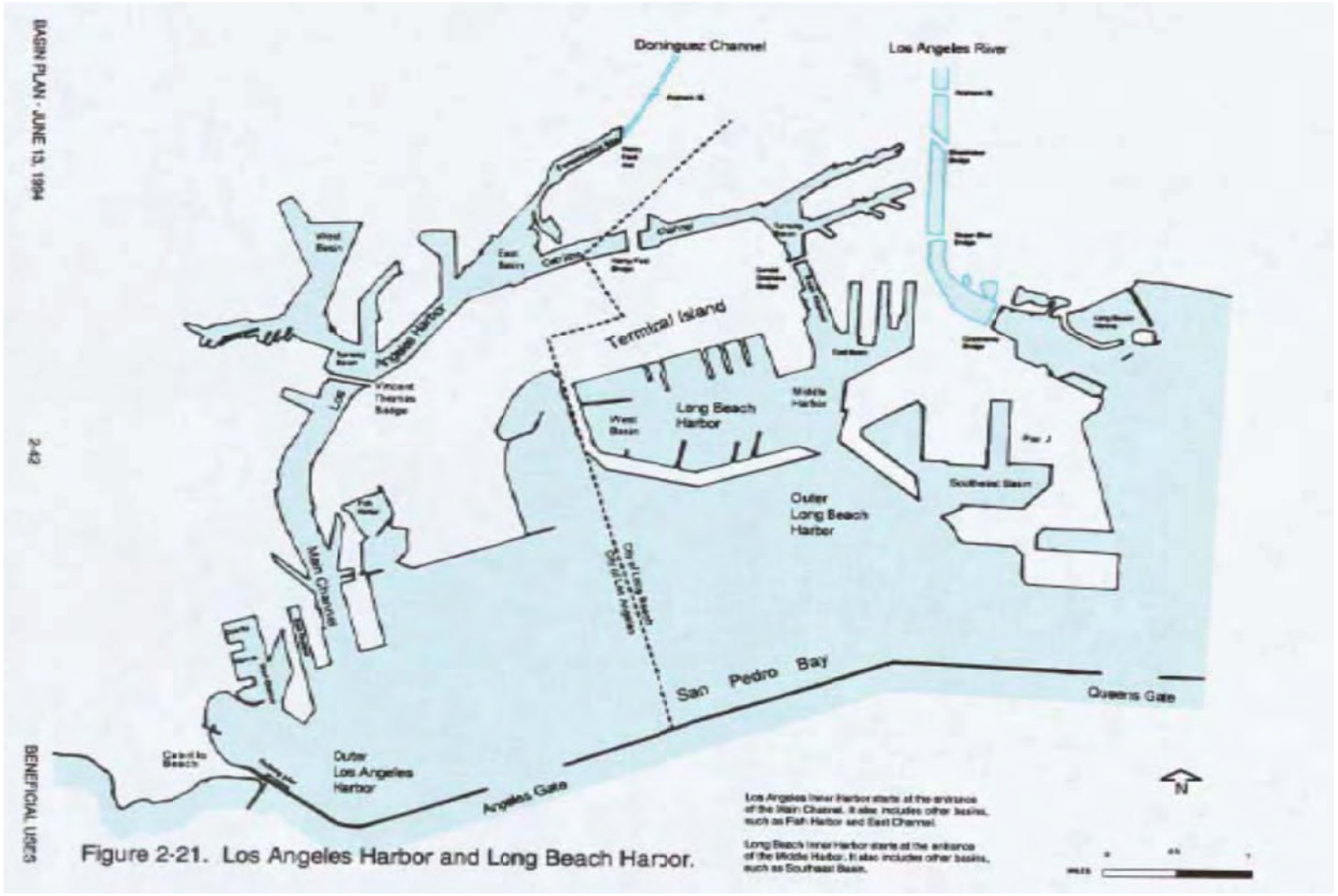

Figure 7. Los Angeles Harbor and Long Beach Harbor. San Pedro Bay extends to Queensway Bridge. From Figure 2-21 at p. 2-42 in Basin Plan Chapter 2 (June 13, 1994).

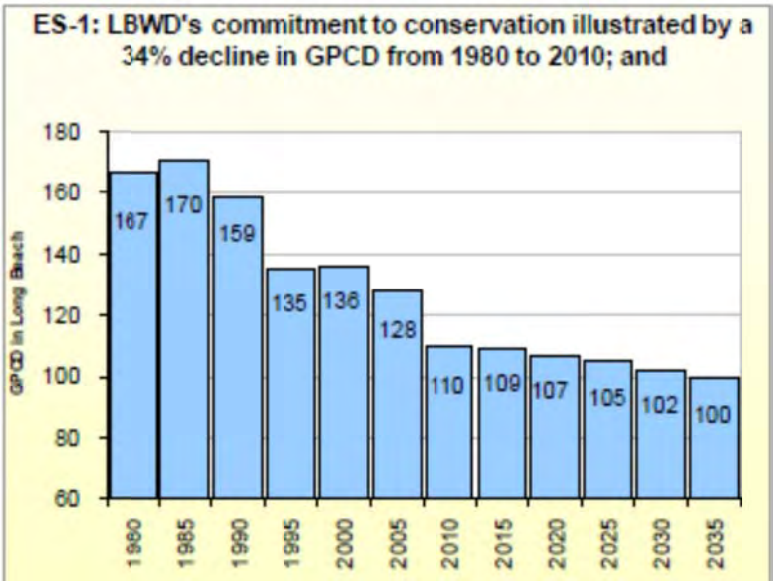

Figure 8. Water use in gallon per capita per day in Long Beach. From 2010 Urban Water Management Plan (Long Beach Water Department).

ATTACHMENT C

References

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Response to Comments on the Total Maximum Daily Loads for Bacteria in the Long Beach City Beaches and Los Angeles River Estuary
November 30, 2011 Public Notice
March 26, 2012

RESPONSE TO COMMENTS

This document includes USEPA's response to comments submitted in response to the November 30, 2011 Public Notice of the Draft Long Beach City Beaches and Los Angeles River Estuary Indicator Bacteria TMDL. The comment letter submitted is provided on USEPA Region 9's website with highlighted comment notations added to the original letter to identify the end of each comment (eg., USEPA is responding to the specific comment immediately above the numbered "Comment" in yellow bold). Any change that is made to the TMDL in response to the comments is indicated in the response. If no change is noted in the response, then no change was deemed necessary in the TMDL. Please see (http://www.epa.gov/region9/water/tmdl/progress.html) for individual comment letters.

3. Susan Paulsen and Vada Yoon, Flow Science Incorporated, for City of Signal Hill

Response to Comment 1:
USEPA staff recognize that there are natural sources of bacteria that may cause or contribute to exceedances of the single sample objectives and that it is not the intent of USEPA or the Regional Board to require treatment of natural sources of bacteria. As such, a reference system approach has been chosen which includes allowable exceedances of bacteria objectives. The reference system approach takes into account natural sources of bacteria including re-growth, and is based upon 6 years of data. As described in Response to Comments 1 and 2 from Rutan and Tucker, LLP, Submitted on Behalf of the City of Signal Hill, the reference beach approach is the most appropriate option consistent with the applicable water quality objectives as described in the Basin Plan. With respect to the rationale for using the "reference system/antidegradation approach", see TMDL Sections 4.1, 4.2, and 7.3.

USEPA acknowledges that estuaries and coastal beaches are different. However, in USEPA's view, those differences do not make use of the reference system/antidegradation approach, including the selection of Leo Carillo Beach as the reference system, inappropriate in this TMDL. USEPA knows of no reference system waterbody that is superior to Leo Carillo Beach for the purposes of this TMDL, and USEPA understands that the commenters or the State of California have not identified one. As explained in the TMDL, USEPA considered alternatives to the "reference system/antidegradation approach" and, likewise, concluded that none were superior. Given the severity of the impairments, and the evident absence of a better reference system, USEPA does not believe that further delay of the TMDL is warranted.

USEPA has recommended in the TMDLs, that if appropriate reference estuary data becomes available in the future, that the TMDL may be revised to incorporate these new reference numbers. In addition, this TMDL does not forego any interested party from conducting studies

to address natural sources such as birds and other wildlife after the anthropogenic sources have been controlled such that they do not cause or contribute to exceedances.

In Section 8.1 of the TMDLs, USEPA has recommended that interim milestones linked to meeting the TMDLs should consider the influence of upstream sources of bacteria to the LAR Estuary and to the LBC Beaches. The recommended point of discharge monitoring in Section 8.8 of the TMDLs could also assist in excluding natural sources of bacteria from MS4 compliance evaluations.

***Response to Comment 2*:**
See Response to Comment 1 above, and Comment 4 below.

Response to Comment 3:
See Response to Comment 1 above

Response to Comment 4:
EPA does not agree that the TMDL fails to appropriately consider the impacts of discharge from the Los Angeles River to the LAR Estuary (See, TMDL Sections 5.1, 6.2, and 8.1, and Appendix D). As explained in the TMDL and appendix, the bacterial loadings to the Los Angeles River upstream of the river's estuary have been addressed by the State through a separate TMDL (LARWQCB, 2010), and the focus of this EPA-established TMDL is to address the bacterial loadings to the Long Beach City Beaches, as well as the additional loadings to the LAR Estuary, particularly in light of the contribution of those loadings to the bacterial impairments at the Long Beach City Beaches.

USEPA concurs with the overall comment that the majority of bacteria loads to the LAR Estuary are from the Los Angeles River. While we agree with the overall comment, we have not independently verified the information presented in Table 4 of the comments. However, to consider a complete picture of loading to the LAR Estuary, this TMDL incorporated the drainage area from the LAR Estuary direct drainages. As noted above, the TMDL itself is based on exceedence days, which include the cumulative impacts from the Los Angeles River watershed as well as LAR Estuary direct drainages. USEPA has incorporated a discussion of loads from the Los Angeles River TMDL in the report text (not as a table). We did not want to create confusion in the future by presenting exact values. Specifically, if revisions are made to one of the two TMDL reports in the future, the other TMDL report could then contain incorrect loading values. It is important to note that the loads calculated to support this TMDL effort were not used to calculate the loading capacity and associated allocations. Rather, these values are expressed as exceedence days. The existing exceedence days were based on available data in the LAR Estuary, which do consider the cumulative impacts from the Los Angeles River watershed as well as LAR Estuary direct drainages.

To address concerns associated with the overestimation of the dry weather flows in the Draft TMDL report, a new dry weather technical approach has been incorporated into Appendix C and the Final TMDL Report (note: In addition, upon final quality assurance checks of the dry

weather loading calculations, a unit conversion error was identified, which would have lowered the areas used in the original dry weather loading calculations, thereby also reducing the calculated flow.). Specifically, USEPA incorporated the area-weighted dry weather flow data from the Colorado Lagoon and Belmont Pump drainage areas provided by the City of Long Beach to calculate dry weather flows in the TMDL areas. The resulting dry weather flows from the new approach are considerably lower than those presented in the Draft TMDL (total LAR Estuary direct drainage dry weather flow less than 1 cfs). In addition, subbasins 7, 8, 9, and 16, which drain above Willow Street, were excluded from the LAR Estuary direct drainage, as they are incorporated into the LAR Bacteria TMDL (LARWQCB, 2010). All maps, tables, loading estimates, analyses, and discussion have been modified accordingly in the TMDL report and associated appendices.

The commenter has concerns that the LAR Estuary was not listed as impaired and is not included in the consent decree. While this is true, it is part of the TMDL process to evaluate available data and confirm (or refute) impairments. During the data review process, the LAR Estuary was identified as impaired by comparing the available data to associated water quality objectives. Because of this impairment, a TMDL was developed. The identification of new impairments during TMDL data review is common (and actually useful from a resources standpoint since it is often cost-effective to add an additional pollutant or nearby waterbody to an existing technical approach). Also see Response to Comment 1 from Rutan and Tucker, LLP, Submitted on Behalf of the City of Signal Hill.

The commenter has concerns that if bacteria loads in the Los Angeles River continue to exceed water quality objectives over a 15 to 20 year time frame, water quality objectives within the LAR Estuary may not be attained. Segment A and Segment B of the LAR bacteria TMDL were prioritized for implementation due to their heavy influence on the LAR Estuary and Long Beach City Beaches, and given a 12 year timeline to achieve final WLA or demonstrate that non-compliance is due to upstream contributions. When the LAR TMDL is successfully implemented, it is likely that numeric targets established in the LAR Estuary and LBC beaches TMDLs would be achievable. For reasons similar to those described in response to Comment 5 from Rutan and Tucker, LLP, EPA does not agree that adding provisions to the TMDL to address timeframes for compliance within the LAR Estuary or the LBC beaches is appropriate. USEPA has recommended that the Regional Board work with stakeholders to consider the influence of upstream bacteria sources to the Estuary and Beaches TMDL, and has stated so in the Implementation Recommendations section.

Finally commenter recommends a fourth alternative "that would focus on reducing anthropogenic sources of bacteria in discharges to the estuary in dry weather flows." USEPA does not understand what is recommended with this comment, as there is no fourth alternative available under existing water quality standards as established in the Basin Plan Amendment. As stated in Response to Comment 1 above, this TMDL does not forego any interested party from conducting studies to address natural sources such as birds and other wildlife after the anthropogenic sources have been controlled such that they do not cause or contribute to exceedances. Nor does this TMDL forego revising the TMDLs if appropriate reference estuary data becomes available in the future.

Response to Comment 5:
USEPA disagrees that the LAR Estuary should be removed from the TMDL. USEPA is not suggesting that during wet weather the volume of water that passes through the LAR Estuary be captured, treated and discharged back to the Estuary. We do recognize that the LAR is a significant contributing source of bacteria to the Estuary and the Long Beach City Beaches. As described in Response to Comment 4 above, the entire area draining to the Los Angeles River has been addressed through a separate bacteria TMDLs. It is not the intent of this TMDL to treat those upstream loads, but rather to address the direct drainage areas to the Estuary which were not included in the LAR bacteria TMDLs (LARWQCB, 2010). Implementation of the TMDLs and the measurement of compliance during wet weather are under the decision authority of the State, not USEPA.

The Regional Board considered and rejected applying the high flow suspension to LAR Estuary during the development of the High Flow Suspension amendment to the Basin Plan. See "Amendment to the Water Quality Control Plan for the Los Angeles Region to Suspend the Recreational Beneficial Uses in Engineered Channels during Unsafe Wet Weather Conditions", May 15, 2003. For reasons similar to those described in response to comment 5 from Rutan and Tucker, LLP, EPA does not agree that it should add to the TMDL a recommendation that the Regional Board adopt a "high flow suspension … for the LAR Estuary as soon as possible" or address the State's implementation of the TMDL as suggested in the comment.

Response to Comment 6:
USEPA has revised the TMDL Report text to clarify that this TMDL applies to the LAR Estuary, as defined in the Basin Plan. As stated in the Basin Plan and in the Draft TMDL, the upper boundary of the LAR Estuary begins at Willow Street. It appears that confusion is stemming from the comparison of multiple maps; however, the Basin Plan is clear on the spatial extent of the LAR Estuary; therefore, the TMDL applies to this same area. Figures 2 and 3 of Appendix D have been modified to show this upper boundary, which is consistent with the Basin Plan and the other maps of the Draft TMDL.

Response to Comment 7:
See Response to Comment 8, 9, and 10 below.

Response to Comment 8:
Concerns associated with the wet weather loading estimation (Issue 4.1) were provided in bullet form. The responses below are provided with similar numbering:

a) *The wet weather technical approach is focused on freshwater loadings from the watersheds draining to the impaired marine segments. Therefore, E. coli was selected as the representative indicator bacteria to quantify freshwater loadings because it can be directly compared to the available freshwater water quality objectives and percent reductions can be calculated to support implementation actions (note: freshwater water quality objectives are not available for enterococcus, fecal coliform, and total coliform;*

however, marine water quality objectives are available for these indicator bacteria). Additional text has been added to the TMDL Report and Appendix B to clarify the selection of the indicator bacteria. As stated in the comment, the wet weather model was parameterized identically to the LAR bacteria TMDL model and no additional calibration/validation was performed. There were no wet weather data (regardless of the indicator bacteria selected) available from any of the storm drains that could be used for comparison with model output. It is important to note that only the freshwater inputs (i.e., storm drains) were represented by the LSPC model; comparison could only be made to data in the LAR Estuary using a receiving water model (however, no wet weather data were available for the estuary, either). USEPA agrees that wet weather data for comparison with model output would be useful if updates are made to the modeling in the future.

b) *The bacteria concentrations used in the modeling were selected to maintain consistency with the bacteria modeling used for the LAR bacteria TMDL linkage analysis. This ensures that comparisons can be directly made and the loads could ultimately be combined in the future for a comprehensive loading assessment. These values are considered representative of the direct drainages because the distribution of land uses (especially urban) and impervious cover are similar.*
c) *Similar to the response to comment (a) above, no wet weather data were available for comparison with model results and monitoring is not required for TMDL development (TMDLs are required to be based on the best available data). Because the parameters used to represent hydrology were validated during the LA/LB Harbors TMDLs (LARWQCB, 2011), they are considered appropriate for the simulation of hydrology in the direct drainages. USEPA agrees that wet weather data for comparison with model output would be useful if updates are made to the modeling in the future.*
d) *The focus in this TMDL was to include the additional areas draining to the LAR Estuary because the areas draining to the LAR freshwater were included in a separate TMDL effort (LARWQCB, 2010). For general comparison purposes, USEPA has incorporated a discussion of loads from the Los Angeles River TMDL, as they compare to the direct drainage loadings, in the report text.*

Response to Comment 9:
Concerns associated with the dry weather loading estimation (Issue 4.2) were provided in bullet form. The responses below are provided with similar numbering:

a) *USEPA disagrees that the correlations from the Stein and Ackerman (2007) data is not strong (R^2 = 0.96 is a very strong statistical correlation). However, USEPA agrees that recent efforts to reduce dry-weather discharge by cities are important to consider. Because local data were recently provided by the City of Long Beach (during and after the Draft TMDL comment period; note: these data were not provided during development of the Draft TMDLs), USEPA has developed a new approach to calculate dry weather flows in the direct drainage. This approach is described in the response to comment (b) below).*
b) *To address concerns associated with the overestimation of the dry weather flows in the Draft TMDL report, a new dry weather technical approach has been incorporated into*

Appendix C and the Final TMDL Report (note: In addition, upon final quality assurance checks of the dry weather loading calculations, a unit conversion error was identified, which would have lowered the areas used in the original dry weather loading calculations, thereby also reducing the calculated flow.). Specifically, USEPA incorporated the area-weighted dry weather flow data from the Colorado Lagoon and Belmont Pump drainage areas provided by the City of Long Beach to calculate dry weather flows in the TMDL areas. The resulting dry weather flows from the new approach are considerably lower than those presented in the Draft TMDL (total LAR Estuary direct drainage dry weather flow less than 1 cfs).

c) *See response to comment (b) above.*
d) *USEPA disagrees with the comment that bacteria concentration data that were used to estimate the dry-weather loading to the LAR Estuary are from a single storm drain. The bacteria concentration data that were used to estimate dry weather loading are <u>not</u> from a single storm drain. As stated in Appendix C, the value used to represent SD-4 (LBC beaches direct drainage) and the LAR Estuary direct drainages was the geometric mean of all data points (n=82) collected during the City of Long Beach 30-day study (City of Long Beach, 2009). These data represented four different storm drains discharging to the LBC beaches. While these data were not collected from drains discharging to the LAR Estuary, they were collected from nearby watersheds with similar characteristics (land uses, impervious cover, etc.) and are considered representative. USEPA agrees that dry weather data associated with discharges to the LAR Estuary would be useful if updates are made to the loading estimates in the future.*
e) *While the dry-weather loading does not explicitly account for local sources (e.g., birds and dogs), these sources are likely present in the LBC beaches direct drainages sampled during the 30-day study (City of Long Beach , 2009); therefore, they are implicitly accounted for in the existing load calculations.*

Response to Comment 10:
Concerns associated with the Source Assessment to LB Beaches (Issue 4.3) were provided in bullet form. The responses below are provided with similar numbering:

a) *USEPA disagrees with the comment that the EFDC modeling excluded the direct drainage to the LAR Estuary. These areas were represented as the "nearshore watersheds" in the EFDC model, which is consistent with their representation in the LA/LB Harbors TMDLs (LARWQCB, 2011). Appendix D has been updated to clarify that the nearshore watershed represented in Figures 2 and 3 does in fact include the LBC beaches and LAR Estuary direct drainages.*
b) *While the watershed inputs do not explicitly account for local sources (e.g., wildlife), these sources are likely present in the watershed draining to the LAR at Wardlow Road (S10) monitoring site; therefore, they are implicitly accounted for in the EFDC model inputs. However, specific sources located within the estuary itself were not included in the receiving water model.*
c) *The wet and dry weather technical approaches are both focused on freshwater loadings from the watersheds draining to the impaired marine segments. Therefore, E. coli was selected as the representative indicator bacteria to quantify freshwater loadings because*

it can be directly compared to the available freshwater water quality objectives and percent reductions can be calculated to support implementation actions (note: freshwater water quality objectives are not available for enterococcus, fecal coliform, and total coliform; however, marine water quality objectives are available for these indicator bacteria). E. coli was not used in the watershed model of the marine receiving waters because there is no associated marine WQO. While these enterococcus results are not directly comparable to the wet and dry weather E. coli loadings, it is assumed that the bacteria sources are similar. Additional text has been added to the TMDL Report and Appendix D to clarify the selection of the indicator bacteria.

d) *As stated in Appendix D, the EFDC model was not calibrated or validated for enterococcus because the model was originally developed to simulate toxic compounds (LARWQCB, 2011). The model was previously calibrated for hydrodynamics and is, therefore, expected to represent the movement of water through the harbors reasonably well (taking tidal influences, wind, freshwater inflows, and other factors into consideration). Overall, the EFDC modeling exercise presented in the Draft TMDL was used as a qualitative source assessment tool to identify conditions during which freshwater influences from the major rivers are likely to impact water quality along the impaired beach segment.*

Finally, Commenter makes several recommendations at the end of this Comment letter in bulleted form. See Response to Comments 8, 9, and 10 above for response to these bulleted recommendations.

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Karin Graves (WTR-2)
U.S. Environmental Protection Agency
75 Hawthorne Street (WTR-2)
San Francisco CA, 94105

Re: Long Beach City Beaches and Los Angeles River Estuary Total Maximum Daily Loads for Indicator Bacteria, Draft November 2011

Dear Karin Graves,

Heal the Bay and Santa Monica Baykeeper submit the following comments on the Long Beach City Beaches and Los Angeles River Estuary Total Maximum Daily Loads for Indicator Bacteria, Draft November 2011 ("Draft TMDL"). Our organizations have actively worked to reduce and regulate beach fecal pollution for over a decade. Specifically, Heal the Bay co-authored the Santa Monica Bay Restorations Project's 1995 epidemiological study and AB-411 and AB-538 (the assembly bills that established California's bacteria health standards for marine beaches and sanitary survey protocols) and actively participates in the State Beach Water Quality Workgroup and the Clean Beach Advisory Group. Our organizations have participated in the development of the Santa Monica Bay Beaches Fecal Bacteria TMDL, which has served as a model for other Bacteria TMDLs in the Region. We have a strong interest in ensuring that all fecal bacteria TMDLs in the state comply with the requirements of the Clean Water Act and its implementing regulations are technically sound and provide maximum public health protections. We appreciate the opportunity to provide these comments and urge the EPA to strengthen the Draft TMDL as discussed in detail below.

We support EPA's proposal for zero exceedance days in summer and zero exceedances of the geometric mean

We support the following WLAs proposed by EPA which are consistent with the three existing beach bacteria TMDLs in the Region: zero single sample exceedance days for summer dry weather and no allowable exceedances of the geometric mean targets. In particular, the zero allowable exceedance days in summer dry weather are justified under the Clean Water Act's prohibition on non-stormwater discharges (33 U.S.C. § 402(p)) and are necessary to protect public health during the summer months of high beach use. We also support using a *rolling* 30-day geometric mean, as this is extremely important for tracking and abating water quality impairment as well as identifying chronic water quality problems. It is also critical that the geometric mean remains rolling and not based on a static time period, in order to account for water quality fluctuations. This is important for public health protection of beachgoers on a day to day basis. Additionally, not allowing geometric mean exceedances is equally important, as a

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geometric mean exceedance would reflect a more serious and/or persistent water quality problem. Comment 1

EPA should use a more appropriate reference beach such as Nicholas Beach

While we believe that a reference beach approach is an appropriate way to develop fecal bacteria TMDLs in the Los Angeles Region, EPA should not use Leo Carrillo Beach as the reference beach for the Draft TMDL. Instead, EPA should find a more appropriate reference beach. Based on Heal the Bay's analysis of Beach Report Card data for the Region, the most appropriate reference beach for the Los Angeles Region is Nicholas Beach, located at the bottom of the Nicholas Canyon watershed. EPA should therefore use Nicholas Beach as the reference beach in the Draft TMDL.

As the Los Angeles Regional Water Quality Control Board ("Regional Board") explained when it initially developed the reference beach approach for fecal bacteria TMDLs in our Region, Leo Carrillo Beach and the Arroyo Sequit watershed were selected as an "interim" reference system "until other reference sites … are evaluated and the necessary data collected to support the use of alternative reference sites." Regional Board Resolution No. 2002-022, Amendment to the Water Quality Control Plan (Basin Plan) for the Los Angeles Region to Incorporate Implementation Provisions for the Region's Bacteria Objectives and to Incorporate a Wet-Weather Total Maximum Daily Load for Bacteria at Santa Monica Bay Beaches at 4, ¶ 22. The criteria for selecting an appropriate reference system include: 1) availability of adequate historic shoreline monitoring data at the beach, 2) lowest level of development in the watershed draining to the beach, and 3) existence of fresh water outlet (i.e. creek) to the beach. *See id*. The Regional Board's decision to choose Leo Carrillo as an interim reference site was primarily driven by the limited availability of historical shoreline monitoring data but the Board unequivocally resolved to re-evaluate the use of Leo Carrillo Beach due to concerns with the development in close proximity to the beach. *See id.*

Shoreline monitoring data from the last 9 years has in fact confirmed the Regional Board's concerns, demonstrating that Leo Carrillo Beach is not the appropriate reference site beach for fecal bacteria TMDLs in the Los Angeles Region. As shown in EPA's data analysis, the reference beach Leo Carrillo is allowed two (2) exceedance days during winter dry-weather and three (3) exceedance days during wet-weather (weekly sampling), annually. As Leo Carrillo has development at the terminous of the waterbody, it is not appropriate as a reference beach. The septic systems near Arroyo Sequit Creek and the very heavy use from campers and beach visitors in the lower Arroyo Sequit watershed are very concerning. No work assessing the effectiveness of these older and heavily used septic systems has occurred. An analysis of the contributions of these systems to microbial contamination in the lower watershed is long overdue. Clearly, Leo Carrillo should no longer be used as a reference site. Instead, a review of the Region's beach water quality data shows that Nicholas Canyon is a more appropriate reference beach, with significantly less exceedances of the fecal bacteria indicator standards (see attached table). Furthermore, Nicholas Beach meets the rest of the reference beach selection criteria developed by the Regional Board. Nicholas Beach and the Nicholas Canyon watershed have a very low

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level of development, there is ample historical monitoring data and there is a freshwater outlet at the beach, Nicholas Creek. For all of these reasons, EPA should rely on Nicholas Beach as the reference site instead of Leo Carrillo. Consequently, the EPA must revise its technical analysis and the allowable number of exceedance days in the Draft TMDL accordingly. Comment 2

In the alternative, EPA must, at the minimum select a more representative data analysis period for Leo Carrillo Beach

While the best approach for the Draft TMDL is to select Nicholas Beach as the reference site, we urge the EPA, at the minimum, to select a more appropriate data analysis time period if Leo Carrillo Beach is used as a reference site. Specifically, EPA should include only the last five years of monitoring data (2006-2011) to remove any bias in the exceedance probability created due to the extreme wet weather conditions experienced in the winter 2005-2006. EPA's analysis of monitoring data (2004 to 2010) collected at "point zero" from Leo Carrillo Beach shows an exceedance increase during all three seasons (summer dry, winter dry and wet). Data collected during the winter of 2005-2006, one of the wettest years on record, should be removed from the analysis as it creates bias when considering allowable exceedances days. Instead we suggest that EPA analyze the last five years of data (2006-2011) in order to remove this bias. Comment 3

EPA should not use the 90th percentile storm year to determine exceedance rates

The proposed TMDL uses the number of wet weather days during the 90th percentile storm year to determine the number of days of allowable number of exceedances. Because the 90th percentile rain event year is used to determine the number of allowable exceedances, during 90% of all years analyzed, the *actual* number of exceedances at the reference location will be less than the *allowable* number of exceedances. Thus, in 90% of the years the TMDL does not truly only account for natural conditions. Heal the Bay has expressed its concern over this methodology in our comment letters regarding both the dry and wet bacteria TMDLs for Santa Monica Bay Beaches. Instead, we suggest that EPA use the median or 50th percentile storm year. At a minimum, EPA should consider this bias and provide a more robust margin of safety than is currently proposed. Comment 4

EPA should not contemplate sub-seasons in the Draft TMDL

EPA discusses potential changes being discussed at the Regional Board regarding the fecal bacteria TMDLs, including an approach to split the AB411 period into sub-seasons for the geometric mean calculation. While we understand the importance for consistency between regional TMDLs, there are serious flaws with this approach. Implementing a single geometric mean per sub-season would inhibit the ability to track chronic pollution problems. Instead, this approach would simply provide regulatory relief to the discharger but would be disastrous for public health protection. Further, there has been no draft proposal released by the Regional

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Board at this time, and no changes have been adopted by the Board. Thus, we urge EPA to drop this language from the Draft TMDL. Comment 5

EPA should make stronger, more detailed recommendations on monitoring and implementation and should work with Regional Board to develop an Implementation Plan:

Include Tighter Compliance Deadline Recommendations in the TMDL

EPA's recommendations for compliance deadlines should not be based on the Los Angeles River Bacteria TMDL, where final compliance with WLA's and LA's for wet and dry weather is required after twenty-five years. Twenty-five years is far too long for compliance, especially in the dry weather. The other beach bacteria TMDLs in our Region prescribe a much shorter timeframe: three years to achieve summer dry weather compliance, six years for winter dry weather, and up to 18 years (depending on integrated approach) for wet weather compliance. Allowing a longer implementation schedule will thus unjustifiably result in less protection to recreational users of the Long Beach city beaches and the Los Angeles River Estuary in comparison with beachgoers at all Santa Monica Bay beaches. Such a result is manifestly unfair and illogical.

Moreover, Heal the Bay's Beach Report Card has tracked drastic improvements since the TMDL implementation, showcasing that significant improvements can be made in a relatively short time. Dry weather numeric targets and compliance deadlines are much easier to achieve than during wet weather; therefore, at a minimum EPA should recommend a six year compliance schedule for dry weather. Furthermore, meeting dry weather compliance requirements is extremely important and crucial in protecting public health, as this is the highest beach-going season.

Although as the Draft TMDL states the Los Angeles River Bacteria TMDL implementation timeline set a compliance milestone of eight years for Long Beach beaches, this is simply a milestone with no compliance consequences. While we are hopeful this milestone will be achieved; a specific recommendation should be made to the Regional Board for the Long Beach Bacteria TMDL compliance deadline. Water quality and public health should not have to wait any longer than 6 years for dry weather and 10, or maximum of 18 years if integrated watershed approach is approved by the Regional Board, for wet weather. Comment 6

Recommend interim compliance milestones

The Santa Monica Bay Beaches Bacteria TMDL and other beach TMDLs require interim compliance milestones, in order to demonstrate that dischargers are on an appropriate path to compliance. While we understand that EPA does not have the authority to prescribe these in the

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Draft TMDL, EPA should include this in the Draft TMDL as a strong recommendation to the Regional Board. Specifically, the milestones should be modeled after the Santa Monica Bay Beaches Bacteria TMDL:

(Wet weather-Integrative Approach)

Date	Action
6 years after effective date of the TMDL	Each defined jurisdictional group must achieve a 10% cumulative percentage reduction from the total exceedance-day reductions required for that jurisdiction group.
10 years after effective date of the TMDL	Each defined jurisdictional group must achieve a 25% cumulative percentage reduction from the total exceedance-day reductions required for that jurisdictional group.
15 years after effective date of the TMDL	Each defined jurisdictional group must achieve a 50% cumulative reduction from the total exceedance-day reductions required for that jurisdictional group.
18 years after effective date of the TMDL	Final implementation targets in terms of allowable wet-weather exceedance days must be achieved at each individual beach as identified. In addition, geometric mean targets must be achieved for each individual beach location.

(Wet weather Non-Integrative Approach)

Date	Action
6 years after effective date of the TMDL	Each defined jurisdictional group must achieve a 25% cumulative percentage reduction from the total exceedance-day reductions required for that jurisdictional group.
8 years after effective date of the TMDL	Each defined jurisdictional group must achieve a 50% cumulative percentage reduction from the total exceedance-day reductions required for that jurisdictional group.
10 years after effective date of the TMDL	Final implementation targets in terms of allowable wet-weather exccedance days must be achieved at each individual beach as identified. In addition, the geometric mean targets must be achieved for each individual beach location.

Further, EPA should encourage Regional Board to develop and adopt an Implementation Plan with these details. As the MS4 permits are up for renewal, it is especially important to develop both interim and final compliance deadlines so that they can be included in these permits. Otherwise the final WLAs will need to go into the permit and permittees will be subject to the final WLAs immediately. Comment 7

Provide Incentives for Dischargers

Other beach bacteria TMDLs in the region offer an extended final compliance period if dischargers pursue an Integrated Approach. Although we understand that EPA does not have the authority to set compliance timelines, we encourage EPA to include a similar recommendation.

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The discharger would receive an extended timeline if they develop a detailed plan that describes how and when they will achieve success using the integrated approach. This would include a plan of implementation with milestones. The Santa Monica Bay Beach Bacteria TMDL states, "*if an integrated water resources approach is pursued, responsible jurisdictions and agencies may be allotted up to an 18-year implementation timeframe, based on a clear demonstration of the need for a longer schedule in the implementation plan...otherwise, at most a 10-year implementation timeframe will be allotted*." Of note as we have learned from the Santa Monica Bay TMDL, there is a difference between developing a plan and truly implementing a plan. In order for a permittee to be granted all or part of the extension, they would need to demonstrate that the plan is actually being implemented. Comment 8

Include Monitoring Recommendations for Long Beach City Beaches and the Los Angeles River Estuary

The Draft TMDL does not include any recommendations for monitoring. Although we understand that EPA does not have the authority to include monitoring requirements in the Draft TMDL, EPA should provide recommendations for monitoring requirements. EPA should use the current beaches TMDL monitoring requirements as a model. Specifically, recommendations should include daily or systematic weekly sampling in the wave wash at all major drains and creeks or at existing monitoring stations at beaches without stormdrains or freshwater outlets to determine compliance. At all locations, samples shall be taken at ankle depth and on an incoming wave. At locations where there is a freshwater outlet, during wet weather, samples should be taken as close as possible to the wave wash, and no further away than 10 meters down current of the stormdrain or outlet. Monitoring recommendations should also include a robust monitoring program for the Estuary, especially given that there is only bi-weekly monitoring data (May through September) during 2009 and 2010. Additionally, at least three monitoring locations within the Estuary should be determined. Further, the implementation of a model monitoring program specifically identified in: *Public Health Protection at Marine Beaches: A Model Program for Water Quality Monitoring and Notification*, in which EPA co-authored with Heal the Bay, should be implemented to promote consistency in monitoring and public notification programs throughout the country. We encourage EPA to work with the Regional Board to develop an Implementation Plan and MS4 permit that includes these monitoring requirements. Comment 9

Include additional recommendations for the Estuary

While we support EPA's efforts in analyzing the water quality data from the Los Angeles River Estuary and determining impairment, EPA should provide additional details and recommendations to the Estuary responsible parties. For instance, EPA should recommend a monitoring program for the Estuary, especially given that there are no data, besides data collected (May through September) during 2009 and 2010. Of note, the City of Long Beach found that the main source of bacteria to the beaches at the numbered streets was the Los

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Angeles River. Also, EPA should suggest a TMDL reopener if future Estuary data analysis forms any new conclusion or if a reference estuary is found. Comment 10

Miscellaneous

Dog Zone

The Draft TMDL includes the Long Beach dog zone as a potential source. EPA should recommend better monitoring at this location to properly assess the impacts. Also we encourage EPA and the Regional Board to recommend that dogs be on a leash and the installation of an enclosed fence around the dog zone. This will help manage the dog zone as a potential source of bacteria to the beaches. Comment 11

***

In summary, Heal the Bay and Santa Monica Baykeeper urge EPA to consider the comments above in order to ensure that water quality standards are met and public health is not compromised for years to come. In particular, we encourage EPA to recommend that the Regional Board separate wet and dry weather compliance deadlines and interim deadlines consistent with the other beach bacteria TMDLs. This is critical in protecting the public health of millions of Long Beach beachgoers every year. In addition, data should be reanalyzed for Leo Carrillo based on monitoring data collected over the last five years and should explore alternate reference beaches.

Thank you for the opportunity to comment. Please contact us if you have any questions at 310-451-1500.

Amanda Griesbach, MS
Water Quality Scientist
Heal the Bay

Kirsten James, MESM
Water Quality Director
Heal the Bay

Tatiana Gaur
Staff Attorney
Santa Monica Baykeeper

Response to Comments on the Total Maximum Daily Loads for Bacteria in the Long Beach City Beaches and Los Angeles River Estuary
November 30, 2011 Public Notice
March 26, 2012

RESPONSE TO COMMENTS

This document includes USEPA's response to comments submitted in response to the November 30, 2011 Public Notice of the Draft Long Beach City Beaches and Los Angeles River Estuary Indicator Bacteria TMDL. The comment letter submitted is provided on USEPA Region 9's website with highlighted comment notations added to the original letter to identify the end of each comment (eg., USEPA is responding to the specific comment immediately above the numbered "Comment" in yellow bold). Any change that is made to the TMDL in response to the comments is indicated in the response. If no change is noted in the response, then no change was deemed necessary in the TMDL. Please see (http://www.epa.gov/region9/water/tmdl/progress.html) for individual comment letters.

4. Kirsten James and Amanda Greisbach, Heal the Bay & Tatiana Gaur, Santa Monica Baykeeper

Response to Comment 1:
Comment noted.

Response to Comment 2:
USEPA feels it has selected an appropriate reference beach in these TMDLs, and chosen an approach that is consistent with other Southern California bacteria TMDLs. Leo Carrillo Beach (LCB) and its associated drainage area, Arroyo Sequit Canyon, was designated by the Regional Board as the appropriate local reference system. See pg. pg. 2-3, 11-13, and 44-45 in these TMDLs for further explanation. If at some point in the future, the Regional Board decides to name a more appropriate reference beach, these TMDLs may be revised to incorporate a new reference beach and associated exceedance day numbers.

Response to Comment 3:
See Response to Comment 2 above.

Response to Comment 4:
Because these TMDLs address impairments in Southern California waters, USEPA determined that using the number of wet weather days during the 90th percentile storm year to determine the number of days of allowable number of exceedances is an appropriate approach. This approach is consistent with other TMDLs in this Region. If at some point in the future, the Regional Board decides to select a different percentile year, these TMDLs may be revised to incorporate this approach.

Response to Comment 5:
While it is clear that the Regional Board may revise several bacteria TMDLs as part of the reopener process described in these TMDLs, it is not clear at this point exactly what the Regional Board is proposing. For this reason we are removing any statement that suggests or provides an example of what the Regional Board is proposing. The statement specific to sub-seasons was removed from the TMDLs.

Response to Comment 6:
Regarding a tighter compliance timeline recommendation, USEPA has revised the Language in the Implementation Recommendations Section to reference compliance with the lower reaches of the Los Angeles River Bacteria TMDL as follows:

> USEPA recommends that waste load allocations and load allocations (expressed as allowable exceedance day) are achieved in a timeline consistent with the lower segments of the Los Angeles River Bacteria TMDL, and that the Regional Board consider options for providing time to comply, absent a state adopted implementation schedule, and consistent with the State Water Board's compliance schedule policy. Interim milestones should be linked to localized efforts to reduce bacteria loading in the direct drainage areas included in these TMDLs, and should consider the influence of upstream bacteria sources to the LAR Estuary and to the LBC Beaches.
> .

Response to Comment 7: *See Response to Comment 6 above.*

Response to Comment 8: *As decisions specific to permitting policy will be made by the Regional Board and not USEPA, specific a recommendation regarding incentives for dischargers has not been included in this TMDLs.*

Response to Comment 9: *The following language was revised and moved to the Implementation and Monitoring Recommendations section in the TMDLs:*

> To evaluate compliance with numeric targets, USEPA recommends that monitoring take place at existing monitoring sites as well as any new monitoring locations in the ambient water.
>
> For beach monitoring locations, daily or systematic weekly sampling in the wave wash at all major drains and creeks, existing monitoring stations at beaches without stormdrains, and freshwater outlets is recommended to evaluate compliance. At all beach locations, samples should be taken at ankle depth and on an incoming wave, consistent with 17 CCR 7961(b). At locations where there is a freshwater outlet, during wet weather, samples should be taken as close as possible to the wave wash, and no further away than 10 meters down current of the stormdrain or outlet.

USEPA recommends that a robust monitoring program be developed for the LAR Estuary. Available data includes bi-weekly monitoring from May through September of 2009, and 2010. USEPA recommends that monitoring be expanded to include year round monitoring requirements, and at least three monitoring locations within the Estuary. We understand that adequate data to establish a reference estuary approach is currently not available. If in the future, adequate data from reference estuary studies become available, it may be appropriate to consider a reference estuary approach to evaluate compliance with these TMDLs.

Response to Comment 10:
See response to Comment 9 above.

Response to Comment 11:
The following language was added to the Implementation Recommendations section in the TMDLs:

The Draft TMDLs includes the Long Beach dog zone as a potential source. We recommend better monitoring at this location to properly assess the impacts of the dog zone to the beach. Also, we recommend the City of Long Beach require that dogs are kept on a leash, and build an enclosed fence around the dog zone. This will help manage the dog zone as a potential source of bacteria to the beaches.

Comments to Long Beach City Beaches and Los Angeles River Estuary due Legal Holiday 1.16.2012

Karin Graves to: Karin Graves 03/02/2012 02:22 PM

From: Joyce Dillard <dillardjoyce@yahoo.com>
To: Karin Graves/R9/USEPA/US@EPA
Date: 01/16/2012 02:45 PM
Subject: Comments to Long Beach City Beaches and Los Angeles River Estuary due Legal Holiday 1.16.2012

Bacteria need to be addressed by two factors:

1. Source Point
2. Receiving Waters Geology Comment 1

Unless there is a secondary sewer discharge, the pipeline system should be addressed. How many emergency sewer repairs are there in the jurisdiction. Is there pipe breakage from earthquake faults, overweight trucks, aging pipes, lateral pipes not inspected or septic tanks.

This does not necessarily appear in the California Sanitary Sewer Overflow Reduction Program reporting. Comment 2

You state:

For these TMDLs, Leo Carrillo Beach is selected as the reference system since, with 98% open space and little evidence of human impact, it represents an undeveloped watershed in the region

The question is that the bacteria are singly caused by the LA River or from another source. Human Impact and development may not necessarily have the effect assumed. Comment 3

The geology of the coastline prohibits any seepage from flowing out from the coast of the Southern California Bight. In fact, in a conference presentation from the California Beaches and Harbors oceanographer, the coastline retains the bacteria with a void point around Dana Point where the north meets the south.

There is little possibility that the bacteria will disperse by tidal flow anywhere in Southern California. Without proper scientific monitoring, the appearance of bacteria may not be new, but on the ocean bottom and surfacing with seasonal or tidal occurrences.

By Google Earth, you can see the plume. Comment 4

There needs to be incorporation of research and identification of pollutant occurrences.

This problem may not be solvable at its current state without reporting, disclosure and an understanding of Mother Nature. Comment 5

Joyce Dillard
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Los Angeles, CA 90031

Response to Comments on the Total Maximum Daily Loads for Bacteria in the Long Beach City Beaches and Los Angeles River Estuary
November 30, 2011 Public Notice
March 26, 2012

RESPONSE TO COMMENTS

This document includes USEPA's response to comments submitted in response to the November 30, 2011 Public Notice of the Draft Long Beach City Beaches and Los Angeles River Estuary Indicator Bacteria TMDL. The comment letter submitted is provided on USEPA Region 9's website with highlighted comment notations added to the original letter to identify the end of each comment (eg., USEPA is responding to the specific comment immediately above the numbered "Comment" in yellow bold). Any change that is made to the TMDL in response to the comments is indicated in the response. If no change is noted in the response, then no change was deemed necessary in the TMDL. Please see (http://www.epa.gov/region9/water/tmdl/progress.html) for individual comment letters.

5. Joyce Dillard, Citizen

Response to Comment 1: *Comment noted.*

Response to Comment 2: *Commenter may find the following information relevant: Language describing, and a table listing, the geographical locations, date, volumes and classification of Sanitary Sewer Overflows and Private Lateral Sewer Overflows was added to pg. 28-30 of the TMDLs.*

Response to Comment 3: *Please see Section 4, Source Assessment, where USEPA provides an analysis of both point and non-point sources, as well as a discussion of human caused and natural sources. Also please see Section 5.2, Linkage Analysis, where USEPA has incorporated a discussion of loads from the Los Angeles River TMDL in the report text (not as a table).*

Response to Comment 4: *Comment noted.*

Response to Comment 5: *These TMDLs are based on a robust scientific analysis. This particular comment does not raise specific scientific issues.*