

**California Regional Water Quality Control Board
San Diego Region**

Tentative Resolution No. R9-2013-0003

A RESOLUTION AMENDING *THE WATER QUALITY CONTROL PLAN FOR THE SAN DIEGO BASIN (9)* TO INCORPORATE TOTAL MAXIMUM DAILY LOADS FOR TOXIC POLLUTANTS IN SEDIMENT AT THE MOUTHS OF PALETA, CHOLLAS, AND SWITZER CREEKS IN SAN DIEGO BAY

AND MISCELLANEOUS CHANGES TO CHAPTER 5 TO UPDATE REGIONAL BOARD RESOLUTIONS LIST

WHEREAS, The California Regional Water Quality Control Board, San Diego Region (hereinafter, San Diego Water Board), finds that:

1. **Basin Plan Amendment:** The federal Clean Water Act¹ and state Porter-Cologne Water Quality Control Act² requires the San Diego Water Board to establish water quality standards for each waterbody within its region. The water quality standards for the inland surface waters and enclosed bays and estuaries in the San Diego Region are established in the *Water Quality Control Plan for the San Diego Basin (9) (Basin Plan)*. Water quality standards include beneficial uses, water quality objectives (WQOs) that are established at levels sufficient to protect those beneficial uses, and an antidegradation policy to prevent degrading waters that are better than the quality established as WQOs. Waterbodies that do not meet water quality standards are considered impaired.

¹ Clean Water Act section 303; U.S. Code section 1313

² California Water Code section 13240

2. **Clean Water Act Section 303(d) List of Water Quality Limited Segments:** As required by the Clean Water Act (CWA) section 303(d), each state must identify waters within its boundaries that do not meet water quality standards. Specifically, the states must identify those waters for which technology-based effluent limitations are not stringent enough to implement any water quality standard applicable to such waters and establish a priority ranking for such waters.³ For those waters identified as not meeting water quality standards, each state must establish the total maximum daily load (TMDL) at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety.⁴ Each state is required to develop a list that identifies and establishes a priority ranking for those waters requiring TMDLs.⁵ The list is known as the Clean Water Act Section 303(d) List of Water Quality Limited Segments or more commonly, the 303(d) List. For the specific purpose of developing information, states are also required to estimate TMDLs for all other waters that are not identified on the 303(d) List.⁶

For TMDLs that are developed, U.S. Environmental Protection Agency regulations require states to incorporate TMDLs into the Basin Plans along with adequate implementation measures to implement all aspects of the plan.⁷ TMDLs that are incorporated into the Basin Plan are required to include implementation plans under State law. Basin Plans must have a program of implementation to achieve WQOs.⁸ The implementation plan must include a description of actions that are necessary to achieve the objectives, a time schedule for these actions, and a description of surveillance to determine compliance with the WQOs.⁹

[State Water Board Resolution No. 2005-0050, Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options, and its guidance document¹⁰ outline principles and the process to be used by the San Diego Water Board to address waters on the CWA section 303\(d\) List.](#)

³ Clean Water Act section 303(d)(1)(A); U.S. Code section 1313(d)(1)(A)

⁴ Clean Water Act section 303(d)(1)(C); U.S. Code section 1313(d)(1)(C)

⁵ Code of Federal Regulations Title 40 section 130.7(b)(1)

⁶ Clean Water Act section 303(d)(3) states that "For the specific purpose of developing information, each State shall identify all waters within its boundaries, which is has not identified under paragraph (1)(A) and (1)(B) of this subsection and estimate for such waters the total maximum daily load with seasonal variations and margin of safety..."

⁷ Code of Federal Regulations Title 40 section 130.6 [40CFR130.6]

⁸ See Water Code section 13050(j). A "Water Quality Control Plan" or "Basin Plan" consists of a designation or establishment for the waters within a specified area of all of the following: (1) Beneficial uses to be protected, (2) Water quality objectives and (3) A program of implementation needed for achieving water quality objectives.

⁹ Water Code section 13242

¹⁰ [State of California S.B. 469 TMDL Guidance: A Process for Addressing Impaired Waters in California, June 2005. Approved by Resolution No. 2005-0050.](#)

3. **Definition of Total Maximum Daily Load (TMDL):** A TMDL is defined as the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background.¹¹ TMDLs must be established at levels necessary to attain and maintain the applicable narrative and numerical water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge between effluent limitations and water quality.¹² TMDLs must be established for waterbodies identified on the 303(d) List.¹³ For the purpose of developing information for all waters not identified on the 303(d) List, states are also required to estimate the TMDLs with seasonal variations and margin of safety for those waters to assure protection and propagation of a balanced indigenous population of fish, shellfish, and wildlife.¹⁴
4. **Water Quality Standards Interpreted in TMDLs with Numeric Targets:** One or more numeric targets are typically required to calculate TMDLs at levels necessary to attain and maintain applicable narrative and numerical water quality standards. Numeric targets interpret the existing water quality standards (i.e., beneficial uses and the WQOs established at levels sufficient to support those uses). In California, numeric targets are often based on the WQOs in the Basin Plan or other water quality control plans. Water Quality Control Plans contain numeric and narrative WQOs. If applicable WQOs are numeric, the numeric WQOs can be used as numeric targets. If applicable WQOs are narrative, one or more quantifiable target values or measurable indicators must be selected to measure progress and evaluate final attainment and maintenance of the narrative WQOs. In impaired waters requiring TMDLs, when numeric targets are met in the waterbody, the water quality standards should be attained and restored. While numeric targets and TMDLs interpret water quality standards, numeric targets and TMDLs are not water quality standards. The water quality standards, TMDLs, WLAs, LAs, receiving water limits, numeric targets, and/or water quality based effluent limits (WQBELs) developed in this project become enforceable requirements after they have been incorporated into the regulatory orders issued by the San Diego Water Board and/or State Water Board (e.g., waste discharge requirements, conditional waivers, etc.).

¹¹ Code of Federal Regulations Title 40 section 130.2(i)

¹² Code of Federal Regulations Title 40 section 130.7(c)(1)

¹³ Clean Water Act section 303(d)(1)(C); U.S. Code section 1313(d)(1)(c)

¹⁴ Clean Water Act section 303(d)(3); U.S. Code section 1313(d)(3)

5. **TMDL Basin Plan Amendment:** Upon establishment of TMDLs by the state or U.S. Environmental Protection Agency (USEPA), the state is required to incorporate TMDLs into the state water quality management plan.¹⁵ The Basin Plan and applicable statewide plans serve as the water quality management plan for the watersheds under the jurisdiction of the San Diego Water Board. Incorporating TMDLs into the Basin Plan requires an amendment to the Basin Plan.¹⁶ Because TMDLs are established based on numeric targets that interpret existing water quality standards (i.e., beneficial uses and WQOs), and do not constitute the establishment of new water quality objectives, an amendment to the Basin Plan to incorporate TMDLs is not subject to the requirements of Water Code section 13241, which only apply when “establishing water quality objectives”. Instead, TMDLs are programs for the implementation of existing water quality standards, and are established in the Basin Plan subject to the requirements of Water Code section 13242, which requires a description of the actions necessary to achieve the objectives, a time schedule for the actions to be taken, and a description of the surveillance to be undertaken to determine compliance with objectives.
6. **Cleanup of Toxic Hot Spots in San Diego Bay are Priority in the Region:** Established in 1989 by the California Legislature, the Bay Protection and Toxic Cleanup Program¹⁷ included goals to identify toxic hot spots (THS) in enclosed bays, estuaries, and coastal waters of the state, develop a plan for THS cleanup, and develop control strategies to prevent THS creation. The 1998 *Regional Toxic Hot Spot Cleanup Plan* and the 2000 *Toxic Hot Spot Cleanup Plans for B Street/Broadway Piers, Switzer Creek, Foot of Evans/Sampson Streets, and Chollas Creek in San Diego Bay* identify actions including regulating discharges through NPDES permits for industrial facilities and municipal storm water, adopting TMDLs, and remediating the sites through sediment removal options. The San Diego Water Board identified the 7th Street Channel (Paleta Creek Mouth) and the mouths of Chollas Creek, and Switzer Creek as three of five priority THS. TMDLs have been developed for these sites and are contained in the TMDL project known as the *Total Maximum Daily Loads for Toxic Pollutants in Sediment at San Diego Bay Shorelines – Mouths of Paleta Creek, Chollas Creek, and Switzer Creek*, or the Toxics Pollutants in Sediment TMDLs Project.

¹⁵ Code of Federal Regulations Title 40 section 130.6(c)(1)

¹⁶ Pursuant to the requirements of Article 3, commencing with section 13240, of Chapter 4 of the Porter-Cologne Water Quality Control Act, as amended, codified in Division 7, commencing with section 13000, of the Water Code

¹⁷ Water Code section 13390 et seq.

7. **Toxic Hot Spots Listed as Impaired Waters:** These three specific segments of San Diego Bay Shoreline in the San Diego Region were placed on the List of Water Quality Limited Segments because of toxic conditions to aquatic life and degraded benthic community structure. Levels of chlordane, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs) in sediment at these locations exceed the narrative sediment quality objective and have been shown to cause these toxic conditions. The shoreline segments of San Diego Bay for which water quality is impaired by toxic pollutants in sediment, and for which TMDLs have been calculated, are shown below.

Waterbody	Segment / Area	Hydrologic Descriptor	Pollutant / Stressor	Extent of Impairment	Year Listed
San Diego Bay	Seventh Street Channel (Paleta Creek)	El Toyon HSA (908.31)	Benthic Community Effects Sediment Toxicity	9 acres	1998
San Diego Bay	Near Chollas Creek	Chollas HSA (908.22)	Benthic Community Effects Sediment Toxicity	15 acres	1998
San Diego Bay	Near Switzer Creek	Lindberg HSA (908.21)	Chlordane PAHs	5.5 acres	2002

The beneficial uses in these shoreline segments that are sensitive to toxic pollutants in sediment are estuarine habitat (EST), marine habitat (MAR), wildlife habitat (WILD), commercial and sport fishing (COMM), and shellfish harvesting (SHELL). Concentrations of pollutants in sediment have been shown to have toxic effects on mortality and development of indicator organisms and effects on abundance and diversity of benthic communities. Concentrations of pollutants have been shown to be bioaccumulating in aquatic life that are harmful to human health.

8. **Sediment Quality Objectives:** The *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1: Sediment Quality* contains narrative sediment quality objectives (SQO) for benthic community protection and human health. These sediment quality criteria apply to the San Diego Bay shorelines at the mouths of Paleta, Chollas, and Switzer creeks.

Aquatic Life – Benthic Community Protection

Pollutants in sediments shall not be present in quantities that, alone or in combination, are toxic to benthic communities in bays and estuaries of California. This narrative objective shall be implemented using the integration of multiple lines of evidence (MLOE):

1. **Sediment Toxicity:** Sediment toxicity is a measure of the response of invertebrates exposed to surficial sediments under controlled laboratory conditions. The sediment toxicity LOE is used to assess both pollutant related biological effects and exposure. Sediment toxicity tests are of short durations and may not duplicate exposure conditions in natural systems. This LOE provides a measure of exposure to all pollutants present, including non-traditional or unmeasured chemicals.
2. **Benthic Community Condition:** Benthic community condition is a measure of the species composition, abundance and diversity of the sediment-dwelling invertebrates inhabiting surficial sediments. The benthic community LOE is used to assess impacts to the primary receptors targeted for protection of aquatic life. Benthic community composition is a measure of the biological effects of both natural and anthropogenic stressors.
3. **Sediment Chemistry:** Sediment chemistry is the measurement of the concentration of chemicals of concern in surficial sediments. The chemistry LOE is used to assess the potential risk to benthic organisms from toxic pollutants in surficial sediments. The sediment chemistry LOE is intended only to evaluate overall exposure risk from chemical pollutants. This LOE does not establish causality associated with specific chemicals.

Human Health

Pollutants shall not be present in sediments at levels that will bioaccumulate in aquatic life to levels that are harmful to human health. This narrative objective shall be implemented on a case-by-case basis, based upon a human health risk assessment. In conducting a risk assessment, the Water Boards shall consider any applicable and relevant information, including California Environmental Protection Agency's (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA) policies for fish consumption and risk assessment, Cal/EPA's Department of Toxic Substances Control (DTSC) Risk Assessment, and USEPA Human Health Risk Assessment policies.

9. **Numeric Targets:** One or more quantitative numeric targets are required to calculate a TMDL. Numeric targets are selected based on the water quality standards (i.e., beneficial uses and the water quality objectives) that are applicable to the water body. The selected numeric target(s) must be able to interpret and implement the water quality standards. When the numeric targets are met in the impaired water body, the water quality objectives will be met and the water quality standards should be restored.

The numeric targets for sediment, water, and fish tissue are selected to interpret and implement the narrative sediment quality objectives cited in finding 8 to protect aquatic life and human health. Sediment numeric targets for chlordane, priority pollutant PAHs, and total PCBs are set at the 95 percent upper confidence limit of the mean of available San Diego Bay monitoring data of locations assessed as unimpacted [and likely unimpacted](#) using the Aquatic Life-Benthic Community Protection SQO MLOE approach. Water column numeric targets for chlordane, benzo(a)pyrene, and total PCBs are set at the California Toxics Rule human health criteria for ingestion of organisms. Additionally, a fish tissue numeric target is set at OEHHA Fish Contaminant Goal for total PCBs to protect human health.

10. **Sources of Toxic Pollutants in Sediment:** The pollutants can be deposited either directly to a waterbody (the impaired waterbody or a contributing waterbody) or onto land surfaces where the pollutants wash off during storm events. Chlordane, total PAHs, and total PCBs have a tendency to bind to soil and organic particles, and are linked to the transport and deposition of suspended sediment. Storm water runoff from urbanized areas flows off a number of land uses including residential areas, commercial and industrial areas, roads, highways and bridges. Essentially all sources (point and nonpoint) in the watershed enter Paleta, Chollas, and Switzer creeks through the storm water conveyance systems and discharge pollutant loads into the mouths of Paleta, Chollas, and Switzer creeks, particularly during storm events.

Other likely point and nonpoint source pollutant loads in all three creeks include storm water runoff from adjacent industrial discharges (individual WDRs), sediment re-suspension and flux, leaching from creosote pier pilings, and direct atmospheric deposition of pollutants to the surface of the waterbody. Sources specific to particular creeks include the National Steel and Shipbuilding Company (NASSCO) shipyard located just north of the Chollas Creek mouth, the Naval Station San Diego (NAVSTA) located near Paleta and Chollas creek mouths, sediment re-suspension and migration caused by boat and ship traffic near Paleta, Chollas, and Switzer creek mouths, and the Tenth Avenue Marine Terminal located near Switzer Creek mouth.

11. Calculation of Mass-Based Total Maximum Daily Loads [40 CFR 130.2(i)]:

TMDLs for toxic pollutants in sediment are equal to the total assimilative or loading capacities of the waterbodies located at the three San Diego Bay shorelines for chlordane, total PAHs, and total PCBs. The loading capacities are defined as the maximum amount of chlordane, total PAHs, and total PCBs that the waterbody can receive and still attain water quality standards necessary for the protection of designated beneficial uses. Each TMDL accounts for all known sources of a pollutant, whether from natural background, nonpoint sources, or point sources, and must include a margin of safety (MOS) to preclude pollutant loading from exceeding the actual assimilative capacities of the waterbodies. The TMDL calculations also account for seasonal variations and critical conditions and were developed in a manner consistent with guidelines published by U.S. EPA.

12. Technical TMDL Analysis: A Technical Report entitled “Total Maximum Daily Loads for Toxic Pollutants in Sediment at San Diego Bay Shorelines – Mouths of Paleta Creek, Chollas Creek, and Switzer Creek” was prepared with the details of the technical TMDL analysis. The technical TMDL analysis includes a description of the sediment and benthic community impairments, selection of numeric targets (interpretation of the existing narrative sediment quality objectives used to calculate the TMDLs), source analysis, linkage analysis (calculation of “existing” pollutant loads and “allowable” loading capacity [or TMDLs]), method for allocating the TMDLs to the identified point sources and nonpoint sources, and calculation of load reductions required from identified controllable sources (difference between “existing” and “allowable” bacteria loads for each source).

13. Allocations of Mass-Based TMDLs to Point Sources and Nonpoint Sources: A TMDL is divided, or allocated, among the sources that contribute or may contribute pollutant loads to a water body. If there are point sources that contribute or may contribute pollutant loads to a water body, they are assigned portions of the TMDL as WLAs. For nonpoint sources and natural background sources that contribute or may contribute pollutant loads to a water body, they are assigned portions of the TMDL as LAs. The TMDL is expressed mathematically as the sum of all the WLAs and LAs and margin of safety (i.e., $TMDL = \sum WLAs + \sum LAs + MOS$).

Sources that are not identified cannot be assigned a WLA or LA and are assumed to have a zero allowable load (i.e., $WLA = 0$ or $LA = 0$). Identified sources may also be assigned a zero allowable load (i.e., $WLA = 0$ or $LA = 0$). Source that are assigned a zero allowable load are not allowed to discharge the specific pollutant to the water body as part of the TMDL.

14. Load Reductions Required to Attain Mass-Based TMDLs: For each source that is identified, an existing pollutant load is also calculated. The difference between the existing pollutant load and the WLA or LA for a source is the load reduction that is required to meet the WLA or LA. When all the sources have reduced their existing loads to meet their assigned WLAs or LAs, the numeric targets will be met in the water body, the water quality objectives will be met, and the water quality standards should be restored.

In general, only controllable sources are required to reduce their existing pollutant loads to meet their assigned WLAs. In some cases, the WLA assigned to a controllable source is set equal to the existing pollutant load, meaning a load reduction may not be required, but the existing load must be maintained and cannot increase over time. At this time, atmospheric deposition [directly to the water bodies](#) is attributable to uncontrollable sources. LAs for atmospheric deposition are set equal to the existing pollutant loads, meaning no load reductions are required.

15. Concentration-Based TMDLs: Concentration-based TMDLs are equal to the total assimilative capacity of the receiving water at the three San Diego Bay creek mouths. The loading capacities of total chlordane, priority pollutant PAHs, and total PCBs in the receiving water sediment are 2.1 µg/kg, 2,965 µg/kg, and 168 µg/kg, respectively. The loading capacities of chlordane, benzo(a)pyrene, and total PCBs in the receiving water are 0.59 ng/L, 49.0 ng/L, and 0.17 ng/L, respectively. The fish tissue concentration target for total PCBs is 3.6 µg/kg wet weight.

16. Implementation Plan: TMDLs are not self-implementing or directly enforceable against sources in the watershed. Instead, other San Diego Water Board programs or authorities must be used to implement the pollutant load reductions identified by a TMDL analysis to achieve the water quality objectives that will support the designated beneficial uses of a water body. The exact authorities and programs used by the San Diego Water Board to implement the TMDLs will depend on the types of sources present.

[Consistent with Water Code section 13242 and State Water Board Resolution No. 2005-0050](#)), the amendment of the Basin Plan to establish and implement TMDLs for the waters of the San Diego Bay shorelines listed in finding 2, in Attachment A, contains an Implementation Plan that contains (1) the actions that may be taken by the San Diego Water Board and/or other entities to implement the TMDLs and restore beneficial uses, (2) the minimum components for a monitoring program to assess compliance with the TMDLs, WLAs, and LAs, and 3) a compliance schedule by which attainment of the TMDLs, and thereby the restoration of the water quality standards, should be achieved. The San Diego Water Board may issue orders and take non-regulatory actions to compel the dischargers responsible for controllable sources to attain the load reductions needed to keep discharges of chlordane, total PAHs, and total PCBs at or below the TMDLs calculated for these waterbodies.

When the San Diego Water Board and State Water Board re-issue or revise National Pollutant Discharge Elimination System (NPDES) requirements for discharges from controllable point sources, and take action implementing the State *Policy for the Implementation and Enforcement of the Nonpoint Source Pollution Control Program* for discharges from controllable nonpoint sources, they will include, whenever and wherever appropriate, water quality-based effluent limitations (WQBELs) and requirements that will implement all TMDLs, WLAs, and LAs applicable to waters affected by the regulated discharges.

17. Implementation of TMDLs: Because the NPDES Permit holders have jurisdiction over land use in the watersheds and have been identified as the most significant controllable source of pollutants discharging to the receiving waters, these TMDLs will be implemented primarily through the revision of the National Pollutant Discharge Elimination System (NPDES) discharge requirements regulating discharges from the Phase I MS4s, Caltrans, U.S. Navy, and National Steel and Shipbuilding Company. The statewide general NPDES permits for Discharges of Storm Water Associated with Industrial Activities, Construction and Land Disturbance Activities, and from Small Municipal Separate Storm Sewer Systems will also be revised to include TMDL implementation requirements. Federal regulations require that NPDES requirements incorporate water quality based effluent limitations (WQBELs) that must be consistent with the requirements and assumptions of any available WLAs.¹⁸ WQBELs may be expressed as numeric effluent limitations, when feasible, and/or as a best management practice (BMP) program of expanded or better-tailored BMPs.¹⁹ The WQBELs will likely need to include a BMP program to achieve the load reductions required to attain the TMDLs in the receiving waters. The Phase I MS4 copermittees, Caltrans, and U.S. Navy will be required to submit Comprehensive Load Reduction Plans outlining a proposed BMP program that will be capable of achieving the necessary load reductions required to attain the TMDLs in the receiving water. The Phase I MS4 copermittees, Caltrans, and U.S. Navy will be responsible for reducing their pollutant loads and/or demonstrating that their discharges are not causing exceedances of the sediment quality objective in the receiving waters. Other dischargers identified as significant sources of toxic pollutants will also be responsible for reducing their pollutant loads and/or demonstrating that their discharges are not causing exceedances of the sediment quality objective in the receiving waters.

¹⁸ Code of Federal Regulations Title 40 section 122.44(d)(1)(vii)(B)

¹⁹ Code of Federal Regulations Title 40 section 122.44(k)(2)&(3)

18. Sediment Remediation: The Implementation Plan associated with this Basin Plan Amendment includes steps for sediment remediation because such actions are necessary to address the existing impairments. Such Water Board actions include use of Water Code sections 13267 and 13304 authorities to require responsible and/or suspected parties to investigate, cleanup, and abate pollution and sources of pollutants. Water Code section 13267 is intended to be used to investigate the tidally-influenced portions in watersheds addressed in this TMDL. Furthermore, the numeric targets used for establishing TMDL waste load allocations in the Basin Plan Amendment are not intended to serve as explicit or implicit sediment remediation levels. Our expectation is that sediment remediation targets will be established pursuant to State Board Resolution No. 92-49 during development of a Cleanup and Abatement Order pursuant to Water Code section 13304.

18-19. Compliance Schedule: Full implementation of the TMDLs for chlordane, total PAHs, and total PCBs shall be completed within 20 years from the effective date²⁰ of the Basin Plan amendment. The compliance schedule for implementing the load and waste load reductions required to achieve the TMDLs is phased in over time.

19-20. Compliance Monitoring: An essential component of implementation is water quality monitoring. Monitoring is needed to evaluate the progress toward attainment of the TMDLs and restoration of the beneficial uses in the receiving waters. Monitoring, including pollutant load reductions, changes in urban runoff and discharge water quality, and changes in receiving water and sediment quality will be necessary to assess effectiveness in achieving WLAs and compliance with the sediment quality objectives for benthic community protection cited in finding 8. Guidelines to assist the San Diego Water Board and responsible dischargers in developing adequate monitoring programs are contained in the Implementation Plan in Attachment A.

20-21. Compliance with WLAs and LAs: Ultimately, the TMDLs will be met when the dischargers responsible for controllable sources meet their assigned WLAs and actions have been completed by responsible parties to remediate the contaminated marine sediments located in the impaired creek mouths cited in finding 7. The TMDLs and WLAs are calculated based on achieving the numeric targets cited in finding 9 in the referenced marine sediments, which are based on the sediment quality objective cited in finding 8. After remediation of the contaminated marine sediments and when all discharges from controllable sources meet their assigned WLAs and LAs, the water quality standards should be attained and restored and compliance with the TMDLs should be achieved.

²⁰ The effective date is the date the Office of Administrative Law approves this Basin Plan amendment.

21.22. Scientific Peer Review: The scientific basis for these TMDLs has undergone external peer review pursuant to Health and Safety Code section 57004. The San Diego Water Board has considered and responded to all comments submitted by the peer review panel, and has enhanced the Technical Report appropriately. [The methodology for interpreting the narrative sediment quality objective \(SQO\) received external peer review during the rule-making process for the State Water Board's amendment of the Water Quality Control Plan for Enclosed Bays and Estuaries - Part 1 Sediment Quality. The derivation of numeric targets from SQO results received external peer review on behalf of the Aquatic Science Center in 2009.²¹ The San Diego Water Board concurs with the Aquatic Science Center's authors' responses to external peer reviewers.](#)

22.23. Antidegradation Policy Consistency. The amendment is consistent with the state Antidegradation Policy²² and the federal Antidegradation Policy²³ in that it does not allow degradation of water quality, but requires restoration of water quality and attainment of water quality standards.

23.24. California Environmental Quality Act Requirements: 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)²⁴ requirements for preparing environmental documents.²⁵ As such, the documents supporting the San Diego Water Board's proposed basin planning action contain the required environmental documentation under CEQA and serve as "substitute environmental documents" (SED).²⁶ The SED for this project includes the environmental checklist, the detailed Technical Report, responses to comments submitted during the public participation phase in the development of the TMDLs, and this resolution and Basin Plan amendment. For CEQA purposes, the "project" is the adoption of a Basin Plan amendment establishing TMDLs for toxic pollutants in sediment at three creek mouths in San Diego Bay where water quality has been listed as "impaired" pursuant to section 303(d) of the CWA, as required by that section. While the San Diego Water Board has no discretion to not establish the TMDLs (the TMDLs are 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 applicable water quality objectives at the affected San Diego Bay shorelines. The CEQA checklist and other portions of the SED contain significant analysis and numerous findings related to impacts.

²¹ [Thompson, B., Melwani, A.R., and Hunt, J.A. \(2009\). Estimated Sediment Contaminant Concentrations Associated with Biological Impacts at San Diego Bay Clean-up Sites, SWRCB Agreement No. 08-194-190, Contribution No. 584, Aquatic Science Center, Oakland, California.](#)

²² State Board Resolution No. 68-16

²³ 40 CFR section 131.12

²⁴ California Public Resources Code, section 21000 et seq.

²⁵ 14 CCR 15251(g); 23 CCR 3782

²⁶ 23 CCR 3777

24-25. CEQA Scoping Meeting. A Public Workshop and CEQA Scoping Meeting was conducted on October 14, 2008 at the San Diego Water Board Hearing Room to solicit input from the public and interested stakeholders in determining the appropriate scope, content, and implementation options of the proposed TMDL. At the meeting, staff presented the regulatory background, description of the project, location of the project, project purpose, and potential implementation alternatives. Staff received input from members of the regulated community, the environmental community, and other stakeholders. This meeting fulfilled the requirements under CEQA.²⁷ A notice of the CEQA Scoping meeting was sent to interested parties on August 29, 2008 and published in the San Diego Union-Tribune on August 30, 2008.

25-26. Program and Project-Level CEQA Analysis: In preparing the SED, the San Diego Water 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. The “Lead” agencies for 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.

26-27. CEQA Findings: The proposed Basin Plan amendment has the potential to cause significant adverse impacts on the environment because implementation of the amendment will lead to actions being taken that will include minor construction, earthmoving, and sediment remediation activities. These activities will cause potentially significant environmental impacts on air quality, biological resources, historical, archaeological, and paleontological resources, and from hazardous materials and increased traffic. The potentially significant impacts are as follows:

- Temporary emissions from the potential implementation projects of the Basin Plan amendment would likely contribute to the existing non-attainment status of air quality for ozone.
- Direct and indirect impacts to biological resources will potentially disturb foraging of special status birds and marine animals.
- Implementaiton actions that include minor construction and earthmoving have the potential to disturb or distroy historical, archaeological, and paleontological resources.

²⁷ California Public Resources Code section 21083.9; 23 CCR 3775.5

- Sediment remediation activities will result in potentially significant impacts from accidental spills of hazardous materials and increased traffic in the local surrounding areas that will be lessened in significance by incorporating mitigation.

Detailed discussion regarding these potentially significant adverse impacts and the associated mitigation measures is contained in the SED, included as Appendix H of the Technical Report and incorporated herein to this Resolution.²⁸

There are feasible mitigation measures that when employed would substantially lessen the potentially significant adverse impacts on air quality, biological resources, and historical, archaeological, and paleontological resources identified in the SED. Such mitigation measures are within the responsibility and jurisdiction of other public agencies, not the San Diego Water Board.²⁹ When the parties responsible for implementing these TMDLs and implementation requirements determine how they will proceed, the parties responsible for those parts of the project can and should implement such mitigation into any subsequent projects or project approvals as part of the environmental review process unless mitigation measures are deemed infeasible through specific considerations.³⁰ The San Diego Water Board fully expects responsible agencies to implement mitigation measures when carrying out reasonably anticipated methods of compliance that will reduce impacts to less than significant. Where any subsequent project requires approval by the San Diego Water Board, the San Diego Water Board will include mitigation measures to avoid or substantially lessen the significant adverse environmental effects.

27-28. Statement of Overriding Consideration: The implementation of this Basin Plan amendment will result in improved water quality in the waters of the region and will have significant positive impacts to the environment (including restoration and enhancement of beneficial uses) and the economy over the long term. Reduction of toxicant loadings in San Diego Bay will help to restore and enhance water quality in the Bay, decrease toxic risks to the aquatic ecosystem from exposure to contaminants, and improve fish and wildlife habitat in the Bay. A healthy San Diego Bay with vivid ecosystem is an indispensable element to the wellbeing of local residents and the prosperity of local economy, including tourism. The implementation of the Basin Plan amendment will also restore and protect the Paleta, Chollas, and Switzer Creek mouths for use and enjoyment by the people of the state. In particular, the removal from bay water of contaminants that are toxic to and bioaccumulate in organisms decreases the health hazards at all levels as the contaminants travel along and up through the food chain. In all, enhancement of the estuarine and marine beneficial uses will have positive social and economic effects by improving the quality of the environment for human health protection, aesthetic enjoyment, and biological utility.

²⁸ 14 CCR 15091(a)(2)

²⁹ 14 CCR 15091(a)(2)

³⁰ 14 CCR 15091(a)(3)

Implementation of the requirements included in the Basin Plan amendment is both necessary and beneficial. To the extent potentially significant adverse environmental effects will occur, the San Diego Water Board has balanced the economic, legal, social, and environmental benefits of this Basin Plan amendment against the unavoidable environmental risks and finds that the benefits outweigh the unavoidable adverse environmental effects, such that those effects are considered acceptable. Implementation of the Basin Plan amendment is in the greater region-wide public interest. The basis for this finding is more fully set forth in the SED, included as Appendix H of the Technical Report and incorporated herein to this Resolution.³¹

| **28-29. Department of Fish and Wildlife Filing Fee:** This Basin Plan amendment may have an effect on fish and wildlife. The San Diego Water Board will, therefore, forward a CEQA filing fee payment to the Department of Fish and Wildlife under the California Fish and Game Code section 711.4.

| **29-30. Economic Analysis:** The San Diego Water Board has considered the costs of the reasonably foreseeable methods of compliance with the waste load allocations specified in these TMDLs. The most reasonably foreseeable methods of compliance involve implementation of structural and non-structural controls for control of watershed sources, and dredging and capping of contaminated marine sediments at the San Diego Bay shorelines cited in finding 7. Surface water monitoring to evaluate the effectiveness of these controls will be necessary.

| **30-31. Stakeholder and Public Participation:** Interested persons and the public have had reasonable opportunity to participate in review of the proposed Toxic Pollutants in Sediment TMDLs in the Mouths of Paleta, Chollas, and Switzer Creeks. Stakeholder outreach for TMDL development was achieved through public workshops on the following dates: May 17, 2000, August 3, 2001, April 21, 2003, May 13, 2004, and January 18, 2005. For the TMDLs adopted under Resolution No. R9-2013-0003, efforts to solicit public review and comment included public workshops and CEQA scoping meetings on June 18, 2002 for the Switzer Creek TMDL project and on October 14, 2008 for the Paleta, Chollas, and Switzer creeks TMDLs project, 6 meetings with interested stakeholders, 9 meetings with the San Diego Bay Sediment TMDLs Work Group, 3 opportunities to review project reports, and one public review and comment period of the final draft project documents consisting of 48 days. Notices for all meetings were sent to interested parties, including cities and counties with jurisdiction in watersheds draining to the impaired San Diego Bay creek mouths. All of the written comments submitted to the San Diego Water Board up to April 8, 2013 for the attached Basin Plan amendment have been considered and were responded to in writing in a response to comments document, which has been appended to the Technical Report as Appendix M.

³¹ 14 CCR 15093

Written comments and oral testimony were considered and responded to during the June [4219](#), 2013 public hearing.

[31-32. Necessity Standard:](#)³² Amendment of the Basin Plan to establish and implement ~~sediment~~-TMDLs for the waters located at the impaired shoreline segments in finding 7 is necessary because the existing water quality does not meet applicable sediment quality objectives for aquatic life – benthic community protection and human health. Clean Water Act section 303(d) requires the establishment and implementation of TMDLs under the water quality conditions that exist at these three shoreline segments. TMDLs for chlordane, total PAHs, and total PCBs are necessary to restore the water quality needed to support the beneficial uses designated for the shorelines of San Diego Bay.

[32-33. Miscellaneous Changes to update Regional Board Resolutions List.](#) The amendment also includes minor, non-regulatory changes to the Basin Plan that are unrelated to the TMDL. The list of previously adopted Regional Board Resolutions currently in the Basin Plan is out of date; the list will be updated to reflect the resolution numbers and titles of previously adopted resolutions, including this resolution. In addition, the list's introduction and headings will be made clearer, and an error in the list will be corrected. These housekeeping changes need to be made through a Basin Plan amendment and are included as part of this TMDL for efficiency purposes.

[33-34. Public Notice:](#) The San Diego Water Board has notified all known interested parties and the public of its intent to consider adoption of this Basin Plan amendment in accordance with Water Code section 13244.

NOW, THEREFORE, BE IT RESOLVED THAT:

- 1. Environmental Documents Certification:** The substitute environmental documents prepared pursuant to Public Resources Code section 21080.5 are hereby certified, and the Executive Officer is directed to file a Notice of Decision with the Resources Agency after State Water Board and Office of Administrative Law (OAL) approval of the Basin Plan Amendment, in accordance with the Public Resources Code³³ and the California Code of Regulations.³⁴
- 2. Amendment Adoption:** The San Diego Water Board hereby adopts the attached Basin Plan amendment as set forth in Attachment A hereto to establish the TMDLs and Implementation Plan for toxic pollutants in sediment at the mouths of Paleta, Chollas, and Switzer creeks to achieve the TMDL and related beneficial use restoration goals, and its supporting documentation.

³² Government Code section 11353(b)

³³ Public Resource Code section 21080.5(d)(2)(E)

³⁴ 23 CCR 3781

3. **Technical Report Approval:** The San Diego Water Board hereby approves the Technical Report entitled *Total Maximum Daily Loads for Toxic Pollutants in Sediment at San Diego Bay Shorelines – Mouths of Paleta Creek, Chollas Creek, and Switzer Creek*, dated ~~February 19~~June 5, 2013.
4. **Department of Fish and Wildlife Filing Fee:** The Executive Officer is authorized to transmit payment of the applicable fee as may be required by the California Department of Fish and Wildlife.
5. **State Water Board Submittal:** The Executive Officer is directed to submit this Basin Plan amendment to the State Water Board in accordance with the Water Code.³⁵
6. **Agency Approvals:** The San Diego Water Board requests that the State Water Board approve the Basin Plan amendment in accordance with the requirements of the Water Code,³⁶ and forward it to the OAL and U.S. EPA for approval.
7. **Non-Substantive Corrections:** If, during the approval process for this amendment, the San Diego Water Board, the State Water Board, or the OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the San Diego Water Board of any such changes.

I, David W. Gibson, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of a resolution adopted by the California Regional Water Quality Control Board, San Diego Region, on June ~~12~~19, 2013.

DAVID W. GIBSON
Executive Officer

³⁵ Water Code section 13245

³⁶ Water Code sections 13245 and 13246

ATTACHMENT A
TO RESOLUTION NO. R9-2013-0003

**AMENDMENT TO THE WATER QUALITY
CONTROL PLAN FOR THE SAN DIEGO BASIN (9) TO INCORPORATE
TOTAL MAXIMUM DAILY LOADS FOR TOXIC POLLUTANTS IN SEDIMENT AT THE
MOUTHS OF PALETA, CHOLLAS AND SWITZER CREEKS IN SAN DIEGO BAY**

This Basin Plan amendment establishes Total Maximum Daily Loads (TMDLs) and associated load and wasteload allocations for chlordane, total polycyclic aromatic hydrocarbons (total PAHs), and total polychlorinated biphenyls (*total PCBs*) in the San Diego Bay shorelines located at the mouths of Paleta Creek, Chollas Creek, and Switzer Creek. This amendment includes a program to implement the TMDLs and monitor their effectiveness. Chapters 2, 3, and 7 of the Basin Plan are amended as follows:

Chapter 2. Beneficial Uses.

Table 2-3. Beneficial Uses of Coastal Waters.

Consecutively number and add the following footnote to San Diego Bay in Table 2-3:

The San Diego Bay shorelines at the mouths of Paleta Creek, Chollas Creek, and Switzer Creek are designated as water quality limited segments for chlordane, total polycyclic aromatic hydrocarbons (total PAHs), and total polychlorinated biphenyls (total PCBs) pursuant to Clean Water Act section 303(d). Total Maximum Daily Loads have been adopted to address these impairments. See Chapter 3, *Water Quality Objectives, Enclosed Bays and Estuaries Plan*, Sediment Quality Objective for Part 1 Sediment Quality; and Chapter 7, *Total Maximum Daily Loads, Total Maximum Daily Loads for Toxic Pollutants in Sediment at the Mouths of Paleta, Chollas, and Switzer Creeks in San Diego Bay*.

Renumber any footnotes in Table 2-3 displaced by these new footnotes.

Chapter 3. Water Quality Objectives.

Inland Surface Waters, Enclosed Bays and Estuaries, Coastal Lagoons, and Ground Waters

Add the following heading and text after the text of the “Thermal Plan Water Quality Objective:”

Enclosed Bays and Estuaries Plan

Sediment Quality Objective for Part 1 Sediment Quality:

The terms and conditions of the State Board’s “Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality” (Part 1) and any revisions thereto are incorporated into this Basin Plan by reference. The terms and conditions of the Part 1 apply to the Enclosed Bays and Estuaries within this Region.

The San Diego Bay shorelines at the mouths of Paleta Creek, Chollas Creek, and Switzer Creek are designated as water quality limited segments for chlordane, total polycyclic aromatic hydrocarbons (total PAHs), and total polychlorinated biphenyls (total PCBs) pursuant to Clean Water Act section 303(d).

Total Maximum Daily Loads have been adopted to address these impairments. See Chapter 2, Table 2-3, Beneficial uses of Coastal Waters, Footnote [insert footnote number], and Chapter 7, *Total Maximum Daily Loads, Total Maximum Daily Loads for Toxic Pollutants in Sediment at the Mouths of Paleta, Chollas, and Switzer Creeks in San Diego Bay.*

Revise the Chapter 3 Table of Contents and Index to reflect the above change.

Chapter 7. Total Maximum Daily Loads

Add the following to the end of Table 7-1:

	RWQCB Adoption Date	SWRCB Approval Date	OAL Approval Date	USEPA Approval Date
Total Maximum Daily Load				
Total Maximum Daily Loads for Toxic Pollutants in Sediment at the Mouths of Paleta, Chollas, and Switzer Creeks in San Diego Bay	TBD	TBD	TBD	TBD

Add the following section to the end of Chapter 7. The headings, tables, and footnotes in the following text should be numbered sequentially, in a manner that is consistent with the Basin Plan.

Total Maximum Daily Loads for Toxic Pollutants in Sediment at the Mouths of Paleta, Chollas, and Switzer Creeks in San Diego Bay.

On [insert date], the San Diego Water Board adopted Resolution No. R9-2013-0003, *A Resolution Amending the Water Quality Control Plan for the San Diego Region (9) to Incorporate Total Maximum Daily Loads for Toxic Pollutants in Sediment at the Mouths of Paleta, Chollas, and Switzer Creeks in San Diego Bay*. The TMDL Basin Plan Amendment was subsequently approved by the State Water Resources Control Board (SWRCB) on [insert date], the Office of Administrative Law on [insert date], and the USEPA on [insert date].

Mass-based and concentration-based TMDLs have been established for the following waterbodies listed on the 2010 California Clean Water Act Section 303(d) List of Water Quality Limited Segments (2010 303(d) List).

Table 7 - [Insert Table Number (1)]. Waterbodies Addressed by Toxic Pollutants in Sediment TMDLs Project

Watershed	Type of Listing	Waterbody Name	Number of TMDLs ¹	Number of Listings
El Toyon HSA (908.31)	Bay & Harbor	San Diego Bay Shoreline, Seventh Street Channel ²	10	2
Chollas HSA (908.22)	Bay & Harbor	San Diego Bay Shoreline, near Chollas Creek ²	10	2
Lindberg HSA (908.21)	Bay & Harbor	San Diego Bay Shoreline, near Switzer Creek ³	10	2
Total Number of TMDLs Adopted as part of the Toxic Pollutants in Sediment TMDLs Project (Paleta, Chollas, and Switzer Creek Mouths)			30	
Total Number of Listing on 2010 303(d) List in Toxic Pollutants in Sediment TMDLs Project				6

Note: HSA = hydrologic subarea

¹ Includes Mass-Based and Concentration-Based TMDLs

² Listed as impaired due to sediment toxicity and benthic community effects. The Seventh Street Channel is located at the mouth Paleta Creek.

³ Listed as impaired due to sediment chemistry levels of chlordane and PAHs that exceed guideline values and toxicity test results indicated a degraded benthic community condition.

Mass-based TMDLs for total chlordane, total PAHs, and total PCBs were developed for discharges to each of the creek mouth areas. Concentration-based TMDLs are established for total chlordane, priority pollutant PAHs, and total PCBs in sediment, total chlordane, benzo(a)pyrene, and total PCBs in water, and total PCBs in fish tissue within each creek mouth area.

Problem Statement

Sediment pollutant concentrations in the Paleta, Chollas, and Switzer Creek mouths do not meet the Enclosed Bays and Estuaries Plan narrative sediment quality objective for benthic community protection and human health. Elevated levels of pollutants in the sediment unreasonably impair and threaten the estuarine habitat (EST), marine habitat (MAR), wildlife habitat (WILD), commercial and sport fishing (COMM), and shellfish harvesting (SHELL) beneficial uses of San Diego Bay. The pollutants causing aquatic life beneficial use impairment are chlordane, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs) in sediment.

Numeric Targets

Numeric targets are established to restore aquatic life and human health beneficial uses by attaining the narrative Sediment Quality Objectives for Aquatic Life – Benthic Community Protection (Aquatic Life) and Human Health.

Numeric targets for these sediment TMDLs are derived using the MLOE Approach to interpret the Aquatic Life Sediment Quality Objective. The numeric target values were set at the 95 percent upper confidence limit of available San Diego Bay data of stations that were assessed to be “Unimpacted” or “Likely Unimpacted” in accordance with the MLOE Approach.

Water column targets are set equal to the California Toxics Rule (CTR) human health criteria for consumption of organisms. Fish tissue concentrations are set equal to the Fish Contaminant Goal for PCBs developed by the Office of Environmental Health Hazard Assessment.³⁷

³⁷ Klassing, S., and R. Brodberg. 2008. *Development of Fish Contaminant Goals and Advisory Tissue Levels for Common Contaminants in California Sport Fish: Chlordane, DDTs, Dieldrin, Methylmercury, PCBs, Selenium, and Toxaphene*. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Pesticide and Environmental Toxicology Branch, Sacramento, CA. June 2008.

Table 7 - [Insert Table Number (2)]. Numeric Targets for Toxic Pollutants at the Creek Mouths of Paleta, Chollas, and Switzer Creeks

Contaminant of Concern	Numeric Target
Sediment Concentration	
Total Chlordane	2.1 µg/kg
Priority Pollutant PAHs ¹	2,965 µg/kg
Total PCBs ²	168 µg/kg
Water Column Concentration	
Total Chlordane	0.00059 µg/L
Benzo(a)pyrene	0.049 µg/L
Total PCBs	0.00017 µg/L
Fish Tissue Concentration	
Total PCBs	3.6 µg/kg wet weight

¹ Priority Pollutant PAHs = Σ [Acenaphthene] [Acenaphthylene] [Anthracene] [Benz(a)anthracene] [Benzo(a)pyrene] [Benzo(b)fluoranthene] [Benzo(k)fluoranthene] [Benzo(g,h,i)perylene] [Chrysene] [Dibenz(a,h)anthracene] [Fluoranthene] [Fluorene] [Indeno(1,2,3-c,d)pyrene] [Naphthalene] [Phenanthrene] [Pyrene]

² Total PCBs is sum of 41 congeners

Source Analysis

Several pollutant sources have impacted the shoreline areas at the mouths of Paleta, Chollas, and Switzer creeks in San Diego Bay. These include legacy and active point and nonpoint sources that contribute toxic pollutants through various mechanisms and complex processes. Point sources include Phase I Municipal Separate Storm Sewer Systems (MS4s), Regulated Small MS4s, Caltrans MS4, Statewide General Industrial and Construction Storm Water discharges, and adjacent shoreline sources with Individual Waste Discharge Requirements (WDRs). The sources include the cities of San Diego, La Mesa, Lemon Grove, National City, County of San Diego, Port of San Diego, Caltrans, U.S. Navy, and National Steel and Shipbuilding Company (NASSCO).

Atmospheric deposition represents the primary nonpoint pollutant source. Other sources include dynamic sediment flux, re-suspension of sediment from natural processes and anthropogenic activities, leaching from creosote pilings, and various industrial/military activities. Pollutant sources were represented within the modeling framework in order to determine the relative contribution and impact of these sources on the impaired creek mouth areas.

Critical Condition

The critical conditions are a set of environmental conditions for which controls designed to protect water quality will ensure attainment of the numeric targets for all other conditions. The critical conditions include the location and the period of time in which the waterbody is expected to exhibit the highest vulnerability.

To ensure that numeric targets are met throughout the impaired waterbodies, a critical location consisting of the entire length of impaired shoreline, extending to the end of the adjacent piers was used as the area where the allowable loads (i.e., TMDL) are calculated. The critical period associated with extreme rainfall conditions (i.e., critical wet year), and thus the highest potential pollutant load at the critical location, was selected for watershed modeling analysis. The 2004/05 rainfall year was selected as the critical wet period for assessment of extreme wet weather loading conditions.

Linkage Analysis

The purpose of the linkage analysis is to quantify the “existing” pollutant loads that are currently generated by the pollutant sources in the watershed under the critical conditions, and quantify the maximum allowable loading to each impaired waterbody that will result in attainment of numeric targets under the same critical conditions. This maximum allowable pollutant loading is, in other words, the TMDL.

The linkage analysis used computer modeling approaches to quantify the “existing” and allowable pollutant loadings for each impaired waterbody during critical wet weather conditions. The wet weather modeling approach chosen for the linkage analysis was based on the application of the U.S. EPA’s Loading Simulation Program in C++ (LSPC) model to simulate watershed hydrology and transport of sediments in the streams and storm drains conveying pollutants to the impaired areas. Receiving water models were developed using the Environmental Fluid Dynamics Code (EFDC) to simulate the fate and transport of suspended sediment and toxic pollutants to determine the assimilative capacity of the impaired areas. Watershed pollutant loads from LSPC were input into the EFDC models to provide dynamic simulation of tidal flushing, sediment deposition/re-suspension, and transport of suspended sediment and associated pollutants.

Total Maximum Daily Loads and Allocations

For these impaired waterbodies, TMDLs are expressed on a mass loading basis for discharges from the watershed and in terms of concentration of bed sediment and water column and fish tissue in the creek mouth areas.

A. Mass-Based TMDLs, Allocations, and Margins of Safety

The numeric targets are used to calculate the TMDLs on a mass loading basis under a set of critical conditions. The TMDLs that were calculated in terms of mass loading are used to identify the pollutant loads from controllable sources that need to be reduced in order for the numeric targets to be met in the receiving waters. The mass-based TMDLs are allocated to the identified point and nonpoint sources and an explicit margin of safety (MOS) is reserved to account for uncertainty in developing the relationship between pollutant discharges and water quality impacts.

Mass-based TMDLs are calculated for wet weather as the critical condition and to account for seasonal variations because the highest loadings occur during periods of rainfall. Only wet weather point sources are identified as controllable sources in each of the three Hydrologic Sub-Areas: Paleta, Chollas, and Switzer Creek Watersheds. Wasteload allocations (WLAs) are assigned to the city and county municipalities, Port of San Diego, Caltrans, and the U.S. Navy. The loadings of these three organics should be a concern on a long-term basis for these TMDLs rather than on a day-to-day basis given that the loading results are based on a sediment concentration value and not an immediate water column concentration.

Load allocations (LAs) are assigned for direct atmospheric deposition of total chlordane based on direct deposition to the surface area of each impaired waterbody and its corresponding watershed modeled reaches (stream channels). The LAs for direct atmospheric deposition are assigned as uncontrollable sources. No load reductions are required. The LAs of total PAHs and total PCBs for each waterbody is zero because the net load is to the atmosphere for these pollutants.

Explicit margins of safety are reserved in each TMDL from allocation to sources. An explicit margin of safety of 5 percent is applied to the calculated TMDLs for total PAHs and total PCBs in each watershed to account for unknown contributions from other sources. An explicit margin of safety of 20 percent was applied to the calculated TMDLs for total chlordane based on the variation in modeled concentrations for this pollutant. The conservative assumptions made in the TMDL analysis and the explicit margins of safety that are used result in conservative mass-based TMDLs that are expected to restore and protect the beneficial uses of the receiving waters.

The following table presents the mass-based TMDLs, allocations, and margins of safety for these waterbodies:

Table 7 - [Insert Table Number (3)]. Mass-Based Toxic Pollutants in Sediment TMDLs for Paleta, Chollas, and Switzer Creeks

Paleta Creek TMDL WLAs, LAs, MOS, and TMDLs													
		San Diego WLA	La Mesa WLA	Lemon Grove WLA	SD County WLA	National City WLA	Caltrans WLA	U.S Navy WLA	SD Port District WLA	WLA Total	LA	MOS	TMDL
Chlordane	g/d	0.048	NA	NA	NA	0.023	0.003	0.009	NA	0.083	0.001	0.021	0.105
Total PAHs	g/d	1.75	NA	NA	NA	0.86	0.11	0.32	NA	3.04	0	0.16	3.20
Total PCBs	mg/d	0.240	NA	NA	NA	0.118	0.014	0.044	NA	0.416	0	0.022	0.438
Chollas Creek TMDL WLAs, LAs, MOS, and TMDLs													
		San Diego WLA	La Mesa WLA	Lemon Grove WLA	SD County WLA	National City WLA	Caltrans WLA	U.S Navy WLA	SD Port District WLA	WLA Total	LA	MOS	TMDL
Chlordane	g/d	0.34	0.046	0.056	0.002	NA	0.014	0.001	0.001	0.460	0.004	0.118	0.582
Total PAHs	g/d	8.90	1.20	1.48	0.05	NA	0.37	0.03	0.01	12.04	0	0.63	12.67
Total PCBs	mg/d	2.32	0.31	0.39	0.01	NA	0.10	0.01	0.01	3.15	0	0.16	3.31
Switzer Creek TMDL WLAs, LAs, MOS, and TMDLs													
		San Diego WLA	La Mesa WLA	Lemon Grove WLA	SD County WLA	National City WLA	Caltrans WLA	U.S Navy WLA	SD Port District WLA	WLA Total	LA	MOS	TMDL
Chlordane	g/d	0.046	NA	NA	NA	NA	0.001	NA	0.001	0.048	0.001	0.012	0.061
Total PAHs	g/d	1.32	NA	NA	NA	NA	0.04	NA	0.02	1.38	0	0.07	1.45
Total PCBs	mg/d	0.49	NA	NA	NA	NA	0.01	NA	0.01	0.51	0	0.03	0.54

B. Concentration-Based TMDLs

The impairment at the creek mouth areas is due to historic loads of organic pollutants, including chlordane, PAHs, and PCBs, that have accumulated in the bed sediments. The loading capacity is set on a concentration basis to the sediment concentration that will be protective of direct effects to benthic communities.

The loading capacity of each pollutant is set equal to the numeric targets in the receiving water bed sediments ([Insert Table Number (4)]). The numeric targets are sediment concentrations that are derived from the Aquatic Life SQO MLOE Approach.

Table 7 - [Insert Table Number (4)]. Bed Sediment Loading Capacity at the Mouths of Paleta, Chollas, and Switzer Creeks

Pollutant	Bed Sediment Loading Capacity
Total Chlordane	2.1 µg/kg
Priority Pollutant PAHs	2,965 µg/kg
Total PCBs	168 µg/kg

To protect human health in San Diego Bay, the loading capacity of the receiving water is set equal to the water column numeric targets and total PCB concentrations in fish tissue is set at the fish tissue numeric targets.

Table 7 – [Insert Table Number (5)]. Water Column and Fish Tissue Concentration Targets at the Mouths of Paleta, Chollas, and Switzer Creeks

Pollutant	Receiving Water Loading Capacity
Water Column	
Total Chlordane	0.00059 µg/L
Benzo(a)pyrene	0.049 µg/L
Total PCBs	0.00017 µg/L
Fish Tissue	
Total PCBs	3.6 µg/kg wet weight

TMDL Implementation Plan

The purpose of the Implementation Plan is to guide the San Diego Water Board's implementation activities to restore the impaired beneficial uses of these waterbodies. Restoring the impaired beneficial uses will be accomplished by achieving the concentration-based TMDLs in the receiving waters, achieving the wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources, and demonstrating attainment of the Aquatic Life and Human Health SQOs. When contaminated sediment has been remediated, discharges from controllable sources meet their assigned WLAs and LAs, and the concentration-based TMDLs are maintained in the receiving waters, the beneficial uses should be restored.

The Responsible Parties are identified as follows (solid bullets indicate parties that received WLAs as part of this TMDL project):

Paleta Creek Watershed

- City of San Diego (Phase I MS4)
- National City (Phase I MS4)
- Caltrans
- U.S. Navy
- Enrollees of the Industrial Storm Water General Permit
- Enrollees of the Construction Storm Water General Permit
- Regulated Small MS4s enrolled in the Statewide General Permit

Chollas Creek Watershed

- City of San Diego (Phase I MS4)
- City of La Mesa (Phase I MS4)
- City of Lemon Grove (Phase I MS4)
- [County of San Diego \(Phase I MS4\)](#)
- Port of San Diego (Phase I MS4)
- Caltrans
- U.S. Navy
- Enrollees of the Industrial Storm Water General Permit
- Enrollees of the Construction Storm Water General Permit
- Regulated Small MS4s (Statewide General Permit)
- NASSCO

Switzer Creek Watershed

- City of San Diego (Phase I MS4)
- Port of San Diego (Phase I MS4)
- Caltrans
- Enrollees of the Industrial Storm Water General Permit
- Enrollees of the Construction Storm Water General Permit

- Regulated Small MS4s (Statewide General Permit)

The San Diego Water Board will take the following actions to implement the TMDLs.

A. Phased Implementation of Mass-Based TMDLs and Attainment of Concentration-Based TMDLs

The TMDLs will be phased in over a 20 year period from the effective date of this Basin Plan amendment. Attainment of the TMDLs is based on achieving the WLAs for watershed discharges, maintaining the creek mouth sediment and water column concentrations at or below the concentration-based TMDLs, and attaining the SQOs for benthic community protection (aquatic life) and human health in the creek mouth areas of Paleta, Chollas, and Switzer creeks in San Diego Bay. SQO attainment demonstrates that the beneficial uses have been restored and provides the data needed for delisting from the section 303(d) List.

Table 7 – [Insert Table Number (6)]. Phased Load Reduction of Mass-Based TMDLs and Sediment Quality Improvement Milestones

	Attainment Date	Phased Load Reductions for Achievement of WLAs ¹ (Mass-Based TMDLs)	Attainment Milestones for Creek Mouth Areas (Concentration-Based TMDLs)
Interim Goal 1	December 31, [Insert Year 5]	40%	--
Interim Goal 2	December 31, [Insert Year 8]	--	Complete Sediment Remediation. Meet Sediment and Water Column Targets.
Interim Goal 3	December 31, [Insert Year 10]	80%	Begin monitoring to demonstrate attainment of Aquatic Life SQO.
Interim Goal 4	December 31, [Insert Year 15]	90%	--
Interim Goal 5	December 31, [Insert Year 20]	100% = Meet WLAs	Meet Fish Tissue Concentration Target. Attain Aquatic Life and Human Health SQOs

¹ Percent reduction required from existing loads in high flow year to meet WLAs.

B. Source Control and Pollutant Load Reduction

Responsible parties must manage and reduce pollutant loads in accordance with the phased load reduction milestones in Table 7 – [Insert Table Number (6)]. All responsible parties are required to develop load reduction plans that identify specific implementation actions that each party will use to comply with the required wasteload reductions and/or TMDL implementation requirements. Load reduction plans must include, but are not limited to, a management and source control program that utilizes structural and non-structural best management practices and a monitoring program. Plans should incorporate an adaptive management approach and be developed collaboratively, when possible, by all responsible parties within each watershed.

Load reduction plans shall be submitted by parties with assigned WLAs to the San Diego Water Board within 12 months of the TMDL effective date, and reviewed by the San Diego Water Board Executive Officer within 6 months of submittal. Storm Water Pollution Prevention Plans (SWPPPs) prepared by industrial, construction, and regulated small MS4s permittees pursuant to their respective statewide general NPDES permits can serve as the Load Reduction Plans for these entities. All industrial, construction, and regulated small MS4 permittees shall update their SWPPPs within 6 months of the TMDL effective date with any additional BMPs, monitoring, or other actions that will be performed to account for their site's potential to discharge organic pollutants to receiving waters and/or Phase I MS4. Alternatively, existing permittees may update their SWPPPs within 12 months if they enter into a Memorandum of Understanding (MOU), or a similar formal joint effort with the Phase I MS4s in the applicable watershed to collaboratively and more successfully implement the adaptive management framework. The Load Reduction Plan must be implemented within 90 days upon receipt of San Diego Water Board's comments and recommendations, but in any event, no later than 6 months after submittal.

The San Diego Water Board will issue, or revise and re-issue waste discharge requirements (WDRs) to point sources that were assigned WLAs in the San Diego Region to enforce the requirements of the TMDLs, WLAs, and implementation.³⁸ In the case of Caltrans, the San Diego Water Board will request the State Water Board to revise and reissue the WDRs and NPDES requirements.

Industrial facilities, construction sites, regulated small MS4s, and NASSCO did not receive WLAs, which is equivalent to being assigned a WLA of zero. These parties are responsible for meeting requirements consistent with this implementation plan. The San Diego Water Board will request the State Water Board to revise and reissue existing statewide general WDRs and NPDES requirements for industrial activities, construction activities, and regulated small MS4s to incorporate TMDL implementation requirements for facilities located within these watersheds.

³⁸ Authorized pursuant to Water Code sections 13263 and 13264

Industrial facilities with the following standard industrial classification (SIC) codes are subject to the requirements of the TMDL implementation.

- Recycling Facilities (SICs 5015 and 5093)
- Transportation Facilities (SICs 3731, 3732, 4011, 4111 – 4173, 4212 – 4231, 4512-4581, and 5171)
- Fabricated Metal Products Manufacturing Facilities (SICs 3411 – 3499)
- Marine Cargo Handling Facilities (SICs 4412, 4424, 4491, 4492)

The San Diego Water Board will submit a letter to the California Air Resources Board and/or the San Diego County Air Pollution Control District requesting that they address issues relating to air deposition of toxic organic pollutants in the San Diego Bay airshed. Atmospheric deposition was the only nonpoint source identified in the Paleta, Chollas, and Switzer creek watersheds. Atmospheric deposition is considered an uncontrollable nonpoint source.

C. Special Studies

The San Diego Water Board will issue two investigative orders to direct Responsible Parties to conduct the following special studies.

1. Intertidal Segments Study(ies) – Investigate contributing loads and sediment concentrations of total chlordane, PPPAHs, and total PCBs in the sediments of the tidally-influenced portions of Paleta, Chollas, and Switzer Creek watersheds. [While recent water quality data has been collected throughout five TMDL watersheds contributing to San Diego Bay, the data only represents the watersheds above tidal influence. The proposed intertidal study would focus on a data gap in the contributing watershed data for the tidally-influenced portions in watersheds addressed in this TMDL.](#) The study(ies) must be designed to answer the following questions:

- Are storm drains and/or creek bed sediments in the tidally-influenced portions of the watersheds sources of pollutants to the impaired creek mouth areas?
- If storm drains and/or the creek bed sediments are found to be sources of a pollutant(s) to the creek mouth areas, what are their contributions of the pollutant(s) to the impaired waterbodies and what is the extent of polluted sediments that need to be cleaned up?
- Do sediment concentrations in storm drains and/or creek beds exceed the Bed Sediment Loading Capacities listed in Table 7 - [Insert Table Number (4)]?

The City of San Diego, Port of San Diego, and U.S. Navy will be considered for inclusion in this investigative order. The study(ies) must be completed within 3 years of the effective date of these TMDLs. This study(ies) shall include monitoring of storm drains and creek bed sediments. The water quality monitoring must include 2 wet weather and 2 dry weather sampling events. One sediment quality sample set shall be collected during the summer season. Sampling locations shall be representative of the land uses within the tidal portion of each watershed. If necessary, based on the findings and proposed responses or lack thereof from responsible parties, the San Diego Water Board may require remediation action via permit requirements or enforcement actions.

2. Macoma Tissue Bioaccumulation Monitoring Study – Monitoring is needed to assess the human health threat from post-remediation creek mouth sediments in San Diego Bay at Paleta, Chollas, and Switzer creek mouths. Bioaccumulation of PCBs will be tested by exposing Macoma nasuta a relevant test species to site sediments using appropriate scientific testing methods. Results of the study will be compared with the Fish Tissue Concentration Target listed in Table 7 – **[Insert Table Number (5)]** and used to inform an effort to address bay-wide PCB impairment of San Diego Bay.

U.S. Navy and NASSCO will be considered for inclusion in this investigative order, which will be issued within 4 years of the effective date of these TMDLs. The Phase I MS4 Responsible Parties identified in Section 9.3 above will be named if the results from the Intertidal Segments Study(ies) or other evidence finds that sediment buildup in the storm drains of the tidally-influenced segments of the watersheds are contributing a PCB source load to the creek mouth impairments.

- The investigation must include a baseline monitoring event prior to sediment remediation in the creek mouth areas and must be collected every 2 to 3 years following remediation and continue until tissue concentrations meet the Fish Tissue Concentration Target (this monitoring may be coordinated with the Aquatic Life SQO attainment monitoring requirement); or
- Macoma tissue Bioaccumulation monitoring may be replaced with similar monitoring through participation in the bay-wide strategy monitoring plan, which will include PCB monitoring in fish tissue. Similarly, adoption of a San Diego Bay PCB TMDL would negate these TMDL requirements for Macoma tissue monitoring as these requirements would address the bay-wide PCB impairment.

Analysis for the study may be used in conjunction with any human health risk analysis associated with an enforcement order to conduct sediment remediation.

Adoption of a San Diego Bay PCBs in Fish Tissue TMDL ~~would~~will negate these TMDL requirements for ~~Macoma tissue bioaccumulation~~ monitoring as those requirements ~~would~~will directly address the bay-wide PCB impairment.

D. Sediment Remediation

~~Following special study Investigative Orders, t~~The San Diego Water Board ~~will~~intends to issue a Cleanup and Abatement Order(s) to require ~~removal of contaminated~~ sediment ~~remediation to levels at or below the Bed Sediment Loading Capacities listed in Table 7 - [Insert Table Number (4)]~~ within each of the three TMDL site footprints to a designated cleanup level.³⁹ ~~Because the TMDL loading capacities were generated from San Diego Bay SQO data based on aquatic life protection, it is likely the remediation levels will be at or below the Bed Sediment Loading Capacities listed in Table 7 - [Insert Table Number (4)].~~ Sediment remediation will be required to be completed no later than by the end of year 8 after the effective date of this amendment.

E. Monitoring for TMDL Compliance and Compliance Assessment

The purpose of monitoring is to evaluate the progress made towards attainment of the TMDLs and restoration of beneficial uses in the receiving waters. Storm water effluent monitoring will be used to determine compliance with the assigned interim and final wasteload allocations and determine the effectiveness of implementation actions proposed by responsible parties to improve water and sediment quality including proposed structural and non-structural BMP to reduce storm water runoff and sediment loading.

Monitoring of sediment and water column concentrations in the creek mouth areas will be used to determine attainment of the concentration-based TMDLs and if additional implementation action should be required to restore and protect beneficial uses. Water quality data may also be used to identify the need for modifying the TMDL requirements specified in this action or whether additional regulatory actions are in need of implementation by the San Diego Water Board to assure the restoration and protection of beneficial uses.

The Responsible Parties are responsible for conducting water quality, sediment quality, and *Macoma* tissue monitoring to measure compliance with the TMDL requirements. Phase I MS4s, Caltrans, and the U.S. Navy have primary responsibility for demonstrating that storm water discharges meet the interim and final WLAs.

³⁹ In accordance with Resolution No. 92-49, Policy and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code section 13304.

Monitoring shall be conducted under technically appropriate Monitoring and Reporting Plans (MRPs) and Quality Assurance Project Plans (QAPPs). The MRPs shall include a requirement that the responsible parties report compliance and non-compliance with waste load and load allocations as part of annual reports submitted to the Regional Board. The QAPPs shall include protocols for sample collection, standard analytical procedures, and laboratory certification.

Responsible Parties are encouraged to collaborate or coordinate their efforts to avoid duplication and reduce associated costs. Storm water dischargers may coordinate compliance with the TMDL monitoring, assessment, and reporting requirements.

The monitoring must include the following:

Storm Water Effluent Monitoring.

Watershed monitoring of storm water effluent concentrations and flow at a subset of MS4 outfalls within each jurisdiction of each watershed. The subset of outfalls must be representative of storm water flows from areas consisting primarily of residential, commercial, and industrial land uses. The data will be used to calculate or estimate the annual loads. Samples should be collected during at least two wet weather events occurring in the rainy season, October 1st through April 30th.

Storm water samples will be analyzed and reported for total chlordane, PCB congeners and total PCBs, total PAHs and PPPAHs, and total suspended solids. Sampling shall be designed in a way to collect sufficient volumes of suspended solids to allow for analysis of the listed pollutants in the bulk sediment.

In addition to TMDL constituents, general water chemistry (temperature, dissolved oxygen, pH, and electrical conductivity) and a flow measurement will be required at each sampling event. General chemistry measurements may be taken in the laboratory immediately following sample collection, if auto samplers are used for sample collection or if weather conditions are unsuitable for field measurements. The sample must not be influenced by sea water.

If exceedances of the concentration-based TMDLs are observed in the monitoring data, additional monitoring locations and/or other source identification methods must be implemented to identify the sources causing the exceedances. The additional monitoring locations and/or other source identification methods must also be used to demonstrate that organic pollutant loads from the identified sources have been addressed and are no longer causing exceedances in the receiving waters.

Receiving Water Monitoring: Sediment and Water Column

Bed sediment and water column monitoring of the creek mouth areas are required to demonstrate attainment of concentration-based TMDLs. Monitoring locations must spatially represent each creek mouth area and be selected based on the stations Phase I Sediment Quality Assessment Studies' station locations for these creek mouths (Anderson, et al., 2004; SCCWRP and SPAWAR, 2005) or justified otherwise as meeting the objectives above. Collection of creek mouth sediment and water column samples must occur in the summer months. Water and sediment chemistry monitoring shall be required annually.

Sediment chemistry variables sampled must include, at a minimum, total chlordane, PCB congeners and total PCBs, and PPPAHs.

Receiving water chemistry variables sampled must include, at a minimum, total chlordane, Benzo[a]pyrene, total PCBs. In addition to TMDL constituents, general water chemistry (temperature, dissolved oxygen, pH, and electrical conductivity) will be required at each sampling event.

If exceedances of the concentration-based TMDLs begin to occur in the creek mouth sediments after [dredging remediation](#) has occurred, additional investigation, analysis, and/or monitoring will be required for the purpose of identifying pollutant sources. Such monitoring will likely include stations representing the tidally-influenced portion of the watershed.

Attainment of Aquatic Life Sediment Quality Objective

Sediment quality objective evaluation as detailed in the Aquatic Life SQO (MLOE Approach) shall be performed at least once every five years and, if possible, in coordination with the Biological Baseline and Bight regional monitoring programs. Sampling and analysis for the full chemical suite, two toxicity tests and four benthic indices as specified in Aquatic Life SQO shall be conducted and evaluated. If moderate toxicity as defined in the Aquatic Life SQO is observed, results shall be highlighted in annual reports and further analysis and evaluation to determine causes and remedies shall be required in accordance with the monitoring plan. Locations for sediment triad assessment and the methodology for combining result from sampling locations to determine sediment conditions shall be specified in the MRP to be approved by the Executive Officer. The sampling design shall be in compliance with the SQO Part 1 Sediment Monitoring section (VII.E).

F. Re-evaluation of TMDLs and/or Allocations

The San Diego Water Board may re-evaluate the TMDLs and/or WLAs and LAs if new information or data indicates that a re-evaluation is needed for the purpose of restoring beneficial uses.

G. TMDL Compliance Schedule

The TMDL compliance schedules to meet the WLA for each of the three pollutants in each creek mouth will be phased over 20 years, with 40 percent met by the end of [Insert Year 5], 80 percent met by the end of [Insert Year 10], 90 percent met by the end of [Insert Year 15], and 100 percent of the WLAs met by the end of [Insert Year 20] of the effective date of this amendment.⁴⁰

Sediment remediation will be completed no later than by the end of [Insert Year 8] of the effective date of this amendment.⁴¹ This will allow dischargers the time needed to install BMPs and implement load reduction plans.

In addition, the pollutant concentrations in sediments at designated sampling locations at each of the three creek mouths must not exceed the bed sediment loading capacity values in Table 7 - [Insert Table No. (4)] and water column concentration targets in Table 7 - [Insert Table Number (5)] by the end of [Insert Year 8].

Table 7 – [Insert Table Number (7)]. Implementation Action Schedule

	Task Description	Responsible Party	Compliance Date
1.	Issue, reissue, or revise WDRs/NPDES requirements for Phase 1 MS4 Permit and Naval Base San Diego individual permit to incorporate requirements for complying with TMDL, WLAs, and TMDL implementation requirements	San Diego Water Board	Completed during NPDES permit renewal (within 5 years of applicable permit adoption date) or sooner dependant upon resources.
2.	Issue, reissue, or revise WDRs/NPDES requirements for individual and statewide general permits to incorporate requirements for complying with TMDL, WLAs, and/or TMDL implementation requirements	San Diego Water Board and State Water Board	Completed during NPDES permit renewal – within 5 years of applicable permit date, and every 5 years thereafter
3.	Prepare and submit Load Reduction Plans for San Diego Water Board review, for each watershed	Phase I MS4s, U.S. Navy, and Caltrans	Plan submittal by 12 th month after OAL effective date of this Basin Plan amendment. Plan must be implemented no later than 6 months after submittal Annual reporting of implementation and monitoring program consistent with permit

⁴⁰ The effective date is the date the Office of Administrative Law approves this Basin Plan amendment.

⁴¹ The effective date is the date the Office of Administrative Law approves this Basin Plan amendment.

			reporting requirements
4.	Prepare and submit updated Storm Water Pollution Prevention Plan	Enrollees of the Industrial, Construction, and Regulated Small MS4 General Permit and NASSCO	Plan submittal within 6 months of OAL effective date of this Basin Plan amendment. Permittees entering into agreements with Phase I MS4s may submit in accordance with the Phase I MS4 submittal date. Plan must be implemented no later than 6 months after submittal Annual reporting of implementation and monitoring program consistent with permit reporting requirements
5.	Issue Investigative Order(s) to direct special study on tidally-influenced segments of Paleta, Chollas, and/or Switzer creeks	San Diego Water Board	Within 6 months to 1 year of OAL effective date of this Basin Plan amendment
6.	Submit report on special study on tidally-influenced segments of Paleta, Chollas, and/or Switzer creeks	Responsible Parties named in Investigative Order	In accordance with the Investigative Order(s) to direct special study on tidally-influenced segments of Paleta, Chollas, and/or Switzer creeks
7.	Issue Investigative Order(s) to direct special study on pollutant concentrations in Macoma tissue bioaccumulation in Paleta, Chollas, and Switzer creek mouth areas	San Diego Water Board	Within 6 years of OAL effective date of this Basin Plan amendment or in accordance with the San Diego Bay Strategy
8.	Issue Cleanup and Abatement Order(s) to remediate sediment in Paleta, Chollas, and Switzer creek mouth areas	San Diego Water Board	Within 6 years of OAL effective date of this Basin Plan amendment
9.	Completion of sediment remediation in Paleta, Chollas, and Switzer creek mouth areas	Responsible Parties named in Cleanup and Abatement Order	In accordance with the Cleanup and Abatement Order(s) to remediate sediment in Paleta, Chollas, and Switzer creek mouth areas
10.	Demonstrate attainment of Meet TMDL Interim Goal 1: attain 40% of required reduction in waste loads	Phase I MS4s, U.S. Navy, and Caltrans	5 years after effective date of this Basin Plan amendment
11.	Demonstrate attainment of Meet TMDL Interim Goal 2: attain concentration-based TMDLs for	Phase I MS4s, U.S. Navy, and Caltrans	8 years after effective date of this Basin Plan amendment

	sediment and water column in Paleta, Chollas, and Switzer creek mouth areas		
12.	Demonstrate attainment of Meet TMDL Interim Goal 3: attain 80% of required reduction in waste loads and begin monitoring to demonstrate attainment of Aquatic Life SQO	Phase I MS4s, U.S. Navy, and Caltrans	10 years after effective date of this Basin Plan amendment
13.	Demonstrate attainment of Meet TMDL Interim Goal 4: attain 90% of required reduction in waste loads	Phase I MS4s, U.S. Navy, and Caltrans	15 years after effective date of this Basin Plan amendment
14.	Demonstrate attainment of Meet Final Goals: attain 100% of required reduction in waste loads WLA s and LA s, meet fish tissue concentration target, and attain Aquatic Life and Human Health SQOs	Phase I MS4s, U.S. Navy, and Caltrans	20 years after effective date of this Basin Plan amendment

Add the following photographic image and caption to Chapter 7 within the added text (photo by David Barker).



Mouth of Chollas Creek in San Diego Bay

Revise the Chapter 7 Table of Contents to reflect the above changes.

This Basin Plan amendment also makes the following miscellaneous changes:

Chapter 5. Plans and Policies

Regional Board Resolutions

Revise the introductory paragraph as follows:

The San Diego Regional Board has adopted many resolutions which, in addition to the State Board Resolutions described previously, are important to the Regional Board's implementation of the Basin Plan. ~~All of the Regional Board Resolutions which implement, interpret, or make specific the Basin Plan and which are listed below have been incorporated in this Basin Plan and are therefore superseded by this Basin Plan.~~ The Regional Board Resolutions that implement, interpret, or make specific the Basin Plan are incorporated into the Basin Plan and are listed below.

Add the following subheading and text below the introductory paragraph:

Early Resolutions

The following resolutions were incorporated into the 1994 edition of the Basin Plan.

Add the following resolution after Resolution No. 94-09:

Resolution No. 94-10. Adopted September 8, 1994. *A Resolution Adopting an Update to the Water Quality Control Plan for the San Diego Basin.*

Delete the last item on the list, which was adopted as part of Resolution 94-10 and is not, itself, a resolution:

~~**Regional Board Water Quality Management Policy.** This policy consists of five general water quality policy statements and is described in Chapter 1 of the Basin Plan.~~

New Regional Board Resolutions

Replace the heading and introductory text as follows:

~~New Regional Board Resolutions~~

~~The following Basin Plan amendments have been adopted since the September 8, 1994 update.~~

More Recent Resolutions

The following resolutions have been incorporated into the Basin Plan since 1994.

Delete references to page numbers, chapters, and appendices in the listed Regional Board resolutions (eight instances).

Update the list of resolutions by adding approved resolutions to the end of the list, as appropriate. List in order of resolution number, and include only resolution number and title. The resolutions to be added include but may not be limited to:

R9-2005-0036; R9-2005-0238; R9-2005-0239; R9-2006-0029; R9-2007-0043; R9-2007-0104; R9-2008-0027; R9-2008-0028; R9-2010-0001.

Revise the Chapter 5 Table of Contents and Index if needed to reflect the above changes.