TMDL Executive Summary

California Regional Water Quality Control Board
Los Angeles Region
June 7, 2012
557th Board Meeting

Item Number	11.c.
Proposed Board Action	Consideration of a proposed Basin Plan Amendment to revise the Bacteria Total Maximum Daily Load for Malibu Creek and Lagoon
Need for Action	The Malibu Creek and Lagoon Bacteria TMDL was adopted by Resolution No. R04-019R on December 13, 2004, and became effective on January 24, 2006. The goal of the Malibu Creek Bacteria TMDL is to address the impairment of water quality due to elevated bacteria densities. Recreating in waters with elevated bacterial indicator densities has long been associated with adverse human health effects. The Malibu Creek and Lagoon Bacteria TMDL establishes (1) water quality targets and waste load and load allocations for sources of bacteria within the watershed in order to protect the designated water contact recreation uses and (2) specifies a program of implementation. The Malibu Creek Bacteria TMDL uses innovative approaches to implement water quality objectives for bacteria, including the reference system/antidegradation approach and the corresponding allowable exceedance days approach. The Malibu Creek Bacteria TMDL also includes a scheduled "reconsideration" as part of its implementation schedule to re-evaluate the reference system used to calculate allowable exceedances days of bacteria objectives, as well as several other aspects of the TMDL. The matters to be considered as specified in the TMDL are: • Consider a natural source exclusion for bacteria loadings from birds in the Malibu Lagoon if all anthropogenic sources to the Lagoon have been controlled, • Reassess the allowable winter dry-weather and wet-weather exceedance days based on additional data on bacterial indicator densities, and an evaluation of site-specific variability in exceedance levels to determine whether existing water quality is better than water quality at the reference watershed, • Reassess the allowable winter dry-weather and wet-weather exceedance days based on a re-evaluation of the selected reference watershed and consideration of other reference watersheds that may better represent reaches of the Malibu Creek and Lagoon,

	• Consider whether the allowable winter dry-weather and wet-weather exceedance days should be adjusted annually dependent on the rainfall conditions and an evaluation of natural variability in exceedance levels in the reference system(s), • Re-evaluate the reference year used in the calculation of allowable exceedance days, and • Re-evaluate whether there is a need for further clarification or revision of the geometric mean implementation provision. Regional Board staff considered each of these elements as part of the action before the Board. The detailed analysis of these elements is contained in the TMDL staff report. The revisions proposed for Regional Board consideration at this time are limited to the specific elements identified at the time of Regional Board adoption of the original TMDL in 2004. Staff has recommended only these revisions for this Board action because these specific reconsiderations are an obligation for the Board and are "overdue." The Regional Board is not precluded from reconsidering any aspect of a TMDL. But at this time, Regional Board staff has evaluated and publically noticed only those certain technical aspects specifically listed in the original BPA. Some additional revisions have been made for clarity or consistency, but no new substantial changes are recommended. However, staff does recognize that other aspects of the TMDLs may need to be reconsidered in the future, especially as the science continues to develop. New scientific information that is currently being developed includes studies to examine the potential of marine sediments to act as sinks for indicator bacteria, the relative loading of human versus non-human sources in estuarine and marine environments, and USEPA's new draft ambient water quality criteria. In addition, the Southern California Coastal Water Research Project (SCCWRP) is coordinating with the County of Ventura, Regional Board staff, and USEPA to begin examining and correlating the health risks associated with non-human sources and causative microbes related to illness. Staff can turn to these other issues once we have met our current obligation. Regional Board staff will consider all new material and information brought to our attention and can reconsider the TMDL based on this new information as warranted.

EXECUTIVE SUMMARY

Stakeholder Participation	Staff met with stakeholders to address specific questions and concerns both prior to and during the 45-day public comment period. The proposed revisions to the Basin Plan Amendments to the TMDL and supporting documents were publicly noticed on March 23, 2012 for a 45-day comment period.
Summary of Commenters	Eleven letters were received by the May 7, 2012 comment deadline. The following organizations each submitted one comment letter: 1. County of Los Angeles Department of Public Works 2. County of Ventura 3. City of Thousand Oaks 4. Heal the Bay and Santa Monica Baykeeper Staff also received eight comment letters from individuals.
Significant Issues and Proposed Changes	Staff has reviewed and responded to the significant issues raised by the commenters. Several of the comments on the Malibu Creek TMDL, such as the method for calculating the geometric mean to assess compliance with bacteria objectives, are similar to comments made on the beaches TMDLs, and staff's responses to those comments are summarized in the executive summary for the reconsideration of the beaches TMDLs, Item 11.a. Staff's responses to comments on the Malibu TMDL and proposed changes are as follows: 1. Comment: A natural source exclusion should be considered for Malibu Lagoon. Per the TMDL, the State Department of Parks and Recreation is required to conduct a study to quantify the bacteria loading from birds to Malibu Lagoon. The result of this study was supposed to have been submitted to the Regional Board and be used during reconsideration of the TMDL, specifically in assessing the feasibility of applying the natural sources exclusion approach to the Lagoon. Response: This was an item specifically identified for the Malibu Creek TMDL reconsideration. Accordingly, staff did consider the application of a natural source exclusion to Malibu Lagoon, but determined that one was not justified at this time. It is not evident that all sources of indicator bacteria in the Lagoon are of natural origin, nor has it been demonstrated that all anthropogenic sources to the Lagoon have been controlled such that they do not cause or contribute to an exceedance of the single sample objectives, which is a criterion that must be met in order for a

	natural source exclusion to apply. For example, the bacteria exceedance rates at the monitoring location upstream of the Lagoon are still higher than allowable exceedance rates, which demonstrate that (1) Malibu Creek itself is impaired for bacteria and (2) upstream discharges are a source of bacteria to Malibu Lagoon. Staff acknowledges the recent study published by the US Geological Survey titled "The Distribution of Fecal Indicator Bacteria along the Malibu, California, Coastline" (Izbicki, 2011). However, the study states that the data collected need further interpretation to fully understand how these complex data sets relate to bacteria occurrence and sources in this complex hydrologic setting before final conclusions can be drawn. Regarding the TMDL requirement for State Parks to submit a bird study, staff has determined that not all anthropogenic sources of bacteria to the lagoon have been controlled. Therefore, consideration of a natural sources exclusion approach is premature at this time and a bird study is not yet necessary. Furthermore, the estimation of bacteria loadings from birds in the lagoon has already been described in the 2004 staff report and staff believes that an additional bird study conducted by State Parks at this point would not improve upon the estimates in the 2004 staff report. A further bird study to quantify the bacteria loading from birds may be required at the Regional Board's discretion in the future. 2. <u>Comment:</u> The allowable exceedances days for the Malibu Lagoon should be based on a marine reference system. <u>Response:</u> When the Malibu Creek Bacteria TMDL was originally adopted in 2004, Leo Carrillo Beach was selected as the reference system to determine the allowable number of exceedance days for the Malibu Creek watershed due to the lack of bacteria data from a freshwater reference system in the Los Angeles region at that time. However, it was recognized that Leo Carrillo Beach was not the most representative reference site for freshwater systems in the Los Angeles region. For this reason, the TMDL included a specific reconsideration of the reference system as part of the scheduled reconsideration. In this reconsideration, Regional Board staff has proposed to use data from freshwater reference systems that are now available for

	southern California. The TMDL revisions that were publically noticed included a freshwater reference system that was applied to the entire Malibu Creek, including the Lagoon. The exceedances probabilities for the freshwater reference system are 1.6% for dry weather and 19% for wet weather. However, staff recognizes that the freshwater exceedances probabilities are lower than the updated Leo Carrillo Beach exceedance probabilities that are being used for the beach bacteria TMDL reconsiderations. Furthermore, the Regional Board has previously applied marine water standards, including allowable exceedance days, to estuaries in the region. Staff therefore agrees to revise the allowable exceedances probabilities for Malibu Lagoon to be equal to the Leo Carrillo Beach exceedances probabilities of 22% for wet weather, 10.4% for winter dry weather, and 0% for summer dry weather. 3. Comment: There should be an extension of the dry-weather compliance deadline (January 24, 2012). Response: Staff acknowledges the challenges in implementing the TMDL, as well as the implementation efforts conducted to date by responsible parties. However, in order to improve water quality in Malibu Creek and Lagoon, and protect public health, staff has not proposed to extend the deadline to achieve compliance with the allowable exceedance days for dry weather. The existing dry-weather compliance deadline was approved by the Regional Board after a lengthy public participation process, and considering all stakeholder input and the nature of the Malibu Creek watershed. 4. Comment: The revised outfall and follow-up investigation monitoring requirements should be removed and combined into a requirement for a Source Investigation Plan. Response: One of the additional changes proposed by staff that was not specified for reconsideration in the original TMDL was the addition of outfall monitoring requirements. This change was intended for consistency and to comport the Malibu TMDL with the Los Angeles River and Santa Clara River Bacteria TMDLs. The follow-up monitoring requirements were included in the original TMDL. At the time the TMDL was adopted in 2006, the follow up monitoring requirements were similar to the follow-up monitoring for beaches.

	However, staff recognizes that due to the nature of a flowing riverine system versus a receiving water beach, it may be appropriate to specify different follow-up monitoring requirements for Malibu Creek than those proposed for the beaches. Therefore, staff proposes to modify the TMDL to clarify how outfall monitoring will be used to determine whether or not a responsible agency has caused or contributed to an in-stream exceedance of bacteria objectives. 5. Comment: As Cold Creek subwatershed has been used as a Southern California reference watershed, and since it is located with the Malibu Creek watershed, the dry weather and wet weather exceedance probabilities for Cold Creek should be used to determine the freshwater allowable exceedance days for the revised Bacteria TMDL. Response: There are many onsite wastewater treatment systems located in the Cold Creek subwatershed, which can lead to the high single sample exceedance rates in Cold Creek. Therefore Cold Creek is not an appropriate freshwater reference site. The Basin Plan implementation provisions for the bacteria objectives and the State's Listing Policy require that a reference site should not be impacted by human activity.
Alternatives	Alternatives to the proposed Board Action include: 1. Adopt the proposed revisions to the TMDL. 2. Adopt the proposed revisions to the TMDL with modifications arising as a logical outgrowth of the proposed amendment. 3. No action. If the Regional Board does not adopt the proposed revisions to the TMDL, the existing compliance milestones and allocations will remain in place.
Recommendation	Staff recommends adoption of the proposed revisions to the TMDL as presented, Alternative 1. This alternative meets regulatory and legal requirements and sets forth a technically sound and equitable plan to continue addressing fecal indicator bacteria in Malibu Creek and Lagoon.