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

RESOLUTION NO. R08-006
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 Angles 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, Alage, 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 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

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.

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

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.

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 (Nutirent) 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.

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 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.

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.

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.)

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 Lakeis 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 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.

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).

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, § 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.

22. A CEQA Scoping hearing was conducted on September 12, 2007 at the Regional Board's office – 320 West 4th 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.

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 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.

24. The foreseeable methods of compliance 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.

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.

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).)

27. From a program-level perspective, incorporation of the alternatives and mitigation measures outlined in the substitute environmental documents may not forseeably reduce impacts to less than significant levels.

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.

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 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.)

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.

31. The regulatory action meets the "Necessity" standard of the Administrative Procedures Act, Government Code, section 11353, 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.

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.

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.

34. Considering the record as a whole, this Basin Plan amendment will result in no effect, either individually or cumulatively, on wildlife resources.

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.

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.

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.

Tracy J. Egoscue
Executive Officer

5/29/08
Date

Amendment to the Water Quality Control Plan – Los Angeles Region

to Incorporate the

Total Maximum Daily Load for Eutrophic, Algae, Ammonia, and Odors (Nutrient) in Machado Lake

Adopted by the California Regional Water Quality Control Board, Los Angeles Region on May 1, 2008

Amendments

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Add:

List of Figures, Tables, and Inserts

Add:

Chapter 7. Total Maximum Daily Loads (TMDLs)
Machado Lake Eutrophic, Algae, Ammonia, and Odors (Nutrient) TMDL

This TMDL was adopted by:

The Regional Water Quality Control Board on May 1, 2008**.**

This 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].**

This TMDL is effective on **[Insert Date]**

The elements of the TMDL are presented in Table 7-29.1 and the Implementation Plan in Table 7-29.2

Table 7-29.1. Machado Lake Eutrophic, Algae, Ammonia, and Odors (Nutrient) TMDL: Elements

TMDL Element	Regulatory Provisions
Problem Statement	Excessive loadings of nutrients, in particular nitrogen (including ammonia) and phosphorus, cause eutrophic effects, including algae and odors, which impair the beneficial uses of Machado Lake. The nutrient enrichment results in high algal productivity; algal blooms have been observed in the lake during summer months. In addition, high nutrient concentrations contribute to excessive and nuisance macrophyte growth. Algae respiration and decay depletes oxygen from the water column creating an adverse aquatic environment. Machado Lake was placed on the Clean Water Act 303(d) list of impaired waterbodies in 1998, 2002, and 2006 for ammonia, algae, odors, and eutrophic. Applicable Water Quality Objectives for this TMDL are narrative objectives for Biostimulatory Substances and Taste and Odor; and numeric objectives for Dissolved Oxygen and Ammonia. The beneficial uses of Machado Lake include beneficial uses associated with recreation (REC 1 and REC 2), aquatic life (WARM, WILD, RARE, and WET) and water supply (MUN). This TMDL addresses the eutrophic, algae, ammonia, and odor listings which impair these uses.
Numeric Targets	The total phosphorus target for Machado Lake is 0.1 mg/L as a monthly average concentration in the water column, which is based upon US EPA Nutrient Criteria Technical Guidance Manual for Lakes and Reservoirs. A ratio of total nitrogen to total phosphorus of 10 is the basis for the total nitrogen (TKN + NO_3-N + NO_2 –N) numeric target of 1.0 mg/L as a monthly average concentration in the water column. The total nitrogen target incorporates all forms of nitrogen including TKN, which is the sum of organic nitrogen and ammonia nitrogen, nitrate nitrogen (NO_3-N), and nitrite nitrogen (NO_2-N). The total nitrogen target expressed as a monthly average is protective of chronic aquatic life exposure for ammonia. There is a separate numeric target for ammonia of 5.95 mg/L as an hourly average to be protective of acute aquatic life exposure. The chlorophyll *a* target is 20 ug/L based on EPA guidance and the Carlson Trophic Status Index. The dissolved oxygen target is a single sample concentration of no less than 5 mg/L measured at 0.3 meter above the sediments based on the Basin Plan objective. The following table provides the numeric targets for the Machado Lake TMDL.

<table>
<tr><th>TMDL Element</th><th>Regulatory Provisions</th></tr>
<tr><td></td><td>
<table>
<tr><th>Indicator</th><th>Numeric Target</th></tr>
<tr><td>Total Phosphorus</td><td>0.1 mg/L monthly average</td></tr>
<tr><td>Total Nitrogen (TKN + NO_3-N + NO_2 –N)</td><td>1.0 mg/L monthly average</td></tr>
<tr><td>Ammonia - N</td><td>5.95 mg/L one-hour average</td></tr>
<tr><td>Ammonia - N</td><td>2.15 mg/L 30 day average</td></tr>
<tr><td>Dissolved Oxygen</td><td>5 mg/L single sample minimum measured 0.3 meter above the sediments.</td></tr>
<tr><td>Chlorophyll a</td><td>20 µg/L monthly average</td></tr>
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</td></tr>
<tr><td>Source Analysis</td><td>The point sources of nutrients into Machado Lake are stormwater discharges from the municipal separate storm sewer system (MS4), California Department of Transportation (Caltrans), and general construction and industrial discharges. Stormwater discharges to Machado Lake occur through the following subdrainage systems: Drain 553, Wilmington Drain, Project 77/510, and Walteria Lake. Discharges from Walteria Lake and Drain 553 are tributary to the Wilmington Drain, which then directly discharges in the northern portion of Machado Lake. Approximately, 88 % of the discharge into the lake enters through the Wilmington Drain.

The major nonpoint source of nutrients to Machado Lake is internal nutrient loading (nutrient flux from sediments). Atmospheric deposition is also a nonpoint source of total nitrogen. Nutrient loads from wind resuspension, bioturbation, birds, and general surface runoff are minor sources. Special studies may be conducted to further evaluate sources.</td></tr>
<tr><td>Linkage Analysis</td><td>The linkage analysis focuses on the relationship between the nutrient loading to the lake and the numeric targets established to measure attainment of beneficial uses. The Nutrient Numeric Endpoints BATHTUB Spreadsheet Model, which was developed by Tetra Tech for US EPA, was used to establish the linkage between nutrient loading to Machado Lake and the predicted water quality response. The model performs water and nutrient balance calculations under steady-state conditions. Eutrophication related water quality conditions are expressed in terms of total phosphorus, ortho-phosphourus, total nitrogen, inorganic nitrogen, chlorophyll a, transparency (Secchi depth), and hypolimnetic oxygen depletion rates. The linkage analysis demonstrates that assigning waste load and load allocations for total nitrogen and total phosphorus will address eutrophication related water quality conditions.</td></tr>
<tr><td>Waste Load Allocations</td><td>Waste load allocations are assigned to urban stormwater dischargers (MS4, Caltrans, general construction and general industrial) in both wet and dry weather. The final waste load allocations are assigned as concentration based allocations of 0.1 mg/L and 1.0 mg/L as monthly averages for total phosphorus and total nitrogen (TKN + NO_3-N + NO_2 –N), respectively.</td></tr>
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TMDL Element	Regulatory Provisions
	Interim WLAs are based on current in-lake concentrations. The effective date interim total nitrogen and total phosphorus waste load allocations are set as the 95th percentile of current concentrations in the lake. The 5 year interim total nitrogen WLAs are established as a 30 percent reduction from current in-lake concentrations. Concentration-based interim and final WLAs will be included in stormwater permits in accordance with NPDES guidance and requirements. The tables below present the interim and final waste load allocations for the stormwater discharges.

Waste Load Allocations	Total Phosphorus	Total Nitrogen ($TKN + NO_3\text{-}N + NO_2\text{-}N$)
	Final WLA (mg/L)	Final WLA (mg/L)
MS4 Permittees[1] Caltrans, General Construction and Industrial stormwater permits	0.1	1.0

1. Municipal Separate Storm Sewer System (MS4) Permittees that are responsible for discharges to Machado Lake include: Los Angeles County, Los Angeles County Flood Control District, and the Cities of Carson, Lomita, Los Angeles, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, and Torrance.

Waste Load Allocations	Years After Effective Date	Interim Total Phosphorus WLAs (mg/L)	Interim Total Nitrogen (TKN + NO3-N + NO2-N) WLAs (mg/L)
MS4 Permittees, Caltrans, General Construction and Industrial Stormwater permits	At Effective Date[1]	1.25	3.50
	5[2]	1.25	2.45
	9.5 (Final WLAs[3])	0.10	1.00

[1] The compliance point for all effective date interim WLAs is measured in the lake.
[2] The compliance point for all year 5 interim WLAs is measured as specified in Implementation Plan Section II of Table 7-29.1
[3] The compliance point for all final WLAs is measured as specified in Implementation Plan Section II of Table 7-29-.1

<table>
<tr><th>TMDL Element</th><th>Regulatory Provisions</th></tr>
<tr><td>Load Allocations</td><td>
Load allocations are assigned for nonpoint source discharges to the lake, primarily internal loading from the lake. The final load allocations for internal loading are concentration based allocations of 0.1 mg/L and 1.0 mg/L as monthly averages for total phosphorus and total nitrogen (TKN + NO_3-N + NO_2 –N), respectively. Concentration based load allocations are appropriate and can be evaluated by monitoring the nutrient concentrations in the water column.

Interim LAs are based on current in-lake concentrations. The effective date interim total nitrogen and phosphorus load allocations are set at the 95th percentile of current concentrations in the lake. The 5 year interim total nitrogen LAs are established as a 30 percent reduction from current in-lake concentrations. The tables below present the final and interim load allocations for the nonpoint sources.

<table>
<tr><th rowspan="2">Load Allocations</th><th>Total Phosphorus</th><th>Total Nitrogen (TKN + NO_3-N + NO_2-N)</th></tr>
<tr><th>Final LA (mg/L)</th><th>Final LA (mg/L)</th></tr>
<tr><td>Internal Nutrient Load (City of Los Angeles Department of Recreation and Parks)</td><td>0.1</td><td>1.0</td></tr>
</table>
<table>
<tr><th>Load Allocations</th><th>Years After Effective Date</th><th>Interim Total Phosphorus LAs (mg/L)</th><th>Interim Total Nitrogen (TKN + NO3-N + NO2-N) LAs (mg/L)</th></tr>
<tr><td rowspan="3">Internal Nutrient Load (City of Los Angeles Department of Recreation and Parks)</td><td>At Effective Date</td><td>1.25</td><td>3.50</td></tr>
<tr><td>5</td><td>1.25</td><td>2.45</td></tr>
<tr><td>9.5 (Final LAs)</td><td>0.10</td><td>1.00</td></tr>
</table>
</td></tr>
<tr><td>Margin of Safety</td><td>The uncertainties associated with this TMDL are due to limited data from the stormdrains entering the lake and the inherent seasonal and annual variability in delivery of phosphorus and nitrogen for external sources and nutrient cycling within the lake. To address these uncertainties, conservative numeric targets were selected by establishing the targets under a critical lake volume. Likewise, the waste load and load allocations are based on a constant value for internal loading. Moreover, the lake conditions under which the load capacity was developed were based on dry weather critical conditions when the lake level is</td></tr>
</table>

TMDL Element	Regulatory Provisions
	reduced and therefore loading capacity is reduced. These conservative approaches provide an implicit margin of safety.
Seasonal Variations and Critical Conditions	The external nutrient loading to Machado Lake generally occurs during winter and spring months, in conjunction with storm events. During the dry season the lake receives minimal external loading. In the summer there is the release of nutrients from the sediments. At the same time there is very little water inflow and a decreased lake level due to evaporation. These seasonal variations cause increased nutrient concentrations. Moreover, the reduced lake volume during the summer months provides less assimilative capacity. The critical condition for the attainment of beneficial uses at Machado Lake occurs during the summer months. Also, the critical conditions for dissolved oxygen impairments related to algae growth are during the warm dry summer months when algal respiration is highest. The Machado Lake nutrient TMDL accounts for seasonal and critical conditions of the summer months by assigning a load allocation to the lake sediments and requiring a reduction in this source of nutrients to the lake, and by assigning WLAs to urban stormwater dischargers year-round.
Special Studies and Monitoring Plan	**<u>Special Studies</u>** Additional monitoring and special studies may be undertaken by dischargers and responsible agencies to evaluate the uncertainties and assumptions made in the development of this TMDL. (The results of special studies may be used to reevaluate waste load allocations and load allocations when the Machado Lake Nutrient TMDL is reconsidered.) ***Optional Study #1:*** Core flux study to estimate the nutrient flux from sediments under equilibrium conditions. Results from this study would be beneficial to gauge the success of implementation measures such as aeration. ***Optional Study #2:*** A study to understand factors such as nitrogen and phosphorus sedimentation rates (particulate settling velocities), the overall lake sedimentation rate, and sediment resuspension rate. These factors would be important for a Machado Lake nutrient budget and gauging the potential need for periodic hydraulic dredging. ***Optional Study #3***: A work plan for permittees to assess compliance with TMDL WLAs on a mass basis for total nitrogen and total phosphorous. The work plan should detail testing methodologies, BMPs, and treatments to be implemented to attain and demonstrate a reduction of total nitrogen and phosphorous loading on a mass basis. A final report including the results shall be submitted to the Regional Board for Executive Officer approval. Additional special studies proposed by stakeholders are optional and will be considered at the 7.5 year TMDL reconsideration. All proposed special study work plans and documents shall be submitted to the Regional Board for Executive Officer approval prior to special studies being initiated.

TMDL Element	Regulatory Provisions
	Monitoring Plan A Monitoring and Reporting Program (MRP) plan to assess compliance with LAs and WLAs measured in lake must be submitted to the Executive Officer for approval within one year of the effective date. Monitoring will begin 60 days after the Executive Officer has approved the monitoring plan. This MRP plan will be required as part of the Lake Water Quality Management Plan as discussed in the Implementation Section. The MRP plan will be designed to monitor and implement this TMDL. The monitoring plan is required to measure the progress of pollutant load reductions and improvements in water quality. The monitoring plan shall ▪ Determine attainment of total phosphorus, total nitrogen, ammonia, dissolved oxygen, and chlorophyll *a* numeric targets. ▪ Determine compliance with the waste load and load allocations for total phosphorus, and total nitrogen. ▪ Monitor the effect of implementation actions on lake water quality Responsible jurisdictions shall be required to begin monitoring sixty days after the Executive Officer approves the MRP. Field samples and water samples shall be collected bi-weekly on a year-round basis. The lake sampling sites will be located in the open water portion of the lake with one in the northern portion and one in the southern portion of the lake. *In situ* measurements of water quality shall be made. The water quality probes will be calibrated immediately prior to departure to the field against known pH, EC, and DO solutions. Secchi depth, a measurement of transparency, will also be measured with a standard Secchi disk or other approved method. Additionally, a staff gauge shall be placed in an appropriate location at the lake to measure changes in lake elevation. The monitoring plan shall consider stratification for the collection of water samples. Water samples shall be analyzed for constituents including but not limited to the following. ▪ Total nitrogen ▪ Total phosphorus ▪ Nitrate (NO_3-N) ▪ Total ammonia (NH_3-N) ▪ Ortho-phosphorus (PO_4) ▪ Total Dissolved Solids ▪ Total Suspended Solids ▪ Chlorophyll a ▪ Turbidity

TMDL Element	Regulatory Provisions
	Detection limits shall be less than the numeric targets in this TMDL. A monitoring report shall be prepared and submitted to the Regional Board annually within six months after the completion of the final sampling event of the year. If an alternative WLA compliance option is selected, an appropriate separate TMDL compliance MRP Plan and TMDL Implementation Plan must be submitted for Executive Officer approval. Annual monitoring reports demonstrating compliance or non-compliance with WLAs shall be submitted for Executive Officer approval. All compliance monitoring must be conducted in conjunction with a Regional Board approved Quality Assurance Project Plan (QAPP). The QAPP shall include protocols for sample collection, standard analytical procedures, and laboratory certification.

TMDL Element	Regulatory Provisions
Implementation Plan	Compliance with the TMDL is based on the assigned WLAs and LAs. Compliance with this TMDL will require the implementation of NPDES stormwater permit limits and lake management activities to reduce nutrient loading to the lake, reduce nutrient concentrations in the lake, prevent excessive algal biomass growth, and maintain an adequate dissolved oxygen concentration. Table 7-29.2 contains a schedule for responsible jurisdictions to implement BMPs and a Lake Water Quality Management Plan to comply with the TMDL. I. Implementation and Determination of Compliance with LAs Compliance with the LAs will be measured in the lake and will be achieved through a combination of implementation of lake management projects and BMPs to reduce external and internal nutrient loading to the lake and to reduce and manage internal nutrient sources. Load allocations will be implemented through the following: (1) Memorandum of Agreement (MOA), or (2) Clean Up and Abatement Order or Other Regulatory Order The responsible jurisdictions for the load allocations shall be allowed one year from the effective date of this TMDL to enter into a Memorandum of Agreement (MOA) with the Executive Officer, detailing the voluntary efforts that will be undertaken to attain the load allocations. The MOA shall comply with the Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options ("Policy"), including part II, section 2 c ii and related provisions, and shall be consistent the requirements of this TMDL. If the MOA is timely adopted, and so long as it is implemented, the program described in the MOA shall be deemed "certified", pursuant to the Policy, subject to the conditions of Policy section 2 e. The MOA shall include development of a Lake Water Quality Management Plan (LWQMP), must be approved by the Executive Officer, and may be amended with Executive Officer approval, as necessary. If a MOA is not established with responsible jurisdictions within one year or if responsible jurisdictions do not comply with the terms of the MOA, a cleanup and abatement order pursuant to Water Code section 13304, or another appropriate regulatory order, shall be issued to implement the load allocations. Furthermore, the implementation of the MOA must result in attainment of the TMDL load allocations. If the MOA and LWQMP are not implemented or otherwise do not result in attainment of load allocations, the certification shall be revoked, the MOA rescinded, and the load allocations shall be implemented through a cleanup and abatement order, or other order, as described above. Implementation of the MOA shall be reviewed annually by the Executive Officer as part of the Monitoring and Reporting Program (MRP) annual reports. To the satisfaction of the Executive Officer the LWQMP shall meet the following criteria:

TMDL Element	Regulatory Provisions
	■ One and one half years from the effective date of the TMDL responsible jurisdictions shall submit a LWQMP, MRP Plan and QAPP for approval by the Executive Officer. ■ The LWQMP shall include a list of cooperating parties. ■ The LWQMP shall address appropriate water quality monitoring and a timeline for the implementation of management practices to reduce and manage nutrient loading to the lake. The timeline shall ensure that the implementation actions are underway prior to Regional Board reconsideration of the TMDL. The LWQMP shall present a comprehensive management plan and strategy for achieving the LAs at Machado Lake and attaining numeric targets and beneficial uses. The LWQMP shall include a schedule for implementation actions. ■ The LWQMP shall achieve compliance with the load allocations through the implementation of lake management strategies to reduce and manage internal nutrient sources. The lake management implementation actions may include, but are not limited to the following: ■ Wetland restoration ■ Aeration system ■ Hydraulic Lake dredging ■ Hydroponic Islands ■ Alum treatment ■ Fisheries Management ■ Macrophyte Management and Harvesting ■ Maintain Lake Level – Supplemental Water ■ The LWQMP shall include a MRP Plan. The MRP shall include a requirement that the responsible jurisdictions report compliance and non-compliance with load allocations as part of annual reports submitted to the Regional Board. Compliance with the load allocations shall be measured in the lake at two locations, one in the north portion and one in the south. The average of these two sampling locations shall determine compliance with the load allocations. MRP protocols may be based on Surface Water Ambient Monitoring Program (SWAMP) protocols for water quality monitoring or alternative protocols proposed by dischargers and approved by the Executive Officer. ■ A QAPP shall also be submitted to the Regional Board for approval by the Executive Officer to ensure data quality. The QAPP shall include protocols for sample collection, standard analytical procedures, and laboratory certification. The QAPP may be based on SWAMP protocols for water quality monitoring and quality assurance or alternative protocols proposed by dischargers and approved by the Executive Officer.

TMDL Element	Regulatory Provisions
	■ The MOA and LWQMP program shall include assurances that it will be implemented by the responsible jurisdiction. ■ Implementation of the LWQMP program should include a Health and Safety Plan to protect personnel. The Executive Officer may require a revised assessment under the MOA and LWQMP: (a) To prevent nutrients from accumulating or recycling in the lake in deleterious amounts that impair water quality, contribute to negative eutrophic conditions or adversely affect beneficial uses; (b) To reflect the results of nutrient assessment or special studies Cleanup and Abatement Order or Other Regulatory Order: Alternatively, responsible jurisdictions may propose, or the Regional Board may impose, an alternative program which would be implemented through a cleanup and abatement order, or any other appropriate order or orders, provided the program is consistent with the allocations, reductions, and schedule described in Table 7-29.2. ❖ Determination of Compliance with Interim LAs Responsible parties shall comply with numeric interim LAs or may be deemed in compliance with the interim LAs through implementation of lake sediment removal and/or lake management implementation actions in accordance with the LWQMP schedule as approved by the Regional Board Executive Officer. II. Implementation and Determination of Compliance with WLAs WLAs will be incorporated into NPDES stormwater permits. Stormwater permittees may be deemed in compliance with waste load allocations by actively participating in a LWQMP and attaining the waste load allocations for Machado Lake. Stormwater permittees and the responsible party for the lake may work together to implement the LWQMP and reduce external nutrient loading to attain the TMDL waste load allocations measured in the lake. Alternatively, MS4 Permittees may be deemed in compliance with waste load allocations by demonstrating reduction of total nitrogen and total phosphorous on an annual mass basis measured at the stormdrain outfall of the permittee's drainage area. The annual mass based allocation shall be equal to a monthly average concentration of 0.1 mg/L TP and 1.0 mg/L TN based on approved flow conditions. Permittees must demonstrate total nitrogen and total phosphorous load reductions to be achieved in accordance with a special study workplan approved by the Executive Officer. Compliance may also be demonstrated as concentration based monthly averages

TMDL Element	Regulatory Provisions
	for TP and TN measured at the stormdrain outfall of the permittee's drainage area. MS4 Permittees shall be required to develop and implement a MRP plan and TMDL Implementation Plan. The MRP plan shall include a requirement that the responsible jurisdictions report compliance and non-compliance with waste load allocations as part of annual reports submitted to the Regional Board. ❖ Determination of Compliance with Interim WLAs Responsible parties may comply with the numeric interim WLAs or may be deemed in compliance with the interim WLAs through implementation of external nutrient source reduction projects in accordance with the TMDL Implementation Plan schedule as approved by the Regional Board Executive Officer. The Regional Board may revise these WLAs and the compliance point based on the collection of additional information developed through special studies or monitoring conducted as part of this TMDL. The Regional Board will reconsider the TMDL at 7.5 years from the effective date based on water quality monitoring and special studies.

TMDL Element	Regulatory Provisions

	III. APPLICATION OF ALLOCATIONS TO RESPONSIBLE JURISDICTIONS
	
	Responsible jurisdictions to attain WLAs for this TMDL include but are not limited to:
	• Caltrans
	• General Stormwater Permit Enrollees
	• MS4 Permittees including:
	  ➢ Los Angeles County
	  ➢ Los Angeles County Flood Control District
	  ➢ Cities of Carson,
	  ➢ City of Lomita,
	  ➢ City of Los Angeles,
	  ➢ City of Palos Verdes Estates,
	  ➢ City of Rancho Palos Verdes,
	  ➢ City of Redondo Beach,
	  ➢ City of Rolling Hills,
	  ➢ City of Rolling Hills Estates,
	  ➢ City of Torrance.
	
	The City of Los Angeles, Department of Recreation and Parks is responsible jurisdiction to implement the assigned Load Allocations for this TMDL.

Table 7-29.2 Machado Lake Eutrophic, Algae, Ammonia, and Odors (Nutrient) TMDL: Implementation Schedule

Task Number	Task	Responsible Jurisdiction	Date
1	Effective date interim waste load (WLA) and load allocations (LA) for total nitrogen and total phosphorus apply.	California Department of Transportation (Caltrans), Municipal Separate Storm Sewer System Permittees[4] (MS4 Permittees), City of Los Angeles – Department of Recreation and Parks	Effective Date of TMDL
2	Responsible jurisdictions shall enter into a Memorandum of Agreement (MOA) with the Regional Board to implement the load allocations.	City of Los Angeles – Department of Recreation and Parks	1 year from effective date of TMDL
3	Regional Board staff shall begin development of a Clean Up and Abatement Order or other regulatory order to implement the load allocations if an MOA is not established with responsible jurisdictions.	Regional Board Staff	1 year from effective date of TMDL
4	Clean Up and Abatement Order or other regulatory order adopted by the Regional Board if an MOA is not established with responsible jurisdictions. The Clean Up and Abatement Order or other regulatory order shall reflect the TMDL Implementation Schedule.	Regional Board Staff	1.5 years from effective date of TMDL
5	Responsible jurisdictions whose compliance is determined as concentration based WLAs measured at end of pipe shall submit a Monitoring and Reporting Program (MRP) Plan to the Executive Officer for approval.	Caltrans, MS4 Permittees	One year from effective date of TMDL
6	Responsible jurisdictions shall submit a Lake Water Quality Management Plan, MRP Plan and Quality Assurance Project Plan for approval by the Executive Officer to comply with MOA.	City of Los Angeles – Department of Recreation and Parks	1.5 years from effective date of TMDL
7	Responsible jurisdictions shall submit a work plan for optional special study #3 (if responsible jurisdictions choose to conduct this special study) for approval by the Executive Officer.	Caltrans, MS4 Permittees	One year from effective date of TMDL

[4] Municipal Separate Storm Sewer System (MS4) Permittees that are responsible for discharges to Machado Lake include: Los Angeles County, Los Angeles County Flood Control District, and the Cities of Carson, Lomita, Los Angeles, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, and Torrance.

Task Number	Task	Responsible Jurisdiction	Date
8	Responsible jurisdictions shall submit work plans for optional special studies #1 and #2 (if responsible jurisdictions choose to conduct special studies) for approval by the Executive Officer.	Caltrans, MS4 Permittees, City of Los Angeles – Department of Recreation and Parks	1.5 years from effective date of TMDL
9	Responsible jurisdictions shall begin monitoring as outlined in the approved MRP plan.	Caltrans, MS4 Permittees, City of Los Angeles – Department of Recreation and Parks	Sixty days from date of MRP Plan approval
10	Responsible jurisdictions shall begin implementation of Lake Water Quality Management Plan.	City of Los Angeles – Department of Recreation and Parks	Sixty days from date of Lake Water Quality Management Plan approval
11	Responsible jurisdictions whose compliance is determined as concentration based WLAs measured at end of pipe shall submit a TMDL Implementation Plan including BMPs to address discharges from storm drains.	Caltrans, MS4 Permittees	Two years from effective date of TMDL
12	Responsible jurisdictions whose compliance is determined as concentration based WLAs measured at end of pipe shall begin implementation of BMPs to address discharges from stormdrains	Caltrans, MS4 Permittees	Sixty days from date of Implementation Plan approval
13	Responsible jurisdictions shall submit annual monitoring reports. The monitoring reports shall include a requirement that the responsible jurisdictions demonstrate compliance with the MOA. If the MOA and Lake Water Quality Management Plan are not implemented or otherwise do not result in attainment of load allocations, the Regional Board shall revoke the MOA and the load allocations shall be implemented through a Clean Up and Abatement Order or other regulatory order.	City of Los Angeles – Department of Recreation and Parks	Annually – from date of Lake Water Quality Management Plan approval
14	Responsible jurisdictions whose compliance is determined as concentration based WLAs measured at end of pipe shall submit annual monitoring reports.	Caltrans, MS4 Permittees	Annually – from date of MPR Plan approval
15	Optional Special Study #3 completed and final report submitted for Executive Officer approval.	Caltrans, MS4 Permittees	Within 2.5 years of effective date of TMDL

Task Number	Task	Responsible Jurisdiction	Date
16	Responsible jurisdictions shall submit a MRP Plan and TMDL Implementation Plan for the alternative mass based WLA compliance option (if selected), to the Executive Officer for approval.	Caltrans, MS4 Permittees	Within 2.5 years of effective date of TMDL
17	Responsible jurisdictions shall begin monitoring and implementing projects/programs as outlined in the approved MRP and TMDL Implementation Plan for the alternative mass based WLA compliance option.	Caltrans, MS4 Permittees	Sixty days from date of MRP/ Implementation Plan approval
18	Responsible jurisdictions whose compliance is determined as mass based WLAs measured at end of pipe shall submit annual monitoring reports.	Caltrans, MS4 Permittees	Annually – from date of MPR/ Implementation Plan approval
19	Optional Special Studies completed and Special Study final reports submitted for Executive Officer approval.	Caltrans, MS4 Permittees, City of Los Angeles – Department of Recreation and Parks	Within 6 years of effective date of TMDL
20	Regional Board staff and responsible jurisdictions will present an Information Item to the Regional Board on the progress of TMDL implementation efforts and compliance with implementation schedules.	Regional Board staff and responsible jurisdictions	4 years from effective date of TMDL
21	5 Year interim total nitrogen WLA and LA apply.	Caltrans, MS4 permittees, City of Los Angeles – Department Recreation and Parks	Within 5 years of effective date of TMDL
22	Regional Board will reconsider the TMDL to include results of optional special studies and water quality monitoring data completed by the responsible jurisdictions and revise numeric targets, WLAs, LAs, and the implementation schedule as needed.	Regional Board	7.5 years from effective date of TMDL
23	Responsible jurisdictions shall achieve Final WLAs and LAs for total nitrogen (including ammonia) and total phosphorus and demonstrate attainment of numeric targets for total nitrogen, ammonia, total phosphorus, dissolved oxygen, and chlorophyll a. Responsible parties shall demonstrate attainment of water quality standards for total nitrogen, ammonia, total phosphorus, dissolved oxygen, and biostimulatory substances in accordance with federal regulations and state policy on water quality control.	Caltrans, MS4 Permittees, City of Los Angeles – Department of Recreation and Parks	Within 9.5 years of effective date of TMDL