

# Attachment A to Resolution No. R12-XXX

## Amendment to the Water Quality Control Plan for the Los Angeles Region to Revise the Total Maximum Daily Load for Bacterial Indicator Densities in Ballona Creek, Ballona Estuary, and Sepulveda Channel.

Adopted by the California Regional Water Quality Control Board, Los Angeles Region on [Insert Date].

### Amendments:

#### Table of Contents

Add:

Chapter 7. Total Maximum Daily Loads (TMDLs) Summaries  
7-21 Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL

#### List of Figures, Tables and Inserts

Add:

Chapter 7. Total Maximum Daily Loads (TMDLs)

Tables

7-21 Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL  
7-21.1. Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL: Elements  
7-21.2a. Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL: Final Allowable Exceedance Days by Reach  
7-21.2b. Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL: WLAs and LAs for tributaries to the Impaired Reaches.  
7-21.3. Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL: Significant Dates

#### Chapter 7. Total Maximum Daily Loads (TMDLs) Summaries, Section 7-21 (Ballona Creek, Ballona Estuary, and Sepulveda Channel Bacteria TMDL)

This TMDL was adopted by the Regional Water Quality Control Board on June 8, 2006.

This TMDL was approved by:

The State Water Resources Control Board on November 15, 2006.

The Office of Administrative Law on February 20, 2007.

The U.S. Environmental Protection Agency on March 26, 2007.

This TMDL was revised and adopted by the Regional Water Quality Control Board on [Insert Date]

This revised TMDL was approved by:

The State Water Resources Control Board on [Insert Date].

The Office of Administrative Law on [Insert Date].

The U.S. Environmental Protection Agency on [Insert Date].

The following table includes all the elements of this TMDL.

## Attachment A to Resolution No. R12-XXX

**Table 7-21.1. Ballona Creek, Estuary, and Tributaries s Bacteria TMDL: Elements**

Element	Key Findings and Regulatory Provisions
<p><b>Problem Statement</b></p>	<p>Elevated bacterial indicator densities are causing impairment of the water contact recreation (REC-1) beneficial use designated for Ballona Estuary and Sepulveda Channel, limited water contact recreation (LREC) designated for Ballona Creek Reach 2, and non-contact recreation (REC-2) beneficial uses of Ballona Creek Reach 1. Recreating in waters with elevated bacterial indicator densities has long been associated with adverse human 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.</p>
<p><b>Numeric Target</b> (Interpretation of the numeric water quality objective, used to calculate the waste load allocations)</p>	<p>The TMDL has a multi-part numeric target based on the bacteriological water quality objectives for marine and fresh water to protect the contact and non-contact recreation uses. 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> <p>In Marine Waters Designated for Water Contact Recreation (REC-1)</p> <p><u>1. Geometric Mean Limits</u></p> <p>a. Total coliform density shall not exceed 1,000/100 ml.  b. Fecal coliform density shall not exceed 200/100 ml.  c. <i>Enterococcus</i> density shall not exceed 35/100 ml.</p> <p><u>2. Single Sample Limits</u></p> <p>a. Total coliform density shall not exceed 10,000/100 ml.  b. Fecal coliform density shall not exceed 400/100 ml.  c. <i>Enterococcus</i> density shall not exceed 104/100 ml.  d. Total coliform density shall not exceed 1,000/100 ml, if the ratio of fecal-to-total coliform exceeds 0.1.</p> <p>In Fresh Waters Designated for Water Contact Recreation (REC-1)</p> <p>1. Geometric Mean Limits</p> <p>a. <i>E. coli</i> density shall not exceed 126/100 ml.  <del>b. Fecal coliform density shall not exceed 200/100 ml.</del></p> <p>2. Single Sample Limits</p> <p>a. <i>E. coli</i> density shall not exceed 235/100 ml.  <del>b. Fecal coliform density shall not exceed 400/100 ml.</del></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. The bacteriological objectives for freshwater were revised a second time by a Basin Plan amendment adopted by the Regional Board on July 8, 2010, and subsequently approved by the State Water Resources Control Board, the Office of Administrative Law and finally by U.S. EPA on December 5, 2011.

## Attachment A to Resolution No. R12-XXX

Element	Key Findings and Regulatory Provisions
	<p>In Fresh Waters Designated for Limited Water Contact Recreation (LREC-1)<sup>2</sup></p> <ol style="list-style-type: none"> <li>1. Geometric Mean Limits               <ol style="list-style-type: none"> <li>a. <i>E. coli</i> density shall not exceed 126/100 ml.</li> <li><del>b. Fecal coliform density shall not exceed 200/100 ml.</del></li> </ol> </li> <li>2. Single Sample Limits               <ol style="list-style-type: none"> <li>a. <i>E. coli</i> density shall not exceed 576/100 ml.</li> </ol> </li> </ol> <p>In Fresh Waters Designated for Non-Contact Water Recreation (REC-2)</p> <ol style="list-style-type: none"> <li>1. Geometric Mean Limits               <ol style="list-style-type: none"> <li>a. Fecal coliform density shall not exceed 2000/100 ml.</li> </ol> </li> <li>2. Single Sample Limits               <ol style="list-style-type: none"> <li>a. Fecal coliform density shall not exceed 4000/100 ml.</li> </ol> </li> </ol> <p>The targets apply throughout the year. Determination of attainment of the targets will be at in-stream monitoring sites to be specified in the compliance monitoring report.</p> <p><u>In this TMDL, implementation of the above REC-1 and LREC-1 bacteria objectives and the associated TMDL numeric targets is achieved using a 'reference system/anti-degradation approach' rather than the alternative 'natural sources exclusion approach subject to antidegradation policies' or strict application of the single sample objectives. As required by the federal Clean Water Act and Porter-Cologne Water Quality Control Act 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.</u></p> <p><u>This TMDL uses a "reference system/anti-degradation approach" to implement the water quality objectives per the implementation provisions in Chapter 3. On the basis of the historical exceedance frequency at Southern California reference reaches, The 'reference system/anti degradation approach' means that on the basis of historical exceedance levels at existing monitoring locations, including a local reference beach within Santa Monica Bay, a certain number of daily exceedances of the single sample bacteria objectives are permitted. The allowable number of exceedance days is set such that (1) bacteriological water quality at any site is at least as good as at a designated reference site within the watershed and (2) there is no degradation of existing bacteriological water quality. This approach recognizes that there are natural sources of bacteria that may cause or contribute to exceedances of the single sample</u></p>

<sup>2</sup> The bacteriological objectives for the LREC-1 use designation were provided in a Basin Plan Amendment adopted by State Board on January 20, 2005, and subsequently approved by the Office of Administrative Law and finally by U.S. EPA on February 17, 2006

## Attachment A to Resolution No. R12-XXX

Element	Key Findings and Regulatory Provisions
	<p><del>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.</del></p> <p>The geometric mean targets may not be exceeded at any time. <del>The rolling 30-day geometric</del> For the purposes of this TMDL, the geometric means will shall be calculated <u>weekly as a rolling geometric mean using 5 or more samples, for six week periods starting all calculation weeks on Sunday on each day.</u> <del>If weekly sampling is conducted, the weekly sample result will be assigned to the remaining days of the week in order to calculate the daily rolling 30-day geometric mean.</del> For the single sample targets, each existing monitoring site is assigned an allowable number of exceedance days for <del>three</del> <u>two</u> time periods (1) <del>summer dry weather (April 1 to October 31),</del> <u>and</u> (2) <del>winter dry weather (November 1 to March 31),</del> <u>and</u> (3) <del>wet-weather</del> (defined as days with 0.1 inch of rain or greater and the three days following the rain event.)</p> <p>Implementation of the REC-2 target will be as specified in the Basin Plan. The REC-2 bacteria objectives allow for a 10% exceedance frequency of the single sample limit in samples collected during a 30-day period. This allowance, which is based on an acceptable level of health risk, will be applied in lieu of the allowable exceedance days discussed earlier. As with the other REC-1 and LREC-1 objectives, the geometric mean target for REC-2, which is based on <del>a rolling 30-day periods as defined above,</del> will be strictly adhered to and may not be exceeded at any time.</p>
<i>Source Analysis</i>	<p>The major contributors of flows and associated bacteria loading to Ballona Creek and Estuary, are dry- and wet-weather urban runoff discharges from the storm water conveyance system. Run-off to Ballona Creek is regulated as a point source under the Los Angeles County MS4 Permit, the Caltrans Storm Water Permit, and the General Construction and Industrial Storm Water Permits. In addition to these regulated point sources, the Ballona Estuary receives input from the Del Rey Lagoon and Ballona Wetlands through connecting tide gates.</p> <p>Preliminary data suggest that the Ballona Wetlands are a sink for bacteria from Ballona Creek and it is therefore not considered a source in this TMDL. Inputs to Ballona Estuary from Del Rey Lagoon, are considered non-point sources of bacterial contamination. This waterbody may be considered for a natural source exclusion if its contributing bacteria loads are determined to be as a result of wildlife in the area, as opposed to anthropogenic inputs. The TMDL will require a source identification study for the lagoon in order to apply the natural source exclusion.</p> <p>Other nonpoint sources in Ballona Creek and Estuary include natural sources from birds, waterfowl and other wildlife. Data do not currently exist to quantify the extent of the impact of wildlife on bacteria water quality in the Estuary.</p>
<i>Loading Capacity</i>	<p>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.</p>

## Attachment A to Resolution No. R12-XXX

Element	Key Findings and Regulatory Provisions									
<p><i>Waste Load Allocations (for point sources)</i></p>	<p>The Los Angeles County MS4, <del>and</del> Caltrans, <u>and any future Phase II MS4</u> storm water permittees and co-permittees are assigned waste load allocations (WLAs) expressed as the number of daily or weekly sample days that may exceed the single sample targets equal to the TMDLs established for the impaired reaches (see Table 7.21.2a), and Waste Load Allocations assigned to waters tributary to impaired reaches (Table 7.21.2b). Waste load allocations are expressed as allowable exceedance days because the bacterial density and frequency of single sample exceedances are the most relevant to public health protection.</p> <p>For each monitoring site, allowable exceedance days are set on an annual basis as well as for <del>three</del><u>two</u> time periods. These <del>three</del><u>two</u> periods are:</p> <ol style="list-style-type: none"> <li>1. <del>summer-dry-weather days (April 1 to October 31)</del></li> <li>2. <del>winter-dry-weather (November 1 to March 31)</del></li> <li>3. <del>2</del><u>2</u> wet-weather days (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, <u>Los Angeles County Flood Control District</u>, Caltrans, and the Cities of Los Angeles, Culver City, Beverly Hills, Inglewood, West Hollywood, and Santa Monica are the responsible jurisdictions and responsible agencies<sup>3</sup> for the Ballona Creek Watershed. The responsible jurisdictions and responsible agencies within the watershed are jointly responsible for complying with the waste load allocation in each reach.</p> <p>For the single sample objectives of the impaired REC-1 and LREC-1 reaches, the <del>proposed WLAs for are listed below. summer dry weather are zero (0) days of allowable exceedances, and those for winter dry weather and wet weather are three (3) days and seventeen (17) days of exceedance, respectively.</del></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><u>Allowable Number of Exceedance Days</u></th> <th style="text-align: center;"><u>Daily Sampling</u></th> <th style="text-align: center;"><u>Weekly Sampling</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><u>Dry Weather</u></td> <td style="text-align: center;"><u>5</u></td> <td style="text-align: center;"><u>1</u></td> </tr> <tr> <td style="text-align: center;"><u>Wet Weather</u></td> <td style="text-align: center;"><u>15</u></td> <td style="text-align: center;"><u>2</u></td> </tr> </tbody> </table> <p>In the instances where more than one single sample objective applies, exceedance of any one of the limits constitutes an exceedance day. <del>The proposed</del> waste load allocation for the <del>rolling 30-day</del> geometric mean for the responsible agencies and jurisdictions is zero (0) <del>days of</del> allowable exceedances.</p> <p>For the single sample objectives of the impaired REC-2 reach, the <del>proposed</del> WLA for all periods is a 10% exceedance frequency of the REC-2 single sample water quality objectives. <del>The proposed</del> waste load allocation for the <del>rolling 30-day</del> geometric mean for the responsible agencies and jurisdictions is</p>	<u>Allowable Number of Exceedance Days</u>	<u>Daily Sampling</u>	<u>Weekly Sampling</u>	<u>Dry Weather</u>	<u>5</u>	<u>1</u>	<u>Wet Weather</u>	<u>15</u>	<u>2</u>
<u>Allowable Number of Exceedance Days</u>	<u>Daily Sampling</u>	<u>Weekly Sampling</u>								
<u>Dry Weather</u>	<u>5</u>	<u>1</u>								
<u>Wet Weather</u>	<u>15</u>	<u>2</u>								

<sup>3</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) water permit, (2) local or state agencies that have jurisdiction over Ballona Creek, its tributaries, and Ballona Estuary, ~~and~~ (3) the California Department of Transportation pursuant to its storm water permit, and (4) any permittees enrolled under a Phase II MS4 permit within the Ballona Creek watershed.

## Attachment A to Resolution No. R12-XXX

Element	Key Findings and Regulatory Provisions									
	<p>zero (0) <del>days of</del> allowable exceedances.</p> <p>In addition to assigning TMDLs for the impaired reaches, Waste Load Allocations and Load Allocations are assigned to the tributaries to these impaired reaches. <u>These WLAs -and LAs are to be met at the confluence of each tributary and its downstream reach (see Table 7.21.2b).</u></p> <p><u>Discharges from general NPDES permits, general industrial storm water permits and general construction storm water permits are not expected to be a significant source of bacteria. Additionally, these discharges are not eligible for the reference system approach set forth in the implementation provisions for the bacteriological objectives in Chapter 3. Therefore, the waste load allocations for these discharges for all time periods are the 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 Ballona Creek watershed management area will also be subject to a WLA based on these bacteriological objectives.</u></p>									
<b>Load Allocations</b> (for nonpoint sources)	<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, along with a <del>rolling 30 day</del> geometric mean <u>limit</u>. 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. Del Rey Lagoon is considered a nonpoint source and is therefore subject to load allocations.</p> <p>The <del>proposed</del> LA for <del>summer dry weather</del> are <del>zero (0) days of allowable exceedances</del>, and those for <del>winter dry-weather and wet-weather</del> are <del>three-listed below</del>(3) days and <del>seventeen (17) days of exceedance</del>, respectively.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><u>Allowable Number of Exceedance Days</u></th> <th style="text-align: center;"><u>Daily Sampling</u></th> <th style="text-align: center;"><u>Weekly Sampling</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><u>Dry Weather</u></td> <td style="text-align: center;"><u>5</u></td> <td style="text-align: center;"><u>1</u></td> </tr> <tr> <td style="text-align: center;"><u>Wet Weather</u></td> <td style="text-align: center;"><u>15</u></td> <td style="text-align: center;"><u>2</u></td> </tr> </tbody> </table> <p>In the instances where more than one single sample objective applies, exceedance of any one of the limits constitutes an exceedance day. <u>The proposed</u> load allocation for the <del>rolling 30 day</del> geometric mean <u>limit</u> for the responsible agencies and jurisdictions is zero (0) <del>days of</del> allowable exceedances (see Table 7.21.2a).</p> <p>The City of Los Angeles is the responsible jurisdiction for the Del Rey lagoon, and is responsible for complying with the assigned load allocations presented in Table 7.21.2b at the tide gate(s) between the Lagoon and the Estuary.</p> <p>If other unidentified nonpoint sources are directly impacting bacteriological water quality and causing an exceedance of the numeric targets, within the Estuary, the permittee(s) under the <del>Municipal Storm Water MS4</del> NPDES Permits are not responsible through these permits. However, the jurisdiction or agency adjacent to the monitoring location may have further obligations to</p>	<u>Allowable Number of Exceedance Days</u>	<u>Daily Sampling</u>	<u>Weekly Sampling</u>	<u>Dry Weather</u>	<u>5</u>	<u>1</u>	<u>Wet Weather</u>	<u>15</u>	<u>2</u>
<u>Allowable Number of Exceedance Days</u>	<u>Daily Sampling</u>	<u>Weekly Sampling</u>								
<u>Dry Weather</u>	<u>5</u>	<u>1</u>								
<u>Wet Weather</u>	<u>15</u>	<u>2</u>								

## Attachment A to Resolution No. R12-XXX

Element	Key Findings and Regulatory Provisions
	<p>identify <u>and control</u> such sources.</p>
<p><b>Implementation</b></p>	<p>The regulatory mechanisms used to implement the TMDL will include the Los Angeles County <del>Municipal Storm Water</del><u>MS4</u> NPDES Permit <del>(MS4)</del>, the Caltrans Storm Water Permit, <u>any future Phase II MS4 permits</u>, general NPDES permits, general industrial storm water permits, general construction storm water permits, and the authority contained in Sections 13263 <del>and</del> 13267, <u>and 13383</u> of the <u>California</u> Water Code, <u>and other appropriate regulatory mechanisms</u>. Each NPDES permit assigned a WLA shall be reopened or amended at re-issuance, in accordance with applicable laws, to incorporate the applicable WLAs as a permit requirement.</p> <p>Each responsible jurisdiction<del>s</del> and agency will be required to meet the <del>storm water</del> <u>MS4</u> waste load allocations <del>shared by the LA County MS4 and Caltrans permittees</del> at the designated <del>TMDL effectiveness compliance</del> monitoring points. <u>An iterative implementation approach using a combination of non-structural and structural BMPs may be used to achieve compliance with the waste load allocations. The administrative record and the fact sheets for the MS4 and Caltrans storm water permits must provide reasonable assurance that the BMPs selected will be sufficient to</u> <del>implement</del> <u>achieve</u> the waste load allocation.</p> <p>Load allocations for nonpoint sources will be <del>incorporated</del> <u>implemented into through</u> Waste Discharge Requirements, <del>and Memorandum of Understanding or other appropriate mechanisms with the responsible jurisdictional agencies</del> <u>consistent with the Nonpoint Source Implementation and Enforcement Policy</u>.</p> <p>This TMDL will be implemented in two phases over a ten-year period (see Table 7-21.3). <del>Within six years of the effective date of the TMDL</del> <u>By April 27, 2013</u>, compliance with the allowable number of <del>summer dry-weather exceedance days (April 1 to October 31), winter dry weather exceedance days (November 1 to March 31) and the rolling 30-day geometric mean targets for both periods</del> must be achieved. <del>By July 15, 2021</del> <u>Within ten years of the effective date of the TMDL</u>, compliance with the allowable number of wet-weather exceedance days and <del>rolling 30-day</del> <u>the</u> geometric mean targets must be achieved.</p> <p><del>In order to clearly justify an extended implementation schedule beyond 10 years and up to 14 years from the effective date of the TMDL, the responsible agencies are required to submit additional quantifiable analyses as described below to demonstrate (1) the proposed plans will meet the final WLAs and (2) the proposed implementation actions will achieve multiple water quality benefits and other public goals.</del></p> <p><del>The types of approaches proposed coupled with quantifiable estimates of the integrated water resources benefits of the proposed structural and non-structural BMPs included in the Implementation Plan would provide the obligatory demonstration that an integrated water resources approach is being pursued. This demonstration shall include numeric estimates of the benefits, including but not limited to reductions in other pollutants, groundwater recharged, acres of multi use projects and water (e.g. urban runoff)</del></p>

## Attachment A to Resolution No. R12-XXX

Element	Key Findings and Regulatory Provisions
	<p><del>beneficially reused.</del></p> <p>The responsible jurisdictions and the responsible agencies must submit a report to the Executive Officer (see Table 7-21.3) describing how they intend to comply with the dry-weather and wet-weather WLAs. <u>As the primary jurisdiction, the City of Los Angeles is responsible for submitting the implementation plan report described above.</u></p> <p>In addition, as the responsible agency for Del Rey Lagoon, the City of Los Angeles must submit a report detailing how it intends to comply with the load allocations assigned to this waterbody. <u>Alternatively, -the City of Los Angeles may submit data clearly demonstrating that Del Rey Lagoon is not a source, for the Regional Board’s consideration-.</u></p> <p><del>The Regional Board intends to reconsider this TMDL, within 4 years of its effective date to incorporate modifications to the WLAs based on results of the scheduled reconsideration of the Santa Monica Bay (SMB) beaches TMDLs. The SMB beaches TMDLs are scheduled to be reconsidered in four years to re-evaluate the allowable winter dry-weather and wet-weather exceedance days based on additional data on bacterial indicator densities in the wave wash; to re-evaluate the reference system selected to set allowable exceedance levels; to re-evaluate the reference year used in the calculation of allowable exceedance days, and to re-evaluate the need for revision of the geometric mean implementation provision.</del></p> <p><del>The Regional Board also intends to re-asses the WLAs for Benedict Canyon Channel, Sepulveda Channel, and Centinela Creek based on results of the required compliance monitoring, and/or any voluntary beneficial use investigations.</del></p>
<i>Margin of Safety</i>	<p>By directly applying the numeric water quality standards and implementation procedures as Waste Load Allocations, there is little uncertainty about whether meeting the TMDLs will result in meeting the water quality standards.</p>
<i>Seasonal Variations and Critical Conditions</i>	<p>Seasonal variations are addressed by developing separate waste load allocations for <del>three</del><u>two</u> time periods (<del>summer</del><u>dry</u>-<u>weather</u>, <del>winter</del><u>dry</u><u>weather</u>, and <u>wet</u>-<u>weather</u>) based on public health concerns and observed natural background levels of exceedance of bacterial indicators.</p> <p>The critical condition for bacteria loading to the Ballona Creek, Ballona Estuary, and Sepulveda Channel is during wet weather when monitoring data indicate greater exceedance probabilities of the single sample bacteria objectives than during <u>dry</u>-<u>weather</u>.</p> <p>The Santa Monica Bay Beaches Bacteria TMDL identified the critical condition within wet weather more specifically, in order to set the allowable number of exceedances of the single sample limit days. <u>The 90<sup>th</sup> percentile storm year in terms of wet days was used as the reference year. The number of wet-weather days in the 1993 reference year was 75 days, and the number of dry-weather days was 290 days. The 90<sup>th</sup> percentile year was selected for several reasons. First, selecting the 90<sup>th</sup> percentile year avoids an untenable situation where the reference system is frequently out of compliance. Second, selecting the 90<sup>th</sup> percentile year allows responsible jurisdictions and responsible agencies to plan for a ‘worst case scenario’, as a critical condition is intended to do.</u></p>

## Attachment A to Resolution No. R12-XXX

Element	Key Findings and Regulatory Provisions
<p><i>Monitoring</i></p>	<p>The <del>TMDL effectiveness</del> monitoring program will assess attainment of the allowable exceedances for Ballona Creek, Ballona Estuary, and Sepulveda Channel, and the WLAs for the tributaries. Responsible jurisdictions and responsible agencies shall conduct daily or systematic weekly sampling at a minimum of two locations within Ballona Estuary and Reach 2 of Ballona Creek, at least one location each in Reach 1 of Ballona Creek and Sepulveda Channel, and at the confluence with Centinela Creek and Benedict Canyon Channel, to determine compliance. Similar monitoring at the connecting tide gates of Del Rey Lagoon is also required. Where monitoring locations are located at or close to the boundary of two reaches, data from sampling points will also be used to assess the immediate downstream reach. This will ensure that the downstream reaches, which have more stringent water quality objectives, are adequately protected.</p> <p><u>Responsible jurisdictions and agencies shall submit an outfall monitoring plan by within 6 months of the effective date of the TMDL revised by Resolution R12-XXX. The outfall monitoring plan shall propose an adequate number of representative outfalls to be sampled, a sampling frequency, and protocol for enhanced outfall monitoring as a result of an in-stream exceedance. Responsible jurisdictions and agencies can use existing outfall monitoring station in the MS4 permit, where appropriate for both the permit and TMDL objectives.</u></p> <p>If the number of exceedance days is greater than the allowable number of exceedance days in the REC-1 and LREC-1 waters, and/or the frequency of exceedance is greater than 10% in the REC-2 waters, the responsible jurisdictions and/or responsible agencies shall be considered not to be attaining the TMDLs and/or assigned allocations (non-attaining). Responsible jurisdictions or agencies shall not be deemed non-attaining 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 an in-stream location is non-attaining as determined in the previous paragraph, the <del>Regional Board shall require</del> responsible agencies <del>to shall</del> initiate an investigation <u>within 24 hours of receiving analytical results</u>, which at a minimum shall include daily sampling at the existing monitoring location until all single sample events meet bacteria water quality objectives.</p>
<p><i>Special Studies</i></p>	<p><del>Should the jurisdictional agency for Del Rey Lagoon opt for the natural source exclusion, the TMDL requires that a separate bacteria source identification study be conducted to determine its eligibility. The study should identify all probable sources of bacteria loads, their estimated contributions to the Lagoon, and a determination of the frequency of exceedances of the single sample bacteria objectives caused by the identified natural sources.</del></p>

## Attachment A to Resolution No. R12-XXX

**Table 7.21.2a: Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL: Final Allowable Exceedance Days by Reach**

Time Period	Ballona Estuary, Ballona Creek Reach 2, and Sepulveda Channel *	Ballona Creek Reach 1**
<del>Summer-Dry-Weather (April 1 to October 31)</del>	<del>Zero (0) exceedance days based on the applicable Single Sample Bacteria Water Quality Objectives  Zero (0) exceedance days based on the Rolling 30 Day Geometric Mean Bacteria Water Quality Objectives</del>	<del>No more than 10% of the Single Sample Bacteria Water Quality Objectives  Zero (0) exceedance days based on the Rolling 30 Day Geometric Mean Bacteria Water Quality Objectives</del>
<del>Winter-Dry-Weather (November 1-March 31)</del>	<del>Three-Five (35) exceedance days (daily sampling) or one (1) exceedance day (weekly sampling) based on the applicable Single Sample Bacteria Water Quality Objectives  Zero (0) exceedance days based on the Rolling 30 Day Geometric Mean Bacteria Water Quality Objectives</del>	<del>No more than 10% of the Single Sample Bacteria Water Quality Objectives sample days  Zero (0) exceedance days based on the Rolling 30 Day Geometric Mean Bacteria Water Quality Objectives</del>
<del>Wet-Weather (days with ≥0.1 inch of rain + 3 days following the rain event)</del>	<del>175*** exceedance days (daily sampling) or two (2) exceedance days (weekly sampling) based on the applicable Single Sample Bacteria Water Quality Objectives  Zero (0) exceedance days based on the Rolling 30 Day Geometric Mean Bacteria Water Quality Objectives</del>	<del>No more than 10% of the Single Sample Bacteria Water Quality Objectives sample days  Zero (0) exceedance days based on the Rolling 30 Day Geometric Mean Bacteria Water Quality Objectives</del>
<del>Geometric Mean</del>	<del>Zero (0) exceedances of the Geometric Mean Bacteria Water Quality Objectives during the Winter Season (November 1-March 31); Early Summer Season (April 1-May 31); Mid-summer Season (June 1-August 30); and Late Summer Season (September 1-October 31)</del>	<del>Zero (0) exceedances of the Geometric Mean Bacteria Water Quality Objectives during the Winter Season (November 1-March 31); Early Summer Season (April 1-May 31); Mid-summer Season (June 1-August 30); and Late Summer Season (September 1-October 31)</del>

\* Exceedance days for Ballona Estuary based on REC-1 marine water numeric targets; for Ballona Creek Reach 2 based on LREC-1 freshwater numeric targets; and for Sepulveda Channel, based on fresh water REC-1 numeric targets

\*\*Exceedance frequency for Ballona Creek Reach 1 based on freshwater REC-2 numeric targets

\*\*\* In Reach 2, the greater of the allowable exceedance -days under the reference system approach or high flow suspension shall apply.

## Attachment A to Resolution No. R12-XXX

**Table 7.21.2b: Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL: WLAs and LAs for tributaries to the Impaired Reaches, *if daily sampling is applied.***

Tributary	Point of Application	Water Quality Objectives	Waste Load Allocation (No. exceedance days)
Ballona Creek Reach 1	At confluence with Reach 2	LREC-1 Freshwater	For single sample objectives: <del>(05) summer-dry weather,</del> <del>(3) winter-dry weather</del> <del>(175)* winter-wet weather</del>  For geometric mean objectives: (0) for all periods
Benedict Canyon Channel	At confluence with Reach 2	LREC-1 Freshwater	For single sample objectives: <del>(05) summer-dry weather,</del> <del>(3) winter-dry weather</del> <del>(175)* winter-wet weather</del>  For geometric mean objectives: (0) for all periods
Ballona Creek Reach 2	At confluence with Ballona Estuary	REC-1 Marine water	For single sample objectives: <del>(05) summer-dry weather,</del> <del>(3) winter-dry weather</del> <del>(1715) winter-wet weather</del>  For geometric mean objectives: (0) for all periods
Centinela Creek	At confluence with Ballona Estuary	REC-1 Marine water	For single sample objectives: <del>(05) summer-dry weather,</del> <del>(3) winter-dry weather</del> <del>(1715) winter-wet weather</del>  For geometric mean objectives: (0) for all periods
Del Rey Lagoon	At confluence with Ballona Estuary	REC-1 Marine water	For single sample objectives: <del>(05) summer-dry weather,</del> <del>(3) winter-dry weather</del> <del>(1715) winter-wet weather</del>  For geometric mean objectives: (0) for all periods

\*At the confluence with Reach 2, the greater of the allowable exceedance days under the reference system approach or high flow suspension shall apply.

Sepulveda Channel was not assigned a waste load allocation at its confluence with Reach 2 since the TMDL requires the more stringent REC-1 objectives to be met in this waterbody, which should lead to the attainment of the less stringent LREC-1 objectives of the downstream reach.

## Attachment A to Resolution No. R12-XXX

**Table 7.21.3 Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL: Significant Dates**

Date	Action
<i>Responsible Jurisdictions for the Waste Load Allocations</i>	
<p><del>April 27, 2008</del><sup>12 months after the effective date of the TMDL</sup></p>	<p>Responsible jurisdictions and responsible agencies must submit, for Regional Board approval, a comprehensive bacteria water quality monitoring plan for the Ballona Creek Watershed. The plan must be approved by the Executive Officer before the monitoring data can be considered during the implementation of the TMDL. The plan must provide for analyses of all applicable bacteria indicators for which the Basin Plan and subsequent amendments have established objectives. The plan must also include a minimum of two sampling locations (mid-stream and downstream) in Ballona Estuary, Ballona Creek (Reach 1 and 2), and their tributaries.</p> <p>The draft monitoring report shall be made available for public comment and the Executive Officer shall accept public comments for at least 30 days. Once the coordinated monitoring plan is approved by the Executive Officer, monitoring shall commence within 6 months.</p>
<p><del>October 27, 2009</del><sup>2 1/2 years after the effective date of the TMDL</sup></p>	<p>Responsible jurisdictions and agencies must provide a draft Implementation Plan 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. The description of the implementation methods and milestones shall include a technically defensible quantitative linkage to the interim and final waste load allocations (WLAs). The linkage should include target reductions in stormwater runoff and/or fecal indicator bacteria. The plan shall include quantitative estimates of the water quality benefits provided by the proposed structural and non-structural BMPs. Estimates should address reductions in exceedance days, bacteria concentration and loading, and flow in the drain and at each beach compliance monitoring location.</p> <p>As part of the draft plan, responsible agencies must submit results of all special studies and/or Environmental Impact Assessments, designed to determine feasibility of any strategy that requires diversion and/or reduction of Creek flows.</p> <p><del>If a responsible jurisdiction or agency is requesting a longer schedule for wet weather compliance based on an integrated approach, the plan must include a clear demonstration that the plan meets the criteria of an Integrated Water Resources Approach (IWRAs), and a clear demonstration of the need for the proposed schedule. Compliance with the wet weather allocations shall be as soon as possible but under no circumstances shall it</del></p>

## Attachment A to Resolution No. R12-XXX

Date	Action
	<p><del>exceed the time frame adopted in the TMDL for non integrated approaches or for an integrated approach.</del></p> <p>The draft Plan shall be made available for public comment and the Executive Officer shall accept public comments for at least 30 days.</p>
3 months after receipt of Regional Board comments on the draft plan	Responsible jurisdictions and agencies submit a Final Implementation Plan to the Regional Board.
<b><i>Responsible agencies for Load Allocations</i></b>	
<p><del>April 27, 2008</del> <del>year after the effective date of the TMDL</del></p>	<p>Responsible agencies must submit, for Regional Board approval, separate comprehensive bacteria water quality monitoring plans for inputs from Del Rey Lagoon and the Ballona Wetlands to the Ballona Estuary. Each plan must be approved by the Executive Officer before the monitoring data can be considered during the implementation of the TMDL. The plan must provide for analyses of all applicable bacteria indicators for which the Basin Plan and subsequent amendments have established objectives The plan must also include a minimum of one sampling location at the connecting tide gate(s).</p> <p>The draft monitoring reports shall be made available for public comment and the Executive Officer shall accept public comments for at least 30 days. Once a coordinated monitoring plan is approved by the Executive Officer, monitoring shall commence within 6 months.</p>
<p><del>3 years after the effective date of the TMDL. April 27, 2010</del></p>	<p><del>If the responsible agency for the Del Rey Lagoon intends to pursue a natural source exclusion, it shall submit the results of separate natural source study for the Lagoon to the Executive Officer of the Regional Board. The study shall include a comprehensive assessment of all sources of bacteria loads to the Lagoon and estimates of their individual contributions. In addition, a determination of the number of exceedance days caused by these sources should be made</del></p> <p><del>These studies shall be made available for public comment and the Executive Officer shall accept public comments for at least 30 days.</del></p>
<b><i>Responsible Agencies for WLAs and LAs* (*Only if not eligible for natural source exclusion(s))</i></b>	
<p><del>April 27, 2011</del> <del>4 years after the effective date of the TMDL:</del></p>	<p>The Regional Board shall reconsider this TMDL to:</p> <p><del>(1) Re-assess 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 Ballona</del></p>

## Attachment A to Resolution No. R12-XXX

Date	Action
	<p style="text-align: center;"><del>Creek and Estuary,</del></p> <p><del>(2) 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);</del></p> <p><del>(3) Re-evaluate the reference year used in the calculation of allowable exceedance days, and</del></p> <p><del>(4) Re-evaluate whether there is a need for further clarification or revision of the geometric mean implementation provision.</del></p> <p><del>(5) Consider natural source exclusions for bacteria loading from Del Rey Lagoon and the Ballona Wetlands based on results of the source identification study.</del></p> <p><del>(6) Re-assess WLAs for Benedict Canyon Channel, Sepulveda Channel, and Centinela Creek based on results of the required compliance monitoring, and/or any voluntary beneficial use investigations.</del></p>
<p><del>6 years after the effective date of the TMDL April 27, 2013;</del></p>	<p>Achieve compliance with the allowable exceedance days for <del>summer and winter dry-weather</del> as set forth in Table 6-1 <del>and rolling 30 day geometric mean targets.</del></p>
<p><del>10 years after effective date of the TMDL or, if an Integrated Water Resources Approach is implemented, up to July 15, 2021.*</del></p>	<p>Achieve compliance with the allowable exceedance days <u>during wet weather</u> as set forth in Table 6-1 and <u>rolling 30 day geometric mean targets for all seasonal periods specified above during wet weather.</u></p>

~~\*July 15, 2021 is the final compliance date of the Santa Monica Bay Beaches Bacteria Wet Weather TMDL.~~