

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION**

**RESOLUTION NO. R9-2014-0020**

**RESOLUTION OF COMMITMENT TO AN ALTERNATIVE PROCESS  
FOR ACHIEVING WATER QUALITY OBJECTIVES FOR  
BIOSTIMULATORY SUBSTANCES  
IN LOMA ALTA SLOUGH**

**WHEREAS:**

As described herein, the San Diego Water Board began development of a Total Maximum Daily Load (TMDL) in 2006 for the eutrophication impairment in Loma Alta Slough. The Board, in May 2013, issued a revised municipal separate storm sewer system (MS4) permit, Order No. R9-2013-0001 (Regional MS4 Permit). Compliance with the prohibitions and requirements of the Regional MS4 Permit will result in the desired environmental outcome for Loma Alta Slough by 2023. Therefore, the Board will postpone concluding the TMDL process in favor of the prohibitions and approach specified in Order No. R9-2013-0001.

1. The Loma Alta Creek watershed encompasses approximately 6,400 acres, of which approximately 70 percent includes urban development. Development is predominantly residential, with smaller portions of commercial and industrial development, utilities, and public facilities. Approximately 95 percent of the watershed is within the City of Oceanside. The remaining area is within the City of Vista and the County of San Diego. These municipalities are covered under the Regional MS4 Permit.
2. Loma Alta Slough is a 3-acre coastal estuarine wetland located at the terminus of Loma Alta Creek at Buccaneer Beach. The physical features of the Slough have undergone significant changes due to development encroaching upon all sides. Modifications include filling the open water portions of the Slough, straightening banks, and hardening the bed and/or banks. Buccaneer Park is located on the southwestern portion of the Slough and affords the public opportunities for non-contact water recreation such as picnicking, sightseeing, bird watching, and aesthetic enjoyment.
3. Loma Alta Slough is located within the Carlsbad Hydrologic Unit, Loma Alta Hydrologic Area, Basin Number 904.10. The *Water Quality Control Plan for the San Diego Basin (9)* (Basin Plan) designates six existing beneficial uses for the Loma Alta Slough.

- a. Contact Water Recreation
  - b. Non-Contact Water Recreation
  - c. Estuarine Habitat
  - d. Wildlife Habitat
  - e. Rare, Threatened, or Endangered Species
  - f. Marine Habitat
4. The Basin Plan contains Water Quality Objectives (WQOs) developed to protect the most sensitive beneficial uses designated for a water body. The WQO for biostimulatory substances includes a narrative WQO and a numeric interpretation.
- a. Narrative WQO: Inland surface waters, bays and estuaries and coastal lagoon waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growths cause nuisance or adversely affect beneficial uses.
  - b. Numeric Interpretation: The numeric interpretation of the biostimulatory substances WQO for inland surface waters, enclosed bays and estuaries, and coastal lagoons is:
    - i. Concentrations of nitrogen and phosphorus, by themselves or in combination with other nutrients, shall be maintained at levels below those which stimulate algae and emergent plant growth.
    - ii. Threshold total phosphorus (P) concentrations shall not exceed 0.05 milligrams per liter (mg/l) in any stream at the point where it enters any standing body of water, nor 0.025 mg/l in any standing body of water. A desired goal in order to prevent plant nuisance in streams and other flowing waters appears to be 0.1 mg/l total P. These values are not to be exceeded more than 10% of the time unless studies of the specific water body in question clearly show that water quality objective changes are permissible and changes are approved by the San Diego Water Board.
    - iii. Analogous threshold values have not been set for nitrogen compounds; however, natural ratios of nitrogen to phosphorus are to be determined by surveillance and monitoring and upheld. If data are lacking, a ratio of N:P = 10:1, on a weight to weight basis shall be used.
5. Algal blooms sometime occur naturally; however, they are often the result of waste discharges or nonpoint source pollutants. Algal blooms directly and indirectly depress the dissolved oxygen content of water. A direct depression of dissolved oxygen occurs during the night when the lack of sunlight causes algae to consume oxygen for respiration, while no longer producing oxygen from photosynthesis. An indirect depression of dissolved oxygen occurs when the algae die and the biomass is decomposed by aerobic bacteria which consumes

dissolved oxygen. Depressed dissolved oxygen content can result in fish kills and increased turbidity. This general process is known as eutrophication.

6. Excessive algal growth also results in floating algal scum and algal mats that are aesthetically unpleasant. Under these conditions the quality of surface water impairs the beneficial use of contact and non-contact water recreation.
7. Excessive eutrophic conditions result in water quality that does not support the designated beneficial uses of Loma Alta Slough.
8. Loma Alta Slough was placed on the Clean Water Act (CWA) Section 303(d) list of Water Quality Limited Segments in 1996 for impairments related to eutrophication. The beneficial uses of the Slough that are most sensitive to eutrophic condition are estuarine and marine habitat. Eutrophication also adversely affects contact and non-contact water recreation.
9. The CWA section 303(d) requires the State to establish a TMDL for pollutants at a level necessary to implement the applicable water quality standards. Section 303(d)(3) requires the State to establish TMDLs for all other waters.
10. A TMDL is a calculation of the maximum loading capacity of the impaired water body for each impairing pollutant. A TMDL is a planning tool for restoring water quality conditions that support designated beneficial uses by identifying capacity, estimating uncontrollable load allocations, and assigning waste load allocations. A TMDL implementation plan identifies and guides the actions needed to meet the TMDL and achieve water quality standards.

## **TMDL DEVELOPMENT**

11. The San Diego Water Board initiated TMDL development for Loma Alta Slough in 2006 with Investigation Order No. R9-2006-076<sup>1</sup> that identified elements for a Monitoring Program Workplan for Loma Alta Slough with special studies to characterize dry weather flow and storm flow-influenced water quality in order to complete development of a TMDL, load and waste load allocations, and identify necessary reductions. The workplan was submitted in June 2007.<sup>2</sup> The State Water Resources Control Board and the United States Environmental Protection Agency (USEPA) funded development of data compilation and model

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<sup>1</sup> Investigation Order No. R9-2006-076 to Owners and Operators of Municipal Separate Storm Sewer Systems, California Department of Transportation, Hale Avenue Resource Recovery Facility, and North County Transit District Responsible for the Discharge of Bacteria, Nutrients, Sediment, and Total Dissolved Solids into Impaired Lagoons, Adjacent Beaches, and Agua Hedionda Creek. The Order was amended three times, the last of which occurred in October 2007.

<sup>2</sup> San Diego Coastal Lagoons TMDL Monitoring Workplan, June 2007. Prepared by Karen McLaughlin, Martha Sutula, and Ken Schiff, Southern California Coastal Water Research Project.

configuration in 2008.<sup>3</sup> The eutrophication impairment was confirmed using monitoring data collected between 2007 and 2009.

12. A TMDL stakeholder process from 2007-2013 informed decision-making by identifying and discussing scientific, regulatory, and management questions and data, and ultimately selecting numeric targets that represent attainment of the biostimulatory water quality objective for Loma Alta Slough.
13. The TMDL calculations are based upon the best available science and data and are summarized in a draft TMDL Report, *Phosphorus Total Maximum Daily Load for Loma Alta Slough, Oceanside, California (Draft May 2014)*. This process included conducting USEPA-funded special studies; presentations by nationally-recognized experts in the fields of nutrient numeric endpoints, aquatic geochemistry, and the hydrodynamics of coastal estuarine systems; establishing numeric targets based on nutrient numeric endpoints; and hydrodynamic and water quality modeling of Loma Alta Slough used to calculate the TMDL, allocations and reductions.
14. The draft TMDL Report prepared by San Diego Water Board staff following the stakeholder process includes all elements required by USEPA for TMDLs, including the following:
  - a. Problem Statement: The Loma Alta Slough eutrophication impairment occurs during the dry season months (May through October) when the Slough mouth is closed, watershed flows are insufficient to maintain an opening to the ocean, and atmospheric conditions in conjunction with nutrient loading in the Slough result in excessive algal growth.
  - b. Source and Linkage Analysis: The primary sources of the impairment in Loma Alta Slough are dry-weather discharges from irrigation runoff and other illicit dry-weather discharges conveyed by the MS4 to Loma Alta Slough. Smaller contributions occur from groundwater infiltration. Loading of nutrients, specifically phosphorus, into the Slough associated with dry weather flows results in excessive algal growth
  - c. Numeric Targets: The numeric targets for Loma Alta Slough, established by a consensus of the stakeholders, uses macroalgal biomass and percent cover as valid interpretations of the narrative WQO for biostimulatory substances. The selected macroalgal biomass and percent cover targets are shown in Table 1.

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<sup>3</sup> San Diego Region Lagoon TMDLs Phase I – Data Compilation and Model Configuration, June 2008. Prepared for: San Diego Regional Water Quality Control Board and United States Environmental Protection Agency Region IX, Prepared by: Tetra Tech, Inc.

**Table 1  
 Numeric Targets for Loma Alta Slough  
 (from the Draft TMDL Report)**

<b>Metric</b>	<b>Target</b>	<b>Applicable Season</b>
Surface Water Macroalgal Biomass	Less than 90 grams per cubic meter	Dry-weather season, May through October
Surface Water Macroalgal Cover	Less than 50 percent	Dry-weather season, May through October

- d. TMDL Calculation: The TMDL calculated for Loma Alta Slough to achieve the water quality objective for biostimulatory substances is 31.5 grams of total phosphorus per month from May through October.
- e. Allocation of the TMDL: The load allocation and waste load allocation are 19.7 grams of phosphorus per month and 11.8 grams of phosphorus per month, respectively.
- f. Attainment Date: The recommended attainment date, the date when the numeric targets will be reached in Loma Alta Slough, is 2023.
- g. Implementation Plan: To achieve necessary reductions in phosphorus loading, the Implementation Plan relies on the existing Regional MS4 Permit (Order No. R9-2013-0001), specifically the prohibitions on dry-weather discharges and development and implementation of a Water Quality Improvement Plan for the Loma Alta Creek watershed.

**REGIONAL MUNICIPAL STORM WATER PERMIT APPROACH**

- 15. Order No. R9-2013-0001, *National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds within the San Diego Region*<sup>4</sup> (Regional MS4 Permit) was adopted by the San Diego Water Board in May 2013.
- 16. The Regional MS4 Permit includes revisions to the prior MS4 Permit (Order No. R9-2007-0001) that require effective elimination of non-storm water discharges to the MS4 system. As discussed in the linkage analysis of the draft TMDL Report, elimination of unauthorized non-storm water discharges to the MS4 system will result in the attainment of the macroalgal numeric targets. These new provisions as of 2013 include both a prohibition on discharges into the MS4 from over-

<sup>4</sup> A copy is available at:  
[http://www.waterboards.ca.gov/sandiego/water\\_issues/programs/stormwater/docs/updates052313/2013-0523\\_Order\\_No.\\_R9-2013-0001\\_COMPLETE.pdf](http://www.waterboards.ca.gov/sandiego/water_issues/programs/stormwater/docs/updates052313/2013-0523_Order_No._R9-2013-0001_COMPLETE.pdf)

irrigation and requirements to develop and implement a Water Quality Improvement Plan for priority water bodies. Further, a prohibition on contaminated groundwater infiltration remains in the Regional MS4 Permit.

- a. Provision A.1.b, states that *“non-storm water discharges into the MS4s are to be effectively prohibited, through the implementation of Provision II. E.2, unless such discharges are authorized by a separate NPDES permit.”* Pursuant to Provision II.E.2, each Copermittee<sup>5</sup> must implement a program to actively detect and eliminate illicit discharges into the MS4. Provision II.E.2.a requires each Copermittee to address all non-storm water discharges as illicit discharges unless a non-storm water discharge is either identified as a discharge authorized by a separate NPDES permit, or identified as a category of non-storm water discharges or flows that must be addressed according to specific requirements.
  - b. Pursuant to Provision E.2.a.(3) states that groundwater infiltration into the MS4 must also be addressed as an illicit discharge if either the Copermittee or the San Diego Water Board identifies the discharge as a source of pollutants to receiving waters. Studies indicate that groundwater may be a source of pollutants entering the MS4. Therefore, groundwater discharges into the MS4 are identified as a source of pollutants entering the MS4 and may also need to be addressed as illicit discharges and eliminated.
  - c. Provision II.B requires the development and implementation of a Water Quality Improvement Plan to ultimately comply with the prohibitions and limitations presented under Provision A. The Water Quality Improvement Plan is the backbone of the Regional MS4 Permit requirements. Provision B provides the guidance, criteria, and minimum expectations and requirements for the elements of the Water Quality Improvement Plan to be developed and implemented by the Copermittees.
  - d. The Water Quality Improvement Plan also incorporates a program to monitor and assess the progress of the Copermittees' jurisdictional runoff management programs toward improving the quality of discharges from the MS4s, as well as tracking improvements to the quality of receiving waters.
17. The Water Quality Improvement Plans require the implementation of pollution controls and water quality management actions which can result in the attainment of water quality standards in water bodies impaired by discharges from the Copermittees' MS4s. The Water Quality Improvement Plans also include requirements that are expected to attain water quality standards in a reasonable period of time.

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<sup>5</sup> For the purposes of the Regional MS4 Permit, Copermittees are the entities enrolled in the permit. These entities may include municipalities (such as the City of Oceanside) and special districts.

18. The Water Quality Improvement Plans are commitments by the Copermittees to develop, plan, budget for, and implement pollution controls that will attain water quality standards in receiving waters in a reasonable period of time, or as soon as possible.
19. Pursuant to Provision B.2.a. of the Regional MS4 Permit, Copermittees must identify the water quality priorities within each Watershed Management Area that will be addressed by the Water Quality Improvement Plan. Watershed Management Areas may be separated into subwatersheds to focus water quality prioritization and jurisdictional runoff management program implementation efforts by receiving water. And, Loma Alta Slough meets four of the criteria to be used to identify water quality impacts:
  - a) Loma Alta Slough is listed as impaired on the CWA Section 303(d) List (Provision B.2.a.1).
  - b) A TMDL for Loma Alta Slough is under development by the San Diego Water Board (Provision B.2.a.1).
  - c) Receiving water monitoring data indicates an impairment in Loma Alta Slough (Provision B.2.a.6).
  - d) There is evidence of adverse impacts to the chemical, physical, and biological integrity of the water in Loma Alta Slough (Provision B.2.a.8).
20. The City of Oceanside, as a Copermittee covered by the Regional MS4 Permit, intends to take appropriate actions within the context of the Regional MS4 Permit to address the impairment of Loma Alta Slough.<sup>6</sup> In response to tentative Investigative Order R9-2014-0022<sup>7</sup> the City indicated that:
  - a. The City will use the numeric targets, developed through the stakeholder process and incorporated in the draft TMDL Report, as numeric goals in the Water Quality Improvement Plan for the Loma Alta Creek Watershed.
  - b. The City will incorporate the slough monitoring requirements proposed in Tentative Investigative Order No. R9-2014-0022 into the Water Quality Improvement Plan.
  - c. The City will develop and implement a Water Quality Improvement Plan to effectively prohibit the City's non-storm water discharges to the MS4 system.

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<sup>6</sup> Letter titled, *Comment Letter – Tentative Investigative Order No. R9-2014-0020*, dated May 5, 2014.

<sup>7</sup> Tentative Investigative Order was released for public review on March 14, 2014. Staff agreed with stakeholder comments that a more effective and efficient approach to realizing water quality outcomes would be to rely on the existing prohibitions and requirements of the Regional MS4 Permit and replaced the tentative Investigative Order with this Resolution.

- d. The City considers nutrients in the Loma Alta Hydrologic Area as one of the highest priority projects for the development of the Water Quality Improvement Plan.
- e. The City, as provided in a detailed schedule for development and implementation of the Water Quality Improvement Plan (Table 2), estimates that attainment of the numeric goals and restoration of the beneficial uses of Loma Alta Slough will be achieved by the end of 2023.

**Table 2  
City of Oceanside's Tentative Proposed Schedule  
to Address the Eutrophication Impairment in Loma Alta Slough**

<i>Activity</i>	<i>Year</i>
City continues implementation of current programs addressing non-stormwater discharges under the MS4 Permit	2014
City develops Goals, Strategies, and Schedules for the Water Quality Improvement Plan that are aligned with the draft TMDL Report	
Submission of the Water Quality Improvement Plan goals, strategies, and schedules to the San Diego Water Board	2015
Updates to the City's Jurisdictional Runoff Management Program (JRMP) to implement Water Quality Improvement Plan Strategies	
Submission of Water Quality Improvement Plan, include the Loma Alta Slough Monitoring Plan to the San Diego Water Board	
San Diego Water Board approval of the Water Quality Improvement Plan	
City begins implementation of the strategies in the Water Quality Improvement Plan through revised JRMP	2016
City implements Monitoring Program for Slough – Year 1	
Submission of Water Quality Improvement Plan Annual Report for FY15-16 (includes the Annual Monitoring Report for Loma Alta Slough)	2017
City implements Monitoring Program for Slough – Year 2	
City implements JRMP in support of Water Quality Improvement Planning strategies	
Submission of Water Quality Improvement Plan Annual Report for FY16-17 (includes the Annual Monitoring Report for Loma Alta Slough)	2018
Assessment of progress towards meeting the interim numeric goals developed in the Water Quality Improvement Plan	
City and San Diego Water Board assesses effectiveness of actions to date (including potential revisions to numeric goals, strategies, responsible parties, and schedules)	
City implements Monitoring Program for Slough – Year 3	
City continues implementation of Monitoring Plan, Water Quality Improvement Plan Strategies, and JRMP	2019 – 2022
Continued Water Quality Improvement Plan Annual Reporting (including the Annual Monitoring Report for the Slough)	

<b>Activity</b>	<b>Year</b>
Projected attainment of Final Numeric Goals under the Water Quality Improvement Plan	2023
City and San Diego Water Board assess effectiveness of actions to date (including potential revisions to numeric goals, strategies, and schedules)	

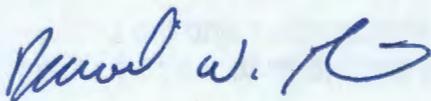
21. The Regional MS4 Permit provides the regulatory structure that allows the reclassification of 303(d) listed waterbodies from Category 5 (evidence shows at least one use not supported and a TMDL is needed) to Category 4b (evidence shows at least one use not supported, but a TMDL is not needed as an *existing regulatory program is expected to result in the attainment of the water quality standard within a reasonable, specified time frame* [italic added for emphasis]).
  
22. As required by State Law and in alignment with Chapter 4 Proactive Public Outreach and Communication of the San Diego Water Board's Practical Vision, a robust stakeholder and public participation process was conducted for the draft TMDL. Interested persons and the public have had reasonable opportunity to participate in development and review of the draft TMDL Report and to review this Resolution. Notices for all meetings were sent to known interested persons and the municipalities with jurisdiction in the Loma Alta watershed. All of the written comments submitted to the San Diego Water Board during the review and comment periods have been considered. Efforts to solicit public review and comment included:
  - a. A multi-year process where meetings with stakeholders and the public were held to develop the draft TMDL.
  - b. Distribution of a Tentative Investigative Order and draft TMDL Report to stakeholders and the public on March 14, 2014.
  - c. A 45-day public comment period during which stakeholders and the public were provided the opportunity to submit written comments to the San Diego Water Board.
  - d. A public workshop to discuss and receive comments from stakeholders and the public on April 24, 2014.
  - e. A public meeting on June 26, 2014 where stakeholders and the public were provided the opportunity to provide oral comment to the Board about the draft TMDL Report and the tentative Resolution.
  
23. This action advances the values and the Monitoring and Assessment chapter of the San Diego Water Board's Practical Vision.

24. The San Diego Water Board has notified all known interested persons and the public of its intent to consider adoption of this Resolution in accordance with applicable statutes and regulations.

**THEREFORE, BE IT RESOLVED THAT:**

1. Consistent with the San Diego Water Board's Practical Vision<sup>8</sup> and USEPA's *Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program*<sup>9</sup>, the Board will postpone concluding the Loma Alta Slough Phosphorus TMDL process to address the eutrophication impairment in favor of implementation of the prohibitions and Water Quality Improvement Plan framework specified in the Regional MS4 Permit, Order No. R9-2013-0001.
2. The Regional MS4 Permit provides a more efficient regulatory pathway towards compliance and implementation actions, and the desired environmental outcomes (i.e. numeric targets), than continuing work toward completing the TMDL process, while simultaneously preserving transparency and accountability.
3. The Board supports the approach proposed by the City of Oceanside and believes that using the Water Quality Improvement Plan, as required by the Regional MS4 Permit, will result in attainment of the numeric goals by the end of 2023.
4. If follow-up actions and effectiveness monitoring do not show progress and final achievement of the TMDL stakeholder-derived numeric targets, then the San Diego Water Board will reinstate the process of considering adoption of the Phosphorus TMDL for Loma Alta Slough.

I, David W. Gibson, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, San Diego Region, on June 26, 2014.



David W. Gibson  
Executive Officer

Attachment: Phosphorus Total Daily Maximum Load for Loma Alta Slough, Oceanside, California, prepared by the California Regional Water Quality Control Board – San Diego Region, (Draft) May 2014.

<sup>8</sup> [http://www.waterboards.ca.gov/sandiego/water\\_issues/Practical\\_Vision/index.shtml](http://www.waterboards.ca.gov/sandiego/water_issues/Practical_Vision/index.shtml)

<sup>9</sup> [http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/upload/vision\\_303d\\_program\\_dec\\_2013.pdf](http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/upload/vision_303d_program_dec_2013.pdf)