

## **Attachment B to Resolution No. R21-001**

### **Amendment to the Water Quality Control Plan for the Los Angeles Region to Revise the Marina del Rey Harbors' Mother Beach and Back Basins Bacteria TMDL**

#### **Amendments:**

#### **Chapter 7. Total Maximum Daily Loads (TMDLs) Marina del Rey Harbors' Mother Beach and Back Basins Indicator Bacteria TMDL**

This TMDL was adopted by the Regional Board on August 7, 2003.

This TMDL was approved by:

The State Water Resources Control Board on November 19, 2003.  
The Office of Administrative Law on January 30, 2004.  
The U.S. Environmental Protection Agency on March 18, 2004.

This TMDL was revised by:

The Regional Board on June 7, 2012.

This revised TMDL was approved by:

The State Water Resources Control Board on March 19, 2013.  
The Office of Administrative Law on November 7, 2013.  
The U.S. Environmental Protection Agency on July 2, 2014.

This TMDL was revised by:

The Regional Board on [date].

This revised TMDL was approved by:

The State Water Resources Control Board on [date].  
The Office of Administrative Law on [date].  
The U.S. Environmental Protection Agency on [date].

The following table includes the elements of this TMDL.

**Table 7-5.1 Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL: Elements**

Element	Key Findings and Regulatory Provisions
<b><i>Problem Statement</i></b>	Elevated bacterial indicator densities are causing impairment of the water contact recreation (REC-1) beneficial use at Marina del Rey Harbor (MdRH) Mothers' Beach and back basins. Swimming in marine waters with elevated bacterial indicator densities has long been associated with adverse health effects. Specifically, local and national epidemiological studies compel the conclusion that there is a causal relationship between adverse health effects and recreational water quality, as measured by bacterial indicator densities.
<b><i>Numeric Target</i></b>	<p>The TMDL has a multi-part numeric target based on the bacteriological water quality objectives for marine water to protect the water contact recreation use. These targets are the most appropriate indicators of public health risk in recreational waters.</p> <p>These bacteriological objectives are set forth in Chapter 3 of the Basin Plan.<sup>1</sup> The objectives are based on four bacterial indicators and include both geometric mean limits and single sample limits. The Basin Plan objectives that serve as the numeric targets for this TMDL are:</p> <ol style="list-style-type: none"> <li>1. <b><u>Geometric Mean Limits</u></b> <ol style="list-style-type: none"> <li>a. <b>Total coliform density shall not exceed 1,000/100 ml.</b></li> <li>b. <b>Fecal coliform density shall not exceed 200/100 ml.</b></li> <li>c. <b>Enterococcus density shall not exceed 35/100 ml.</b></li> </ol> </li> <li>2. <b><u>Single Sample Limits</u></b> <ol style="list-style-type: none"> <li>a. <b>Total coliform density shall not exceed 10,000/100 ml.</b></li> <li>b. <b>Fecal coliform density shall not exceed 400/100 ml.</b></li> <li>c. <b>Enterococcus density shall not exceed 104/100 ml.</b></li> <li>d. <b>Total coliform density shall not exceed 1,000/100 ml, if the ratio of fecal-to-total coliform exceeds 0.1.</b></li> </ol> </li> </ol> <p>These objectives are generally based on an acceptable health risk for marine recreational waters of 19 illnesses per 1,000 exposed individuals as set by the United States Environmental Protection Agency (US EPA) (US EPA, 1986). The targets apply throughout the year. The final compliance point for the targets is the point at which the effluent from a storm drain initially mixes with the receiving water where there is a freshwater outlet (i.e., publicly-owned storm drain) to the beach, or at ankle depth at beaches without a freshwater outlet, and at surface and depth throughout the Harbor. For Mothers' Beach, the targets will apply at existing or new monitoring sites, with samples taken at ankle depth. For Basins D, E, and F, the targets will also apply at existing or new monitoring sites with samples collected at surface and at depth.</p>

<sup>1</sup> The bacteriological objectives were revised by a Basin Plan amendment adopted by the Regional Board on October 25, 2001, and subsequently approved by the State Water Resources Control Board, the Office of Administrative Law and finally by U.S. EPA on September 25, 2002.

Element	Key Findings and Regulatory Provisions
<b>Numeric Target (con't)</b>	<p>Implementation of the above bacteria objectives and the associated TMDL numeric targets is achieved using a 'reference system/anti-degradation approach' as set forth in Chapter 3. As required by the Clean Water Act and California Water Code, Basin Plans include beneficial uses of waters, water quality objectives to protect those uses, an anti-degradation policy, collectively referred to as water quality standards, and other plans and policies necessary to implement water quality standards. This TMDL and its associated waste load allocations, which shall be incorporated into relevant permits, and load allocations are the vehicles for implementation of the Region's standards.</p> <p>The geometric mean targets may not be exceeded at any time. For purposes of this TMDL, the geometric means shall be calculated weekly as a rolling geometric mean using 5 or more samples, for six week periods starting all calculation weeks on Sunday. For the single sample targets, each existing monitoring site is assigned an allowable number of exceedance days for three time periods (1) summer dry-weather (April 1 to October 31), (2) winter dry-weather (November 1 to March 31), and (3) wet-weather (defined as days with 0.1 inch of rain or greater and the three days following the rain event).</p>
<b>Source Analysis</b>	<p>Dry-weather urban runoff and storm water conveyed by storm drains are the primary sources of elevated bacterial indicator densities to MdRH Mothers' Beach and back basins during dry and wet weather. As of December 2002, there were seven dischargers located within the Marina del Rey watershed. These dischargers were issued general NPDES permits, general industrial and/or general construction storm water permits. The bacteria loads associated with these discharges are largely unknown, since most do not monitor for bacteria. However, these discharges are not expected to be a significant source of bacteria.</p> <p>Potential nonpoint sources of bacterial contamination at Mothers' Beach and the back basins of MdRH include marina activities such as waste disposal from boats, boat deck and slip washing, swimmer "wash-off", restaurant washouts and natural sources from birds, waterfowl and other wildlife. The bacteria loads associated with these nonpoint sources are unknown.</p>
<b>Loading Capacity</b>	<p>Studies show that bacterial degradation and dilution during transport from the watershed to the receiving water do not significantly affect bacterial indicator densities. Therefore, the loading capacity is defined in terms of bacterial indicator densities, which is the most appropriate for addressing public health risk, and is equivalent to the numeric targets, listed above. As the numeric targets must be met at the point where the effluent from storm drains initially mixes with the receiving water and back basins throughout the day, no degradation or dilution allowance is provided.</p>

Element	Key Findings and Regulatory Provisions
<p><b>Waste Load Allocations</b> (for point sources)</p>	<p>The Los Angeles County municipal separate storm sewer system (MS4) Permittees, California Department of Transportation (Caltrans), and any future Phase II MS4 permittees are assigned waste load allocations (WLAs) expressed as the number of daily or weekly sample days that may exceed the single sample targets identified under “Numeric Target” at a monitoring site. Waste load allocations are expressed as allowable exceedance days because the bacterial density and frequency of single sample exceedances are the most relevant to public health protection.</p> <p>The allowable number of exceedance days for a monitoring site for each time period is based on the lesser of two criteria (1) exceedance days in the designated reference system and (2) exceedance days based on historical bacteriological data at the monitoring site. This ensures that bacteriological water quality is at least as good as that of a largely undeveloped system and that there is no degradation of existing water quality.</p> <p>For each monitoring site, allowable exceedance days are set on an annual basis as well as for three time periods. These three periods are:</p> <ol style="list-style-type: none"> <li>1. summer dry weather (April 1 to October 31)</li> <li>2. winter dry weather (November 1 to March 31)</li> <li>3. wet weather (defined as days of 0.1 inch of rain or more plus three days following the rain event).</li> </ol> <p>The County of Los Angeles, Los Angeles County Flood Control District, City of Los Angeles, and Culver City are the Los Angeles County MS4 permittees identified as the responsible jurisdictions and responsible agencies<sup>2</sup> for the Marina del Rey Watershed. The County of Los Angeles is the primary jurisdiction because Marina del Rey Harbor is located in an unincorporated area of the County, and the Los Angeles County Flood Control District is the Principal Permittee in the Los Angeles County MS4 NPDES Permit, and the Marina is owned and operated by the County of Los Angeles. The responsible jurisdictions and responsible agencies within the Marina del Rey Watershed are jointly responsible for complying with the waste load allocation at monitoring locations impacted by MS4 discharges. All proposed WLAs for summer dry weather are zero (0) days of allowable exceedances.<sup>3</sup> The proposed WLAs for winter dry weather and wet weather vary by monitoring location as identified in Table 7-5.2.</p> <p>The waste load allocation for the geometric mean targets for the MS4 Permittees and Caltrans is zero (0) exceedances during the calculation periods.</p>

<sup>2</sup> For the purposes of this TMDL, “responsible jurisdictions and responsible agencies” are defined as (1) local agencies that are permittees or co-permittees on a municipal separate storm sewer system (MS4) permit, (2) local or state agencies that have jurisdiction over Mothers’ Beach or the back basins of MdRH, and (3) the California Department of Transportation pursuant to its storm water permit.

<sup>3</sup> In order to fully protect public health, no exceedances are permitted at any monitoring location during summer dry-weather (April 1 to October 31). In addition to being consistent with the two criteria, waste load allocations of zero (0) days of allowable exceedances are further supported by the fact that the California Department of Public Health has established minimum protective bacteriological standards – the same as the numeric targets in this TMDL – which, when exceeded during the period April 1 to October 31, result in posting a beach with a health hazard warning (California Code of Regulations, Title 17, Section 7958).

Element	Key Findings and Regulatory Provisions
<p><b>Waste Load Allocations</b> (con't)</p>	<p>As discussed in "Source Analysis", discharges from general NPDES permits, general industrial storm water permits and general construction storm water permits are not expected to be a significant source of bacteria. Additionally, these discharges are not eligible for the reference system approach set forth in the implementation provisions for the bacteriological objectives in Chapter 3. Therefore, the WLAs for these discharges for all three time periods are the bacteriological objectives contained in Chapter 3. Any future enrollees under a general NPDES permit, general industrial storm water permit or general construction storm water permit within the MdR Watershed will also be subject to a WLA based on these bacteriological objectives.</p>
<p><b>Load Allocations</b> (for nonpoint sources)</p>	<p>Load allocations are expressed as the number of daily or weekly sample days that may exceed the single sample targets identified under "Numeric Target" at a monitoring site. Load allocations are expressed as allowable exceedance days because the bacterial density and frequency of single sample exceedances are the most relevant to public health protection.</p> <p>Since all storm water runoff to MdRH is regulated as a point source, load allocations of zero (0) days of allowable exceedances for nonpoint sources are set in this TMDL for each time period. The load allocation for the geometric mean targets for nonpoint sources is zero (0) exceedances during the defined calculation periods. If a nonpoint source is directly impacting bacteriological quality and causing an exceedance of the numeric target(s), the permittee(s) under the MS4 NPDES Permits are not responsible through these permits. However, the jurisdiction or agency adjacent to the monitoring location may have further obligations, as described under "Compliance Monitoring" below.</p>
<p><b>Implementation</b></p>	<p>The regulatory mechanisms used to implement the TMDL include, but are not limited to, the MS4 NPDES permit(s) covering areas within the Marina del Rey subwatershed, including any future Phase II MS4 permits, the General Industrial Stormwater Permit, the General Construction Stormwater Permit, the Caltrans Stormwater Permit, general NPDES permits, general industrial storm water permits, general construction storm water permits, and the authority contained in Sections 13263, 13267 and 13383 of the California Water Code. Each NPDES permit assigned a WLA shall be reopened or amended at reissuance, in accordance with applicable laws, to incorporate the applicable WLAs as a permit requirement. Load allocations for nonpoint sources will be implemented consistent with the Statewide Policy for Implementation and Enforcement of the Nonpoint Source Control Program.</p> <p>This TMDL will be implemented in three phases (see Table 7-5.3). By March 18, 2007, there shall be no allowable exceedances of the single sample limits at any location during summer dry weather (April 1 to October 31) or winter dry weather s (November 1 to March 31). By July 15, 2024, compliance with the allowable number of wet weather exceedance days and the geometric mean targets must be achieved.</p>

Element	Key Findings and Regulatory Provisions
<b>Implementation</b> ( <i>con't</i> )	<p>For those monitoring locations subject to the antidegradation provision, there shall be no increase in exceedance days during the implementation period above the estimated days for the monitoring location in the critical year as identified in Table 7-5.2.</p> <p>The responsible jurisdictions and the responsible agencies must submit a report to the Executive Officer by July 30, 2005 (see Table 7-5.3) describing how they intend to comply with the dry-weather and wet-weather WLAs. As the primary jurisdiction, the County of Los Angeles is responsible for submitting the implementation plan report described above. In addition, the County of Los Angeles Department of Beaches and Harbor must submit a report detailing its efforts to prohibit discharges from boats in the Harbor (see Table 7-5.3).</p> <p>The Marina del Rey Harbor jurisdictional unit may change its primary jurisdiction by submitting a joint, written request, submitted by the current primary jurisdiction and the proposed primary jurisdiction, to the Executive Officer requesting reassignment of primary responsibility.</p>
<b>Margin of Safety</b>	<p>The TMDL is set at levels that are exactly equivalent to the applicable water quality standards along with the proposed reference system/antidegradation implementation provisions set forth in Chapter 3.</p> <p>A margin of safety has been implicitly included through several conservative assumptions, such as the assumption that no dilution takes place between the storm drain and where the effluent initially mixes with the receiving water, and that bacterial degradation rates are not fast enough to affect bacteria densities in the receiving water.</p>
<b>Seasonal Variations and Critical Conditions</b>	<p>Seasonal variations are addressed by developing separate waste load allocations for three time periods (summer dry weather, winter dry weather and wet weather) based on public health concerns and observed natural background levels of exceedance of bacterial indicators.</p> <p>The critical condition for bacteria loading is during wet weather, when historic monitoring data for MdrRH and the reference beach indicate greater exceedance probabilities of the single sample bacteria objectives than during dry weather. To more specifically identify a critical condition within wet weather, in order to set the allowable exceedance days shown in Table 7-5.2, the 90<sup>th</sup> percentile 'storm year'<sup>4</sup> in terms of wet days<sup>5</sup> is used as the reference year. Selecting the 90<sup>th</sup> percentile year avoids a situation where the reference system is frequently out of compliance. Further, it is expected that because responsible jurisdictions and agencies will be planning for this 'worst-case' scenario, there will be fewer exceedance days than the maximum allowed in drier years.</p>

<sup>4</sup> For purposes of this TMDL, a 'storm year' means November 1 to October 31. The 90<sup>th</sup> percentile storm year was 1993 with 75 wet days at the LAX meteorological station.

<sup>5</sup> A wet day is defined as a day with rainfall of 0.1 inch or more plus the 3 days following the rain event.

Element	Key Findings and Regulatory Provisions
<b>Compliance Monitoring</b>	<p>Responsible jurisdictions and agencies shall conduct daily or systematic weekly sampling at the initial point of mixing with the receiving water at all major drains<sup>6</sup>, at existing monitoring stations and at other designated monitoring stations to determine compliance.<sup>7</sup> For Mothers' Beach the targets will also apply at existing or new monitoring sites, with samples taken at ankle depth. For Basins D, E, and F the targets will also apply at existing or new monitoring sites with samples collected at surface and at depth. Samples collected at ankle depth shall be taken 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 initial point of mixing with the receiving water, and no further away than 10 meters down current of the storm drain or outlet.<sup>8</sup> At locations where there is a freshwater outlet, samples shall be taken when the freshwater outlet is flowing into the surf zone.<sup>9</sup></p> <p>If the number of exceedance days is greater than the allowable number of exceedance days, the responsible jurisdictions and agencies shall be considered out of compliance with the TMDL. Responsible jurisdictions or agencies shall not be deemed out of compliance with the TMDL if the investigation described in the paragraph below demonstrates that bacterial sources originating within the jurisdiction of the responsible agency have not caused or contributed to the exceedance.</p> <p>If a single sample shows the discharge or contributing area to be out of compliance, the Regional Board may require, through permit requirements or the authority contained in California Water Code sections 13267 and 13383, daily sampling where the effluent from the storm drain initially mixes with the receiving water or at the existing monitoring location (if it is not already) until all single sample events meet bacteria water quality objectives. Furthermore, if a location is out-of-compliance as determined in the previous paragraph, responsible agencies shall initiate an investigation, which at a minimum shall include daily sampling where the effluent from the storm drain initially mixes with the receiving water or at the existing monitoring location until all single sample events meet bacteria water quality objectives. If bacteriological water quality objectives are exceeded in any three weeks of a four-week period when weekly sampling is performed, or, for areas where testing is done more than once a week, 75% of testing days produce an exceedance of bacteria water quality objectives, the responsible</p>

<sup>6</sup> Major drains are major municipal separate storm sewer system outfalls as defined in 40 CFR section 122.26(b)(5) that have measurable flow to the beach during dry weather.

<sup>7</sup> The frequency of sampling (i.e., daily versus weekly) shall be determined in the monitoring and reporting programs of the permits through which the waste load allocations are implemented. However, the number of sample days that may exceed the objectives will be scaled by solving for the variable "x" in the following equation: (Number of wet-weather days or dry-weather days in 1993 / 365 days = x / 52 weeks), where the number of wet-weather days and dry-weather days are based on the historical rainfall record at the Los Angeles International Airport also known as "LAX".

<sup>8</sup> Safety considerations during wet weather may preclude taking a sample at the initial point of mixing with the receiving water.

<sup>9</sup> At some freshwater outlets and storm drains, during high tide conditions, the tide pushes the freshwater discharge back into the drain. As a result, sampling under these conditions is not representative of water quality conditions when the drain is flowing into the surf zone. The tide height at which this situation occurs will vary with the size, slope and configuration of the drain and the beach. Responsible agencies must ensure that samples are collected only when drains are flowing into the surf zone, not when the discharge is pushed back into the drain. Responsible agencies must submit a coordinated monitoring plan by July 16, 2004, in which this assurance should be included.

Element	Key Findings and Regulatory Provisions
<p><b>Compliance Monitoring</b> (con't)</p>	<p>agencies shall conduct a source investigation of the subwatershed(s) pursuant to protocols established under California Water Code section 13178. Responsible jurisdictions may wish to conduct compliance monitoring at key jurisdictional boundaries as part of this effort. If a location without a freshwater outlet is out-of-compliance or if the outlet is diverted or being treated, the adjacent municipality, County agency(s), or State or federal agency(s) shall be responsible for conducting the investigation and shall submit its findings to the Regional Board to facilitate the Regional Board exercising further authority to regulate the source of the exceedance in conformance with the California Water Code and Statewide Policy for Implementation and Enforcement of the Nonpoint Source Control Program.</p> <p>In addition, the Mdr responsible jurisdictions and responsible agencies are required to conduct a study to determine the relative bacterial loading from sources including but not limited to storm drains, boats, birds, and other nonpoint sources.</p>



**Table 7-5.2 Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL: Final Allowable Exceedance Days by Sampling Location**

Compliance Deadline		March 18, 2007		March 18, 2007		July 15, 2024	
		Summer Dry Weather ^		Winter Dry Weather ^		Wet Weather ^	
		April 1 - October 31		November 1 – March 31		November 1 - October 31	
Station ID	Location Name	Daily sampling (No. days)	Weekly sampling (No. days)	Daily sampling (No. days)	Weekly sampling (No. days)	Daily sampling (No. days)	Weekly sampling (No. days)
MdRH-1	Mothers' (Marina) Beach, at playground area	0	0	9	2	17	3
MdRH-2	Mothers' (Marina) Beach, at lifeguard tower	0	0	9	2	17	3
MdRH-3	Mothers' (Marina) Beach, between lifeguard tower and boat dock	0	0	9	2	17	3
MdRH-4	Basin D, near first slips outside swim area	0	0	9	2	17	3
MdRH-5	Basin E, in front of tide-gate from Oxford Basin	0	0	9	2	17	3
MdRH-6	Basin E, center of basin	0	0	9	2	17	3
MdRH-7	Basin E, in front of Boone-Olive Pump Outlet	0	0	9	2	17	3
MdRH-8	Back of Main Channel	0	0	9	2	17	3
MdRH-9	Basin F, center of basin	0	0	9	2	8	1

Notes: The number of allowable exceedances is based on the lesser of (1) the reference system or (2) existing levels of exceedance based on historical monitoring data.

The allowable number of exceedance days during winter dry-weather is calculated based on the 10th percentile storm year in terms of dry days at the LAX meteorological station.

The allowable number of exceedance days during wet-weather is calculated based on the 90th percentile storm year in terms of wet days at the LAX meteorological station.

^ A dry day is defined as a non-wet day. A wet day is defined as a day with a 0.1 inch or more of rain and the three days following the rain event.

Table 7-5.3 Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL: Significant Dates

Date	Action
July 16, 2004	<p>Responsible jurisdictions and responsible agencies shall submit coordinated monitoring plan(s) to be approved by the Executive Officer. The monitoring plans shall including a list of new sites<sup>2</sup> and/or sites relocated to include the point where the effluent from the storm drain initially mixes with the receiving water, at least three locations off of Mothers' Beach, and at least one location in each of the other Marina del Rey Basins (i.e., Basins A, B, C, E, F, G, and H). The plan shall include the responsible jurisdictions' and responsible agencies' recommended sampling frequency at each location.</p> <p>The Los Angeles County Department of Beaches and Harbors shall provide a written report to the Regional Board detailing efforts to control discharges from boats, including but not limited to the number of live-aboards and the number of pump-outs per month.</p> <p>The responsible jurisdictions and the responsible agencies must identify and provide documentation on small drains discharging to Mothers' Beach and the Marina del Rey Harbor. Documentation must include a report of waste discharge where necessary.</p>
March 30, 2005 (Draft Report) July 30, 2005 (Final Report)	Responsible jurisdictions and responsible agencies shall provide a written report to the Regional Board outlining how each intends to cooperatively achieve compliance with the dry-weather and wet-weather TMDL Waste Load Allocations. The report shall include implementation methods, an implementation schedule, and proposed milestones.
March 18, 2007	Responsible jurisdictions and responsible agencies shall provide to the Regional Board results of the study conducted to determine the relative bacterial loading from sources including but not limited to storm drains, boats, birds and other nonpoint sources at the Oxford Flood Control Basin, Mothers' Beach, and the Harbor.
March 18, 2007	Achieve compliance with the allowable exceedance days as set forth in Table 7-5.2 during summer dry weather (April 1 to October 31) and winter dry weather (November 1 to March 31).
Six months from effective date of TMDL revised by Resolution No. R12-007	Responsible jurisdictions and agencies shall submit a revised bacteria water quality monitoring plan to address changes in the calculation and reporting of attainment of the geometric mean targets.
July 15, 2018	The Regional Board shall reconsider the TMDL.
July 15, 2024	Achieve compliance with the allowable wet weather exceedance days as set forth in Table 7-5.2 and the geometric mean targets.

<sup>2</sup> For those areas of the marina without an existing monitoring site, responsible jurisdictions and responsible agencies must establish a monitoring site if there is measurable flow from a publicly owned storm drain to the basin during dry weather.