

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

**RESOLUTION NO. R9-2007-0044**

**A RESOLUTION AMENDING *THE WATER QUALITY CONTROL PLAN FOR  
THE SAN DIEGO BASIN (9)* TO INCORPORATE TOTAL MAXIMUM  
DAILY LOADS FOR INDICATOR BACTERIA  
PROJECT I - BEACHES AND CREEKS  
IN THE SAN DIEGO REGION**

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

1. **Basin Plan Amendment:** Total Maximum Daily Loads (TMDLs) and allocations for pollutants that exceed water quality objectives in waterbodies that do not meet water quality standards under the conditions set forth in section 303(d) of the Clean Water Act [33 U.S.C. 1250, *et seq.*, at 1313(d)] (“Water Quality Limited Segments”) should be incorporated into the *Water Quality Control Plan for the San Diego Basin (9)* (Basin Plan) pursuant to 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.
2. **Clean Water Act Section 303(d):** As required by section 303(d) of the Clean Water Act (CWA), specific segments of the Pacific Ocean shoreline<sup>1</sup> and creeks in the San Diego Region, located in 12 coastal watersheds, were placed on the List of Water Quality Limited Segments because levels of total coliform, fecal coliform, and/or enterococci at those locations exceeded water quality objectives for water-contact recreation (REC-1)<sup>2</sup>. (Measurements of total coliform, fecal coliform, and enterococci are relied on to indicate the presence of disease-causing pathogens.) The list of beach and creek segments at which water quality is impaired by bacterial pollution, including the extent of the impairments, and for which TMDLs have been calculated, are shown in Attachment A.
3. **Water Quality Impairments:** REC-1 is particularly sensitive to, and subject to impairment by, pathogens when elevated densities of indicator bacteria exist in the water.<sup>3</sup> Persons who ingest water during recreational activities in waters containing indicator bacteria at densities in excess of water quality objectives for REC-1, are

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<sup>1</sup> The Pacific Ocean shoreline consists of a zone extending seaward from the shoreline a distance of 1,000 feet or to the 30-foot depth contour, whichever is further from the shoreline.

<sup>2</sup> The Basin Plan and Ocean Plan also contains SHELL objectives for total coliform. SHELL impairments for total coliform are being developed in a separate TMDL and/or standards action.

<sup>3</sup> Water quality objectives for indicator bacteria in waters with non-water-contact recreation (REC-2) are less stringent than the water quality objectives for REC-1, therefore, attainment of REC-1 objectives through the implementation of TMDLs will, *a fortiori*, provide the requisite water quality for REC-2.

significantly more likely to incur infections or illness caused by pathogens in the water than when indicator bacteria occur at densities consistent with the applicable water quality objectives. REC-1 is a beneficial use of the Pacific Ocean beaches where water quality is listed as impaired; REC-1 also exists in the creeks where water quality is listed as impaired.

4. **Necessity Standard** [Government Code section 11353(b)]: Amendment of the Basin Plan to establish and implement Total Maximum Daily Loads (TMDLs) for the waters of the beaches and creeks listed in Attachment A is necessary because the existing water quality at the beaches and creeks listed in Attachment A does not meet applicable water quality objectives for total coliform, fecal coliform, and/or enterococci bacteria. CWA section 303(d) requires the establishment and implementation of TMDLs under the water quality conditions that exist at these beaches and creeks. TMDLs for total coliform, fecal coliform, and/or enterococci bacteria are necessary to promote attainment of applicable water quality objectives and restoration of water quality needed to support the beneficial uses designated for the beaches and creeks.
5. **Water Quality Objectives:** Water quality objectives for bacteria in the waters of the Pacific Ocean shoreline, expressed as the most probable number of bacteria colonies per 100 mL of water sample (MPN/100 mL), are contained in the *Water Quality Control Plan for Ocean Waters of California* (Ocean Plan). The water quality objectives for bacteria in the inland surface waters are contained in the Basin Plan.
  - (a) The water quality objectives for indicator bacteria in waters of the Pacific Ocean shoreline designated as having REC-1 beneficial use include:
    - i. Total coliform density shall not exceed 1,000 MPN/100 mL nor shall the geometric mean of total coliform density from five or more samples exceed 1,000 MPN/100mL, or 10,000 MPN/100mL in a single sample or 1,000 MPN/100mL in a single sample when the fecal coliform/total coliform ratio exceeds 0.1;
    - ii. Fecal coliform density based on the geometric mean of least five samples shall not exceed 200 MPN/100mL nor 400 MPN/100mL in a single sample; and
    - iii. Enterococci density: In marine waters, the geometric mean of enterococci shall not exceed 35 colonies per 100 ml. The single sample maximum allowable density in designated beach areas is 104 colonies per 100 ml, in moderately or lightly used areas is 276 colonies per 100 ml, in infrequently used areas is 500 colonies per 100 ml.
  - (b) The water quality objectives for indicator bacteria in inland surface waters designated as having the REC-1 beneficial use include:

- i. **Fecal Coliform:** based on a minimum of not less than five samples for any 30-day period, bacteria density shall not exceed a log mean of 200 MPN/100 mL, and no more than 10 percent of the total samples during any 30-day period shall exceed 400 MPN/100 mL.
  - ii. **Enterococci:** In fresh water, the geometric mean of enterococci shall not exceed 33 colonies per 100 ml. The single sample maximum allowable density in designated beach areas is 61 colonies per 100 ml, in moderately or lightly used areas is 108 colonies per 100 ml, in infrequently used areas is 151 colonies per 100 ml.
  - iii. **E.coli<sup>4</sup>:** In fresh water, the geometric mean of *E. coli* shall not exceed 126 colonies per 100 ml. The single sample maximum allowable density in designated beach areas is 235 colonies per 100 ml, in moderately or lightly used areas is 406 colonies per 100 ml, in infrequently used areas is 567 colonies per 100 ml.
6. **Numeric Targets:** Numeric Targets are established for the purposes of calculating TMDLs. The numeric targets for these TMDLs consist of the REC-1 water Quality Objectives for indicator bacteria contained in the Ocean Plan and Basin Plan. Since numeric targets are equal to the water quality objectives for total coliform, fecal coliform, enterococci bacteria, and E.coli cited in finding 5, attainment of TMDLs will ensure attainment of these water quality objectives.
7. **Sources of Bacteria:** Bacteria build up on the land surface as a result of various anthropogenic land uses and management practices (e.g., management of manure fertilizer in rural areas, and pet waste in urban areas) and natural processes (e.g., bird and wildlife feces). Bacteria are washed off the land surface by dry weather urban runoff and rainfall runoff and enter surface waters through pipes, outfalls, and conveyance channels from municipal wastewater treatment plants, industrial waste treatment facilities, or Municipal Separate Storm Sewer Systems (MS4s) in urban areas. In rural areas, bacteria are washed off the land surface through stormwater runoff directly to surface waters. These diffuse sources (agriculture, livestock, and horse ranch facilities) have multiple routes of entry into surface waters. In order to quantify bacteria loading from these various sources and transport mechanisms, 13 land-use types were identified in this TMDL analysis: Low Density Residential, High Density Residential, Commercial/Institutional, Industrial/Transportation, Military, Parks/Recreation, Open Recreation, Agriculture, Dairy/Intensive Livestock, Horse Ranches, Open Space, Water, and Transitional (Construction Activities). Since bacteria loading associated with these land use types is highly correlated with land-use practices, each land use type has a unique bacteria loading coefficient associated with it. Quantification of bacteria loading in all watersheds is necessary to calculate the load reductions required to meet the TMDLs.

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<sup>4</sup> E.coli TMDLs were not calculated for *E.coli* because fecal coliform TMDLs and load reductions essentially account for *E.coli*.

8. **Water Quality Objective Violations:** Bacteria densities at the impaired beaches and creeks have frequently exceeded water quality objectives. For beaches, the highest number of exceedances of WQOs was in the vicinity of creeks and major stormwater outfalls.
9. **Relationship Between Bacteria and Pathogens:** Fecal indicator bacteria originate from the intestinal flora of warm-blooded animals, including humans, and their presence in surface water is used as an indicator of the possible presence of human pathogens (*i.e.*, organisms that can cause illness in people exposed through recreational water use and people who harvest and eat filter-feeding shellfish; pathogens include protozoans, bacteria, viruses, and other disease-causing organisms). Bacteria have been historically used as indicators of human pathogens because the probability of disease is directly correlated with the density of indicator bacteria in waters used for recreation and because the indicator bacteria are easier and less costly to measure than the pathogens themselves. If TMDLs for indicator bacteria are attained, then water quality objectives are met, and health risks associated with pathogens are minimal.
10. **Total Maximum Daily Loads** [40 CFR 130.2(i)]: TMDLs for bacteria are equal to the total assimilative or loading capacities of the waterbodies located in the 12 watersheds for total coliform, fecal coliform, and enterococci bacteria. The loading capacities are defined as the maximum amount of fecal coliform, total coliform and enterococci that the waterbody can receive and still attain water quality objectives necessary for the protection of designated beneficial uses. Each TMDL must accommodate 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 USEPA.
11. **Allocations and Reductions:** Discharges of bacteria from all identified sources that are susceptible to control or management must be reduced in order to keep total bacterial loads as close to the TMDLs and actual assimilative capacities of the impaired waters as possible. Discharges from controllable sources were identified as originating from MS4s for urbanized sources, and agriculture, livestock, and horse ranch facilities for non-urbanized sources. Controllable sources must be reduced by an amount in proportion to the existing loads generated in each watershed, as calculated using a computer model. TMDLs are reported on a watershed basis and must be jointly achieved by all dischargers of bacteria located in the watersheds. Although considered a controllable source, load reductions from the California Department of Transportation (Caltrans) are not necessary because in all watersheds, loads from Caltrans are a minor contributor to the total existing loads.<sup>5</sup> Natural

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<sup>5</sup> The dry and wet weather wasteload allocation for discharges from wastewater treatment facilities, also known as publicly owned treatment works (POTWs), is zero. The only exception is Padre Dam whose discharge to the San Diego River is regulated by the San Diego Waterboard and must meet REC-1 permit

sources of bacteria are considered uncontrollable and no load reductions are necessary.

12. **Implementation Plan:** The report entitled *Total Maximum Daily Loads for Indicator Bacteria, Project I – Beaches and Creeks in the San Diego Region*, (Technical Report) dated December 12, 2007 presents a summary of measures that, if adopted by the San Diego Water Board, the State Water Resources Control Board (SWRCB), and local governmental agencies, will promote attainment of the load reductions needed to keep discharges of bacteria at or below the TMDLs calculated for these waterbodies. Section 303 of the CWA and the federal NPDES regulations direct USEPA and authorized states to impose requirements consistent with TMDLs for point source discharges to “impaired” waterbodies. When the San Diego Water Board and SWRCB re-issue or revise National Pollutant Discharge Elimination System (NPDES) requirements for municipal and industrial storm water discharges, including discharges of “small MS4s,” and take action implementing the *State Policy for the Implementation and Enforcement of the Nonpoint Source Pollution Control Program*, they will have to include requirements that will implement all TMDLs applicable to waters affected by the regulated discharges.
13. **Compliance Monitoring:** Monitoring including pollutant load reductions, changes in urban runoff and discharge water quality, and changes in receiving water quality will be necessary to assess effectiveness in achieving load and wasteload allocations and compliance with the water quality objectives for total coliform, fecal coliform, and enterococci.
14. **Compliance Schedule:** Full implementation of the TMDLs for indicator bacteria shall be completed within 20 years from the effective date of the Basin Plan amendment. The compliance schedule for implementing the load and wasteload reductions required under these TMDLs is structured in a phased manner, with 100 percent of interim reductions necessary for protection of the REC-1 beneficial use required within 10 years from the effective date of the Basin Plan amendment that establishes the TMDLs. Because dischargers accountable for attaining load reductions in multiple watersheds may have difficulty providing the same level of effort simultaneously in all watersheds, a scheme for prioritizing implementation of bacteria reduction strategies in waterbodies within watersheds was developed.
15. **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. No change to the fundamental approach to TMDL calculation was necessary as a result of this process.

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requirements. Therefore Padre Dam received a wasteload allocation which is based on the effluent limitations of its WDRs, and is included in addition to these TMDLs which are based on urban runoff.

16. **CEQA 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) (Public Resources Code, section 21000 et seq.) requirements for preparing environmental documents [14 CCR 15251(g); 23 CCR 3782]. 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 documents" [23 CCR 3777]. The substitute documents for this project include 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. The project itself is the establishment of TMDLs for indicator bacteria at beaches and creeks where water quality has been listed as "impaired" by the SWRCB 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 beaches and creeks.
17. **Project Impacts:** The accompanying CEQA substitute documents satisfy the requirements of substitute documents for a Tier 1 environmental review under CEQA, pursuant to Public Resources Code section 21159 and CCR Title 14, section 15187. Nearly all of the compliance obligations anticipated to be necessary to implement the TMDLs for indicator bacteria will be undertaken by public agencies that will have their own obligations under CEQA for implementation projects that could have significant environmental impacts (*e.g.*, installation and operation of structural best management practices). 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.

If not properly mitigated at the project level, implementation and compliance measures undertaken could have significant adverse environmental impacts. The substitute documents for this TMDL, and in particular the environmental checklist and responses to comments, identify broad mitigation approaches that should be considered at the project level. The San Diego Water Board does not engage in speculation or conjecture regarding the projects that may be used to implement the TMDLs and only considers the reasonably foreseeable alternative methods of compliance, the reasonably foreseeable feasible environmental impacts of the these methods of compliance, and the reasonably foreseeable mitigation measures which would avoid or eliminate the identified impacts, all from a broad general perspective consistent with the uncertainty regarding how the TMDLs, ultimately, will be implemented. The lengthy implementation period allowed by the TMDLs will allow persons responsible for compliance with wasteload allocations or load allocations to develop and pursue many compliance approaches and mitigation measures.

18. **Project Mitigation:** The proposed amendment to the Basin Plan to establish TMDLs for indicator bacteria in beaches and creeks could have a significant adverse effect on the environment. However, there are feasible alternatives, feasible mitigation measures, or both, that would substantially lessen any significant adverse impact. The public agencies responsible for implementation measures needed to comply with the TMDLs can and should incorporate such alternatives and mitigation into any projects or project approvals that they undertake for the impaired beaches and creeks. Possible alternatives and mitigation are described in the CEQA substitute documents, specifically the Technical Report and the environmental checklist. To the extent the alternatives, mitigation measures, or both, are not deemed feasible by those agencies, the necessity of implementing the TMDLs that is mandated by the federal Clean Water Act and removing the bacteria impairments on beaches and creeks in the San Diego Region (an action required to achieve the express, national policy of the Clean Water Act) outweigh the unavoidable adverse environmental effects identified in the substitute documents.
19. **Department of Fish and Game Filing Fee:** Considering the record as a whole, this Basin Plan amendment will result in no adverse effect, either individually or cumulatively, on wildlife resources.
20. **Economic Analysis:** The San Diego Water Board has considered the costs of the reasonably foreseeable methods of compliance with the load and wasteload allocations specified in these TMDLs. The most reasonably foreseeable methods of compliance involve implementation of structural and non-structural controls. Surface water monitoring to evaluate the effectiveness of these controls will be necessary.
21. **Stakeholder & Public Participation:** Interested persons and the public have had reasonable opportunity to participate in review of the proposed TMDLs. Efforts to solicit public review and comment included a public workshop and CEQA scoping meeting in March 2003, a public workshop in March 2004, eleven meetings with the Stakeholder Advisory Group, four public review and comment periods consisting of 62 days, 45 days, 47 days, and 30 days respectively, a public workshop on January 11, 2006, public hearings on February 8, 2006, April 25, 2007, and December 12, 2007. Notices for all meetings were sent to interested parties including cities and counties with jurisdiction in watersheds draining to the bacteria impaired beaches and creeks. All of the written comments submitted to the San Diego Water Board during the review and comment periods have been considered in Appendix S and Appendix U to the Technical Report.
22. **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.
23. **Contingency:** Authorization of a Reference System Approach/Natural Sources Exclusion Approach Basin Plan amendment is needed in order to revise the final wet weather TMDLs to include consideration of natural sources of bacteria. It is

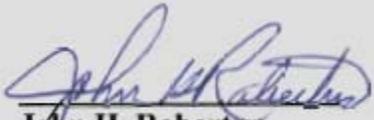
appropriate to make adoption of this Resolution contingent on the San Diego Water Board's consideration of that Basin Plan amendment.

**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 section 21080.5(d)(2)(E) of the Public Resources Code and the California Code of Regulations, Title 23, section 3781.
2. **Amendment Adoption:** The San Diego Water Board hereby adopts the attached Basin Plan amendment as set forth in Attachment B hereto to establish TMDLs for indicator bacteria at impaired beaches and creeks in the San Diego Region with such adoption made contingent upon the conclusion of the San Diego Water Board proceedings to consider a resolution adopting a Basin Plan amendment authorizing the Reference System Approach/Natural Sources Exclusion Approach for TMDLs. The San Diego Water Board directs staff to bring the Reference System Approach/Natural Sources Exclusion Approach Basin Plan amendment to the Board for consideration within six months of the date of this Resolution.
3. **Technical Report Approval:** The San Diego Water Board hereby approves the Technical Report entitled *Total Maximum Daily Loads for Indicator Bacteria, Project I – Beaches and Creeks in the San Diego Region*, dated December 12, 2007.
4. **Certificate Of Fee Exemption:** The Executive Officer is authorized to sign a Certificate of Fee Exemption for a “no” impact finding and shall submit this Certificate *in lieu* of payment of the California Department of Fish and Game filing fee.
5. **Agency Approvals:** The Executive Officer is directed to submit this Basin Plan amendment to the SWRCB in accordance with Water Code section 13245.

6. **Non-Substantive Corrections:** If, during the approval process for this amendment, the San Diego Water Board, the SWRCB, 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, John H. Robertus, Executive Officer, do hereby certify 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 December 12, 2007.*



**John H. Robertus**  
Executive Officer

**ATTACHMENT A  
TO RESOLUTION NO. R9-2007-0044**

**Bacteria-Impaired Water Bodies  
Included in  
Project I --Beaches and Creeks in the San Diego Region**

<b>Watershed</b>	<b>Type of Listing</b>	<b>Water Body Name <sup>a</sup></b>	<b>Drainage Area (mi<sup>2</sup>)<sup>b</sup></b>
Laguna/San Joaquin HSA 901.11 and 901.12	Shoreline	Pacific Ocean Shoreline, Laguna Beach HSA Pacific Ocean Shoreline, San Joaquin Hills HSA	13.94
Aliso Creek HSA 901.13	Shoreline and Creek	Pacific Ocean Shoreline Aliso Creek.	35.74
Dana Point HSA 901.14	Shoreline	Pacific Ocean Shoreline	8.89
San Juan Creek HSA 901.27	Shoreline and Creek	Pacific Ocean Shoreline Lower San Juan Creek.	177.18
San Clemente HA 901.30	Shoreline	Pacific Ocean Shoreline	18.78
San Luis Rey River HU 903.00	Shoreline	Pacific Ocean Shoreline	560.42 (354.12)
San Marcos HA 904.50	Shoreline	Pacific Ocean Shoreline	1.43
San Dieguito River HU 905.00	Shoreline	Pacific Ocean Shoreline	346.22 (292.24)
Miramar Reservoir HA 906.10	Shoreline	Pacific Ocean Shoreline <sup>c</sup>	93.73
Scripps HA 906.30	Shoreline	Pacific Ocean Shoreline	8.75
San Diego River HU 907.11	Shoreline and Creek	Pacific Ocean Shoreline Forester Creek. San Diego River (Lower).	436.48 (173.95)
Chollas Creek HSA (908.22)	Creek	Chollas Creek.	26.80

Note: HSA = hydrologic subarea; HA = hydrologic area; HU = hydrologic unit

<sup>a</sup> Impaired for exceedances of fecal coliform, and/or total coliform, and/or enterococci.

<sup>b</sup> The drainage area associated with the dry weather TMDLs are in parenthesis. The drainage areas associated with the wet weather TMDLs are without parenthesis. Some areas impound runoff during dry periods because these watersheds are above large reservoirs and lakes.

<sup>c</sup> The SWRCB removed this water body from the 2006 Clean Water Act Section 303(d) List of Water Quality Limited Segments.

**ATTACHMENT B  
TO RESOLUTION NO. R9-2007-0044**

**AMENDMENT TO THE WATER QUALITY CONTROL  
PLAN FOR THE SAN DIEGO BASIN (9) TO INCORPORATE  
TOTAL MAXIMUM DAILY LOADS FOR INDICATOR BACTERIA,  
PROJECT I – BEACHES AND CREEKS IN THE SAN DIEGO REGION**

This Basin Plan amendment establishes Total Maximum Daily Loads (TMDLs) and associated load and wasteload allocations for total coliform, fecal coliform, and enterococci bacteria in the beach and creek segments listed in Attachment A. This amendment includes a program to implement the TMDLs and monitor their effectiveness. Chapters 2, 3, and 4 of the Basin Plan are amended as follows:

**Chapter 2, Beneficial Uses**

**Table 2-2. Beneficial Uses of Inland Surface Waters**

Consecutively number and add the following footnote to Aliso Creek, San Juan Creek, Forrester Creek, San Diego River (lower), and Chollas Creek in Table 2-2:

Aliso Creek, San Juan Creek, Forrester Creek, San Diego River (lower), and Chollas Creek are designated as water quality limited segments for indicator bacteria 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*, Bacteria - Total and Fecal Coliform, and Bacteria - *E. Coli* and Enterococci, and Chapter 4, *Implementation, Clean Water Act Section 303(d) Requirements for Impaired Waterbodies, Total Maximum Daily Loads, Total Maximum Daily Loads for Indicator Bacteria, Project I – Beaches and Creeks in the San Diego Region*.

Renumber any footnotes in Table 2-2 displaced by this new footnote.

**Table 2-3. Beneficial Uses of Coastal Waters.**

Consecutively number and add the following footnote to Pacific Ocean in Table 2-3:

Certain Pacific Ocean shoreline segments of the following Hydrological Units, Areas, and Subareas are designated as water quality limited segments for indicator bacteria pursuant to Clean Water Act section 303(d): Laguna/San Joaquin HSA 901.11 and 901.12, Aliso Creek HSA 901.13, Dana Point HSA 901.14, San Juan Creek HSA 901.27, San Clemente HA 901.30, San Luis Rey River HU 903.00, San Marcos HA 904.50, San Dieguito River HU 905.00, Miramar Reservoir HA 906.10, Scripps HA 906.30, San Diego River HU 907.11, and Chollas Creek HSA (908.22). Total Maximum Daily Loads have been adopted to address these impairments. See Chapter 4, *Implementation, Clean Water Act Section 303(d) Requirements for Impaired Waterbodies, Total Maximum Daily Loads, Total Maximum Daily Loads for Indicator Bacteria, Project I – Beaches and Creeks in the San Diego*

*Region.*

Consecutively number and add the following footnote to Mouth of San Juan Creek in Table 2-3:

The mouth of San Juan Creek is designated as a water quality limited segment for indicator bacteria pursuant to Clean Water Act section 303(d). Total Maximum Daily Loads have been adopted to address these impairments. See Chapter 4, *Implementation, Clean Water Act Section 303(d) Requirements for Impaired Waterbodies, Total Maximum Daily Loads Total Maximum Daily Loads for Indicator Bacteria, Project I – Beaches and Creeks in the San Diego Region*

Consecutively number and add the following footnote to Mouth of San Luis Rey River in Table 2-3:

The mouth of San Luis Rey River is designated as a water quality limited segment for indicator bacteria pursuant to Clean Water Act section 303(d). Total Maximum Daily Loads have been adopted to address these impairments. See Chapter 4, *Implementation, Clean Water Act Section 303(d) Requirements for Impaired Waterbodies, Total Maximum Daily Loads Total Maximum Daily Loads for Indicator Bacteria, Project I – Beaches and Creeks in the San Diego Region.*

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

The mouth of San Diego River is designated as a water quality limited segment for indicator bacteria pursuant to Clean Water Act section 303(d). Total Maximum Daily Loads have been adopted to address these impairments. See Chapter 4, *Implementation, Clean Water Act Section 303(d) Requirements for Impaired Waterbodies, Total Maximum Daily Loads, Total Maximum Daily Loads for Indicator Bacteria, Project I – Beaches and Creeks in the San Diego Region.*

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

**Chapter 3, Water Quality Objectives**

***Ocean Waters; Ocean Plan and Thermal Plan:***

Add a second paragraph as follows:

Certain Pacific Ocean shoreline segments of the following Hydrological Units, Areas, and Subareas are designated as water quality limited segments for indicator bacteria pursuant to Clean Water Act section 303(d): Laguna/San Joaquin HSA 901.11 and 901.12, Aliso Creek HSA 901.13, Dana Point HSA 901.14, San Juan Creek HSA 901.27, San Clemente HA 901.30, San Luis Rey River HU 903.00, San Marcos HA 904.50, San Dieguito River HU 905.00, Miramar Reservoir HA 906.10, Scripps HA 906.30, San Diego River HU 907.11, and Chollas Creek HSA (908.22).

Total Maximum Daily Loads have been adopted to address these impairments. See Chapter 2, Table 2-3, *Beneficial uses of Coastal Waters, Footnotes [insert footnote numbers]*, and Chapter 4, *Implementation, Clean Water Act Section 303(d) Requirements for Impaired Waterbodies, Total Maximum Daily Loads, Total Maximum Daily Loads for Indicator Bacteria, Project I – Beaches and Creeks in the San Diego Region.*

***Inland Surface Waters, Enclosed Bays and Estuaries, Coastal Lagoons, and Ground Waters; Bacteria – Total and Fecal Coliform:***

Add a second paragraph as follows:

Aliso Creek, San Juan Creek, Forrester Creek, San Diego River (lower), and Chollas Creek are designated as water quality limited segments for indicator bacteria pursuant to Clean Water Act section 303(d). Total Maximum Daily Loads have been adopted to address these impairments. See Chapter 2, Table 2-2, *Beneficial Uses of Inland Surface Waters, Footnote [insert footnote number]* and Chapter 4, *Implementation, Clean Water Act Section 303(d) Requirements for Impaired Waterbodies, Total Maximum Daily Loads, Total Maximum Daily Loads for Indicator Bacteria, Project I – Beaches and Creeks in the San Diego Region.*

**Chapter 4, Implementation**

Amend the Table of Contents of Chapter 4 to include the subsection added below.

Consecutively number footnotes appropriately.

Add the following subsection to the *Clean Water Act Section 303(d) Requirements for Impaired Waterbodies, Total Maximum Daily Loads* section in Chapter 4:

*Total Maximum Daily Loads for Indicator Bacteria, Project I – Beaches and Creeks in the San Diego Region.*

On December 12, 2007, the San Diego Water Board adopted Resolution No. R9-2007-0044, *A Resolution Amending the Water Quality Control Plan for the San Diego Region (9) to Incorporate Total Maximum Daily Loads for Indicator Bacteria, Project I – Beaches and Creeks in the San Diego Region*. 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].

### **Problem Statement**

Bacteria densities in the Pacific Ocean at various beach segments violate water quality objectives (WQOs) for indicator bacteria. Bacteria densities in ocean water at these beaches unreasonably impair and threaten to impair the water quality needed to support designated beneficial uses of contact recreation (REC-1).<sup>1</sup>

Bacteria densities in the waters of Aliso, San Juan, and Forrester Creeks, and the (lower) San Diego River violate WQOs for indicator bacteria. Bacteria densities in these creeks unreasonably impair and threaten to impair the water quality needed to support REC-1.

The federal Clean Water Act requires the establishment of Total Maximum Daily Loads (TMDLs) for pollutants that exceed water quality objectives needed to support designated beneficial uses, *i.e.*, that cause or contribute to violation of state “water quality standards.”

### **Numeric Target**

When calculating TMDLs, numeric targets are established to meet WQOs and subsequently ensure the protection of beneficial uses. The numeric targets for these TMDLs consist of the REC-1 water Quality Objectives for indicator bacteria contained in the Ocean Plan and Basin Plan. TMDLs were calculated for each impaired waterbody, for each indicator bacteria, for wet and dry weather, and for interim and final phases. The numeric targets used in the TMDL calculations were equal to the WQOs for bacteria for REC-1.

Different dry weather and wet weather numeric targets were used for load calculations because the bacteria transport mechanisms to receiving waters are different under wet and dry weather conditions. Single sample maximum WQOs were used as wet weather numeric targets while geometric mean WQOs were used as numeric targets for dry weather periods. For impaired beaches, the numeric targets were equal to the total coliform, fecal coliform and enterococci WQOs for REC-1 in all cases. Wet weather numeric targets were equal to the single sample maximum WQOs, while dry weather targets were equal to the geometric mean WQOs. Although the loads were calculated based on the geometric mean WQOs, the single sample maximum WQOs must be met at all times.

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<sup>1</sup> Water quality objectives for indicator bacteria in waters with non-water-contact recreation (REC-2) are less stringent than the water quality objectives for REC-1, therefore, attainment of REC-1 objectives through the implementation of TMDLs will, *a fortiori*, provide the requisite water quality for REC-2.

Numeric targets used to calculate TMDLs for beaches were also used to calculate TMDLs for impaired creeks (except where WQOs for creeks are more stringent). Even though beaches and creeks are separate waterbodies with slightly different WQOs, all creeks included in this project eventually discharge to beaches, and therefore beneficial uses applicable to beaches must be protected at creek mouths.

Another difference between the wet weather and dry weather TMDL calculations, is that the wet weather targets (during the interim period, only) are implemented by allowing a 22 percent exceedance frequency of the single sample WQOs for REC-1. The purpose of the exceedance frequency is to account for the natural, and largely uncontrollable sources of bacteria (e.g., bird and wildlife feces) in the wet weather loads generated in the watersheds and at the beaches, which can, by themselves, cause exceedances of WQOs. Twenty-two percent is the frequency of exceedance of the single sample maximum WQOs measured in a reference system in Los Angeles County (Leo Carillo Beach/Arroyo Sequit Watershed). A reference system is a beach and upstream watershed that are minimally impacted by anthropogenic activities. The reference system approach also incorporates antidegradation principles in that, if water quality is better than that of the reference system in a particular location, no degradation of existing bacteriological water quality is permitted.

The numeric targets for the beach areas that are downstream of San Juan Creek, Aliso Creek and the San Diego River are equal to the numeric targets for the creeks. Specifically, the WQOs for enterococci are more stringent for creeks than for beaches. Since beaches are downstream of creeks, and numeric targets are equal to WQOs, TMDLs for beaches are calculated using the more stringent WQOs applicable to creeks. Enterococci numeric targets are based on the “designated beach” use category described in Chapter 3.

In some cases, the “designated beach” category may be over-protective of water quality because of the infrequent recreational use in the impaired creeks. The recreational usage frequency in these creeks may correspond to the “moderately to lightly used areas” category. If information is obtained to justify the “moderately to lightly used area” usage frequency, TMDLs using the numeric target corresponding to that usage frequency will be implemented instead.

The numeric targets for the scenarios described above are listed in the following tables.

**[Insert table number]. Interim and Final Wet Weather Numeric Targets**

Indicator Bacteria	Interim Targets		Final Targets	
	Numeric Target (MPN/100mL)	Allowable Exceedance Frequency <sup>a</sup>	Numeric Target <sup>d</sup> (MPN/100mL)	Allowable Exceedance Frequency <sup>b</sup>
Fecal coliform	400 <sup>c</sup>	22%	400 <sup>c</sup>	Not applicable
Total coliform	10,000 <sup>d</sup>	22%	10,000 <sup>e</sup>	Not applicable
Enterococci	104 <sup>f</sup> / 61 <sup>g</sup>	22%	104 <sup>f</sup> / 61 <sup>g</sup>	Not applicable

<sup>a</sup> Exceedance frequency based on reference system in the Los Angeles Region.

<sup>b</sup> Not applicable because there is no authorization for a reference system approach in the Basin Plan.

<sup>c</sup> Fecal coliform single sample maximum WQO for REC-1 use at creeks and at beaches.

<sup>d</sup> Total coliform single sample maximum WQO for REC-1 use at creeks and at beaches.

<sup>e</sup> Total coliform single sample maximum WQO for REC-1 use at beaches.

<sup>f</sup> Enterococci single sample maximum WQO for REC-1 use for “moderately or lightly used” and at “designated beach” frequency of use.

<sup>g</sup> Enterococci single sample maximum WQO for REC-1 use at impaired creeks and downstream beaches (“designated beach” frequency of use; applicable to San Juan Creek and downstream beach, Aliso Creek and downstream beach, San Diego River and downstream beach, Chollas Creek, and Forrester Creek).

**[Insert table number]. Final Dry Weather Numeric Targets**

Indicator Bacteria	Final Targets (MPN/100mL)
Fecal coliform	200 <sup>a</sup>
Total coliform	1,000 <sup>b</sup>
Enterococci	35 <sup>c</sup> / 33 <sup>d</sup>

<sup>a</sup> Fecal coliform 30-day geometric mean WQO for REC-1 use at creeks and beaches.

<sup>b</sup> Total coliform 30-day geometric mean WQO for REC-1 at beaches.

<sup>c</sup> Enterococci 30-day geometric mean WQO for REC-1 at beaches.

<sup>d</sup> Enterococci 30-day geometric mean WQO for REC-1 use at impaired creeks and downstream beaches (applicable to San Juan Creek and downstream beach, Aliso Creek and downstream beach, San Diego River and downstream beach, Chollas Creek, and Forrester Creek).

### **Source Analysis**

Bacteria build up on the land surface as a result of various anthropogenic land uses and management practices (e.g., management of manure fertilizer in rural areas, and pet waste in urban areas) and natural processes (e.g., bird and wildlife feces). Bacteria are washed off the land surface by dry weather urban runoff and rainfall runoff and enter surface waters through pipes, outfalls, and conveyance channels from municipal wastewater treatment plants, industrial waste treatment facilities, or Municipal Separate Storm Sewer Systems (MS4s) in urban areas. Discharges of bacteria from pipes and outfalls constitute point sources. In rural areas, bacteria are washed off the land surface through stormwater runoff directly to surface waters. These nonpoint sources are diffuse sources that have multiple routes of entry into surface waters. Nonpoint sources consist of controllable and uncontrollable sources. Controllable sources include those generated in agriculture, livestock, and horse ranch facilities.<sup>2</sup> Uncontrollable nonpoint source loads come from mostly natural sources (e.g. bird and wildlife feces). In order to quantify bacteria loading from these various sources and transport mechanisms, 13 land-use types were identified in this TMDL analysis: Low Density Residential, High Density Residential, Commercial/Institutional, Industrial/Transportation, Military, Parks/Recreation, Open Recreation, Agriculture, Dairy/Intensive Livestock, Horse Ranches, Open Space, Water, and Transitional (Construction Activities). Since bacteria loading associated with these land use types is highly correlated with land-use practices, each land use type has a unique bacteria loading coefficient associated with it.

### **Total Maximum Daily Loads and Allocations**

The TMDLs are equal to the assimilative or loading capacity of each creek or beach segment for each pollutant. TMDLs for each type of indicator bacteria were developed for each impaired waterbody. TMDLs are defined as the maximum amount of a pollutant the waterbody can receive and still attain water quality objectives and protection of designated beneficial uses. Once calculated, a TMDL is set equal to the sum of all individual Waste Load Allocations (WLAs) for point sources and natural background levels. The TMDL includes a margin of safety (MOS) that takes into account any uncertainties in the TMDL calculation. In this TMDL, the margin of safety is included via conservative estimates throughout the TMDL calculations and not as a separate, additional factor. Separate TMDLs were calculated for wet weather and dry weather conditions to account for seasonal variations, and because the transport mechanism, flow, and bacteria loads are different between dry and wet weather conditions. The year 1993 was selected as the critical wet year for assessment of extreme wet weather loading conditions. This year was the wettest year of the 12 years analyzed (1990 through 2002), and corresponds to the 92<sup>nd</sup> percentile of annual rainfalls measured at multiple rainfall gages in the San Diego Region.

Calibrated models were used to simulate flow and bacteria densities. This information was used to calculate the existing bacteria loads to, and TMDLs for, each impaired segment.

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<sup>2</sup> Animal facilities may be considered point sources if the discharge is from a Concentrated Animal Feeding Operation (CAFO) and is conveyed to surface waters.

Existing loads were compared to the TMDLs to calculate the necessary watershed-wide load reductions needed to achieve the TMDLs in the waterbodies. The TMDLs were allocated among point sources (WLAs) and nonpoint sources (LAs) in each watershed by assigning the loads generated by urban land use areas to point sources, loads generated by rural land use areas to controllable nonpoint sources, and loads generated on undeveloped lands to uncontrollable nonpoint sources. The portions of the wet weather TMDLs assigned to WLAs and LAs were calculated based on the percent of the TMDL load generated by the urban, rural, and undeveloped land uses in each watershed as determined by the models. The dry weather TMDLs were assigned entirely to WLAs because the runoff that transports bacteria loads to surface waters during dry weather occurs only in urban areas. The TMDLs, watershed-wide load reductions, LAs and WLAs are shown below in **[Insert table numbers]**.

**Margin of Safety**

The TMDLs include an implicit margin of safety (MOS). The MOS is included via conservative estimates and assumptions (meaning worst-case scenarios were assumed in terms of existing bacteria loading) throughout the calculations and not as a separate, additional factor.

**[Insert table number].** *Interim Wet Weather TMDLs for Fecal Coliform Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
San Joaquin Hills HSA (901.11) & Laguna Beach HSA (901.12)	101	52,676	49,474	2,765	52.2%	545	0.0%	16	46,318
	103								
Laguna Beach HSA (901.12)	104	652,339	615,160	34,405	52.2%	6,787	0.0%	196	573,602
	105								
	106								
Aliso HSA (901.13)	201	1,752,095	1,579,074	477,264	26.6%	26,457	0.0%	268	1,075,085
	202								
Dana Point HSA (901.14)	301	403,911	377,313	152,456	14.8%	0	0.0%	0	224,857
	302								
	304								
	305								
	306								
Lower San Juan HSA (901.27)	401	15,304,790	14,714,833	1,155,725	12.9%	2,856,458	12.8%	1,541	10,701,109

**[Insert table number].** *Interim Wet Weather TMDLs for Fecal Coliform Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
San Clemente HA (901.30)	501	1,441,719	1,378,930	192,639	24.6%	433	0.0%	333	1,185,526
	502								
	503								
	504								
	505								
	506								
San Luis Rey HU (903.00)	701	33,120,012	32,445,470	916,123	3.3%	20,041,752	3.1%	1,575	11,486,020
San Marcos HA (904.50)	1101	20,886	17,224	6,558	19.1%	9,073	19.0%	8	1,585
San Dieguito HU (905.00)	1301	21,286,909	21,106,683	798,010	1.6%	11,703,008	1.4%	1,496	8,604,169
	1302								
Miramar Reservoir HA (906.10)	1401	10,392	10,256	6,704	2.0%	0	0.0%	0	3,552

**[Insert table number].** *Interim Wet Weather TMDLs for Fecal Coliform Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
Scripps HA (906.30)	1501	204,057	176,906	101,262	21.1%	0	0.0%	0	75,644
	1503								
	1505								
	1507								
San Diego HU (907.11) Santee HSA (907.12)	1801	4,933,682 <sup>A</sup>	4,682,452 <sup>B</sup>	221,233	53.3%	414,813	0.0%	1,045	4,044,058
Chollas HSA (908.22)	1901	603,863	520,440	252,514	25.0%	0	0.0%	898	267,028

<sup>A</sup> The Existing Load is the sum of the model predicted load based on storm water runoff (4,932,380) and the wet weather load allocated to Padre Dam Municipal Water District Water Reclamation Plant (1,302).

<sup>B</sup> The Total Maximum Daily Load is the sum of the model predicted load based on storm water runoff (4,681,150) and the wet weather load allocated to Padre Dam (1,302).

**[Insert table number].** *Final Wet Weather TMDLs for Fecal Coliform Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
San Joaquin Hills HSA (901.11) & Laguna Beach HSA (901.12)	101	52,676	46,318	0	100%	0	100%	0	46,318
	103								
Laguna Beach HSA (901.12)	104	652,339	573,602	0	100%	0	100%	0	573,602
	105								
	106								
Aliso HSA (901.13)	201	1,752,095	1,075,085	0	100%	0	100%	0	1,075,085
	202								
Dana Point HSA (901.14)	301	403,911	224,857	0	100%	0	100%	0	224,857
	302								
	304								
	305								
	306								
Lower San Juan HSA (901.27)	401	15,304,790	10,701,109	0	100%	0	100%	0	10,701,109

**[Insert table number].** *Final Wet Weather TMDLs for Fecal Coliform Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
						Billion MPN/year		Billion MPN/year	Billion MPN/year
San Clemente HA (901.30)	501	1,441,719	1,185,526	0	100%	0	100%	0	1,185,526
	502								
	503								
	504								
	505								
	506								
San Luis Rey HU (903.00)	701	33,120,012	11,486,020	0	100%	0	100%	0	11,486,020
San Marcos HA (904.50)	1101	20,886	1,585	0	100%	0	100%	0	1,585
San Dieguito HU (905.00)	1301	21,286,909	8,604,169	0	100%	0	100%	0	8,604,169
	1302								
Miramar Reservoir HA (906.10)	1401	10,392	3,552	0	100%	0	100%	0	3,552

**[Insert table number].** *Final Wet Weather TMDLs for Fecal Coliform Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
						Billion MPN/year			Billion MPN/year
Scripps HA (906.30)	1501	204,057	75,644	0	100%	0	100%	0	75,644
	1503								
	1505								
	1507								
San Diego HU (907.11) Santee HSA (907.12)	1801	4,933,682 <sup>A</sup>	4,045,360 <sup>B</sup>	0	100%	0	100%	0	4,044,058
Chollas HSA (908.22)	1901	603,863	267,028	0	100%	0	100%	0	267,028

<sup>A</sup> The Existing Load is the sum of the model predicted load based on storm water runoff (4,932,380) and the wet weather load allocated to Padre Dam Municipal Water District Water Reclamation Plant (1,302).

<sup>B</sup> The Total Maximum Daily Load is the sum of the model predicted load for Open Space based on storm water runoff (4,044,058) and the wet weather load allocated to Padre Dam (1,302).

**[Insert table number].** *Interim/Final Dry Weather TMDLs for Fecal Coliform Expressed as a Monthly Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction
San Joaquin Hills HSA (901.11) & Laguna Beach HSA (901.12)	101	511	16	16	96.9%
	103				
Laguna Beach HSA (901.12)	104	2,230	211	211	90.5%
	105				
	106				
Aliso HSA (901.13)	201	5,470	242	242	95.6%
	202				
Dana Point HSA (901.14)	301	1,851	92	92	95.0%
	302				
	304				
	305				
	306				
Lower San Juan HSA (901.27)	401	6,455	1,665	1,665	74.2%

**[Insert table number].** *Interim/Final Dry Weather TMDLs for Fecal Coliform Expressed as a Monthly Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction
		Billion MPN/month			
San Clemente HA (901.30)	501	3,327	192	192	94.2%
	502				
	503				
	504				
	505				
	506				
San Luis Rey HU (903.00)	701	1,737	1,058	1,058	39.1%
San Marcos HA (904.50)	1101	149	26	26	82.6%
San Dieguito HU (905.00)	1301	1,631	1,293	1,293	20.7%
	1302				
Miramar Reservoir HA (906.10)	1401	205	7	7	96.4%

**[Insert table number].** *Interim/Final Dry Weather TMDLs for Fecal Coliform Expressed as a Monthly Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction
Scripps HA (906.30)	1501	3,320	119	119	96.4%
	1503				
	1505				
	1507				
San Diego HU (907.11) Santee HSA (907.12)	1801	5,389 <sup>A</sup>	1,967 <sup>B</sup>	1,506	69.4%
Chollas HSA (908.22)	1901	5,068	398	398	92.1%

<sup>A</sup> The Existing Load is the sum of the model predicted load based on dry weather runoff (4,928) and the dry weather load allocated to Padre Dam Municipal Water District Water Reclamation Plant (461).

<sup>B</sup> The Total Maximum Daily Load is the sum of the model predicted load based on dry weather runoff (1,506) and the dry weather load allocated to Padre Dam (461).

**[Insert table number].** *Interim Wet Weather TMDLs for Total Coliform Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
San Joaquin Hills HSA (901.11) & Laguna Beach HSA (901.12)	101	628,669	567,611	67,154	47.0%	3,884	0.0%	564	497,466
	103								
Laguna Beach HSA (901.12)	104	7,593,233	6,878,039	814,129	47.0%	47,092	0.0%	6,836	6,008,525
	105								
	106								
Aliso HSA (901.13)	201	23,210,774	20,190,798	8,924,810	25.4%	178,723	0.0%	11,084	11,076,181
	202								
Dana Point HSA (901.14)	301	6,546,962	6,031,472	3,404,176	13.2%	0	0.0%	655	2,626,641
	302								
	304								
	305								
	306								
Lower San Juan HSA (901.27)	401	130,258,863	122,879,198	16,079,932	19.5%	14,959,851	19.2%	59,021	91,780,395

**[Insert table number].** *Interim Wet Weather TMDLs for Total Coliform Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
San Clemente HA (901.30)	501	16,236,540	15,147,590	3,479,513	24.0%	1,624	0.0%	13,489	11,652,965
	502								
	503								
	504								
	505								
	506								
San Luis Rey HU (903.00)	701	231,598,677	224,189,156	14,395,880	6.0%	110,776,086	5.6%	55,075	98,962,115
San Marcos HA (904.50)	1101	515,278	425,083	298,420	18.6%	99,848	18.4%	536	26,279
San Dieguito HU (905.00)	1301	163,541,132	159,978,672	16,676,828	4.3%	66,718,625	4.1%	45,968	76,537,250
	1302								
Miramar Reservoir HA (906.10)	1401	212,986	210,182	171,430	1.6%	0	0.0%	10	38,742

**[Insert table number].** *Interim Wet Weather TMDLs for Total Coliform Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
Scripps HA (906.30)	1501	5,029,518	4,356,972	3,448,138	16.3%	0	0.0%	0	908,834
	1503								
	1505								
	1507								
San Diego HU (907.11) Santee HSA (907.12)	1801	72,757,569	66,114,283	10,801,645	38.2%	3,499,639	0.0%	53,264	51,759,735
Chollas HSA (908.22)	1901	15,390,608	13,247,626	9,880,562	18.1%	0	0.0%	45,770	3,321,293

**[Insert table number].** *Final Wet Weather TMDLs for Total Coliform Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
San Joaquin Hills HSA (901.11) & Laguna Beach HSA (901.12)	101	628,669	497,466	0	100%	0	100%	0	497,466
	103								
Laguna Beach HSA (901.12)	104	7,593,233	6,008,525	0	100%	0	100%	0	6,008,525
	105								
	106								
Aliso HSA (901.13)	201	23,210,774	11,076,181	0	100%	0	100%	0	11,076,181
	202								
Dana Point HSA (901.14)	301	6,546,962	2,626,641	0	100%	0	100%	0	2,626,641
	302								
	304								
	305								
	306								
Lower San Juan HSA (901.27)	401	130,258,863	91,780,395	0	100%	0	100%	0	91,780,395

**[Insert table number].** *Final Wet Weather TMDLs for Total Coliform Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
San Clemente HA (901.30)	501	16,236,540	11,652,965	0	100%	0	100%	0	11,652,965
	502								
	503								
	504								
	505								
	506								
San Luis Rey HU (903.00)	701	231,598,677	98,962,115	0	100%	0	100%	0	98,962,115
San Marcos HA (904.50)	1101	515,278	38,984	8657	97.6%	2891	97.6%	536	26,279
San Dieguito HU (905.00)	1301	163,541,132	76,537,250	0	100%	0	100%	0	76,537,250
	1302								
Miramar Reservoir HA (906.10)	1401	212,986	38,742	0	100%	0	100%	0	38,742

**[Insert table number].** *Final Wet Weather TMDLs for Total Coliform Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
Scripps HA (906.30)	1501	5,029,518	908,834	0	100%	0	100%	0	908,834
	1503								
	1505								
	1507								
San Diego HU (907.11) Santee HSA (907.12)	1801	72,757,569	51,759,735	0	100%	0	100%	0	51,759,735
Chollas HSA (908.22)	1901	15,390,608	3,321,293	0	100%	0	100%	0	3,321,293

**[Insert table number].** Final Dry Weather TMDLs for Total Coliform Expressed as a Monthly Load

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Waste-load Allocation (Municipal MS4s)	Percent Reduction
			Billion MPN/month		
San Joaquin Hills HSA (901.11) & Laguna Beach HSA (901.12)	101	2,571	78	78	97.0%
	103				
Laguna Beach HSA (901.12)	104	11,220	1,056	1,056	90.6%
	105				
	106				
Aliso HSA (901.13)	201	26,639	1,208	1,208	95.9%
	202				
Dana Point HSA (901.14)	301	9,315	462	462	95.0%
	302				
	304				
	305				
	306				
Lower San Juan HSA (901.27)	401	30,846	8,342	8,342	73.0%

**[Insert table number].** -Final *Dry Weather TMDLs for Total Coliform Expressed as a Monthly Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction
San Clemente HA (901.30)	501	16,743	958	958	94.3%
	502				
	503				
	504				
	505				
	506				
San Luis Rey HU (903.00)	701	8,549	5,289	5,289	38.1%
San Marcos HA (904.50)	1101	751	129	129	82.7%
San Dieguito HU (905.00)	1301	7,555	6,468	6,468	14.4%
	1302				
Miramar Reservoir HA (906.10)	1401	1,030	36	36	96.5%

**[Insert table number].** Final Dry Weather TMDLs for Total Coliform Expressed as a Monthly Load

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction
Scripps HA (906.30)	1501	16,707	594	594	96.4%
	1503				
	1505				
	1507				
San Diego HU (907.11) Santee HSA (907.12)	1801	28,988	7,529	7,529	74.0%
Chollas HSA (908.22)	1901	25,080	1,991	1,991	92.1%

**[Insert table number].** *Interim Wet Weather TMDLs for Enterococci Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
San Joaquin Hills HSA (901.11) & Laguna Beach HSA (901.12)	101	61,351	56,419	4,787	51.4%	227	0.0%	25	51,289
	103								
Laguna Beach HSA (901.12)	104	791,298	726,379	61,701	51.4%	2,928	0.0%	316	661,526
	105								
	106								
Aliso HSA (901.13)	201	2,230,206	1,950,980	735,453	27.6%	11,374	0.0%	511	1,203,642
	202								
Dana Point HSA (901.14)	301	501,525	462,306	219,518	15.2%	0	0.0%	50	242,738
	302								
	304								
	305								
	306								
Lower San Juan HSA (901.27)	401	12,980,098	12,152,446	1,384,643	27.3%	838,982	27.1%	2,941	9,925,881

**[Insert table number].** *Interim Wet Weather TMDLs for Enterococci Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year			Billion MPN/year		Billion MPN/year		
San Clemente HA (901.30)	501	1,663,093	1,563,186	295,768	25.3%	166	0.0%	640	1,266,612
	502								
	503								
	504								
	505								
	506								
San Luis Rey HU (903.00)	701	18,439,920	17,470,687	1,301,910	11.7%	2,193	6,083,637	11.6%	10,082,948
San Marcos HA (904.50)	1101	40,558	32,966	23,768	20.3%	25	6,249	20.2%	2,924
San Dieguito HU (905.00)	1301	14,796,210	14,327,364	1,769,497	7.5%	4,095,315	7.4%	2,079	8,460,473
	1302								
Miramar Reservoir HA (906.10)	1401	11,564	11,405	8,110	1.9%	0	0.0%	0	3,295

**[Insert table number].** *Interim Wet Weather TMDLs for Enterococci Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
Scripps HA (906.30)	1501	377,839	324,033	232,029	18.8%	0	0.0%	0	92,004
	1503								
	1505								
	1507								
San Diego HU (907.11) Santee HSA (907.12)	1801	7,255,759	6,591,843	891,519	42.8%	213,319	0.0%	2,376	5,484,628
Chollas HSA (908.22)	1901	1,371,972	1,152,645	802,947	21.6%	0	0.0%	2,040	347,658

**[Insert table number]. Final Wet Weather TMDLs for Enterococci Expressed as an Annual Load**

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
San Joaquin Hills HSA (901.11) & Laguna Beach HSA (901.12)	101	61,351	51,289	0	100%	0	100%	0	51,289
	103								
Laguna Beach HSA (901.12)	104	791,298	661,526	0	100%	0	100%	0	661,526
	105								
	106								
Aliso HSA (901.13)	201	2,230,206	1,203,642	0	100%	0	100%	0	1,203,642
	202								
Dana Point HSA (901.14)	301	501,525	242,738	0	100%	0	100%	0	242,738
	302								
	304								
	305								
	306								
Lower San Juan HSA (901.27)	401	12,980,098	9,925,881	0	100%	0	100%	0	9,925,881

**[Insert table number].** *Final Wet Weather TMDLs for Enterococci Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
San Clemente HA (901.30)	501	1,663,093	1,266,612	0	100%	0	100%	0	1,266,612
	502								
	503								
	504								
	505								
	506								
San Luis Rey HU (903.00)	701	18,439,920	10,082,948	0	100%	0	100%	0	10,082,948
San Marcos HA (904.50)	1101	40,558	2,924	0	100%	0	100%	0	2,924
San Dieguito HU (905.00)	1301	14,796,210	8,460,473	0	100%	0	100%	0	8,460,473
	1302								
Miramar Reservoir HA (906.10)	1401	11,564	3,295	0	100%	0	100%	0	3,295

**[Insert table number].** *Final Wet Weather TMDLs for Enterococci Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
Scripps HA (906.30)	1501	377,839	92,004	0	100%	0	100%	0	92,004
	1503								
	1505								
	1507								
San Diego HU (907.11) Santee HSA (907.12)	1801	7,255,759	5,484,628	0	100%	0	100%	0	5,484,628
Chollas HSA (908.22)	1901	1,371,972	347,658	0	100%	0	100%	0	347,658

**[Insert table number].** *Interim/Final Dry Weather TMDLs for Enterococci Expressed as a Monthly Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction
San Joaquin Hills HSA (901.11) & Laguna Beach HSA (901.12)	101	433	3	3	99.4%
	103				
Laguna Beach HSA (901.12)	104	1,888	37	37	98.0%
	105				
	106				
Aliso HSA (901.13)	201	4,614	40	40	99.1%
	202				
Dana Point HSA (901.14)	301	1,567	16	16	99.0%
	302				
	304				
	305				
	306				
Lower San Juan HSA (901.27)	401	5,433	275	275	94.9%

**[Insert table number].** *Interim/Final Dry Weather TMDLs for Enterococci Expressed as a Monthly Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction
San Clemente HA (901.30)	501	2,817	33	33	98.8%
	502				
	503				
	504				
	505				
	506				
San Luis Rey HU (903.00)	701	1,466	185	185	87.4%
San Marcos HA (904.50)	1101	126	5	5	96.4%
San Dieguito HU (905.00)	1301	1,368	226	226	83.4%
	1302				
Miramar Reservoir HA (906.10)	1401	173	1	1	99.3%

**[Insert table number]**, *Interim/Final Dry Weather TMDLs for Enterococci Expressed as a Monthly Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction
Scripps HA (906.30)	1501	2,811	21	21	99.3%
	1503				
	1505				
	1507				
San Diego HU (907.11) Santee HSA (907.12)	1801	4,106	248	248	93.9%
Chollas HSA (908.22)	1901	4,283	66	66	98.5%

[Insert table number]. *Alternative Interim Wet Weather TMDLs for Enterococci Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
Aliso HSA (901.13)	201	2,230,206	1,952,516	736,989	27.4%	11,374	0.0%	511	1,203,642
	202								
Lower San Juan HSA (901.27)	401	12,980,098	12,159,138	1,391,334	26.9%	847,520	26.4%	2,941	9,925,881
San Diego HU (907.11) Santee HSA (907.12)	1801	7,255,759	6,596,073	895,750	42.5%	213,319	0.0%	2,376	5,484,628
Chollas HSA (908.22)	1901	1,371,972	1,153,598	803,900	21.5%	0	0.0%	2,040	347,658

[Insert table number]. *Alternative Final Wet Weather TMDLs for Enterococci Expressed as an Annual Load*

Hydrologic Descriptor	Model Subwatershed	Existing Load	Total Maximum Daily Load	Wasteload Allocation (Municipal MS4s)	Percent Reduction (Municipal MS4s)	Load Allocation (Agriculture / Livestock)	Percent Reduction (Agriculture / Livestock)	Wasteload Allocation (Caltrans)	Load Allocation (Open Space)
		Billion MPN/year				Billion MPN/year		Billion MPN/year	
Aliso HSA (901.13)	201	2,230,206	1,203,642	0	100%	0	100%	0	1,203,642
	202								
Lower San Juan HSA (901.27)	401	12,980,098	9,925,881	0	100%	0	100%	0	9,925,881
San Diego HU (907.11) Santee HSA (907.12)	1801	7,255,759	5,484,628	0	100%	0	100%	0	5,484,628
Chollas HSA (908.22)	1901	1,371,972	347,658	0	100%	0	100%	0	347,658

### **TMDL Implementation Plan**

NPDES requirements for discharges to the beach segments and creeks where water quality has been listed as “impaired” will be reviewed and, if necessary, revised to incorporate provisions consistent with implementation of the TMDLs, *e.g.*, water quality based effluent limits or receiving water limits that reflect waste load allocations for particular sources of bacteria. Existing provisions of current NPDES requirements must be interpreted and enforced in a manner that is consistent with the TMDLs in order to promote attainment of applicable water quality objectives. Additionally, Basin Plan provisions must be implemented in WDRs pursuant to California Water Code section 13263. Among the NPDES requirements that will be affected are the following:

- SWRCB Order No. 99-06-DWQ (NPDES No. CAS000003), statewide general NPDES waste discharge requirements for storm water discharges associated with activities of the California Department of Transportation (CalTrans), or any amendment or renewal thereof; Receiving Water Limitation C-1-3.a of Order No. 99-06 already requires CalTrans to implement BMPs to reduce pollutant discharges, including discharges of bacteria, to the maximum extent practicable;
- San Diego Water Board Order Nos. 2007-0001 and 2002-0001 (NPDES Nos. CAS0108758 and CAS0108740), NPDES requirements for discharges of storm water from large municipal separate storm sewer systems (MS4s) in San Diego County and Orange County, and any amendment or renewal thereof; Receiving Water Limitation A.3.a.1 of Order No. 2007-0001 and C.2 of Order No. 2002-0001 already requires copermitttees to implement BMPs to reduce pollutant discharges, including discharges of bacteria, to the maximum extent practicable;
- SWRCB Order No. 2003-0005-DWQ (NPDES No. CAS000004), statewide general NPDES waste discharge requirements for small MS4s, and any amendment or renewal thereof;
- Any NPDES waste discharge requirements for individual discharges from publicly owned treatment works or CAFOs located in watersheds discharging to impaired beach segments and creeks.

In addition to the issuance and enforcement of NPDES requirements for discharges of pollutants from point sources to navigable waters of the United States, the following actions may be taken to implement TMDLs:

- The San Diego Water Board may issue and enforce waste discharge requirements, or waiver conditions, for discharges of waste that could affect the quality of the waters of the state at the designated beach segments and creeks even though the discharges are not subject to the NPDES requirements (*e.g.*, non-point source discharges of waste); such requirements or conditions must, nonetheless, implement provisions of the Basin Plan, including TMDLs, by including waste discharge requirements or conditions that will prevent pollution or nuisance (*i.e.*, violation of water quality objectives); discharges of waste from livestock operations, manure composting and

soil amendment operations, and agricultural irrigation return flow may be subject to waste load allocations or load allocations that implement TMDLs.

- The San Diego Water Board may work with local governments to “obtain coordinated action in water quality control, including the prevention and abatement of water pollution and nuisance” (California Water Code section 13225). Local governments can adopt and enforce ordinances that will implement TMDLs, including provisions that will promote necessary bacteria load reductions assigned to nonpoint sources within their respective jurisdictions when local governments undertake or approve projects that could have significant impacts on water quality due to discharges of bacteria.
- The San Diego Water Board may take enforcement actions,<sup>8</sup> as necessary and appropriate, against any discharger failing to comply with applicable discharge prohibitions, WDRs, or waiver conditions and may take enforcement action, as necessary and appropriate, to control discharges of wastes and pollutants to beach segments and creeks at which water quality has been listed as “impaired” to attain compliance with the LAs and WLAs established in association with TMDLs, or to attain compliance with applicable WQOs.
- The San Diego Water Board may rescind waivers of waste discharge requirements and issue WDRs or take other appropriate action against any discharger(s) failing to comply with the waiver conditions.

State government agencies are required to comply with the Basin Plan in carrying out activities that may affect water quality within the San Diego Region (California Water Code section 13247). Agencies such as the Department of Parks and Recreation, State Lands Commission, and Coastal Commission, that might undertake or approve projects that could affect the quality of waters of the state or that might involve discharges of wastes that could affect the quality of waters of the state or that might involve discharges of pollutants from point sources to navigable waters all have independent obligations under section 13247 of the California Water Code to comply with provisions of the Basin Plan and implement applicable TMDLs through waste load reductions or load reductions.

### **Prioritization of Waterbodies**

“Impaired” waters were prioritized based on factors such as level of beach (marine or freshwater) swimmer usage, frequency of exceedances of WQOs, and existing programs

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<sup>8</sup> An enforcement action is any formal or informal action taken to address an incidence of actual or threatened noncompliance with existing regulations or provisions designed to protect water quality. Potential enforcement actions including notices of violation (NOVs), notices to comply (NTCs), imposition of time schedules (TSO), issuance of cease and desist orders (CDOs) and cleanup and abatement orders (CAOs), administrative civil liability (ACL), and referral to the attorney general (AG) or district attorney (DA). The San Diego Water Board generally implements enforcement through an escalating series of actions to: (1) assist cooperative dischargers in achieving compliance; (2) compel compliance for repeat violations and recalcitrant violators; and (3) provide a disincentive for noncompliance.

designed to reduce bacteria loading to surface waters, because the waterbodies included in this TMDL are numerous and diverse in terms of geographic location, swimmer accessibility and use, and degree of contamination.

Priority 1 waters are those with the highest priority for pollutant reduction. Priority 1 waters include waterbodies likely to attain applicable WQOs for indicator bacteria and, therefore, likely to be removed from the List of Water Quality Limited Segments, as well as where water quality impairment is greatest, or where the pollution is most likely to impair actual beneficial uses. Implementation of the TMDLs at waterbodies allocated to Priority 2 or 3 may be deferred temporarily in order to focus the greatest effort in waterbodies where the restoration of water quality is of greater importance because dischargers accountable for attaining load reductions in multiple watersheds may have difficulty providing the same level of effort simultaneously in all watersheds. A prioritized list of impaired beaches and creeks included in these TMDLs is shown in Table [Insert table number]. Priority schemes are designated within watersheds.

[Insert table number]. *Prioritized List of Impaired Waters for TMDL Implementation Based on the 2002 Clean Water Act Section 303(d) List*

Watershed	Waterbody	Segment or Area <sup>b</sup>	Priority
San Joaquin Hills HSA (901.11) & Laguna Beach HSA (901.12)	Pacific Ocean Shoreline	Cameo Cove at Irvine Cove Dr. - Riviera Way	1
		at Heisler Park – North	1
Laguna Beach HSA (901.12)	Pacific Ocean Shoreline	at Main Laguna Beach	1
		Laguna Beach at Ocean Avenue	1
		Laguna Beach at Laguna Avenue	1
		Laguna Beach at Cleo Street	1
		Arch Cove at Bluebird Canyon Road	1
		Laguna Beach at Dumond Drive	1
Aliso HSA (901.13)	Pacific Ocean Shoreline	Laguna Beach at Lagunita Place/Blue Lagoon Place at Aliso Beach	1
	Aliso Creek		3
	At creek mouth		
Dana Point HSA (901.14)	Pacific Ocean Shoreline	Aliso Beach at West Street	1
		Aliso Beach at Table Rock Drive	1
		1000 Steps Beach at Pacific Coast Hwy at Hospital (9th Ave)	1
		at Salt Creek (large outlet)	1
		Salt Creek Beach at Salt Creek service road	2
		Salt Creek Beach at Dana Strand Road	2
Lower San Juan HSA (901.27)	Pacific Ocean Shoreline	at Creek mouth	1
	San Juan Creek		3
San Clemente HA (901.30)	Pacific Ocean Shoreline	at Poche Beach (large outlet)	1
		Ole Hanson Beach Club Beach at Pico Drain	1
		San Clemente City Beach at Linda Lane	1

Watershed	Waterbody	Segment or Area <sup>b</sup>	Priority
		San Clemente State Beach at Riviera Beach	1
		San Clemente City Beach at Mariposa Street	2
		San Clemente State Beach at Cypress Shores	2
		San Clemente City Beach at Lifeguard Headquarters	2
		Under San Clemente Municipal Pier	2
		San Clemente City Beach at El Portal Street Stairs	2
		San Clemente City Beach at South Linda Lane	3
		San Clemente City Beach at Trafalgar Canyon (Trafalgar Lane)	3
San Luis Rey HU (903.00)	Pacific Ocean Shoreline	at San Luis Rey River Mouth	2
San Marcos HA (904.50)	Pacific Ocean Shoreline	at Moonlight State Beach	1
San Dieguito HU (905.00)	Pacific Ocean Shoreline	at San Dieguito Lagoon Mouth	1
Miramar Reservoir HA (906.10)	Pacific Ocean Shoreline <sup>a</sup>	Torrey Pines State Beach at Del Mar (Anderson Canyon)	1
Scripps HA (906.30)	Pacific Ocean Shoreline <sup>a</sup>	La Jolla Shores Beach at El Paseo Grande	1
		La Jolla Shores Beach at Caminito Del Oro	1
		La Jolla Shores Beach at Vallecitos	1
		La Jolla Shores Beach at Ave de la Playa	1
		at Casa Beach, Children's Pool	1
		South Casa Beach at Coast Blvd.	1
		Whispering Sands Beach at Ravina Street	1
		Windansea Beach at Vista de la Playa	1
		Windansea Beach at Bonair Street	1
		Windansea Beach at Playa del Norte	1
		Windansea Beach at Palomar Ave.	1
		at Tourmaline Surf Park	1
Pacific Beach at Grand Ave.	1		
Santee HSA (907.12)	Forrester Creek		3
Mission San Diego HSA (907.11) & Santee HSA (907.12)	San Diego River, Lower		3
Chollas HSA (908.22)	Chollas Creek	Bottom 1.2 miles	3

<sup>a</sup> The State Board has proposed removing these beach segments from the 2006 Clean Water Act Section 303(d) List of Water Quality Limited Segments

<sup>b</sup> Based on the 2002 Clean Water Act Section 303(d) List

**Availability of Grants and Loans**

The SWRCB administers several grant and loan funds that might be available, upon request, for water quality control, pollution abatement, or pollution prevention, including projects that could promote attainment of LAs and WLAs needed to comply with TMDLs.

**Compliance Schedule**

Full implementation of the TMDLs for indicator bacteria shall be completed within 10-20 years from *[insert date on which OAL approves this Basin Plan amendment]*. The compliance schedule for implementing the load and wasteload reductions required under these TMDLs is structured in a phased manner, with all of the final dry weather reductions necessary for protection of the REC-1 WQOs required to be met 10 years from *[insert date on which OAL approves this Basin Plan amendment]*. Final wet weather reductions to attain REC-1 WQOs are required to be met after 20 years, as discussed above. Interim wet weather reductions to attain REC-1 WQOs are required to be met after 10 years. Reduction milestones required by the compliance schedule vary on the timeline based on the priority scheme described above. Reduction milestones in bacteria loads and wasteloads are required sooner in the higher priority waters.

*[Insert Table Number] Dry Weather Compliance Schedule and Milestones for Achieving Wasteload Reductions*

Compliance Year (year after OAL approval)	Required Wasteload Reduction		
	Priority 1	Priority 2	Priority 3
5	50% (All Final Dry ENT, FC and TC)		
6		50% (All Final Dry ENT, FC and TC)	
7			50% (All Final Dry ENT, FC and TC)
10	100% (All Final Dry ENT, FC and TC)	100% (All Final Dry ENT, FC and TC)	100% (All Final Dry ENT, FC and TC)

*[Insert Table Number] Wet Weather Compliance Schedule and Milestones for Achieving Wasteload Reductions*

Compliance Year (year after OAL approval)	Required Wasteload Reduction		
	Priority 1	Priority 2	Priority 3
5	50% (All Interim Wet Weather)		
6		50% (All Interim Wet Weather)	
7			50% (All Interim Wet Weather)
10	100% (All Interim Wet Weather )	100% (All Interim Wet Weather )	100% (All Interim Wet Weather )
20	100% (Final Wet Weather)	100% (Final Wet Weather)	100% (Final Wet Weather)

Because dischargers in the Chollas Creek watershed will be addressing required load reductions from multiple water quality improvement projects in addition to bacteria, namely TMDLs for copper, lead, zinc, and diazinon, and a trash reduction program, the compliance schedule is 20 years to achieve the necessary load reductions for all pollutants in this watershed. Regarding bacteria, these interim milestones described in Table *[Insert table number]* apply.

*[Insert table number] Compliance Schedule Including Milestones—Chollas Creek*

Compliance Year (year after OAL approval)	Wasteload Reduction Milestone
7	50% final for dry weather
10	100% final REC-1 for dry weather, 50% interim REC-1 for wet weather
20	100% for final wet weather

### TMDL Implementaton Milestones

Accomplishing the goals of the implementation plan will be achieved by cooperative participation from all responsible parties, including the San Diego Water Board. Major milestones are described in Table [Insert table number].

[Insert table number] TMDL Implementation Milestones

Item	Implementation Action	Responsible Parties	Date
1	Effective date of Beaches and Creeks Indicator Bacteria TMDL Waste Load Allocations.	San Diego Water Board, Municipal Dischargers, Caltrans, Agriculture/Livestock Dischargers	Effective date <sup>a</sup>
2	Consider adoption of Reference System/Natural Sources Exclusion Approach Basin Plan amendment and revise final wet weather TMDLs and dry weather total coliform TMDLs.	San Diego Water Board	Within 1 year of effective date
3	Issue, reissue, or revise Phase I Municipal NPDES WDRs to include WQBELs consistent with the WLAs.	San Diego Water Board	Within 5 years of effective date
4	Issue, reissue, or revise Caltrans NPDES WDRs to include WQBELs consistent with the WLAs.	State Water Board	Within 5 years of effective date
5	Issue, reissue, or revise POTW NPDES WDRs, to incorporate new requirements for sewer line surveillance and maintenance, consistent with the zero bacteria WLA and with the TMDL compliance schedule.	San Diego Water Board	Within 5 years of effective date
6	Meet 50% Final Dry Weather WLA reductions in Priority 1 watersheds.	Municipal Dischargers, Caltrans, Agriculture/Livestock Dischargers <sup>b</sup>	5 years after effective date
7	Meet 50% Interim Wet Weather WLA reductions in Priority 1 watersheds.	Municipal Dischargers, Caltrans, Agriculture/Livestock Dischargers <sup>b</sup>	5 years after effective date
8	Meet 50% Final Dry Weather WLA reductions in Priority 2 watersheds.	Municipal Dischargers, Caltrans, Agriculture/Livestock Dischargers <sup>b</sup>	6 years after effective date
9	Meet 50% Interim Wet Weather WLA reductions in Priority 2 watersheds.	Municipal Dischargers, Caltrans, Agriculture/Livestock Dischargers <sup>b</sup>	6 years after effective date
10	Meet 50% Final Dry Weather WLA reductions in Priority 3 watersheds.	Municipal Dischargers, Caltrans, Agriculture/Livestock Dischargers <sup>b</sup>	7 years after effective date
11	Meet 50% Interim Wet Weather WLA reductions in Priority 3 watersheds.	Municipal Dischargers, Caltrans, Agriculture/Livestock Dischargers <sup>b</sup>	7 years after effective date

Item	Implementation Action	Responsible Parties	Date
12	Meet 100% Final Dry Weather WLA reductions in all watersheds and meet all geometric mean & and single sample WQOs for REC-1.	Municipal Dischargers, Caltrans, Agriculture/Livestock Dischargers <sup>b</sup>	10 years after effective date
13	Meet 100% Interim Wet Weather WLA reductions in all watersheds.	Municipal Dischargers, Caltrans, Agriculture/Livestock Dischargers <sup>b</sup>	10 years after effective date
14	Meet 100% Final Wet Weather WLA reductions in all watersheds and meet all single sample WQOs for REC-1.	Municipal Dischargers, Caltrans, Agriculture/Livestock Dischargers	20 years after effective date <sup>c</sup>
15	Amend discharge conditions of appropriate waivers to be consistent with the WLAs.	San Diego Water Board	As needed after effective date
16	Issue WDRs or Basin Plan prohibitions consistent with the WLAs for controllable nonpoint source discharges not covered by the Waiver Policy.	San Diego Water Board	As needed after effective date
17	Submit annual Progress Report to San Diego Water Board due April 1 of each year.	Caltrans	Annually after reissue of NPDES WDRs
18	Submit annual Progress Report to San Diego Water Board due January 31 of each year.	Phase I Municipal Dischargers	Annually after reissue of NPDES WDRs
19	Require Phase II Municipal Dischargers to enroll in Order No. 2003-0005-DWQ (or superseding renewal orders).	San Diego Water Board	Immediately after effective date
20	Take enforcement actions to attain compliance with the WLAs.	San Diego Water Board	As needed after effective date
21	Investigate landfills as a potential bacteria source.	Municipal Dischargers	Immediately after effective date
22	Recommend TMDL-related projects as high priority for grant funds.	San Diego Water Board	As needed after effective date
23	Coordination and execution of special studies.	San Diego Water Board, Municipal Dischargers, Caltrans, Agriculture/Livestock Dischargers	As needed after effective date

<sup>a</sup> Effective date = date of approval by OAL

<sup>b</sup> Agriculture/Livestock Dischargers in the San Juan Creek, San Luis Rey River, San Marcos Creek, and San Dieguito River watersheds must only meet interim TMDLs.

<sup>c</sup> Final WLA reduction milestone will be revised upon adoption of revised final TMDLs.