

# Attachment A to Resolution No. R13-XXX

## Proposed Amendment to the Water Quality Control Plan – Los Angeles Region to incorporate the Ballona Creek Metals TMDL

Proposed for adoption by the California Regional Water Quality Control Board, Los Angeles Region on December 5, 2013.

### Amendments:

#### Chapter 7. Total Maximum Daily Loads (TMDLs) Summaries, Section 7-12 (Ballona Creek Metals TMDL)

This TMDL was adopted by the Regional Water Quality Control Board on September 6, 2007.

This TMDL was approved by:

The State Water Resources Control Board on June 17, 2008.

The Office of Administrative Law on October 6, 2008.

The U.S. Environmental Protection Agency on October 29, 2008.

This TMDL was revised 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 tables include the elements of this TMDL.

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**Table 7-12.1. Ballona Creek Metals TMDL: Elements**

Element	Key Findings and Regulatory Provisions
<p><i>Problem Statement</i></p>	<p>Ballona Creek is <u>included</u> on <u>the</u> Clean Water Act Section 303(d) list of impaired waterbodies for dissolved copper, dissolved lead, total selenium, <del>and</del> dissolved zinc, <u>and toxicity</u> and Sepulveda Canyon Channel is <u>included on the</u> 303(d) listed <del>ed</del> for lead. The metals subject to this TMDL are toxic pollutants, and the existing water quality objectives for the metals reflect national policy that the discharge of toxic pollutants in toxic amounts be prohibited. When one of the metals subject to this TMDL is present at levels exceeding the existing numeric objectives, then the receiving water is <del>toxic</del> <u>considered to be impaired</u>. The following designated beneficial uses are impaired by these metals: water contact recreation (REC1); non-contact water recreation (REC2); warm freshwater habitat (WARM); estuarine habitat (EST); marine habitat (MAR); wildlife habitat (WILD); rare and threatened or endangered species (RARE); migration of aquatic organisms (MIGR); reproduction and early development of fish (SPWN); commercial and sport fishing (COMM); and shellfish harvesting (SHELL).</p> <p><u>Recent data indicate that selenium is not present at levels exceeding existing numeric targets and is not impairing the designated beneficial uses. Therefore, a TMDL for selenium is not included.</u></p> <p>TMDLs are developed for reaches on the 303(d) list and metal allocations are developed for tributaries that drain to impaired reaches. This TMDL addresses <del>es</del> dry- and wet-weather discharges of copper, lead, <del>selenium</del> and zinc in Ballona Creek and Sepulveda Canyon Channel.</p>
<p><i>Numeric Target</i> (Interpretation of the narrative and numeric water quality objective, used to calculate the load allocations)</p>	<p>Numeric water quality targets are based on the numeric water quality <del>standards-criteria</del> established for metals by the California Toxics Rule (CTR). The targets are expressed in terms of total recoverable metals. There are separate numeric targets for dry and wet weather because hardness values and flow conditions in Ballona Creek and Sepulveda Canyon Channel vary between dry and wet weather. The dry-weather targets apply to days when the maximum daily flow in Ballona Creek is less than <del>6440</del> cubic feet per second (cfs). The wet-weather targets apply to days when the maximum daily flow in Ballona Creek is equal to or greater than <del>6440</del> cfs.</p> <p><b>Dry Weather</b></p> <p>The dry-weather targets <u>for copper, lead, and zinc</u> are based on the chronic CTR criteria. <del>The copper, lead and zinc targets are dependent on hardness to adjust for site specific conditions and require conversion factors to convert between dissolved and total recoverable metals. These targets are based on</del> and the 50<sup>th</sup> percentile hardness value of <del>300</del>396 mg/L <u>for dry-weather flow collected at Sawtelle Boulevard.</u> <del>and the CTR default e</del>Conversion factors <u>for copper, lead, and zinc are based on the dry-weather, 90<sup>th</sup> percentile ratio of the dissolved metals value to total recoverable metals value collected at Sawtelle.</u> <del>The conversion factor for lead is hardness dependent, which is also based on</del></p>

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	<p><del>a hardness of 300 mg/L. The dry weather target for selenium is independent of hardness and expressed as total recoverable metals.</del></p> <p align="center"><b>Dry-weather numeric targets (µg total recoverable metals/L)</b></p> <table border="1"> <thead> <tr> <th></th> <th>Dissolved</th> <th>Conversion Factor</th> <th>Total Recoverable</th> </tr> </thead> <tbody> <tr> <td>Copper</td> <td><del>2324.68</del></td> <td><del>0.960.816</del></td> <td><del>2435.56</del></td> </tr> <tr> <td>Lead</td> <td><del>8.110.11</del></td> <td><del>0.6310.551</del></td> <td><del>1319.65</del></td> </tr> <tr> <td><del>Selenium</del></td> <td></td> <td></td> <td><del>5</del></td> </tr> <tr> <td>Zinc</td> <td><del>300326.50</del></td> <td><del>0.9860.849</del></td> <td><del>304446.55</del></td> </tr> </tbody> </table> <p><b>Wet Weather</b></p> <p>The wet-weather targets for copper, lead and zinc are based on the acute CTR criteria and the 50<sup>th</sup> percentile hardness value of <del>7782</del> mg/L for storm water, <u>defined as days when the maximum daily flow in Ballona Creek is equal to or greater than 64 cfs</u> collected at Sawtelle Boulevard. Conversion factors for copper, <u>lead</u>, and zinc are based on <u>the wet-weather, 90<sup>th</sup> percentile a regression of the</u> dissolved metal values to total <u>recoverable</u> metal values collected at Sawtelle <u>Boulevard</u>. <del>The CTR default conversion factor based on a hardness value of 77 mg/L is used for lead. The wet weather target for selenium is independent of hardness and expressed as total recoverable metals.</del></p> <p align="center"><b>Wet-weather numeric targets (µg total recoverable metals/L)</b></p> <table border="1"> <thead> <tr> <th></th> <th>Dissolved</th> <th>Conversion Factor</th> <th>Total Recoverable</th> </tr> </thead> <tbody> <tr> <td>Copper</td> <td><del>119.45</del></td> <td><del>0.620.814</del></td> <td><del>1813.70</del></td> </tr> <tr> <td>Lead</td> <td><del>4942.96</del></td> <td><del>0.8290.677</del></td> <td><del>5976.75</del></td> </tr> <tr> <td><del>Selenium</del></td> <td></td> <td></td> <td><del>5</del></td> </tr> <tr> <td>Zinc</td> <td><del>9495.74</del></td> <td><del>0.790.945</del></td> <td><del>119104.77</del></td> </tr> </tbody> </table>		Dissolved	Conversion Factor	Total Recoverable	Copper	<del>2324.68</del>	<del>0.960.816</del>	<del>2435.56</del>	Lead	<del>8.110.11</del>	<del>0.6310.551</del>	<del>1319.65</del>	<del>Selenium</del>			<del>5</del>	Zinc	<del>300326.50</del>	<del>0.9860.849</del>	<del>304446.55</del>		Dissolved	Conversion Factor	Total Recoverable	Copper	<del>119.45</del>	<del>0.620.814</del>	<del>1813.70</del>	Lead	<del>4942.96</del>	<del>0.8290.677</del>	<del>5976.75</del>	<del>Selenium</del>			<del>5</del>	Zinc	<del>9495.74</del>	<del>0.790.945</del>	<del>119104.77</del>
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<b>Source Analysis</b>	<p>There are significant differences in the sources of copper, lead, <del>selenium</del> and zinc loadings during dry weather and wet weather. During dry weather, most of the metals loadings are in the dissolved form. Storm drains convey a large percentage of the metals loadings during dry weather because although their flows are typically low, concentrations of metals in urban runoff may be quite high. During dry years, dry-weather loadings account for 25-35% of the annual metals loadings. Additional sources of dry weather flow and metals loading include groundwater discharge and flows from other permitted NPDES discharges within the watershed.</p> <p>During wet weather, most of the metals loadings in Ballona Creek are in the particulate form and are associated with wet-weather storm water flows. On an annual basis, storm water contributes about 91% of the copper loading and 92% of the lead loading to Ballona Creek. Storm water flow is permitted through the municipal separate storm sewer system (MS4) permit issued to the County of Los Angeles, a separate Caltrans storm water permit, a general construction storm water permit, and a general industrial storm water permit.</p> <p>Non-point sources are not considered to be a significant source in this</p>																																								

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	<p>TMDL. Direct atmospheric deposition of metals is insignificant relative to the annual dry-weather loading or the total annual loading. Indirect atmospheric deposition reflects the process by which metals deposited on the land surface may be washed off during storm events and delivered to Ballona Creek and its tributaries. The loading of metals associated with indirect atmospheric deposition <del>are</del><u>is</u> accounted for in the estimates of the storm water loading.</p>																									
<i>Loading Capacity</i>	<p>TMDLs are developed for copper, lead, <del>selenium</del> and zinc for Ballona Creek and Sepulveda Canyon Channel.</p> <p><b>Dry Weather</b></p> <p>Dry-weather loading capacities for Ballona Creek and Sepulveda Canyon Channel are equal to the dry-weather numeric targets multiplied by the critical dry-weather flow for each waterbody. Based on long-term flow records for Ballona Creek at Sawtelle <u>Boulevard</u> the median dry-weather flow is <u>1417</u> cfs. The median dry-weather flow for Sepulveda Canyon Channel, based on measurements conducted in 2003, is 6.3 cfs.</p> <p><b><u>Dry-weather loading capacity (grams total recoverable metals/day)</u></b></p> <table border="1" data-bbox="571 953 1437 1052"> <thead> <tr> <th></th> <th>Copper</th> <th>Lead</th> <th><del>Selenium</del></th> <th>Zinc</th> </tr> </thead> <tbody> <tr> <td>Ballona Creek</td> <td><del>821</del><u>1,479.2</u></td> <td><del>440</del><u>817.2</u></td> <td><del>171</del><u>10,423</u></td> <td><del>18,573.1</del></td> </tr> <tr> <td>Sepulveda Channel</td> <td><del>371</del><u>548.2</u></td> <td><del>199</del><u>302.9</u></td> <td><del>77</del><u>4,712</u></td> <td><del>6,883.0</del></td> </tr> </tbody> </table> <p><b>Wet Weather</b></p> <p>Wet-weather loading capacities are calculated by multiplying the daily storm volume by the wet-weather numeric target for each metal.</p> <p><b><u>Wet-weather loading capacity (grams total recoverable metals/day)</u></b></p> <table border="1" data-bbox="571 1293 1437 1482"> <thead> <tr> <th>Metal</th> <th>Load Capacity</th> </tr> </thead> <tbody> <tr> <td>Copper</td> <td>Daily storm volume x <del>18</del><u>13.7</u> µg/L</td> </tr> <tr> <td>Lead</td> <td>Daily storm volume x <del>59</del><u>76.75</u> µg/L</td> </tr> <tr> <td><del>Selenium</del></td> <td><del>Daily storm volume</del> x 5 µg/L</td> </tr> <tr> <td>Zinc</td> <td>Daily storm volume x <del>119</del><u>104.77</u> µg/L</td> </tr> </tbody> </table>		Copper	Lead	<del>Selenium</del>	Zinc	Ballona Creek	<del>821</del> <u>1,479.2</u>	<del>440</del> <u>817.2</u>	<del>171</del> <u>10,423</u>	<del>18,573.1</del>	Sepulveda Channel	<del>371</del> <u>548.2</u>	<del>199</del> <u>302.9</u>	<del>77</del> <u>4,712</u>	<del>6,883.0</del>	Metal	Load Capacity	Copper	Daily storm volume x <del>18</del> <u>13.7</u> µg/L	Lead	Daily storm volume x <del>59</del> <u>76.75</u> µg/L	<del>Selenium</del>	<del>Daily storm volume</del> x 5 µg/L	Zinc	Daily storm volume x <del>119</del> <u>104.77</u> µg/L
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<p><b>Waste Load Allocations (for point sources)</b></p>	<p>Waste load allocations (WLA) are assigned to point sources for Ballona Creek and Sepulveda Canyon Channel. A <del>grouped</del> mass-based waste load allocation is developed for the storm water permittee <u>groups</u> (Los Angeles County MS4, Caltrans, General Construction and General Industrial) by subtracting the load allocation from the total loading capacity. Concentration-based waste load allocations are developed for other point sources in the watershed.</p> <p><b>Dry Weather</b></p> <p>Dry-weather waste load allocation for storm water is equal to the <u>respective</u> dry-weather critical flow multiplied by the dry-weather numeric target minus the load allocation for direct atmospheric deposition.</p> <p align="center"><b><u>Dry-weather Storm Water WLAs (grams total recoverable metals/day)</u></b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Copper</th> <th style="text-align: center;">Lead</th> <th style="text-align: center;"><del>Selenium</del></th> <th style="text-align: center;">Zinc</th> </tr> </thead> <tbody> <tr> <td>Ballona Creek</td> <td style="text-align: center;"><del>818.91</del> <u>477.2</u></td> <td style="text-align: center;"><del>438.68</del> <u>15.9</u></td> <td style="text-align: center;"><del>171</del> <u>—</u></td> <td style="text-align: center;"><del>10,416.2</del> <u>18,566.3</u></td> </tr> <tr> <td>Sepulveda Channel</td> <td style="text-align: center;"><del>370.75</del> <u>47.9</u></td> <td style="text-align: center;"><del>198.83</del> <u>02.7</u></td> <td style="text-align: center;"><del>77</del> <u>—</u></td> <td style="text-align: center;"><del>4,711.1</del> <u>6,882.0</u></td> </tr> </tbody> </table> <p>A waste load allocation of zero is assigned to all general construction and industrial storm water permits during dry weather. Therefore, the storm water waste load allocations are apportioned between the MS4 permittees and Caltrans, based on an areal weighting approach.</p> <p align="center"><b><u>Dry-weather Storm Water WLAs Apportioned between Storm Water Permits (grams total recoverable metals/day)</u></b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Copper</th> <th style="text-align: center;">Lead</th> <th style="text-align: center;"><del>Selenium</del></th> <th style="text-align: center;">Zinc</th> </tr> </thead> <tbody> <tr> <td><u>Ballona Creek</u></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MS4 permittees</td> <td style="text-align: center;"><del>807.71</del> <u>457.6</u></td> <td style="text-align: center;"><del>432.68</del> <u>05.0</u></td> <td style="text-align: center;"><del>169</del> <u>—</u></td> <td style="text-align: center;"><del>10,273.1</del> <u>18,302.1</u></td> </tr> <tr> <td>Caltrans</td> <td style="text-align: center;"><del>11.2</del> <u>19.6</u></td> <td style="text-align: center;"><del>6.0</del> <u>10.8</u></td> <td style="text-align: center;"><del>2</del> <u>—</u></td> <td style="text-align: center;"><del>143.1</del> <u>246.2</u></td> </tr> </tbody> </table>		Copper	Lead	<del>Selenium</del>	Zinc	Ballona Creek	<del>818.91</del> <u>477.2</u>	<del>438.68</del> <u>15.9</u>	<del>171</del> <u>—</u>	<del>10,416.2</del> <u>18,566.3</u>	Sepulveda Channel	<del>370.75</del> <u>47.9</u>	<del>198.83</del> <u>02.7</u>	<del>77</del> <u>—</u>	<del>4,711.1</del> <u>6,882.0</u>		Copper	Lead	<del>Selenium</del>	Zinc	<u>Ballona Creek</u>					MS4 permittees	<del>807.71</del> <u>457.6</u>	<del>432.68</del> <u>05.0</u>	<del>169</del> <u>—</u>	<del>10,273.1</del> <u>18,302.1</u>	Caltrans	<del>11.2</del> <u>19.6</u>	<del>6.0</del> <u>10.8</u>	<del>2</del> <u>—</u>	<del>143.1</del> <u>246.2</u>
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	<p>Each storm water permittee enrolled under the general construction or industrial storm water permits will receive an individual waste load allocation on a per acre basis, based on the acreage of their facility.</p>								
	<p align="center"><b>Individual per Acre WLAs for General Construction or Industrial Storm Water Permittees (total recoverable metals)</b></p> <hr/> <p align="center">Waste Load Allocation (grams/day/acre)</p> <hr/> <p>Copper <del>2.20E-10</del> <u>1.673 x 10<sup>-10</sup></u> x Daily storm volume (L)</p> <p>Lead <del>7.20E-10</del> <u>9.369 x 10<sup>-10</sup></u> x Daily storm volume (L)</p> <p><del>Selenium</del> <del>6.10E-11</del> x Daily storm volume (L)</p> <p>Zinc <del>1.45E-09</del> <u>1.279 x 10<sup>-9</sup></u> x Daily storm volume (L)</p>								
	<p>Concentration-based wet-weather waste load allocations are assigned to the minor NPDES permits and general non-storm water NPDES permits that discharge to Ballona Creek or its tributaries. Any future minor NPDES permits or enrollees under a general non-storm water NPDES permit will also be subject to the concentration-based waste load allocations. <u>Short-term discharges of potable water that are required by statute are not assigned WLAs but may be subject to alternative permit limits pursuant to the State Water Resources Control Board's Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2005).</u></p>								
	<p align="center"><b>Wet-weather WLAs for other permits (total recoverable metals)</b></p> <hr/> <table border="0"> <tr> <td>Copper (µg/L)</td> <td>Lead (µg/L)</td> <td><del>Selenium (µg/L)</del></td> <td>Zinc (µg/L)</td> </tr> <tr> <td><del>18</del> <u>13.70</u></td> <td><del>59</del> <u>76.75</u></td> <td><del>5</del></td> <td><del>119</del> <u>104.77</u></td> </tr> </table>	Copper (µg/L)	Lead (µg/L)	<del>Selenium (µg/L)</del>	Zinc (µg/L)	<del>18</del> <u>13.70</u>	<del>59</del> <u>76.75</u>	<del>5</del>	<del>119</del> <u>104.77</u>
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<i>Margin of Safety</i>	<p>There is an implicit margin of safety through the use of <u>the 90<sup>th</sup> percentile</u> conservative values for the conversion <u>factors</u> from total recoverable metals to the dissolved fraction during dry and wet-- weather. In addition, the TMDL includes a margin of safety by evaluating dry-weather and wet-weather conditions separately and assigning allocations based on <u>these two disparate-different</u> critical conditions.</p>
<i>Implementation</i>	<p>The regulatory mechanisms used to implement the TMDL will include the Los Angeles County Municipal Storm Water NPDES Permit (MS4), the State of California Department of Transportation (Caltrans) Storm Water Permit, minor NPDES permits, general NPDES permits, general industrial storm water NPDES permits, and general construction storm water NPDES permits. Nonpoint sources will be regulated through the authority contained in Sections 13263 and 13269 of the Water Code, in conformance with the State Water Resources Control Board's Nonpoint Source Implementation and Enforcement Policy (May 2004). 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><del>The Regional Board shall reconsider this TMDL by January 11, 2011 based on additional data obtained from special studies.</del> Table 7-12.2 presents the implementation schedule for the responsible permittees.</p> <p><b>Minor NPDES Permits and General Non-Storm Water NPDES Permits:</b></p> <p><del>The concentration-based waste load allocations for the minor NPDES permits and general non-storm water NPDES permits will be implemented as NPDES permit limits.</del> Permit writers may translate applicable waste load allocations into effluent limits for the minor and general NPDES permits by applying the effluent limitation procedures in Section 1.4 of the State Water Resources Control Board's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2005<del>9</del>) or <u>applying other applicable engineering practices appropriate methodologies</u> authorized under federal regulations. <u>The minor and general non-storm water NPDES permittees may be allowed up to January 11, 2016 to achieve the waste load allocations.</u> <del>Compliance schedules may be established in individual NPDES permits, allowing up to 5 years within a permit cycle to achieve compliance. Compliance schedules may not be established in general NPDES permits.</del> A discharger that can not comply immediately with effluent limitations specified to meet waste load allocations will be required to apply for an individual permit, in order to demonstrate the need for a compliance schedule.</p> <p>Permittees that hold individual NPDES permits and solely discharge storm water may be allowed (at Regional Board discretion) compliance schedules up to January 11, 2016 to achieve compliance with final</p>

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	<p>WLAs.</p> <p><b>General Industrial Storm Water Permits:</b>  <del>The Regional Board will develop a watershed specific general industrial storm water permit to incorporate waste load allocations.</del></p> <p><u>Dry-weather Implementation</u></p> <p>Non-storm water flows authorized by Order No. 97-03 DWQ, or any successor order, are exempt from the dry-weather waste load allocation equal to zero. Instead, these authorized non-storm water flows shall meet the concentration-based waste load allocations assigned to the other NPDES Permits. The dry-weather waste load allocation equal to zero applies to unauthorized non-storm water flows, which are prohibited by Order No. 97-03 DWQ.</p> <p>It is anticipated that the dry-weather waste load allocations will be implemented by requiring improved best management practices (BMPs) to eliminate the discharge of <u>unauthorized non-storm water flows</u> <del>or adequately control the discharge of authorized non-storm water to achieve the concentration-based waste load allocations.</del> However, the permit writers must provide adequate justification and documentation to demonstrate that specified BMPs are expected to result in attainment of the numeric waste load allocations.</p> <p><u>Wet-weather Implementation</u></p> <p>The general industrial storm water permittees are allowed interim wet-weather concentration-based waste load allocations based on benchmarks contained in EPA's Storm Water Multi-sector General Permit for Industrial Activities. The interim waste load allocations apply to all industry sectors until no later than January 11, 2016.</p> <p><b>Interim Wet-Weather WLAs for General Industrial Storm Water Permittees (total recoverable metals)</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Copper (µg/L)</th> <th style="text-align: center;">Lead (µg/L)</th> <th style="text-align: center;"><del>Selenium (µg/L)</del></th> <th style="text-align: center;">Zinc (µg/L)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">63.6</td> <td style="text-align: center;">81.6</td> <td style="text-align: center;"><del>238.5</del></td> <td style="text-align: center;">117</td> </tr> </tbody> </table> <p><del>Until January 11, 2011, interim waste load allocations will not be interpreted as enforceable permit conditions. If monitoring demonstrates that interim waste load allocations are being exceeded, the permittee shall evaluate existing and potential BMPs, including structural BMPs, and implement any necessary BMP improvements. It is anticipated that monitoring results and any necessary BMP improvements would occur as part of an annual reporting process. After January 11, 2011, interim waste load allocations shall be translated into enforceable permit conditions. Compliance with permit conditions may be demonstrated through the installation, maintenance, and monitoring of Regional Board approved BMPs. If this method of compliance is chosen, permit writers must provide adequate</del></p>	Copper (µg/L)	Lead (µg/L)	<del>Selenium (µg/L)</del>	Zinc (µg/L)	63.6	81.6	<del>238.5</del>	117
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	<p><del>justification and documentation to demonstrate that BMPs are expected to result in attainment of interim waste load allocations.</del></p> <p>The general industrial storm water <del>permits</del> <u>permittees</u> shall achieve final wet-weather waste load allocations no later than January 11, 2016, which shall be expressed as NPDES water quality-based effluent limitations <u>(WQBELs)</u>. <del>Effluent limitations may be expressed as permit conditions, such as the installation, maintenance, and monitoring of Regional Board approved BMPs if adequate justification and documentation demonstrate that BMPs are expected to result in attainment of waste load allocations.</del></p> <p><u>Permittees may demonstrate compliance with WQBELs in one of two ways.</u></p> <p><u>First, general industrial and construction storm water permittees may be deemed in compliance with permit limitations if they demonstrate that there are no exceedances of the permit limitations at their discharge points or outfalls.</u></p> <p><u>Second, if permittees provide a quantitative demonstration that control measures and best management practices (BMPs) will achieve WQBELs consistent with the schedule in Table 7-12.2, then compliance may be demonstrated by implementation of those control measures and BMPs, subject to Executive Officer approval.</u></p> <p><b>General Construction Storm Water Permits:</b></p> <p><del>Waste load allocations will be incorporated into the State Board general permit upon renewal or into a watershed specific general permit developed by the Regional Board.</del></p> <p><u>Dry-weather Implementation</u></p> <p>Non-storm water flows authorized by the General Permit for Storm Water Discharges Associated with Construction Activity (Water Quality Order No. <del>99-082009-0009</del> DWQ), or any successor order, are exempt from the dry-weather waste load allocation equal to zero as long as they <del>comply with the provisions of sections C.3 and A.9 of the Order No. 99-08 DWQ, which state that these are</del> authorized non-storm discharges <del>shall be and are</del> (1) infeasible to eliminate (2) comply with BMPs as described in the Storm Water Pollution Prevention Plan prepared by the permittee, and (3) <u>do</u> not cause or contribute to a violation of water quality standards, or comparable provisions in any successor order. Unauthorized non-storm water flows are already prohibited by Order No. <del>99-082009-0009</del> DWQ.</p> <p><u>Wet-weather Implementation</u></p> <p><del>By January 11, 2013, the construction industry will submit the results</del></p>

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	<p><del>of BMP effectiveness studies to determine BMPs that will achieve compliance with the final waste load allocations assigned to construction storm water permittees. Regional Board staff will bring the recommended BMPs before the Regional Board for consideration by January 11, 2014. General construction storm water permittees will be considered in compliance with final waste load allocations if they implement these Regional Board approved BMPs. All permittees must implement the approved BMPs by January 11, 2015. If no effectiveness studies are conducted and no BMPs are approved by the Regional Board by January 11, 2014, each general construction storm water permit holder will be subject to site specific BMPs and monitoring requirements to demonstrate compliance with final waste load allocations.</del></p> <p><u>The general construction storm water permits shall achieve final wet-weather waste load allocations no later than January 11, 2016, which shall be expressed as NPDES water quality-based effluent limitations (WQBELs).</u></p> <p><u>Permittees may demonstrate compliance with WQBELs in one of two ways.</u></p> <p><u>First, general industrial and construction storm water permittees may be deemed in compliance with permit limitations if they demonstrate that there are no exceedances of the permit limitations at their discharge points or outfalls.</u></p> <p><u>Second, if permittees provide a quantitative demonstration that control measures and best management practices (BMPs) will achieve WQBELs consistent with the schedule in Table 7-12.2, then compliance may be demonstrated by implementation of those control measures and BMPs, subject to Executive Officer approval.</u></p> <p><b>MS4 and Caltrans Storm Water Permits:</b></p> <p>The County of Los Angeles, <u>Los Angeles County Flood Control District</u>, City of Los Angeles, Beverly Hills, Culver City, Inglewood, Santa Monica, and West Hollywood are jointly responsible for meeting the mass-based waste load allocations for the MS4 permittees. Caltrans is responsible for meeting <del>their-its</del> mass-based waste load allocations, however, <del>they-it</del> may choose to work with the MS4 permittees. <del>The primary jurisdiction for the Ballona Creek watershed is the City of Los Angeles.</del></p> <p>Applicable CTR limits are being met most of the time during dry weather, with episodic exceedances. Due to the expense of obtaining accurate flow measurements required for calculating loads, concentration-based permit limits may apply during dry weather. These concentration-based limits would be equal to the dry-weather concentration-based waste load allocations assigned to the other NPDES permits.</p>

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	<p>Each municipality and permittee will be required to meet the storm water waste load allocation, <del>at the designated TMDL effectiveness monitoring points.</del> <u>If permittees provide a quantitative demonstration as part of a watershed management program plan that control measures and BMPs will achieve wet-weather WLAs consistent with the schedule in Table 7-14.2, then compliance with wet-weather WQBELs may be demonstrated by implementation of those control measures and BMPs, subject to Executive Officer approval.</u> A phased implementation approach, using a combination of non-structural and structural BMPs may be used to achieve compliance with the stormwater 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 implement the waste load allocations.</p> <p>The implementation schedule for the MS4 and Caltrans permittees consists of a phased approach, with compliance to be achieved in prescribed percentages of the watershed <u>or as a reduction from current loading</u>, with total compliance to be achieved <u>by January 11, 2021</u> <del>within 15 years.</del></p>
<p><i>Seasonal Variations and Critical Conditions</i></p>	<p>Seasonal variations are addressed by developing separate waste load allocations for dry weather and wet weather.</p> <p>Based on long-term flow records, <u>median</u> dry-weather flows in Ballona Creek are estimated to be <del>1417</del> cubic feet per second (cfs). Since, this flow has been very consistent, <del>1417</del> cfs is used to define the critical dry-weather flow for Ballona Creek at Sawtelle Boulevard (upstream of Sepulveda Canyon Channel). There are no historic flow records to determine the average long-term flows for Sepulveda Canyon Channel. Therefore, in the absence of historical records the 2003 dry-weather characterization study measurements are assumed reasonable estimates of flow for this channel. The critical dry-weather flow for Sepulveda Canyon Channel is defined as the average flow of 6.3 cfs.</p> <p>Wet-weather allocations are developed using the load-duration curve concept. The total wet-weather waste load allocation varies by storm, therefore, given this variability in storm water flows, no justification was found for selecting a particular sized storm as the critical condition.</p>
<p><i>Monitoring</i></p>	<p>Effective monitoring will be required to assess the condition of the Ballona Creek and to assess <u>attainment of WLAs and LAs</u> <del>the on-going effectiveness of efforts</del> by dischargers <u>and responsible parties</u> to reduce metals loading to Ballona Creek. Special studies may also be appropriate to provide further information about new data, new or alternative sources, and revised scientific assumptions. Below the Regional Board identifies the various goals of monitoring efforts and studies <u>that shall be included in subsequent permits or other orders.</u> <del>The programs, reports, and studies will be developed in response to</del></p>

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	<p><del>subsequent orders issued by the Executive Officer.</del></p> <p><b>Ambient monitoring</b></p> <p><del>An ambient monitoring program is necessary to assess water quality throughout Ballona Creek and its tributaries and the progress being made to remove the metals impairments. The MS4 and Caltrans storm water NPDES permittees are jointly responsible for implementing the ambient monitoring program. The responsible agencies shall analyze samples for total recoverable metals and dissolved metals, including cadmium and silver, and hardness once a month at each monitoring location. The reported detection limits shall be lower than the hardness adjusted CTR criteria to determine if water quality objectives are being met. There are three ambient monitoring locations.</del></p> <p align="center"><del><b>Ambient Monitoring Locations</b></del></p> <table border="1"> <thead> <tr> <th data-bbox="581 764 808 793"><del>Waterbody</del></th> <th data-bbox="857 764 964 793"><del>Location</del></th> </tr> </thead> <tbody> <tr> <td data-bbox="581 800 756 829"><del>Ballona Creek</del></td> <td data-bbox="857 800 1123 829"><del>At Sawtelle Boulevard</del></td> </tr> <tr> <td data-bbox="581 835 815 865"><del>Sepulveda Channel</del></td> <td data-bbox="857 835 1409 865"><del>Just Above the Confluence with Ballona Creek</del></td> </tr> <tr> <td data-bbox="581 871 756 900"><del>Ballona Creek</del></td> <td data-bbox="857 871 1149 900"><del>At Inglewood Boulevard</del></td> </tr> </tbody> </table> <p><b>TMDL Effectiveness Monitoring</b></p> <p>The MS4 and Caltrans storm water NPDES permittees are jointly responsible for assessing the progress in reducing pollutant loads to achieve the TMDL. The MS4 and Caltrans storm water NPDES permittees are required to submit for approval of the Executive Officer a coordinated monitoring plan that will demonstrate the effectiveness of the phased implementation schedule for this TMDL, which requires attainment of the applicable waste load allocations in prescribed percentages of the watershed over a 15-year period <u>or as a reduction from current load</u>. <del>The monitoring locations specified for the ambient monitoring program may be used as the effectiveness monitoring locations.</del></p> <p>The MS4 and Caltrans storm water NPDES permittees will be found to be effectively meeting the dry-weather waste load allocations if the in-stream pollutant concentrations or load at the first downstream monitoring location is equal to or less than the corresponding concentration- or load-based waste load allocation. Alternatively, effectiveness of the TMDL may be assessed at the storm drain outlet based on the concentration-based waste load allocation for the receiving water. For storm drains that discharge to other storm drains, the waste load allocation will be based on the waste load allocation for the ultimate receiving water for that storm drain system.</p> <p>The MS4 and Caltrans storm water NPDES permittees will be found to be effectively meeting the wet-weather waste load allocations if the loading at the most downstream monitoring location is equal to or less than the wet-weather waste load allocation. Compliance with</p>	<del>Waterbody</del>	<del>Location</del>	<del>Ballona Creek</del>	<del>At Sawtelle Boulevard</del>	<del>Sepulveda Channel</del>	<del>Just Above the Confluence with Ballona Creek</del>	<del>Ballona Creek</del>	<del>At Inglewood Boulevard</del>
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Element	Key Findings and Regulatory Provisions
	<p>individual general construction and industrial storm water permittees will be based on monitoring of discharges at the property boundary. Compliance may be assessed based on concentration and/or load allocations.</p> <p><u>Receiving water quality samples shall also be collected monthly and analyzed for copper, lead, and zinc in the total recoverable and dissolved fraction.</u></p> <p><del>The general storm water permits shall contain a model monitoring and reporting program to evaluate BMP effectiveness. A permittee enrolled under the general permits shall have the choice of conducting individual monitoring based on the model program or participating in a group monitoring effort. MS4 permittees are encouraged to take the lead in group monitoring efforts for industrial facilities under their jurisdiction because compliance with waste load allocations by these facilities will in many cases translate to reductions in metals loads to the MS4 system.</del></p> <p><b>Special studies</b></p> <p>The implementation schedule, Table 7-12.2, allows time for special studies that may serve to refine the estimate of loading capacity, waste load and/or load allocations, and other studies that may serve to optimize implementation efforts. <del>The Regional Board will re-consider the TMDL by January 11, 2011 in light of the findings of these studies.</del> Studies may include:</p> <ul style="list-style-type: none"> <li>• Refinement of hydrologic and water quality model</li> <li>• Additional source assessment</li> <li>• Refinement of potency factors correlation between total suspended solids and metals loadings during dry and wet weather</li> <li>• Correlation between short-term rainfall intensity and metals loadings for use in sizing in-line structural BMPs</li> <li>• Correlation between storm volume and total recoverable metals loading for use in sizing storm water retention facilities</li> <li>• Refined estimates of metals partitioning coefficients, conversion factors, and site-specific toxicity.</li> <li>• Evaluation of potential contribution of aerial deposition and sources of aerial deposition.</li> </ul>

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**Table 7-12.2. Ballona Creek Metals TMDL: Implementation Schedule**

Date	Action
January 11, 2006	Regional Board permit writers shall incorporate the waste load allocations into the NPDES permits. Waste load allocations will be implemented through NPDES permit limits in accordance with the implementation schedule contained herein, at the time of permit issuance or re-issuance.
January 11, 2010	Responsible jurisdictions and agencies shall provide to the Regional Board results of the special studies.
January 11, 2011	The Regional Board shall reconsider this TMDL to re-evaluate the waste load allocations and the implementation schedule.
<b>MINOR NPDES PERMITS AND GENERAL NON-STORM WATER NPDES PERMITS</b>	
Upon permit issuance or renewal	<p>The non-storm water NPDES permittees shall achieve the waste load allocations, which shall be expressed as NPDES water quality-based effluent limitations specified in accordance with federal regulations and state policy on water quality control. <del>Compliance schedules may allow up to five years in individual NPDES permits to meet permit requirements. Compliance schedules may not be established in general NPDES permits.</del> <u>The minor and general non-storm water NPDES permittees are allowed up to January 11, 2016 to achieve the waste load allocations.</u></p> <p>Permittees that hold individual NPDES permits and solely discharge storm water may be allowed (at Regional Board discretion) compliance schedules up to January 11, 2016 to achieve compliance with final WLAs.</p>
<b>GENERAL INDUSTRIAL STORM WATER PERMITS</b>	
Upon permit issuance or renewal	The general industrial storm water NPDES permittees shall achieve dry-weather waste load allocations, which shall be expressed as NPDES water quality-based effluent limitations specified in accordance with federal regulations and state policy on water quality control. Effluent limitations may be expressed as permit conditions, such as the installation, maintenance, and monitoring of Regional Board-approved BMPs. Permittees shall begin to install and test BMPs to meet the interim wet-weather WLAs. BMP effectiveness monitoring will be implemented to determine progress in achieving interim wet-weather waste load allocations.
January 11, 2011	The general industrial storm water NPDES permittees shall achieve the interim wet-weather waste load allocations, which shall be expressed as NPDES water quality-based effluent limitations specified in accordance with federal regulations and state policy on water quality control. Effluent limitations may

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Date	Action
	be expressed as permit conditions, such as the installation, maintenance, and monitoring of Regional Board-approved BMPs. Permittees shall begin an iterative BMP process including BMP effectiveness monitoring to achieve compliance with final wet-weather WLAs.
January 11, 2016	The general industrial storm water NPDES permittees shall achieve the final wet-weather waste load allocations, which shall be expressed as NPDES water quality-based effluent limitations specified in accordance with federal regulations and state policy on water quality control. Effluent limitations may be expressed as permit conditions, such as the installation, maintenance, and monitoring of Regional Board-approved BMPs.
<b>GENERAL CONSTRUCTION STORM WATER PERMITS</b>	
Upon permit issuance, renewal, or re-opener	Non-storm water flows not authorized by Order No. 99-08 DWQ, or any successor order, shall achieve dry-weather waste load allocations of zero. Waste load allocations shall be expressed as NPDES water quality-based effluent limitations specified in accordance with federal regulations and state policy on water quality control. Effluent limitations may be expressed as permit conditions, such as the installation, maintenance, and monitoring of Regional Board-approved BMPs.
January 11, 2013	The construction industry will submit the results of wet-weather BMP effectiveness studies to the Regional Board for consideration. In the event that no effectiveness studies are conducted and no BMPs are approved, permittees shall be subject to site-specific BMPs and monitoring to demonstrate BMP effectiveness.
January 11, 2014	The Regional Board will consider results of the wet-weather BMP effectiveness studies and consider approval of BMPs.
January 11, 2015	<del>All general construction storm water permittees shall implement Regional Board-approved BMPs. The general industrial storm water NPDES permittees shall achieve the final wet-weather waste load allocations, which shall be expressed as NPDES water quality-based effluent limitations specified in accordance with federal regulations and state policy on water quality control. Effluent limitations may be expressed as permit conditions, such as the installation, maintenance, and monitoring of Regional Board-approved BMPs.</del>
<b>MS4 AND CALTRANS STORM WATER PERMITS</b>	
January 11, 2007	In response to an order issued by the Executive Officer, the MS4 and Caltrans storm water NPDES permittees must submit

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	<p>a coordinated monitoring plan, to be approved by the Executive Officer, <del>which includes both ambient monitoring and TMDL effectiveness monitoring. Once the coordinated monitoring plan is approved by the Executive Officer ambient monitoring shall commence within 6 months.</del></p>
<p><u>June 11, 2015</u></p>	<p><u>Submit a revised coordinated monitoring plan.</u></p>
<p>January 11, 2010 (Draft Report) July 11, 2010 (Final Report)</p>	<p>MS4 and Caltrans storm water NPDES permittees shall provide a written report to the Regional Board outlining the drainage areas to be address and how these areas will achieve compliance with the waste load allocations. The report shall include implementation methods, an implementation schedule, proposed milestones, and any applicable revisions to the TMDL effectiveness monitoring plan.</p>
<p>January 11, 2012</p>	<p><u>Compliance with the TMDL may be demonstrated in either one of two ways:</u></p> <ol style="list-style-type: none"> <li><u>1. The MS4 and Caltrans storm water NPDES permittees shall demonstrate that 50% of the total drainage area served by the MS4 <del>system</del> is effectively meeting the dry-weather waste load allocations and 25% of the total drainage area served by the MS4 <del>system</del> is effectively meeting the wet-weather waste load allocations.</u></li> <li><u>2. Alternatively, permittees shall attain a 50% reduction in dry-weather and 25% reduction in wet-weather in the difference between the current loadings and WLAs, as measured at the relevant existing MS4 permit monitoring location and/or at relevant MS4 monitoring stations identified in an approved coordinated monitoring plan.</u></li> </ol>
<p>January 11, 2014</p>	<p><u>Compliance with the TMDL may be demonstrated in either one of two ways:</u></p> <ol style="list-style-type: none"> <li><u>1. The MS4 and Caltrans storm water NPDES permittees shall demonstrate that 75% of the total drainage area served by the MS4 <del>system</del> is effectively meeting the dry-weather waste load allocations.</u></li> <li><u>2. Alternatively, permittees shall attain a 75% reduction in the difference between the current loadings and WLAs, as measured at the relevant existing MS4 permit monitoring location and/or at relevant MS4 monitoring</u></li> </ol>

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Date	Action
	<p align="center"><u>stations identified in an approved coordinated monitoring plan.</u></p>
<p>January 11, 2016</p>	<p><u>Compliance with the TMDL may be demonstrated in either one of two ways:</u></p> <ol style="list-style-type: none"> <li><u>1. The MS4 and Caltrans storm water NPDES permittees shall demonstrate that 100% of the total drainage area served by the MS4 <del>system</del> is effectively meeting the dry-weather waste load allocations and 50% of the total drainage area served by the MS4 <del>system</del> is effectively meeting the wet-weather waste load allocations.</u></li> <li><u>2. Alternatively, permittees shall attain a 100% reduction in dry-weather and 50% reduction in wet-weather in the difference between the current loadings and WLAs, as measured at the relevant existing MS4 permit monitoring location and/or at relevant MS4 monitoring stations identified in an approved coordinated monitoring plan.</u></li> </ol>
<p>January 11, 2021</p>	<p><u>Compliance with the TMDL may be demonstrated in either one of two ways:</u></p> <ol style="list-style-type: none"> <li><u>1. The MS4 and Caltrans storm water NPDES permittees shall demonstrate that 100% of the total drainage area served by the MS4 <del>system</del> is effectively meeting both the dry-weather and wet-weather waste load allocations.</u></li> <li><u>2. Alternatively, permittees shall attain a 100% reduction of both dry and wet-weather in the difference between the current loadings and WLAs, as measured at the relevant existing MS4 permit monitoring location and/or at relevant MS4 monitoring stations identified in an approved coordinated monitoring plan.</u></li> </ol>

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