

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

RESOLUTION NO. R09-005
October 1, 2009

Amendment to the *Water Quality Control Plan for the Los Angeles Region* to Incorporate a Total Maximum Daily Load for Organochlorine (OC) Pesticides, Polychlorinated Biphenyls (PCBs), Sediment Toxicity, Polycyclic Aromatic Hydrocarbons (PAHs), and Metals for Colorado Lagoon

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 waterbody 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. Waterbodies 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 waters must be submitted to United State 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 Santa Monica BayKeeper, Inc. was approved on March 22, 1999, which resolved litigation between those parties relating the pace of TMDL development in the Los Angeles Region. 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. Analytical Unit 82 addresses the impairments in Colorado Lagoon associated with DDT, PCBs, Chlordane, Dieldrin and Sediment Toxicity and Analytical Unit 83 addresses the impairments associated with PAHs and metals including Lead and Zinc. In accordance with the consent decree, the Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL addresses listings in analytical units 82 and 83. According to the consent decree, the TMDL for OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals in Colorado Lagoon 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 non-point 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 Cal. 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. Like most other parts of the Water Quality Control Plan for the Los Angeles Region (Basin Plan), TMDLs are not generally self-implementing. The targets merely establish the bases through which load allocations (LAs) and waste load allocations (WLAs) are calculated. The LAs and WLAs may be implemented in any manner consistent with the Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options, adopted by the State Water Resources Control Board (State Board) on June 16, 2005 (Resolution 2005-0050). Federal regulations also require that National Pollutant Discharge Elimination System (NPDES) permits be consistent with the assumptions and requirements of available WLAs (40 C.F.R. 122.44(d)(vii)(B)).
6. As envisioned by Cal. Water Code section 13242, the TMDL contains a "description of surveillance to be undertaken to determine compliance with objectives." The Compliance Monitoring element of the TMDL recognizes that monitoring will be necessary to assess the on-going condition of the Colorado Lagoon watershed and to assess the on-going effectiveness of efforts by dischargers to reduce OC pesticides, PCBs, sediment toxicity, PAHs, and metals loading to the lagoon. The Regional Board's Executive Officer will ensure that appropriate entities develop and submit monitoring programs and technical reports necessary to achieve the purposes of the TMDL. The Executive Officer will determine the scope of these programs and reports, taking into account any

legal requirements, including this TMDL, and if necessary issue appropriate orders to 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). The Basin Plan and applicable statewide plans serve as the State Water Quality Management Plans governing the watersheds under the jurisdiction of the Los Angeles Regional Board. Attachment A to this resolution contains the language to be incorporated into the Basin Plan for this TMDL.
8. Colorado Lagoon is located within the City of Long Beach, California. The Lagoon is a 15-acre, V-shaped tidal lagoon connected to Alamitos Bay and Pacific Ocean via a box culvert to Marine Stadium. Colorado Lagoon hosts sensitive estuarine habitats and provides public recreation. The beneficial uses identified in the Basin Plan include water contact recreation (REC-1), non-contact water recreation (REC 2), commercial and sport fishing (COMM), warm freshwater habitat (WARM), wildlife habitat (WILD), and shellfish harvesting (SHELL). Colorado Lagoon watershed is approximately 1,172 acres and divided into five sub-basins that discharge storm water and urban dry weather runoff to the Colorado Lagoon. Each of the sub-basins is served by a major storm sewer trunkline and supporting appurtenances that collect and transport storm water and urban dry weather runoff to the Colorado Lagoon. The land uses in the Colorado Lagoon watershed are primarily residential, open space, commercial, and institutional. Residential is the dominant land use accounting for approximately 66 % of the land use. Open space, commercial, and institutional land uses account for 19%, 10%, and 5%, respectively. Colorado Lagoon is identified on the 1998, 2002, and 2006 Clean Water Act 303(d) list of impaired water bodies as impaired due to elevated levels of OC pesticides, PCBs, sediment toxicity, PAHs, and metals in the sediment and fish tissue. The proposed TMDL addresses impairments of water quality caused by these constituents and the Implementation Plan is developed to achieve fish tissue and sediment quality objectives of Colorado Lagoon.
9. The Regional Board's goal in establishing the Colorado Lagoon OC Pesticides, PCBs, sediment toxicity, PAHs, and metals TMDL is to determine and set forth measures needed to remove the impairment of fish tissue and sediment quality due to high levels of OC pesticides, PCBs, sediment toxicity, PAHs, and metals in Colorado Lagoon.
10. The 1998, 2002, and 2006 303(d) lists for the Colorado Lagoon contain listings for sediment toxicity, chlordane, PAHs, lead, and zinc in sediment; and chlordane, DDT, dieldrin, and PCBs in fish tissue. In order to address these listings, water column, fish tissue and sediment targets are selected. Inclusion of the water, fish tissue, and sediment targets mentioned above adequately protects benthic and aquatic organisms, wildlife, and human health from potentially harmful effects associated with OC pesticides, PCBs, sediment toxicity, and metals.

11. Regional Board staff has worked with the City of Long Beach, County of Los Angeles, Friends of Colorado Lagoon, and U.S. EPA during the development of a detailed technical document that analyzes and describes the specific necessity and rationale for the development of this TMDL. The technical document entitled "Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL" is an integral part of this Regional Board action and has been reviewed by the Regional Board before acting. The technical document provides the detailed factual basis and analysis supporting the problem statement, numeric targets, 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.
12. On October 1, 2009, prior to the Board's action on this resolution, public hearings were conducted on the TMDL for OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals for Colorado Lagoon. Notice of the hearing for Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL was published in accordance with the requirements of Cal. Water Code Section 13244. This notice was published in the Long Beach Press-Telegram on July 23, 2009.
13. The public has had a reasonable opportunity to participate in the review of the amendment to the Basin Plan. A draft of the TMDL was released for public comment on July 23, 2009; 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 October 1, 2009 to consider adoption of the TMDL.
14. 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.
15. Because the TMDL implements existing narrative and numeric quality objectives for fish tissue, sediment, and water quality objectives, the Regional Board along with the State Water Resources Control Board (State Board) has determined that adopting a TMDL does not require the water boards to consider the factors of Cal. 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 Board's basin planning staff detailing why TMDLs cannot be considered water quality objectives. (See Memorandum from 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.)

16. While the Regional Board is not required to consider the factors of Cal. Water Code section 13241, it, nonetheless, has developed and received significant information pertaining to the Cal. Water Code section 13241 factors and has considered that information in developing and adopting this TMDL. Section 13241 at a minimum requires that water quality objectives ensure reasonable protection of beneficial uses. The designated beneficial uses for Colorado Lagoon include water contact recreation, non-contact water recreation, commercial and sport fishing, warm freshwater habitat, wildlife habitat, and shellfish harvesting. The past, present, and probable future beneficial uses of water have been considered in that Colorado Lagoon is designated for a number of beneficial uses in the Basin Plan. Various living organisms (including vegetation, fish, invertebrates, and wildlife) are present in, transient through, and will be present in the lagoon. The environmental characteristics of Colorado Lagoon 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. Sediment, fish tissue, and water quality conditions that could be reasonably achieved through the coordinated control of implementation actions including integrating watershed-scale infrastructure projects and non-structural best management practices (BMPs) to control the loading of polluted storm water and contaminated sediments to Colorado Lagoon have been considered. TMDL implementation will be carried out by responsible parties including, but not limited to, the City of Long Beach, the Los Angeles County Flood Control District, and the California Department of Transportation (Caltrans). These projects focus on removal of contaminated sediment, reduction of storm water loadings by redirecting flows from major storm drains that currently discharge into the Lagoon to Marine Stadium, and diversion of low flows during the dry season to the sanitary sewer. Responsible agencies also have several options for implementing structural and nonstructural BMPs to attain fish tissue, sediment, and water quality objectives. Attainment of the water quality standards through removal of contaminated sediment, redirection of flows, and BMPs is a reasonably achievable water quality condition for Colorado Lagoon. 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. The TMDL also authorizes the use of BMPs, to the extent authorized by law, for various storm water dischargers. Economic considerations were considered and are reflected in an implementation program that is flexible and allows 7 years for dischargers to comply with the final allocations. The need for housing within the region has been considered, but this TMDL is unlikely to affect housing needs. Whatever housing impacts could materialize is ameliorated by the

flexible nature of this TMDL and the implementation schedule.

17. The amendment is consistent with the State Antidegradation Policy (State Board Resolution No. 68-16), and the federal Antidegradation Policy (40 CFR 131.12), in that it does not allow the degradation of water quality, but requires restoration of water quality and attainment of water quality standards.
18. Pursuant to Public Resources Code section 21080.5, the Resources Agency has approved the Regional 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 Board staff has prepared "substitute environmental documents" for this project that contains the required environmental documentation under the State Board's CEQA regulations. (23 Cal. Code Regs. § 3777). The substitute environmental documents include the TMDL staff report entitled "Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL", the environmental checklist, the comments and responses to comments, the basin plan amendment language, and this resolution. 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.
19. A CEQA Scoping meeting was conducted on January 21, 2009 at the auditorium of the Lowell Elementary School, 5201 East Broadway, Long Beach, California. A notice of the CEQA Scoping meeting was sent to interested parties including cities and/or counties with jurisdiction in or bordering the watershed. The notice of CEQA Scoping meeting was also published in the Long Beach Press-Telegram on December 22, 2008.
20. 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, the City of Long Beach, the County of Los Angeles, and Caltrans are foreseeably expected to facilitate compliance obligations. The "Lead" agencies for tier 2 projects will assure compliance with project-level CEQA analysis requirements. Project level impacts

will need to be considered in any subsequent environmental analysis performed by responsible agencies, pursuant to Public Resources Code section 21159.2.

21. The foreseeable methods of compliance of this TMDL entail construction and operation of storm water management practices such as relocation of major storm drains to Marine Stadium, low flow diversion of dry-weather run-off to sewer lines, installation of vegetated bioswales and trash separation devices, construction of a new (open or underground) channel from Colorado Lagoon to Marine Stadium, cleaning the existing culvert, repairing tidal gates and removal of sill/structural impedances, and removal of contaminated sediment. The above projects have already been subject to extensive environmental review. Both the Los Angeles County Board of Supervisors and the City of Long Beach have certified program level Environmental Impact Reports (EIRs) for the Termino Avenue Drain Project and the Colorado Lagoon Restoration Project that examine the foreseeable environmental impacts from constructing and operating a system to comply with the Colorado OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL.
22. 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.
23. 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. Cal. 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 elsewhere in the substitute environmental documents. (14 Cal. Code Regs. § 15091(a)(2)).
24. From a program-level perspective, incorporation of the alternatives and mitigation measures specified may not foreseeably reduce impacts to less than significant levels.
25. 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.

26. 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 set forth in the substitute environmental documents. (14 Cal. Code Regs. § 15093).
27. The regulatory action meets the "Necessity" standard of the Administrative Procedures Act, Government Code, Section 11353, Subdivision (b). As specified above, Federal laws and regulations require that TMDLs be incorporated into the state's 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 OC pesticides, PCBs, sediment toxicity, PAHs, and metals impairments of Colorado Lagoon.
28. The Basin Plan amendment incorporating a TMDL for OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals for Colorado Lagoon must be submitted for review and approval by the 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.
29. Considering the record as a whole, this Basin Plan amendment is expected to result in an effect, either individually or cumulatively, on wildlife resources.

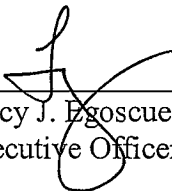
THEREFORE, be it resolved that pursuant to sections 13240 and 13242 of the Cal. Water Code, the Regional Board hereby amends the Basin Plan as follows:

1. 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 Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL.
2. The Regional Board hereby approves and adopts the CEQA substitute environmental documentation and the referenced Environmental Impact Reports

entitled "Termino Avenue Drain Project Environmental Impact Report" and "Environmental Impact Report – Colorado Lagoon Restoration Project, City of Long Beach, California" , including all findings contained therein, 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 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 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 October 1, 2009.



Tracy J. Egoscue
Executive Officer

9/11/10
Date

**Amendment to the Water Quality Control Plan – Los Angeles Region
to Incorporate a**

**Total Maximum Daily Load for Organochlorine (OC) Pesticides, Polychlorinated Biphenyls
(PCBs), Sediment Toxicity, Polycyclic Aromatic Hydrocarbons (PAHs), and Metals for
Colorado Lagoon**

Adopted by the California Regional Water Quality Control Board, Los Angeles Region on
October 1, 2009

Amendments

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TMDL

List of Figures, Tables, and Inserts

Add:

Chapter 7. Total Maximum Daily Loads (TMDLs)

Tables

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TMDL

7-30.1. Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals
TMDL: Elements

7-30.2. Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals
TMDL: Implementation Schedule

Chapter 7. Total Maximum Daily Loads (TMDLs)

**Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals
TMDL**

This TMDL was adopted by:

The Regional Water Quality Control Board on October 1, 2009.

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 7-30.1 and the Implementation Plan in Table
7-30.2

Attachment A to Resolution No. R09-005

Table 7-30.1. Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL: Elements

TMDL Element	Regulatory Provisions
Problem Statement	<p>Colorado Lagoon is identified on the 1998, 2002, and 2006 Clean Water Act Section 303(d) lists of water-quality limited segments as impaired due to elevated levels of OC pesticides, PCBs, sediment toxicity, PAHs, and metals in fish tissue and sediment.</p> <p>Applicable fish tissue, sediment, and water quality objectives for this TMDL are narrative objectives for chemical constituents, bioaccumulation, pesticides, and toxicity; and numeric objectives for metals and organic compounds.</p> <p>The beneficial uses of Colorado Lagoon include water contact recreation (REC-1) and non-contact water recreation (REC-2), commercial and sport fishing (COMM), warm freshwater habitat (WARM), wildlife habitat (WILD), and shellfish harvesting (SHELL).</p> <p>The goal of this TMDL is to protect and restore fish tissue and sediment quality in Colorado Lagoon by controlling the contaminated sediment loading and accumulation of contaminated sediment in the lagoon.</p>

Attachment A to Resolution No. R09-005

TMDL Element	Regulatory Provisions																																								
<p>Numeric Targets</p>	<p>Colorado Lagoon is listed on the 303(d) list for sediment toxicity, PAHs, lead, and zinc in sediment; DDT, Dieldrin, and PCBs in fish tissue; and chlordane in fish tissue and sediment. In order to address these listings, water column, fish tissue and sediment targets are selected. The following table provides the numeric targets for the Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL.</p> <p>Numeric targets for water, fish tissue, and sediment for OC Pesticides, PCBs, PAHs, and metals</p> <table border="1" data-bbox="407 516 1458 867"> <thead> <tr> <th>Constituents</th> <th>Water Quality Target¹ (ug/L)</th> <th>Fish Tissue Target² (ug/kg)</th> <th>ERL Sediment Target³ (ug/dry Kg)</th> </tr> </thead> <tbody> <tr> <td>Chlordane</td> <td>0.00059</td> <td>5.60</td> <td>0.50</td> </tr> <tr> <td>DDTs</td> <td>0.00059</td> <td>21.00</td> <td>1.58⁴</td> </tr> <tr> <td>Dieldrin</td> <td>0.00014</td> <td>0.46</td> <td>0.02</td> </tr> <tr> <td>PCBs</td> <td>0.00017⁵</td> <td>3.60⁶</td> <td>22.70</td> </tr> <tr> <td>Total PAHs⁷</td> <td>0.049⁸</td> <td>5.47</td> <td>4,022.00</td> </tr> <tr> <td>Total LPAHs⁹</td> <td>NA</td> <td>NA</td> <td>552.00</td> </tr> <tr> <td>Total HPAHs¹⁰</td> <td>NA</td> <td>NA</td> <td>1,700.00</td> </tr> <tr> <td>Lead</td> <td>8.10¹¹</td> <td>NA</td> <td>46,700.00</td> </tr> <tr> <td>Zinc</td> <td>81.00¹¹</td> <td>NA</td> <td>150,000.00</td> </tr> </tbody> </table>	Constituents	Water Quality Target ¹ (ug/L)	Fish Tissue Target ² (ug/kg)	ERL Sediment Target ³ (ug/dry Kg)	Chlordane	0.00059	5.60	0.50	DDTs	0.00059	21.00	1.58 ⁴	Dieldrin	0.00014	0.46	0.02	PCBs	0.00017 ⁵	3.60 ⁶	22.70	Total PAHs ⁷	0.049 ⁸	5.47	4,022.00	Total LPAHs ⁹	NA	NA	552.00	Total HPAHs ¹⁰	NA	NA	1,700.00	Lead	8.10 ¹¹	NA	46,700.00	Zinc	81.00 ¹¹	NA	150,000.00
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Lead	8.10 ¹¹	NA	46,700.00																																						
Zinc	81.00 ¹¹	NA	150,000.00																																						
<p>Source Analysis</p>	<p>Point sources</p> <p>The point sources of OC pesticides, PCBs, PAHs, and metals discharged to Colorado Lagoon are urban runoff and stormwater discharges from the municipal separate storm sewer systems (MS4s) and California Department of Transportation (Caltrans). The Colorado Lagoon watershed is divided into five sub-basins that discharge stormwater and urban dry weather runoff to Colorado Lagoon. Each of the sub-basins is served by a major storm sewer trunk line and supporting appurtenances that collect and transport stormwater and urban dry weather runoff to Colorado Lagoon. The sub-basins are as follows:</p> <p>Sub-basin A. Discharges to Colorado Lagoon via a 63-inch reinforced concrete pipe owned and operated by the Los Angeles County Flood Control District (Project 452 Drain)</p>																																								

¹ The California Toxics Rule (CTR) water quality criteria for consumption of organisms only are applied as the numeric targets for Chlordane, 4,4' DDT, Dieldrin, and PCBs for protection of human health. The CTR aquatic life criteria for saltwater are applied as the numeric targets for protection of aquatic life for lead and zinc.

² Office of Environmental Health Hazard Assessment (OEHHA) Fish Contaminant Goals are applied as numeric targets for Chlordane, DDTs, Dieldrin, and PCBs. The U.S. Environmental Protection Agency (USEPA) screening value is applied as the numeric target for total PAHs.

³ Effect Range Low (ERL) sediment criteria from National Oceanic and Atmospheric Administration (NOAA) Sediment Quality Guidelines are applied as numeric targets.

⁴ DDTs in sediment are measured as the sum of DDT, DDE, and DDD.

⁵ PCBs in water are measured as the sum of all congener or isomer or homolog or aroclor.

⁶ PCBs in fish tissue and sediment are measured as sum of all congeners.

⁷ PAHs: Polycyclic aromatic hydrocarbons (sum of acenaphthylene, anthracene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluorene, indeno(1,2,3-c,d)pyrene, phenanthrene, and pyrene).

⁸ CTR human health criteria were not established for total PAHs. Therefore, the lowest CTR criteria for individual PAHs of 0.049 ug/L is applied to the sum of benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-c,d)pyrene. Other PAHs compounds in the CTR shall be screened as part of the TMDL monitoring plan.

⁹ LPAHs: Low molecular weight PAHs.

¹⁰ HPAHs: High molecular weight PAHs.

¹¹ Saltwater criteria for metals are expressed in terms of the dissolved fraction of metals in water column.

Attachment A to Resolution No. R09-005

TMDL Element	Regulatory Provisions
	<p>discharging into the north part of the west arm. The drainage pattern is generally to the south and east. Sub-basin A contains the most commercial activities mainly along Anaheim Street and the northern part of Redondo Avenue.</p> <p>Sub-basin B. Discharges to Colorado Lagoon via a 54-inch reinforced concrete pipe (Line I Storm Drain) discharging into the north part of the north arm. The drainage pattern is generally to the south and west. Sub-basin B is predominately park/golf course open space with some residential areas on the north east corner.</p> <p>Sub-basin C. Discharges to Colorado Lagoon via a 48-inch reinforced concrete pipe (Line K Storm Drain) discharging into the mid-point of the north arm. The drainage pattern is generally to the south and west. Sub-basin C is almost entirely residential with a few commercial activities at the eastern boundary.</p> <p>Sub-basin D. Discharges to Colorado Lagoon via a 24-inch reinforced concrete pipe (Line M Storm Drain) discharging into the south part of the west arm. The drainage pattern is generally to the north and east. Sub-basin D is almost entirely residential with schools and other public facilities.</p> <p>Sub-basin E. Discharges to Colorado Lagoon via a 48-inch reinforced concrete pipe (Termino Avenue Drain) discharging into the west arm. The drainage pattern is generally to the south and east. Sub-basin E is mainly residential with commercial activities located along 7th Street, Coronado and Redondo Avenues to the west, and public facilities to the north.</p> <p>Several other smaller storm drains serve the areas immediately adjacent to the lagoon. These smaller storm drains contribute small amounts of contaminants relative to the five sub-basin discharges described above.</p> <p>Non-point Sources</p> <p>Sediment loading from non-point sources to Colorado Lagoon is mainly runoff from urban, recreational park areas including two golf courses and adjacent park areas, a right-of-way greenbelt, and the picnic and park areas surrounding Colorado Lagoon, and atmospheric deposition.</p>
Linkage Analysis	<p>This TMDL analysis makes a simplifying assumption that the relationship between OC pesticides and PCBs concentrations in fish tissue and sediments is linear, with the slope of the line being the overall sediment–organism bioaccumulation factor (BAF).</p> <p>The impairing contaminants in sediment are associated with fine-grained particles that are primarily delivered to the sediments through suspended solids in stormwater and urban runoff. It is expected that reductions in loadings of these pollutants will lead to reductions in sediment concentrations over time. The existing contaminants in surface sediments will be removed by dredging operations and reduced as sediments are scoured</p>

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	<p>during storms. For the legacy pollutants (chlordane and PCBs), some losses will also occur through the slow decay and breakdown of these organic compounds. Concentrations in surface sediments will be reduced through mixing with cleaner sediments. Attenuation of pollutant concentration levels in sediment is expected to translate to reductions in fish tissue contaminant levels.</p> <p>The linkage analysis focuses on the relationship between source contributions and in-lagoon water and sediment response. The Environmental Fluid Dynamics Code (EFDC) model was selected to simulate source loadings and transport of the listed pollutants in the Colorado Lagoon. This model estimates the metals, PAHs, PCBs, and DDT concentrations in the receiving water to evaluate potential management scenarios and to identify waste load allocations to support water and sediment quality management decisions for Colorado Lagoon. Hydrodynamic, water quality, and sediment transport was developed to simulate the dynamic interaction between Marine Stadium and Colorado Lagoon.</p>																																																					
<p>Waste Load Allocations</p>	<p>Sediment Waste Load Allocations (WLAs) for MS4 Discharges:</p> <p><u>Mass-based WLAs for MS4 Discharges</u></p> <p>Mass-based waste load allocations for MS4 permittees including the City of Long Beach, Los Angeles County Flood Control District, and Caltrans are allocated to the five major storm drain outfalls that currently discharge to the lagoon. Because Colorado Lagoon is located completely within the jurisdictional boundaries of the City of Long Beach and land areas serviced by storm drains that currently discharge to the lagoon are under the jurisdiction of the City of Long Beach, the WLAs are assigned to the City of Long Beach. Caltrans and the City of Long Beach shall each be responsible for achieving the WLAs assigned to the Line I Storm Drain as it conveys stormwater from both Caltrans’ facilities and the City of Long Beach. The Los Angeles County Flood Control District (District) owns and operates the Project 452 Storm Drain; therefore, the District and the City of Long Beach shall each be responsible for achieving the WLAs assigned to the Project 452 Storm Drain. Mass-based WLAs are applied as annual limits and compliance with the mass-based WLAs for sediment will be determined at the storm drain outfalls to the lagoon.</p> <table border="1" data-bbox="428 1415 1442 1675"> <thead> <tr> <th rowspan="2">Constituent</th> <th colspan="5">Final Mass-based WLAs (mg/yr)</th> </tr> <tr> <th>Project 452</th> <th>Line I</th> <th>Termino Ave</th> <th>Line K</th> <th>Line M</th> </tr> </thead> <tbody> <tr> <td>Chlordane</td> <td>5.10</td> <td>3.65</td> <td>12.15</td> <td>1.94</td> <td>0.73</td> </tr> <tr> <td>Dieldrin</td> <td>0.20</td> <td>0.15</td> <td>0.49</td> <td>0.08</td> <td>0.03</td> </tr> <tr> <td>Lead</td> <td>476,646.68</td> <td>340,455.99</td> <td>1,134,867.12</td> <td>181,573.76</td> <td>68,116.09</td> </tr> <tr> <td>Zinc</td> <td>1,530,985.05</td> <td>1,093,541.72</td> <td>3,645,183.47</td> <td>583,213.37</td> <td>218,788.29</td> </tr> <tr> <td>PAHs</td> <td>41,050.81</td> <td>29,321.50</td> <td>97,739.52</td> <td>15,637.89</td> <td>5,866.44</td> </tr> <tr> <td>PCBs</td> <td>231.69</td> <td>165.49</td> <td>551.64</td> <td>88.26</td> <td>33.11</td> </tr> <tr> <td>DDT</td> <td>16.13</td> <td>11.52</td> <td>38.40</td> <td>6.14</td> <td>2.30</td> </tr> </tbody> </table> <p><u>Concentration-based WLAs for MS4 Discharges</u></p> <p>Concentration-based WLAs for sediment are assigned to MS4 permittees including the City of Long Beach, Los Angeles County Flood Control District, and Caltrans. Concentration-based WLAs for sediment are applied as average monthly limits.</p>	Constituent	Final Mass-based WLAs (mg/yr)					Project 452	Line I	Termino Ave	Line K	Line M	Chlordane	5.10	3.65	12.15	1.94	0.73	Dieldrin	0.20	0.15	0.49	0.08	0.03	Lead	476,646.68	340,455.99	1,134,867.12	181,573.76	68,116.09	Zinc	1,530,985.05	1,093,541.72	3,645,183.47	583,213.37	218,788.29	PAHs	41,050.81	29,321.50	97,739.52	15,637.89	5,866.44	PCBs	231.69	165.49	551.64	88.26	33.11	DDT	16.13	11.52	38.40	6.14	2.30
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	<p>Compliance with the concentration-based WLAs for sediment shall be determined by pollutant concentrations in the sediment in the lagoon at points in the West Arm, North Arm, and Central Arm that represent the cumulative inputs from the MS4 drainage system to the lagoon. Concentration-based WLAs for sediment are also assigned to all other minor storm drains discharging from the MS4 to the lagoon.</p> <p>Concentration-based interim WLAs for sediment are set to allow time for removal of contaminated sediment through proposed implementation actions. Interim WLAs are based on the 95th percentile value of sediment data collected from 2000 to 2008. The use of 95th percentile values to develop interim limits is consistent with current NPDES permitting methodology. If the 95th percentile is equal to or lower than the numeric target, the interim limit is equal to the final WLAs. Interim and final WLAs will be included in MS4 permits in accordance with NPDES guidance and requirements.</p> <table border="1" data-bbox="630 747 1237 1119"> <thead> <tr> <th rowspan="2">Constituent</th> <th colspan="2">Concentration-based WLAs</th> </tr> <tr> <th>Interim WLAs (ug/dry kg)</th> <th>Final WLAs (ug/dry kg)</th> </tr> </thead> <tbody> <tr> <td>Chlordane</td> <td>129.65</td> <td>0.50</td> </tr> <tr> <td>Dieldrin</td> <td>26.20</td> <td>0.02</td> </tr> <tr> <td>Lead</td> <td>399,500.00</td> <td>46,700.00</td> </tr> <tr> <td>Zinc</td> <td>565,000.00</td> <td>150,000.00</td> </tr> <tr> <td>PAHs</td> <td>4,022.00</td> <td>4,022.00</td> </tr> <tr> <td>PCBs</td> <td>89.90</td> <td>22.7</td> </tr> <tr> <td>DDT</td> <td>149.80</td> <td>1.58</td> </tr> </tbody> </table> <p>Sediment Waste Load Allocations for Other Point Sources</p> <p>Concentration-based waste load allocations are assigned to minor NPDES permits, other stormwater, and non-stormwater permittees. Any future minor NPDES permits or enrollees under a general non-stormwater NPDES permit, general industrial stormwater permit or general construction permit will also be subject to the concentration-based waste load allocations.</p> <table border="1" data-bbox="630 1421 1237 1705"> <thead> <tr> <th>Constituents</th> <th>Waste Load Allocation (ug/dry kg)</th> </tr> </thead> <tbody> <tr> <td>Chlordane</td> <td>0.50</td> </tr> <tr> <td>Dieldrin</td> <td>0.02</td> </tr> <tr> <td>Lead</td> <td>46,700.00</td> </tr> <tr> <td>Zinc</td> <td>150,000.00</td> </tr> <tr> <td>PAHs</td> <td>4,022.00</td> </tr> <tr> <td>PCBs</td> <td>22.70</td> </tr> <tr> <td>DDT</td> <td>1.58</td> </tr> </tbody> </table>	Constituent	Concentration-based WLAs		Interim WLAs (ug/dry kg)	Final WLAs (ug/dry kg)	Chlordane	129.65	0.50	Dieldrin	26.20	0.02	Lead	399,500.00	46,700.00	Zinc	565,000.00	150,000.00	PAHs	4,022.00	4,022.00	PCBs	89.90	22.7	DDT	149.80	1.58	Constituents	Waste Load Allocation (ug/dry kg)	Chlordane	0.50	Dieldrin	0.02	Lead	46,700.00	Zinc	150,000.00	PAHs	4,022.00	PCBs	22.70	DDT	1.58
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<p>Load Allocations</p>	<p>A mass-based load allocation is developed for direct atmospheric deposition. An estimate of direct atmospheric deposition was developed based on the percent area of surface water within the watershed, which is approximately 15 acres or 1.3% of the total watershed area. The load allocation for atmospheric deposition is calculated by multiplying this percentage by the total loading capacity.</p> <table border="1" data-bbox="631 451 1239 716"> <thead> <tr> <th>Constituent</th> <th>Load Allocation (mg/year)</th> </tr> </thead> <tbody> <tr> <td>Chlordane</td> <td>0.36</td> </tr> <tr> <td>Dieldrin</td> <td>0.014</td> </tr> <tr> <td>Lead</td> <td>33,217.48</td> </tr> <tr> <td>Zinc</td> <td>106,694.25</td> </tr> <tr> <td>PAHs</td> <td>2,860.83</td> </tr> <tr> <td>PCBs</td> <td>16.15</td> </tr> <tr> <td>DDT</td> <td>0.71</td> </tr> </tbody> </table>	Constituent	Load Allocation (mg/year)	Chlordane	0.36	Dieldrin	0.014	Lead	33,217.48	Zinc	106,694.25	PAHs	2,860.83	PCBs	16.15	DDT	0.71
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<p>Margin of Safety</p>	<p>An implicit margin of safety exists in the final WLAs. The implicit margin of safety is based on the selection of multiple numeric targets, including targets for water, fish tissue and sediment to protect human health, and the selection of ERLs as numeric targets for sediment, which are the most protective of the potentially applicable sediment guidelines available.</p> <p>Additionally, to address sources of uncertainty in the analysis, particularly the assumption of natural removal of contaminated sediment at the northern arm of the lagoon, an explicit 10% margin of safety is also included.</p>																
<p>Seasonal Variations and Critical Conditions</p>	<p>No correlation with flow or seasonality (wet vs. dry season) was found to exist in sediment or tissue data. Given that allocations for this TMDL are expressed in terms of OC pesticides, PCBs, PAHs, and metals concentrations in sediment, a critical condition is not identified based upon flow or seasonality.</p> <p>Because the adverse effects of OC pesticides, PCBs, PAHs, and metals are related to sediment accumulation and bioaccumulation in the food chain over long periods of time, short term variations in concentrations are less likely to cause significant impacts upon beneficial uses.</p>																
<p>Monitoring Plan</p>	<p>The Colorado Lagoon TMDL Monitoring Plan (CLTMP) is designed to monitor and evaluate implementation of this TMDL, and refine the understanding of current sediment loadings. The goals of the CLTMP are:</p> <p>To determine compliance with OC pesticides, PCBs, metals, and PAHs waste load and load allocations,</p> <p>To monitor the effectiveness of implementation actions proposed by Los Angeles County Flood Control District and the City of Long Beach on water and sediment quality, including the potential impacts of redirecting discharges from the Termino Ave. Drain and from cleaning the culvert on Marine Stadium and Colorado Lagoon,</p> <p>To monitor contaminated sediment levels in the Lagoon especially in the North Arm of the Lagoon and determine if additional implementation action such as dredging are</p>																

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	<p>necessary to achieve the TMDL, and</p> <p>To implement the CLTMP in a manner consistent with other TMDL implementation plans and regulatory actions within the Colorado Lagoon watershed.</p> <p>Monitoring shall begin six months after the monitoring plan is approved by the Executive Officer. Water column and sediment samples will be collected at the outlet of the storm drains discharging to the lagoon, while water column, sediment, and fish tissue samples will be collected in the West Arm, Central Arm, North Arm, and at the outlet of the lagoon to Marine Stadium <u>during an incoming tide, and at the outfall of Termino Ave. Drain to Marine Stadium. The number and location of monitoring sites shall be specified in the monitoring plan to be approved by the Executive Officer.</u> The City of Long Beach, the Los Angeles County Flood Control District, and Caltrans are each responsible for conducting water, sediment, and fish tissue monitoring. However, they are encouraged to collaborate or coordinate their efforts to avoid duplication and reduce associated costs.</p> <p>Water quality samples and total suspended solids samples shall be collected <u>quarterly in the first year and</u> semi-annually <u>thereafter</u> and analyzed for chlordane, dieldrin, OC pesticides, and total PCBs at detection limits that are at or below the minimum levels. The minimum levels are those published by the State Water Resources Control Board in Appendix 4 of the Policy for the Implementation of Toxic Standards for Inland Surface Water, Enclosed Bays, and Estuaries of California, 2005.</p> <p>Water quality samples shall also be collected <u>quarterly in the first year and</u> semi-annually <u>thereafter</u> and analyzed for general water quality constituents (GWQC), total recoverable and dissolved PAHs, lead, and zinc. If water quality objectives are exceeded at any time, sampling frequency shall be accelerated to quarterly thereafter until water quality objectives are not exceeded. Total suspended solid samples shall also be collected to analyze for PAHs, lead, and zinc. For metal analysis, methods that allow for (1) the removal of salt matrix to reduce interference and avoid inaccurate results prior to the analysis; and (2) the use of trace metal clean sampling techniques, must be applied. Examples of such methods include EPA Method 1669 for sample collection and handling, and EPA Method 1640 for sample preparation and analysis.</p> <p>Sediment samples will be collected annually for analysis of general sediment quality constituents (GSQC), OC pesticides, PCBs, PAHs, and metals. Lead, zinc, chlordane, dieldrin, and total PCBs shall be analyzed at detection limits that are lower than the ERLs. The sediment toxicity testing shall include testing a minimum of three species for lethal and non-lethal endpoints. Toxicity testing may include: the 28-day and 10-day amphipod mortality test, the sea urchin fertilization testing using sediment pore water, and the bivalve embryo testing of the sediment/water interface. The chronic 28-day and shorter-term 10-day amphipod tests may be conducted in the first year. If there is no significant difference in the tests, then the less expensive 10-day test can be used throughout the rest of the monitoring, with some periodic 28-day tests. Sediment toxicity monitoring shall be conducted annually to provide sufficient data over the implementation timeframe to evaluate changes in sediment quality due to implementation actions. If sediment objectives are exceeded or sediment toxicity is observed at any time, sampling frequency for both sediment and sediment toxicity shall be accelerated to semi-annually thereafter until sediment objectives are not exceeded and sediment toxicity is not observed.</p>

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	<p>Fish tissue samples will be collected annually and analyzed for chlordane, dieldrin, DDT, and PCBs to assess changes in concentrations of target organic constituents. The same rationale used for establishing sampling frequency for sediments is used to establish fish tissue sample collection frequency. For Colorado Lagoon, species with the potential for human and wildlife consumption will be targeted. Fish targeted to evaluate potential impacts to human health will be limited to species more commonly consumed by humans. Tissues analyzed will be based on the most appropriate and common preparation for the selected fish species. Tissues from resident California or bay mussels shall be collected annually and analyzed to further assess and track impairment.</p> <p>Monitoring reports shall be prepared and submitted to the Regional Board annually within six months after the completion of the final sampling event of the year. 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.</p>
<p>Implementation Plan</p>	<p>The City of Long Beach, Los Angeles County Flood Control District, and California Department of Transportation (Caltrans) are each responsible for meeting the waste load allocations. However, to the extent their effluent discharges are commingled, they will be held jointly liable for abating the pollutants in the commingled discharge to the extent any of them are unable to disprove their own contribution of pollutants.</p> <p>Compliance with the TMDL is determined based on the assigned WLAs. NPDES permits will be amended to be consistent with the assumptions and requirements of the WLAs. Responsible agencies are required to implement the proposed actions to remove contaminated sediment; control the discharges of pollutants in urban runoff, stormwater and contaminated sediments to Colorado Lagoon; attain water, fish tissue, and sediment quality standards; and protect beneficial uses. Table 7-30.2 contains a schedule for responsible agencies to implement BMPs and proposed implementation actions to comply with the TMDL.</p> <p>Responsible agencies may employ a variety of implementation strategies such as non-structural and structural best management practices (BMPs) to meet the required waste load allocations. The implementation actions described in this section represent a range of activities that are proposed by the Los Angeles County Flood Control District and City of Long Beach in the <i>Los Angeles County Termino Avenue Drain Project</i> and <i>Colorado Lagoon Restoration Project</i>, respectively.</p> <p>Implementation and Determination of Compliance with the WLAs</p> <p>The WLAs will apply to all NPDES dischargers in the Colorado Lagoon watershed. The regulatory mechanisms used to implement the TMDL include the Los Angeles County MS4 permit, the City of Long Beach MS4 permit, the Caltrans stormwater permit, and any future general industrial stormwater permits, general construction stormwater permits, minor NPDES permits, and general NPDES permits as well as any other appropriate regulatory mechanism, including Board orders, where required. Each NPDES permit may be reopened immediately after the TMDL becomes effective, or amended at re-issuance, in accordance with applicable laws, to incorporate the waste load allocations</p>

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	<p>and other provisions of this TMDL.</p> <p>Compliance with the WLAs will be measured at the storm drain outlets and in the lagoon and will be achieved through BMPs and a combination of proposed implementation actions provided in the Proposed Implementation section below to remove contaminated sediment and reduce loadings of contaminated sediment through the control of stormwater and contaminated sediments to Colorado Lagoon.</p> <p>The final WLAs will be included for permitted MS4 discharges and other NPDES discharges in accordance with the compliance schedules provided in Table 7-30.2. The Regional Board may revise these WLAs based on additional information developed through monitoring or special studies.</p> <p>The WLAs for the minor NPDES permits and general non-stormwater NPDES permits will be implemented through effluent limitations consistent with the assumptions and requirements of the WLAs. Permit writers for the non-stormwater permits may translate applicable waste load allocations into effluent limitations for the minor and general NPDES permits by applying applicable engineering practices.</p> <p>Proposed Implementation Actions</p> <p><u>Non-Structural Best Management Practices</u></p> <p>The non-structural BMPs are based on the premise that specific land uses or critical sources can be targeted to achieve the TMDL waste load allocations. Available non-structural BMPs include better sediment control at construction sites and improved street cleaning by upgrading to vacuum type sweepers, storm drain cleaning, and public education and outreach. The lagoon is also impacted by irrigation runoff from the golf course located adjacent to the lagoon in the dry season. Improvements to the golf course operation should also be considered to protect lagoon resources by reducing watering needs and eliminating pesticide and herbicide use.</p> <p><u>Site-Specific Implementation Actions:</u></p> <p>The Regional Board does not prescribe the methods of achieving compliance with the TMDL allocations. However, described below are several implementation actions proposed by the responsible agencies.</p> <p><i>Relocation of the Termino Avenue Drain.</i></p> <p>One of the major system outfalls, the Termino Avenue Drain, has been proposed by the Los Angeles County Flood Control District to be modified, which will no longer discharge into the Lagoon. As proposed in the Los Angeles County Flood Control District Termino Avenue Drain Project (TADP) the drain would bypass the Lagoon and discharge stormwater flows into Marine Stadium. Dry weather flows will be diverted into the sanitary sewer system. This project would also redirect flows from three other storm drains located on the south shore of the Lagoon that currently discharge into the Lagoon.</p>

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	<p><i>Low Flow Diversion and Trash Separation Device.</i></p> <p>The City of Long Beach proposed in the Colorado Lagoon Restoration Project to divert low storm drain flows from other three major storm drain system outfalls and install trash separation devices to trap trash and debris prior to entering the wet well for the diverted runoff. The Colorado Lagoon Restoration Project would redirect or treat low flows from these drains to minimize contamination to water and sediment.</p> <p><i>Vegetated Bioswale Installation.</i></p> <p>The flows from the remaining four local storm drains would be treated via a vegetated bioswale as proposed in the Colorado Lagoon Restoration Project. A bioswale would also be developed on the north shore between the Lagoon and Recreation Park Golf Course. The vegetated bioswale would treat stormwater and dry weather runoff through filtration to remove sediment and pollutants prior to discharging into the Lagoon.</p> <p><i>Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances.</i></p> <p>The Colorado Lagoon is connected to Alamitos Bay and the Pacific Ocean through an underground tidal culvert to Marine Stadium. The existing culvert has not been cleaned since it was built in the 1960s. The flow in the culvert is impeded by sediment that has accumulated on the bottom, extensive marine growth that has accumulated on the sides and ceiling, and debris that is trapped within the trash racks on the tide gate screens at both ends of the culvert. These existing conditions limit the Lagoon’s tidal range and tidal flushing, which results in increased degradation of water quality. As proposed in the Colorado Lagoon Restoration Project, the City of Long Beach plans to clean the existing culvert and trash racks, repair the tidal gates, and remove the sill and structural impedances within and around the existing culvert. Implementation of this component of the Colorado Lagoon Restoration Project would result in increased tidal range, tidal flushing, and water circulation, and improvement of water and sediment quality.</p> <p><i>Remove Contaminated Sediment in the Western Arm of the Lagoon.</i></p> <p>OC pesticides, PCBs, PAHs, and metals were deposited over time from the particulates in the runoff brought to the Lagoon through the existing storm drains. It is estimated that the layer of contaminated sediment reaches 4 to 5 ft deep. The City of Long Beach proposes to remove sediment to a depth of 6 ft to provide a safeguard that only clean sediment remains. The excavation depth gradually decreases toward the footbridge. This component of the Colorado Lagoon Restoration Project would remove approximately 16,000 cubic yards (cy) of contaminated sediment within the western arm of the Lagoon.</p> <p><i>Remove Contaminated Sediment in the Central Lagoon.</i></p> <p>Similar to the sediment removal project above, the Colorado Lagoon Restoration Project would remove sediment and sand that has eroded and been deposited into</p>

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	<p>the Lagoon over years, and create a larger subtidal area. Approximately 5,500 cy of sediment would be removed from the central Lagoon. Sediment removal from the central area of the lagoon would create a channel through the center of the central Lagoon to connect the dredge areas in the western arm to the outlet at the existing culvert or proposed open channel. Removal of this sediment would also provide additional space for water circulation and tidal flushing.</p> <p>As proposed in the Colorado Lagoon Restoration Project, only the Western Arm and the Central Lagoon are planned to be dredged based on the recommendation from the Sediment Testing and Disposal Report. The TMDL monitoring program will determine if additional implementation actions such as dredging in the North Arm will be required to remove contaminated sediment in the Lagoon.</p> <p><i>Build Alternate Channel or Underground Culvert between Lagoon and Marine Stadium.</i></p> <p>City is considering an open channel or parallel underground culvert option to further improve water quality at the Colorado Lagoon. However, this project was not included in the certified EIR. This proposed project consists of replacing the existing concrete box culvert with an open channel or new underground culvert that would run from the Lagoon through Marina Vista Park to Marine Stadium in a location generally parallel to the existing culvert. Creating an open channel or underground culvert would improve tidal flushing by an increase in the tidal range, and result in a corresponding improvement of water and sediment quality. In addition, it would provide improved flood flow conveyance.</p> <p>Implementation of the proposed actions should result in attainment of the TMDL allocations. If the proposed actions are not implemented or otherwise do not result in attainment of allocations, additional implementation actions shall be required.</p>

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**Table 7-30.2 Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL:
Implementation Schedule**

Item	Implementation Action	Responsible Party	Date
1	Effective date of interim waste load allocations (WLAs).	The City of Long Beach, the Los Angeles County Flood Control District, and Caltrans	Effective date of the TMDL
2	Responsible agencies shall submit a monitoring plan to the Los Angeles Regional Board for Executive Officer approval.	The City of Long Beach, the Los Angeles County Flood Control District, and Caltrans	6 months after effective date of the TMDL
3	Responsible agencies shall begin monitoring as outlined in the approved monitoring plan.	The City of Long Beach, the Los Angeles County Flood Control District, and Caltrans	6 months after monitoring plan approved by E.O.
4	Responsible agencies shall submit annual reports to the Los Angeles Regional Board for review.	The City of Long Beach, the Los Angeles County Flood Control District, and Caltrans	15 months after monitoring starts and annually thereafter
5	Responsible agencies shall submit bi-annual progress reports to provide updates on the status of implementation actions performed under the TMDL. The plan shall contain mechanisms for demonstrating progress toward meeting the assigned WLAs.	The City of Long Beach, the Los Angeles County Flood Control District, and Caltrans	Every 2 years after effective date of the TMDL
6	Responsible agencies shall achieve WLAs.	The City of Long Beach, the Los Angeles County Flood Control District, and Caltrans	7 years after effective date of the TMDL