

**State of California  
California Regional Water Quality Control Board, Los Angeles Region**

**RESOLUTION NO. R4-2008-XXX  
May 1, 2008**

**Amendment to the *Water Quality Control Plan for the Los Angeles Region*  
to Incorporate a Total Maximum Daily Load for Eutrophic, Algae, Ammonia,  
and Odors (Nutrient) for Machado Lake**

**WHEREAS, the California Regional Water Quality Control Board, Los Angeles  
Region, finds that:**

1. The Federal Clean Water Act (CWA) requires the California Regional Water Quality Control Board, Los Angeles Region (Regional Board) to establish water quality standards for each water body within its region. Water quality standards include beneficial uses, water quality objectives that are established at levels sufficient to protect those beneficial uses, and an antidegradation policy to prevent degrading waters. Water bodies that do not meet water quality standards are considered impaired.
2. CWA section 303(d)(1) requires each state to identify the waters within its boundaries that do not meet water quality standards. Those waters are placed on the state's "303(d) List" or "Impaired Waters List". For each listed water, the state is required to establish the Total Maximum Daily Load (TMDL) of each pollutant impairing the water quality standards in that waterbody. Both the identification of impaired waters and TMDLs established for those water must be submitted to [the United States Environmental Protection Agency \(U.S. EPA\)](#) for approval pursuant to CWA section 303(d)(2). For all waters that are not identified as impaired, the states are nevertheless required to create TMDLs pursuant to CWA section 303(d)(3).
3. A consent decree between [\(U.S. EPA\)](#), Heal the Bay, Inc. and BayKeeper, Inc. was approved on March 22, 1999, which resolved litigation between those parties relating [to](#) the pace of TMDL development. The court order directs the U.S. EPA to ensure that TMDLs for all 1998-listed impaired waters be established within 13 years of the consent decree. The consent decree combined water body pollutant combinations in the Los Angeles Region into 92 TMDL analytical units. In accordance with the consent decree, the Machado Lake Eutrophic, Algae, Ammonia, and Odors (Nutrient) TMDL addresses the waterbody with eutrophic, algae, ammonia, and odor listings in analytical unit 76. Based on the consent decree schedule, TMDLs must be approved or established by [United States Environmental Protection Agency \(U.S. EPA\)](#) by March 2012.
4. The elements of a TMDL are described in 40 CFR 130.2 and 130.7 and section 303(d)(1)(C) and (D) of the CWA, as well as in U.S. EPA guidance documents (Report No. EPA/440/4-91/001). A TMDL is defined as the sum of the individual waste load allocations for point sources, load allocations for nonpoint sources and natural background (40 CFR 130.2). TMDLs must be set at levels necessary to attain and maintain the applicable narrative and numeric water quality

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standards with seasonal variations and a margin of safety that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality (40 CFR 130.7(c)(1)). 40 CFR 130.7 also dictates that TMDLs shall take into account critical conditions for stream flow, loading and water quality parameters. TMDLs typically include one or more numeric “targets”, i.e., numerical translations of the existing water quality standards, which represent attainment of those standards, contemplating the TMDL elements described above. Since a TMDL must represent the “total” load, TMDLs must account for all sources of the relevant pollutants, irrespective of whether the pollutant is discharged to impaired or unimpaired upstream reaches.

5. Neither TMDLs nor their targets or other components are water quality objectives, and thus their establishment does not implicate [California](#) Water Code section 13241. Rather, under California Law, TMDLs are programs to implement existing standards (including objectives), and are thus established pursuant to Water Code section 13242. Moreover, they do not create new bases for direct enforcement against dischargers apart from the existing water quality standards they translate. The targets merely establish the bases through which load allocations (LAs) and waste load allocations (WLAs) are calculated. WLAs are only enforced for a discharger’s own discharges, and then only in the context of the discharger’s National Pollutant Discharge Elimination System (NPDES) permit (or other permit, waiver, or prohibition), which must contain effluent limits consistent with the assumptions and requirements of the WLAs (40 C.F.R. 122.44(d)(vii)(B)). The Regional Board will develop permit requirements through subsequent permit actions that will allow all interested persons, including but not limited to municipal storm water dischargers, to provide comments on how the WLAs should be translated into permit requirements.
6. As envisioned by Water Code section 13242, the TMDL contains a “description of surveillance to be undertaken to determine compliance with objectives.” The Compliance Monitoring and Special Studies elements of the TMDL recognize that monitoring will be necessary to assess the on-going condition of Machado Lake and to assess the on-going effectiveness of efforts by dischargers to reduce nutrient loading to Machado Lake. Special studies may also be appropriate to provide further information about new data, new or alternative sources, and revised scientific assumptions. The TMDL does not establish the requirements for these monitoring programs or reports, although it does recognize the type of information that will be necessary to secure. The Regional Board’s Executive Officer will issue orders to appropriate entities to develop and to submit monitoring programs and technical reports. The Executive Officer will determine the scope of these programs and reports, taking into account any legal requirements, and issue the orders to the appropriate entities.
7. Upon establishment of TMDLs by the State or U.S. EPA, the State is required to incorporate the TMDLs into the State Water Quality Management Plan (40 CFR 130.6(c)(1), 130.7). This Water Quality Control Plan for the Los Angeles Region (Basin Plan) and applicable statewide plans serve as the State Water Quality Management Plans governing the watersheds under the jurisdiction of the Regional Board. Attachment A to this resolution contains the Basin Planning language for this TMDL.

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8. Machado Lake is located in the Ken Malloy Harbor Regional Park (KMHRP), which is a 231 acre Los Angeles City Park serving the Wilmington and Harbor City areas. The Park is located west of the Harbor freeway (110) and east of Vermont Street between the Tosco Refinery on the south and the Pacific Coast Highway on the North. The Machado Lake area is approximately 103.5 acres in total size. The upper portion, which includes the open water area, is approximately 40 acres and the lower wetland portion is about 63.5 acres. This TMDL will address the 40 acre open water lake. Machado Lake is located within the Machado Lake Sub-watershed which is approximately 20 square miles and positioned within the larger 110 square mile Dominguez Channel Watershed. The dominant land use in the Machado Lake Watershed is high density single family residential accounting for approximately 45 % of the land use. Industrial, vacant, retail/commercial, multi-family residential, transportation, and educational institutions each account for 5-7 % of the land use while “all other” accounts for the remaining 23 %. Machado Lake is a receiving body of urban and stormwater runoff from a network of storm drains throughout the watershed. Machado Lake is identified on the 1998, 2002, and 2006 Clean Water Act 303(d) list of impaired water bodies as impaired due to eutrophic conditions, algae, ammonia, and odors. The proposed TMDL addresses impairments of water quality caused by these constituents and the Implementation Plan is developed to achieve water quality objectives for biostimulatory substances in Machado Lake.
9. Eutrophication is increased nutrient loading to a waterbody and the resulting increased growth of biota, phytoplankton and other aquatic plants. Phosphorus and nitrogen are key nutrients for phytoplankton growth in lakes and are often responsible for the eutrophication of surface waters. The increased nutrient loading is generally from two sources, external loading (discharges into the lake) and internal loading (recycling of nutrients within the lake). There are many biological responses to nutrients (nitrogen and phosphorus) in lakes. The biologically available nutrients and light will stimulate phytoplankton and or macrophyte growth. As these plants grow they provide food and habitat for other organisms such as zooplankton and fish. When the aquatic plants die they will release nutrients (ammonia and phosphorus) back into the water through decomposition. The decomposing of plant material consumes oxygen from the water column; in addition the recycled nutrients are available to stimulate additional plant growth. Physical properties such as light, temperature and wind mixing also play integral roles throughout the pathways described.
10. Excessive nutrient loading, from either external or internal process, will lead to excessive phytoplankton and macrophyte growth, which are often considered the primary problems associated with increased nutrient concentrations in lakes. This excessive plant biomass may cause increased turbidity, altered planktonic food chains, algal blooms, reduced dissolved oxygen concentrations, and increased nutrient recycling. These changes can lead to a cascade of biological responses culminating in impaired beneficial uses. Plant growth can lead to increased pH in the lake due to rapid consumption of carbon dioxide. The elevated pH creates a harmful environment for organisms and can increase the concentration of ammonia potentially leading to direct toxicity of fish and other organisms. As these large phytoplankton populations and macrophytes die or break apart the decomposition process will consume oxygen and reduce the

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oxygen levels found in the lake. Low dissolved oxygen levels can be stressful for fish and other organisms and may in fact lead to fish kills.

11. Numeric targets for the TMDL are based on the specific narrative and numeric water quality objectives (WQOs) provided in the Basin Plan.
12. The Regional Board's goal in establishing the TMDL for eutrophic, algae, ammonia, and odors in Machado Lake is to protect the REC 1, REC 2, aquatic life (WARM, WILD, RARE, WET) and water supply (MUN) beneficial uses of Machado Lake and to achieve the numeric and narrative water quality objectives set to protect those uses.
13. Regional Board Staff have prepared a detailed technical document that analyzes and describes the specific necessity and rationale for the development of this TMDL. The technical document entitled "Machado Lake Eutrophic, Algae, Ammonia, and Odors (Nutrient) TMDL" is an integral part of this Regional Board action and was reviewed, considered, and accepted by the Regional Board before acting. Further, the technical document provides the detailed factual basis and analysis supporting the problem statement, numeric targets (interpretation of the narrative and numeric water quality objectives, used to calculate the load allocations), source analysis, linkage analysis, waste load allocations (for point sources), load allocations (for nonpoint sources), margin of safety, and seasonal variations and critical conditions of this TMDL.
14. On November 2, 2004, City of Los Angeles voters approved Proposition O, a ballot initiative to implement water quality improvement projects within the City of Los Angeles. As part of Proposition O, concept reports have been developed for the Machado Lake Ecosystem Rehabilitation Project and the Wilmington Drain Multi-use project. Many of the proposed actions under these Proposition O projects, such as sediment removal and storm drain inlet upgrades, will improve water quality in Machado Lake. Therefore, the Implementation Plan for the Machado Lake TMDL was designed to coordinate with these Proposition O projects in order to realize the best use of public funds. However, the Proposition O projects, currently in the concept stage, may need to be augmented to achieve TMDL numeric targets and eliminate negative eutrophic conditions in Machado Lake. In recognition of the potential need to expand on Proposition O projects, the TMDL Implementation Schedule provides adequate time for design and implementation of projects so that they attain TMDL requirements and achieve water quality standards.
- 14-15. On May 1, 2008, prior to the Board's action on this resolution, public hearings were conducted on the Machado Lake Eutrophic, Algae, Ammonia, and Odors (Nutrient) TMDL. Notice of the hearing for the Machado Lake Nutrient TMDL was published in accordance with the requirements of Water Code Section 13244. This notice was published in the Los Angeles Times on February 7, 2008.
- 15-16. The public has had a reasonable opportunity to participate in the review of the amendment to the Basin Plan. Public Stakeholder meetings were held on March 14, 2006, February 21, 2007, July 16, 2007, September 12, 2007, and November 26, 2007. A draft of the TMDL was released for public comment on

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- | ~~February~~February 7, 2008; a Notice of Hearing and Notice of Filing were published and circulated 45 days preceding Board action; Regional Board staff responded to oral and written comments received from the public; and the Regional Board held a public hearing on May 1, 2008 to consider adoption of the TMDL.
- | ~~16.17.~~ In amending the Basin Plan to establish this TMDL, the Regional Board considered the requirements set forth in Sections 13240 and 13242 of the California Water Code.
- | ~~17.18.~~ Because the TMDL implements existing narrative and numeric water quality objectives (i.e., numeric water quality objectives in the Basin Plan), the Regional Board (along with the State Water Resources Control Board) have determined that adopting a TMDL does not require the water boards to consider the factors of Water Code section 13241. The consideration of the Water Code section 13241 factors, by section 13241's express terms, only applies "in establishing water quality objectives." Here the Regional Board is not establishing water quality objectives, but as required by section 303(d)(1)(C) of the Clean Water Act is adopting a TMDL that will implement the previously established objectives that have not been achieved. In making this determination, the Regional Board has considered and relied upon a legal memorandum from the Office of Chief Counsel to the State Water Board's basin planning staff detailing why TMDLs cannot be considered water quality objectives. (See Memorandum from the Staff Counsel Michael J. Levy, Office of Chief Counsel, to Ken Harris and Paul Lillebo, Division of Water Quality: *The Distinction Between A TMDL's Numeric Targets and Water Quality Standards*, dated June 12, 2002.)
- | ~~18.19.~~ While the Regional Board is not required to consider the factors of Water Code section 13241, it nonetheless has developed and received significant information pertaining to the Water Code section 13241 factors and has considered that information in developing and adopting this TMDL. The past, present, and probable future beneficial uses of water have been considered in that Machado Lake ~~are is~~ designated for a multitude of beneficial uses in the Basin Plan. The beneficial uses for Machado Lake include aquatic life habitat uses, water contact and non-contact water recreation, and water supply. The environmental characteristics of Machado Lake are spelled out at length in the Basin Plan and in the technical documents supporting this Basin Plan amendment, and have been considered in developing this TMDL. Water quality conditions that reasonably could be achieved through the coordinated control of all factors which affect water quality in the area have been considered. This TMDL provides several compliance options, including lake management strategies/lake treatment options that could be implemented directly at the lake and watershed strategies for stormwater runoff throughout the watershed to treat and reduce nutrient loading to the lake. These options provide flexibility for responsible jurisdictions to reduce internal and external nutrient loading to Machado Lake. Establishing a plan that will ensure Machado Lake attains and continues to ~~maintain attain~~ water quality standards is a reasonable water quality condition. However, to the extent that there would be any conflict between the consideration of the factor in Water Code section 13241, subdivision (c), if the consideration were required, and the Clean Water Act, the Clean Water Act would prevail. Economic considerations were considered throughout the

development of the TMDL. Some of these economic considerations arise in the context of Public Resources Code section 21159 and are equally applicable here. The implementation program for this TMDL recognizes the economic limitations on achieving immediate compliance and allows a flexible implementation schedule of 8.5 years. The need for housing within the region has been considered, but this TMDL is unlikely to affect housing needs. Whatever housing impacts could materialize are ameliorated by the flexible nature of this TMDL and the 8.5 year implementation schedule.

- | 19.20. The amendment is consistent with the State Antidegradation Policy (State Board Resolution No. 68-16), in that the changes to water quality objectives (i) consider maximum benefits to the people of the state, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies. Likewise, the amendment is consistent with the federal Antidegradation Policy (40 CFR 131.12).
- | 20.21. Pursuant to Public Resources Code section 21080.5, the Resources Agency has approved the Regional Water Boards' basin planning process as a "certified regulatory program" that adequately satisfies the California Environmental Quality Act (CEQA) (Public Resources Code, ~~Section §~~ 21000 et seq.) requirements for preparing environmental documents (14 Cal. Code Regs. § 15251(g); 23 Cal. Code Regs. § 3782.) The Regional Water Board staff has prepared "substitute environmental documents" for this project that contains the required environmental documentation under the State Water Board's CEQA regulations. (23 Cal. Code Regs. § 3777.) The substitute environmental documents include the TMDL staff report entitled "Machado Lake Eutrophic Algae, Ammonia, and Odors (Nutrient) TMDL", the environmental checklist, the comments and responses to comments, the basin plan amendment language, and this resolution. The project itself is the establishment of a TMDL for eutrophic, algae, ammonia, and odors in Machado Lake. While the Regional Board has no discretion to not establish a TMDL (the TMDL is required by federal law), the Board does exercise discretion in assigning waste load allocations and load allocations, determining the program of implementation, and setting various milestones in achieving the water quality standards. The CEQA checklist and other portions of the substitute environmental documents contain significant analysis and numerous findings related to impacts and mitigation measures.
- | 21.22. A CEQA Scoping hearing was conducted on September 12, 2007 at the Regional Board's office – 320 West 4<sup>th</sup> Street, Suite 200, Los Angeles, California. A notice of the CEQA Scoping hearing was sent to interested parties including cities and/or counties with jurisdiction in or bordering the watershed. The notice of CEQA Scoping hearing was also published in the Los Angeles Daily News on August 1, 2007.
- | 22.23. In preparing the substitute environmental documents, the Regional Board has considered the requirements of Public Resources Code section 21159 and California Code of Regulations, title 14, section 15187, and intends those documents to serve as a tier 1 environmental review. This analysis is not intended to be an exhaustive analysis of every conceivable impact, but an analysis of the reasonably foreseeable consequences of the adoption of this regulation, from a programmatic perspective. Many compliance obligations will

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be undertaken directly by public agencies that will have their own obligations under CEQA. In addition, public agencies including but not limited to County of Los Angeles, Los Angeles County Flood Control District, Cities of Carson, Lomita, Los Angeles, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, and Torrance are foreseeably expected to facilitate compliance obligations. The “Lead” agencies for such tier 2 projects, will assure compliance with project-level CEQA analysis of this programmatic project. Project level impacts will need to be considered in any subsequent environmental analysis performed by other public agencies, pursuant to Public Resources Code section 21159.2.

- | 23.24. The foreseeable methods of compliance ~~of~~ for this TMDL entail construction and operation of stormwater management practices such as filter systems, alum injection system, swales, and bioretention areas. Foreseeable methods of compliance also include lake management practices, such as hydraulic dredging, aeration systems, alum treatment, and fisheries management.
- | 24.25. Consistent with the Regional Board’s substantive obligations under CEQA, the substitute environmental documents do not engage in speculation or conjecture, and only consider the reasonably foreseeable environmental impacts, including those relating to the methods of compliance, reasonably foreseeable feasible mitigation measures to reduce those impacts, and the reasonably foreseeable alternative means of compliance, which would avoid or reduce the identified impacts.
- | 25.26. The proposed amendment could have a potentially significant adverse effect on the environment. However, there are feasible alternatives, feasible mitigation measures, or both, that if employed, would substantially lessen the potentially significant adverse impacts identified in the substitute environmental documents; however such alternatives or mitigation measures are within the responsibility and jurisdiction of other public agencies, and not the Regional Board. Water Code section 13360 precludes the Regional Board from dictating the manner in which responsible agencies comply with any of the Regional Board’s regulations or orders. When the agencies responsible for implementing this TMDL determine how they will proceed, the agencies responsible for those parts of the project can and should incorporate such alternatives and mitigation into any subsequent projects or project approvals. These feasible alternatives and mitigation measures are described in more detail in the substitute environmental documents. (14 Cal. Code Regs. § 15091(a)(2).)
- | 26.27. From a program-level perspective, incorporation of the alternatives and mitigation measures outlined in the substitute environmental documents may not foreseeably reduce impacts to less than significant levels.
- | 27.28. The substitute documents for this TMDL, and in particular the Environmental Checklist and staff’s responses to comments, identify broad mitigation approaches that should be considered at the project level.
- | 28.29. To the extent significant adverse environmental effects could occur, the Regional Board has balanced the economic, legal, social, technological, and other benefits of the TMDL against the unavoidable environmental risks and finds that specific

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economic, legal, social, technological, and other benefits of the TMDL outweigh the unavoidable adverse environmental effects, such that those effects are considered acceptable. The basis for this finding is more fully set forth in the substitute environmental documents. (14 Cal. Code Regs. § 15093.)

- | 29.30. Health and Safety Code section 57004 requires external scientific peer review for certain water quality control policies. Prior to public notice of the draft TMDL, the Regional Board submitted the scientific basis and scientific portions of the Machado Lake Nutrient TMDL to Dr. Rakesh Gelda and Dr. Paul McGinley for external scientific peer review. The peer review comment reports were received by the Regional Board on January 7, 2008 and January 15, 2008. The peer review found that the proposed TMDL data, modeling analyses, and pollutant allocations were presented in a scientifically credible manner. Minor modifications were made to the scientific portions of the TMDL to address comments identified during the peer review process.
  
- | 30.31. The regulatory action meets the “Necessity” standard of the Administrative Procedures Act, Government Code, ~~Section~~section 11353, ~~Subdivision~~subdivision (b). As specified above, Federal law and regulations require that TMDLs be incorporated into the water quality management plan. The Regional Board’s Basin Plan is the Regional Board’s component of the water quality management plan, and the Basin Plan is how the Regional Board takes quasi-legislative, planning actions. Moreover, the TMDL is a program of implementation for existing water quality objectives, and is, therefore, appropriately a component of the Basin Plan under Water Code section 13242. The necessity of developing a TMDL is established in the TMDL staff report, the section 303(d) list, and the data contained in the administrative record documenting the eutrophic, algae, ammonia, and odors impairments of Machado Lake.
  
- | 31.32. The Basin Plan amendment incorporating a TMDL for eutrophic, algae, ammonia, and odors for Machado Lake must be submitted for review and approval by the State Water Resources Control Board (State Board), the State Office of Administrative Law (OAL), and the U.S. EPA. The Basin Plan amendment will become effective upon approval by OAL and U.S. EPA. A Notice of Decision will be filed with the Resources Agency.
  
- | 32.33. If during the State Board’s approval process Regional Board staff, the SWRCB or State Board staff, or OAL determines that minor, non-substantive modifications to the language of the amendment are needed for clarity or consistency, the Executive Officer should make such changes consistent with the Regional Board’s intent in adopting this TMDL, and should inform the Board of any such changes.
  
- | 33.34. Considering the record as a whole, this Basin Plan amendment will result in no effect, either individually or cumulatively, on wildlife resources.

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**THEREFORE, be it resolved that pursuant to sections 13240 and 13242 of the Water Code, the Regional Board hereby amends the Basin Plan as follows:**

1. The Regional Board hereby approves and adopts the CEQA substitute environmental documentation, which was prepared in accordance with Public Resources Code section 21159 and California Code of Regulations, title 14, section 15187, and directs the Executive Officer to sign the environmental checklist.

1.2. Pursuant to Sections 13240 and 13242 of the California Water Code, the Regional Board, after considering the entire record, including oral testimony at the hearing, hereby adopts the amendments to Chapter 7 of the Water Quality Control Plan for the Los Angeles Region, as set forth in Attachment A hereto, to incorporate the elements of the Machado Lake Eutrophic, Algae, Ammonia, and Odors (Nutrient) TMDL.

~~2. The Regional Board hereby approves and adopts the CEQA substitute environmental documentation, which was prepared in accordance with Public Resources Code section 21159 and California Code of Regulations, title 14, section 15187, and directs the Executive Officer to sign the environmental checklist.~~

3. The Executive Officer is directed to forward copies of the Basin Plan amendment to the State Board in accordance with the requirements of section 13245 of the California Water Code.

4. The Regional Board requests that the State Board approve the Basin Plan amendment in accordance with the requirements of sections 13245 and 13246 of the California Water Code and forward it to OAL and the U.S. EPA.

5. If during the State Board's approval process, Regional Board staff, the State Board or OAL determines that minor, non-substantive modifications to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Board of any such changes.

6. The Executive Officer is authorized to request a "No Effect Determination" from the Department of Fish and Game, or transmit payment of the applicable fee as may be required to the Department of Fish and Game.

I, Tracy J. Egoscue, 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, Los Angeles Region, on May 1, 2008.

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Tracy J. Egoscue  
Executive Officer

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