California Regional Water Quality Control Board
Santa Ana Region

RESOLUTION NO. R8-2005-0001

Resolution Amending the Water Quality Control Plan for the Santa Ana River Basin to Incorporate Bacterial Indicator Total Maximum Daily Loads (TMDLs) for Middle Santa Ana River Watershed Waterbodies

WHEREAS, the California Regional Water Quality Control Board, Santa Ana Region (hereinafter, Regional Board), finds that:

An updated Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) was adopted by the Regional Board on March 11, 1994, approved by the State Water Resources Control Board (SWRCB) on July 21, 1994, and approved by the Office of Administrative Law (OAL) on January 24, 1995.

2. The waterbodies within the Middle Santa Ana River Watershed listed on the Clean Water Act Section 303(d) list for bacterial contamination are as follows: Santa Ana River, Reach 3; Chino Creek, Reach 1; Chino Creek, Reach 2; Mill Creek (Prado Area); Cucamonga Creek, Reach 1; and Prado Park Lake.

Water contact recreation (REC1) and non water contact recreation (REC2) are among the beneficial uses designated in the Basin Plan for the Santa Ana River, Reach 3, Chino Creek, Reaches 1 and 2, Mill Creek (Prado Area), Cucamonga Creek, Reach 1, and Prado Park Lake.

4. For the protection of REC1 beneficial uses of inland surface waters, including the Middle Santa Ana River Watershed Waterbodies, the Basin Plan specifies the following numeric water quality objectives for fecal coliform indicator bacteria: log mean less than 200 organisms/100 mL based on five or more samples per 30 day period, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30–day period.

5. The numeric fecal coliform water quality objectives are not being met in Middle Santa Ana River Watershed Waterbodies. The beneficial use adversely affected by elevated fecal coliform densities in Middle Santa Ana River Watershed Waterbodies is REC1.

6. As a result of violations of the fecal coliform objectives and beneficial use impacts to the Middle Santa Ana River waterbodies, the Regional Board listed these waterbodies as water quality limited in accordance with Section 303(d) of the Clean Water Act. Section 303(d) requires the establishment of a Total Maximum Daily Load (TMDL) for the pollutant(s) causing surface water impairment. The purpose of the TMDL is to assure that water quality standards are achieved. TMDLs to address fecal coliform impairment of the Middle Santa Ana River Watershed Waterbodies are required. Section 303(d) also requires the allocation of each TMDL among the sources of fecal coliform inputs. State law requires an implementation plan and schedule to ensure that the TMDL is met.

7. The TMDLs/Basin Plan amendment shown in the attachment to this Resolution was developed in accordance with Clean Water Act Section 303(d) and Water Code Section 13240 *et seq*. The TMDLs/Basin Plan amendment include background information concerning the water quality impairment being addressed, and the sources of fecal coliform to Middle Santa Ana River

waterbodies. The proposed TMDLs are supported by a detailed report prepared by Regional Board staff and titled "Total Maximum Daily Loads for Bacterial Indicators in the Middle Santa Ana River Watershed", February 3, 2005.

8. The TMDLs/ Basin Plan amendment will be incorporated into Chapter 5 "Implementation", of the Basin Plan.

9. The TMDLs/Basin Plan amendment specifies numeric targets for fecal coliform to be achieved in all Middle Santa Ana River Waterbodies. Control of fecal coliform is needed to ensure compliance with relevant numeric water quality objectives specified in the Basin Plan.

10. The U.S. Environmental Protection Agency (USEPA) has required the states to evaluate and incorporate more appropriate bacterial indicators, including *Escherichia coliform (E. coli)* as water quality standards based on its "Ambient Water Quality Criteria for Bacteria – 1986". The TMDLs/Basin Plan amendment specify alternative numeric targets for *E. coli* to be achieved in all Middle Santa Ana River Waterbodies. The *E. coli* targets are based on USEPA *E. coli* criteria that roughly correspond to the health risk level associated with the existing Basin Plan fecal coliform objectives.

11. The TMDLs/Basin Plan amendment specify Dry Season TMDLs, wasteload allocations for point source discharges (WLAs) and load allocations for nonpoint source discharges (LAs) for fecal coliform and *E. coli* in Middle Santa Ana River Watershed waterbodies. Compliance with the Dry Season TMDLs, wasteload allocations and load allocations is to be achieved as soon as possible, but no later than December 31, 2015.

12. In recognition of the difficulties associated with the control of stormwater discharges, the TMDLs/Basin Plan amendment specify Wet Season TMDLs, waste load allocations for point source discharges and load allocations for nonpoint source discharges for fecal coliform and *E. coli* in Middle Santa Ana River Watershed waterbodies. Compliance with the Wet Season TMDLs, waste load allocations and load allocations is to be achieved as soon as possible, but no later than December 31, 2025.

13. To account for unknowns such as bacterial re-growth, die-off and dilution, the TMDLs/Basin Plan amendment specify an explicit margin of safety of 10% applied to the TMDLs, waste load allocations and load allocations.

14. The TMDLs/Basin Plan amendment specify an implementation plan for bacteria reduction. The implementation plan includes compliance schedules for achieving the numeric targets, TMDLs, wasteload allocations and load allocations, as well as a monitoring program to track progress toward compliance.

15. Stakeholders throughout the Santa Ana Region have formed the Storm Water Quality Standards Task Force (SWQSTF) to evaluate USEPA's bacterial indicator recommendations and appropriate recreational beneficial use designations for waterbodies throughout the Region. The SWQSTF is expected to make recommendations for the adoption of alternative bacterial quality indicators such as *E.coli,* based on USEPA's "Ambient Water Quality Criteria for Bacteria – 1986". These and other recommendations of the SWQSTF for revisions to recreational beneficial use designations will be considered through the Basin Planning process. When and if the Basin Plan is amended to incorporate new bacterial indicators, these TMDLs will be revised as appropriate.

16. The TMDLs/Basin Plan amendment will assure the reasonable protection of the beneficial uses of surface waters within the Region and is consistent with the state's antidegradation policy (SWRCB Resolution No. 68-16).

17. The Regional Board has considered the costs associated with implementation of this amendment, as well as costs resulting from failure to implement bacteria control measures necessary to prevent adverse effects on beneficial uses. The implementation plan in the TMDLs/Basin Plan amendment, which includes extended compliance schedules and employs a phased TMDL approach to provide for refinement based on additional studies and analyses, will ensure that implementation expenditures are reasonable and fairly apportioned among responsible parties.

18. The proposed amendment results in no potential for adverse effects, either individually or cumulatively, on fish and/or wildlife species.

19 The adoption of these TMDLs is necessary to reduce loadings of fecal coliform to Middle Santa Ana River waterbodies and to address water quality impairments that arise therefrom.

20. The proposed amendment meets the "Necessity" standard of the Administrative Procedure Act, Government Code, Section 11352, subdivision (b).

21 The Regional Board submitted the relevant technical documents that serve as the basis for the proposed amendment to an external scientific peer reviewer and has considered the comments and recommendations of the peer reviewer in drafting the amendment. The peer reviewer found the TMDLs to be scientifically valid.

22. The Regional Board discussed this matter at workshops conducted on February 3, 2005 and June 24, 2005 after notice was given to all interested persons in accordance with Section 13244 of the California Water Code. Based on the discussion at these workshops, the Board directed staff to prepare the appropriate Basin Plan amendment and related documentation to incorporate the Middle Santa Ana River Bacterial Indicator TMDLs.

23. The Regional Board prepared and distributed written reports (staff reports) regarding adoption of the TMDLs/Basin Plan amendment in accordance with applicable state and federal environmental regulations (California Code of Regulations, Section 3775, Title 23, and 40 CFR Parts 25 and 131).

24. The process of basin planning has been certified by the Secretary for Resources as exempt from the requirement of the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) to prepare an Environmental Impact Report or Negative Declaration. The TMDLs/Basin Plan amendment package includes staff reports, an Environmental Checklist, an assessment of the potential environmental impacts of the TMDLs/Basin Plan amendment, and a discussion of alternatives. The TMDLs/Basin Plan amendment, Environmental Checklist, staff reports, and supporting documentation are functionally equivalent to an Environmental Impact Report or Negative Declaration.

25 On August 26, 2005, the Regional Board held a Public Hearing to consider the TMDLs/Basin Plan amendment. Notice of the Public Hearing was given to all interested persons and published in accordance with Water Code Section 13244.

26. The TMDLs/Basin Plan amendment must be submitted for review and approval by the State Water Resources Control Board (SWRCB), Office of Administrative Law (OAL) and U.S. Environmental Protection Agency (USEPA). Once approved by the SWRCB, the amendment is submitted to OAL

and USEPA. The TMDLs/Basin Plan amendment will become effective upon approval by OAL and USEPA. A Notice of Decision will be filed.

27. The Notice of Filing, the TMDL Report, environmental checklist, and the draft amendment were prepared and distributed to interested individuals and public agencies for review and comment, in accordance with state and federal regulations (23 CCR §3775, 40 CFR 25 and 40 CFR 131).

28. For the purposes of specifying compliance schedules in NPDES permits for effluent limitations necessary to implement these TMDLs, the schedule(s) specified in these TMDLs shall govern, notwithstanding other compliance schedule authorization language in the Basin Plan.

NOW, THEREFORE BE IT RESOLVED THAT:

The Regional Board adopts the amendment to the Water Quality Control Plan for the Santa Ana River Basin (Region 8), as set forth in the attachment.

2. The Executive Officer is directed to forward copies of the TMDLs/Basin Plan amendment to the SWRCB in accordance with the requirements of Section §13245 of the California Water Code.

The Regional Board requests that the SWRCB approve the TMDLs/Basin Plan amendment, in accordance with Sections §13245 and §13246 of the California Water Code, and forward it to the OAL and U.S. EPA for approval.

4. If, during its approval process, the SWRCB or 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 Board of any such changes.

5. The Executive Officer is authorized to sign a Certificate of Fee Exemption in lieu of payment of the California Department of Fish and Game filing fee.

I, Gerard J. Thibeault, 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, Santa Ana Region, on August 26, 2005.

Gerard J. Thibeault
Executive Officer

ATTACHMENT TO RESOLUTION NO. R8-2005–0001

Amendment to the Santa Ana Region Basin Plan

Chapter 5 - Implementation Plan
(NOTE: The following language is to be added in Chapter 5 of the Basin Plan. If the amendments are approved, corresponding changes will be made to the Table of Contents, the List of Tables, page numbers, and page headers in the plan. Due to the two-column page layout of the Basin Plan, the location of tables in relation to text may change during final formatting of the amendments. For formatting purposes, the maps may be redrawn for inclusion in the Basin Plan, and the final layout may differ from that of the draft.)

Middle Santa Ana River Watershed
The Middle Santa Ana River Watershed covers approximately 488 square miles and lies largely in the southwestern corner of San Bernardino County, and the northwestern corner of Riverside County. A small part of Los Angeles County (Pomona/Claremont area) is also included. This watershed is comprised of three sub–watersheds. The first sub-watershed is the Chino Basin Watershed, which includes portions of San Bernardino County, Los Angeles County, and Riverside County. Surface drainage in this area is directed to Chino Creek and Cucamonga/Mill Creek and is generally southward, from the San Gabriel Mountains toward the Santa Ana River and the Prado Flood Control Basin. The second sub–watershed, the Riverside Watershed, is located in Riverside County. Surface drainage in this area is generally westward from the City of Riverside to the Santa Ana River, Reach 3. The third sub–watershed, the Temescal Canyon Watershed, is also located in Riverside County. Surface drainage in this area is generally northward to Temescal Creek.

Land uses in the Middle Santa Ana River watershed include urban, agriculture, and open space. Although originally developed as an agricultural area, the watershed is being steadily urbanized. Incorporated cities in the Middle Santa Ana River watershed include Pomona, Chino Hills, Upland, Montclair, Claremont, Ontario, Rancho Cucamonga, Rialto, Chino, Fontana, Norco, Corona, and Riverside. In addition, there are several pockets of urbanized unincorporated areas. The current population of the watershed, based upon 2000 census data, is approximately 1.4 million people. The principal remaining agricultural area in the watershed is the area formerly known as the Chino Dairy Preserve. This area is located in the south–central part of the Chino Basin watershed and contains approximately 300,000 cows, which generate the waste equivalent of more than two million people. Recently, the cities of Ontario and Chino annexed the San Bernardino County portions of this area. The remaining portion of the former preserve, which is in Riverside County, remains unincorporated. Open space areas include National Forest lands and State Parks lands.

Middle Santa Ana River Watershed Bacterial Indicator Total Maximum Daily Loads(TMDLs)

Middle Santa Ana River Watershed waterbodies listed on the Clean Water Act Section 303(d) list of impaired waters due to violations of REC1 fecal coliform bacteria objectives are shown in Table 5-9w.

Table 5-9w – Middle Santa Ana River Watershed Waterbodies on the 303(d) List Due to Bacterial Contamination

Waterbody, Reach
Santa Ana River, Reach 3
Chino Creek, Reach 1
Chino Creek, Reach 2
Mill Creek (Prado Area)
Cucamonga Creek, Reach 1
Prado Park Lake

During storm events, these waterbodies receive and transport runoff from urban, agricultural, and open space areas. During dry weather, these waterbodies receive and transport nuisance runoff, primarily from urban areas. Based on monitoring results, and observed waterbody conditions (fish kills and waste-laden stormflows), the Regional Board placed these waterbodies on the 303(d) list of impaired waters due to levels of bacterial indicators that exceeded established objectives for REC1 uses. The listings took place from 1988 to 1998.

A TMDL technical report prepared by Regional Board staff describes the bacterial indicator related problems in the Middle Santa Ana River Watershed waterbodies in greater detail and discusses the technical basis for the TMDLs that follow [Ref. # 1].

A. Middle Santa Ana River Watershed Bacterial Indicator TMDL Numeric Targets

Bacterial indicator numeric targets for the Middle Santa Ana River Watershed waterbodies shown in Table 5-9x are based, in part, on the fecal coliform water quality objective specified in Chapter 4 for the protection of body-contact recreation (REC1) in inland surface waters.

Recognizing that, in the future, *Escherichia coli* (*E. coli*) may be incorporated into the Basin Plan as new bacterial water quality objectives for REC1, alternative numeric targets for *E. coli* are also specified[1]. These targets are based on *E. coli* criteria recommended by the U.S. Environmental Protection Agency [Ref #2]. The *E. coli* levels were chosen to roughly correspond to the health risk level associated with the fecal coliform objectives.

The numeric targets for both bacterial indicators incorporate an explicit 10% margin of safety to address uncertainties recognized in the development of the TMDLs.

USEPA is requiring the states to evaluate and incorporate more appropriate bacterial indicators, including *E. coli*, as water quality standards based on its Ambient Water Quality Criteria for Bacteria – 1986. The Regional Board is participating in the efforts of the Storm Water Quality Standards Task Force (SWQSTF), which is evaluating USEPA's bacterial indicator recommendations and REC1 beneficial use designations for waterbodies within the Santa Ana Region, including the Middle Santa Ana River watershed waterbodies. This numeric target and resulting TMDLs, WLAs and LAs will be adjusted accordingly when and if recommendations from the SWQSTF are incorporated into the Basin Plan.

These numeric targets are specified as follows.

> **Fecal coliform: log mean less than 200 organisms/100 mL based on five or more samples per 30 day period, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30–day period.**
>
> ***E. coli*: log mean less than 126 organisms/100 mL based on five or more samples per 30–day period, and not more than 10% of the samples exceed 235 organisms/100mL for any 30 day period.**

The fecal coliform numeric targets (and other fecal coliform related provisions of these TMDLs) will become ineffective upon the replacement of the fecal coliform REC1 objectives in the Basin Plan with REC1 objectives based on *E. coli* Incorporation of new *E. coli* objectives will be considered through the Basin Planning process.

B. Middle Santa Ana River Watershed Bacterial Indicator TMDLs, Wasteload Allocations, Load Allocations and Compliance Dates

As discussed in the technical TMDL Report, the bacterial indicator TMDLs are expressed in terms of density since it is the number of organisms in a given volume of water (i.e., their density), and not their mass that is significant with respect to public health and the protection of beneficial uses. Similarly, the wasteload allocations for point source discharges (WLAs) and load allocations for nonpoint source discharges (LAs) are also based on density. The density–based WLAs and LAs do not add up to equal the TMDLs, since this is not scientifically valid. To achieve the density–based TMDLs, each WLA and LA must meet the density–based TMDL. As indicated in Table 5-9x, the TMDLs, WLAs and LAs also include a 10% margin of safety (see C., below) applied to the existing Basin Plan fecal coliform objective for REC1 for inland surface waters and to the alternative indicator *E. coli* criteria recommended by the U.S. Environmental Protection Agency. Again, the *E. coli* was chosen to correspond with the health risk level associated with the fecal coliform objectives.

WLAs are specified for urban discharges and discharges from Confined Animal Feeding Operations, including stormwater. LAs are specified for runoff from other types of agriculture and from natural sources (open space/undeveloped forest land). TMDLs, WLAs and LAs are specified for both dry weather discharges and wet weather discharges, with separate compliance schedules. An extended schedule for compliance with the wet weather TMDLs is specified in light of the expected increased difficulty in achieving compliance under these conditions.

Table 5-9x Total Maximum Daily Loads, Waste Load Allocations, and Load Allocations for Bacterial Indicators in Middle Santa Ana River Waterbodies[a,b,c]

Indicator	Total Maximum Daily Loads for Bacterial Indicators	Waste Load Allocation for Bacterial Indicators in Urban Runoff including stormwater discharges	Waste Load Allocation for Bacterial Indicators in Confined Animal Feeding Operations discharges	Load Allocation for Bacterial Indicators in Agricultural runoff discharges	Load Allocation for Bacterial Indicators from Natural Sources
Dry Summer Conditions: April 1 through October 31, as soon as possible, but no later than December 31, 2015					
Fecal coliform	5-sample/30-day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30-day period.
E. coli	5-sample/30-day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.
Wet Winter Conditions: November 1 through March 31, as soon as possible, but no later than December 31, 2025					
Fecal coliform	5-sample/30-day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30-day period.	5-sample/30-day Logarithmic Mean less than 180 organisms/100ml, and not more than 10% of the samples exceed 360 organisms/100ml for any 30-day period.
E. coli	5-sample/30-day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.	5-sample/30-day Logarithmic Mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.

[a] To be achieved as soon as possible, but no later than dates specified.
[b] TMDLs, WLAs and LAs, include a 10% Margin of Safety
[c] The fecal coliform TMDLs, WLAs and LAs become ineffective upon the replacement of the REC1 fecal coliform objectives in the Basin Plan by approved REC1 objectives based on *E. coli*.

C. Margin of Safety

A 10% margin of safety is explicitly incorporated into the Bacterial Indicator TMDLs for the Middle Santa Ana River Watershed to account for unknowns, such as bacterial regrowth, bacteria dilution and organism die-off. As additional data on bacterial dynamics in the Middle Santa Ana River watershed are developed, the margin of safety can be adjusted accordingly.

D. Seasonal Variations/Critical Conditions

The Basin Plan REC1 fecal coliform objectives apply year-round; no distinctions based on climate or other conditions that may affect actual REC1 use are specified[2]. As shown in Table 5-9x, different compliance dates are specified for dry season discharges and wet season discharges. This ensures that dry season recreational beneficial uses are addressed on a priority basis. Additional time is allowed to address complexities associated with the control of wet weather discharges.

E. TMDL Implementation

Implementation is expected to result in compliance with the water quality objectives/numeric targets for fecal coliform and with the numeric targets for *E. coli*. The intent is to ensure protection of the REC1 beneficial uses of Middle Santa Ana River Watershed waterbodies. Collection of additional monitoring data is critical to developing long-term solutions for bacterial indicator control, as well as to consider whether changes to the TMDL are appropriate. With that in mind, the requirements for submittal of plans and schedules to implement the TMDLs take into consideration the need to develop and implement effective short-term solutions, as well as allow for the development of long-term solutions once additional data have been generated.

Implementation of tasks and schedules as specified in Table 5-9y is expected to achieve compliance with the TMDLs and, thereby, water quality standards. Each of these tasks is described below.

The SWQSTF may recommend changes to the REC1 objectives to reflect conditions, such as high flows, that affect REC1 use. Any such changes will be considered through the Basin Planning process.

Table 5-9y – Middle Santa Ana River Watershed Bacterial Indicator TMDL Implementation Plan/Schedule Due Dates

Task	Description	Compliance Date-As soon As Possible but No Later Than
TMDL Phase 1		
Task 1	Revise Existing Waste Discharge Requirements	*(*9 months after BPA approval*)*
Task 2	Identify Agricultural Operators	*(*1 month after BPA approval*)*
Task 3	Develop Watershed-Wide Bacterial Indicator Water Quality Monitoring Program	*(* 6 months after BPA approval*)*
	Implement Watershed-Wide Bacterial Indicator Water Quality Monitoring Program	Upon Regional Board approval Seasonal reports due May 31 and December 31 of each year Triennial reports due every 3 years beginning with first report due February 15, 2007.
Task 4	Urban Discharges	Plan/schedule due
	4.1 Develop and Implement Bacterial Indicator Urban Source Evaluation Plan	4.1 *(* 6 months after BPA approval*)*;
	4.2 San Bernardino County MS4: Revise Municipal Storm Water Management Program (MSWMP)	4.2 Dependent on Task 4.1 results (see text)
	4.3 Riverside County MS4: Revise Drainage Area Management Plan (DAMP)	4.3 Dependent on Task 4.1 results (see text)
	4.4 San Bernardino County MS4: Revise Water Quality Management Plan (WQMP)	4.4 Dependent on Task 4.1 results (see text)
	4.5 Riverside County MS4: Revise Water Quality Management Plan (WQMP)	4.5 Dependent on Task 4.1 results (see text)
Task 5	Agricultural Discharges	Plan/schedule due
	5.1 Develop and Implement Bacterial Indicator Agricultural Source Evaluation Plan	5.1 *(*6 months after BPA approval*)*;
	5.2 Develop and Implement Bacterial Indicator Agricultural Source Management Plan	5.2 Dependent on Task 5.1 results (see text)
Task 6	Review of TMDLs/WLAs/LAs	Once every 3 years to coincide with the Regional Board's triennial review, or more frequently as warranted

[Note: BPA => Basin Plan Amendment]

Task 1: Review and/or Revise Existing Waste Discharge Requirements

There are three Waste Discharge Requirements (WDRs) issued by the Regional Board regulating discharge of various types of wastes in the watershed. On or before (*9 *months from the effective date of this Basin Plan amendment**), each of these WDRs shall be reviewed and revised as necessary to implement the TMDLs, including the appropriate wasteload allocations, compliance schedules and/or monitoring program requirements.

Waste Discharge Requirements for the San Bernardino County Flood Control and Transportation District, the County of San Bernardino and the Incorporated Cities of San Bernardino County within the Santa Ana Region, Areawide Urban Runoff, NPDES No. CAS 618036 (Regional Board Order No. R8-2002-0012). The current Order has provisions to address TMDL issues (see Task 4, below). In light of these provisions, revision of the Order may not be necessary to address TMDL requirements.

.2 Waste Discharge Requirements for the Riverside County Flood Control and Water Conservation District, the County of Riverside and the Incorporated Cities of Riverside County within the Santa Ana Region, Areawide Urban Runoff, NPDES No. CAS 618033 (Regional Board Order No. R8-2002-0011). The current Order has provisions to address TMDL issues (see Task 4, below). In light of these provisions, revision of the Order may not be necessary to address TMDL requirements.

.3 General Waste Discharge Requirements for Concentrated Animal Feeding Operations (Dairies and Related Facilities) within the Santa Ana Region, NPDES No. CAG018001 (Regional Board Order No. 99-11). Updated waste discharge requirements for Concentrated Animal Feeding Operations are expected to be considered by the Regional Board in 2005. These requirements will include appropriate TMDL requirements.

Other waste discharge requirements may be reviewed and/or revised to address bacterial indicator discharges as appropriate.

Task 2: Identify Agricultural Operators

On or before (*1 *month from the effective date of this BPA*), the Regional Board shall develop a list of all known agricultural owners/operators in the Middle Santa Ana River watershed that will be responsible for implementing requirements of these TMDLs. The Regional Board will send a notice to these operators informing them of their TMDL responsibility and alerting them to the potential regulatory consequences of failure to comply.

To implement the agricultural load allocations for non-Concentrated Animal Feeding Operations, monitoring program requirements specified in Task 3 and the agricultural source evaluation studies (Task 5), the Regional Board may issue waste discharge requirements or a waiver of such waste discharge requirements that is conditioned on satisfactory compliance with these TMDL elements.

Task 3: Watershed-Wide Bacterial Indicator Water Quality Monitoring Program

No later than (* *6 months from effective date of this Basin Plan amendment* *), the US Forest Service, the County of San Bernardino, the County of Riverside, the cities of Ontario, Chino, Chino Hills, Montclair, Rancho Cucamonga, Upland, Rialto, Fontana, Norco, Riverside, and Corona, Pomona and Claremont and

agricultural operators in the watershed, shall as a group, submit to the Regional Board for approval a proposed watershed-wide monitoring program that will provide data necessary to review and update the TMDLs. Data to be collected and analyzed shall address, at a minimum, determination of compliance with the TMDLs, WLAs and LAs.

At a minimum, the stations specified in Tables 5-9z and 5-9aa and shown in Figure 5-6, at the frequency specified in Tables 5-9z and 5-9aa, shall be considered for inclusion in the proposed monitoring plan. If one or more of these monitoring stations are not included, the rationale shall be provided and proposed alternative monitoring locations shall be identified in the proposed monitoring plan. The proposed monitoring plan shall also include a plan to compile streamflow measurements at existing USGS stream gauging stations.

At a minimum, samples shall be analyzed for the following constituents

- Fecal Coliform
- Escherichia Coliform (*E. coli*)
- Total Suspended Solids
- pH
- Temperature
- Electrical Conductivity
- Dissolved Oxygen
- Turbidity

The proposed monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. Seasonal reports summarizing and including copies of the data collected during the dry season and wet season monitoring periods shall be submitted by May 31 and December 31 of each year. In order to facilitate review and update of the numeric targets and/or the TMDLs, WLAs, LAs, a triennial report summarizing the data collected for the preceding 3 year period and evaluating compliance with the WLAs/LAs shall be submitted every three years, beginning with the first report due February 15, 2007.

In lieu of this coordinated monitoring plan, one or more of the parties identified above may submit a proposed individual or group monitoring plan for Regional Board approval. Any such individual or group monitoring plan is due no later than (* *6 months from effective date of this Basin Plan amendment**) and shall be implemented upon Regional Board approval at a duly noticed public meeting Seasonal reports summarizing and including copies of the data collected during the dry season and wet season monitoring periods shall be submitted by May 31 and December 31 of each year. In order to facilitate review and update of the numeric targets and/or the TMDLs, WLAs, LAs, a triennial report summarizing the data collected for the preceding 3 year period and evaluating compliance with the WLAs/LAs shall be submitted every three years, beginning with the first report due February 15, 2007.

It may be that implementation of these monitoring requirements will be required through the issuance of Water Code Section 13267 letters to the affected parties. The monitoring plan(s) will be considered by the Regional Board and shall be implemented upon the Regional Board's approval.

Table 5-9z – Watershed Minimum Required Weekly Sampling Station Locations

Station Number	Station Description
C1	Icehouse Canyon Creek
C2	Chino Creek at Schaeffer Avenue
C3	Prado Park Lake at lake outlet
C7	Chino Creek at Central Avenue
C8	Chino Creek at Prado Golf Course
M2	Cucamonga Creek at Regional Plant No. 1
M5	Mill Creek at Chino–Corona Road
S1	Santa Ana River at MWD Crossing
S3	Santa Ana River at Hamner Avenue
T1	Temescal Wash at Lincoln Avenue
TQ1	Tequesquite Arroyo at Palm Avenue

Frequency of sampling:
dry season: weekly
wet season: two 30-day sampling periods during which a minimum of 5 samples are to be collected (at least one sample weekly) and if possible, a minimum of 5 of those samples must be from storm events.

Table 5-9a-a --Additional Watershed Storm Event Sampling Locations

Station Number	Station Description
M3	Bon View Avenue @ Merrill Avenue
M4	Archibald Avenue @ Cloverdale Avenue
G1	Grove Channel @ Pine Avenue
E1	Euclid Avenue Channel @ Pine Avenue

Frequency of sampling: wet weather – one sample/storm event for 5 storm events/year; dry weather – none.

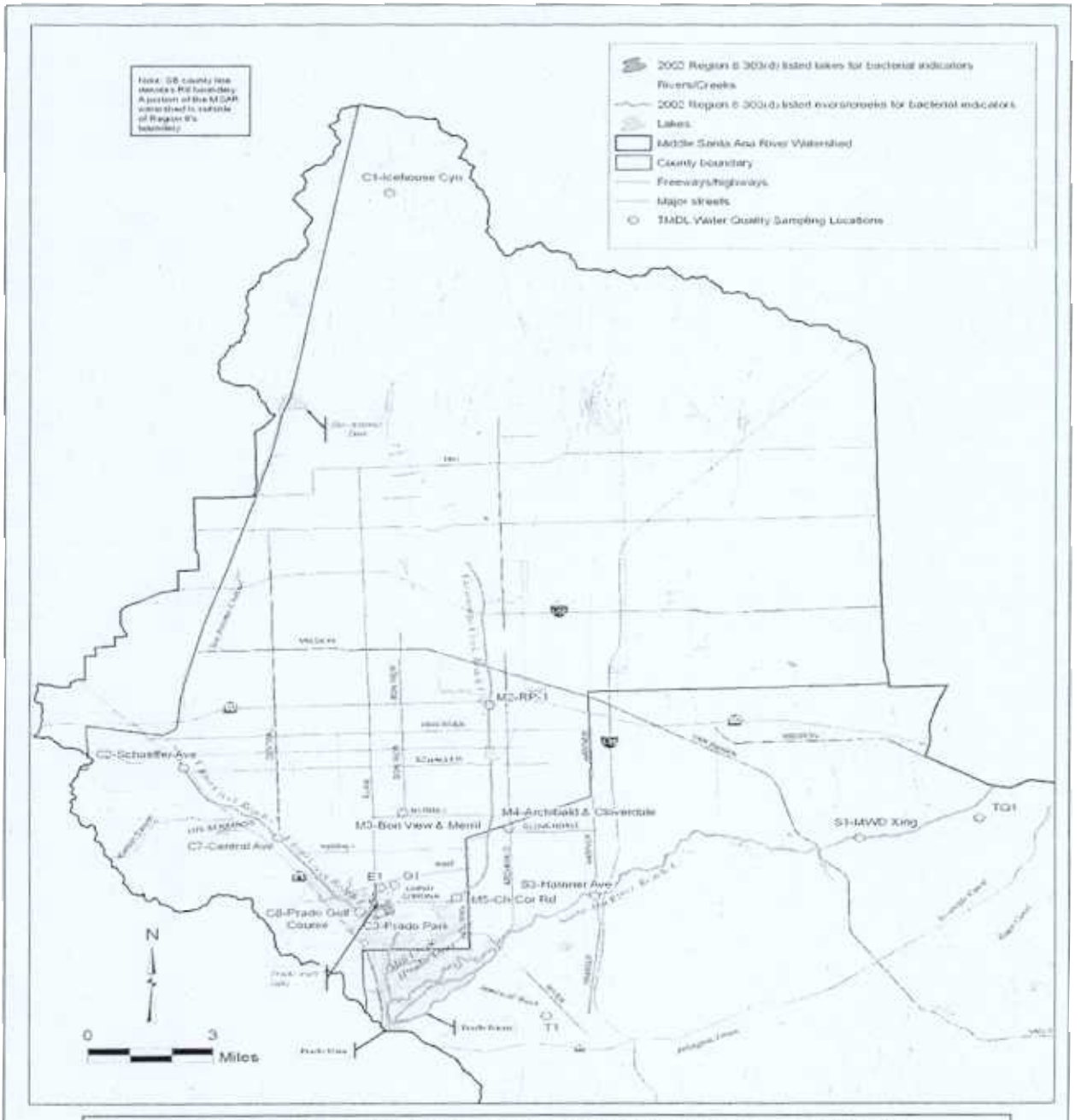

FIGURE 5-6: TMDL WATER QUALITY SAMPLING LOCATIONS

Water Boards

Map created January 2005
Map created by: HB

Data Sources
Middle Santa Ana River Watershed based on Calwater v. 2.2.1 boundaries - CA Spatial Information Library (2004).
Santa Ana River reach designations and GDT streets (SWRCB, 2002)
County: CA Spatial Information Library (2004)
Rivers/creeks, and lakes:
CA Spatial Information Library (1998)
2002 303(d) listed water bodies:
SWRCB (2003)

Task 4: Urban Discharges

Phase I urban discharges, including stormwater runoff, include those from the cities and unincorporated communities in the Middle Santa Ana River Watershed. These discharges are regulated under the MS4 NPDES permits identified in Tasks 1.1 and 1.2 (Review and Revise Existing Waste Discharge Requirements), above. The requirements of these NPDES permits differ somewhat and therefore the TMDL implementation requirements that pertain to the permittees under each permit also vary slightly, as shown below[3].

4.1 Develop and Implement Bacterial Indicator Urban Source Evaluation Plans

On or before (*6 *months from the effective date of this Basin Plan amendment**), the County of San Bernardino, the County of Riverside, the cities of Ontario, Chino, Chino Hills, Montclair, Rancho Cucamonga, Upland, Rialto, Fontana, Norco, Riverside, and Corona, Pomona and Claremont shall develop a Bacterial Indicator Urban Source Evaluation Plan(s) (USEP). This plan shall include steps needed to identify specific activities, operations, and processes in urban areas that contribute bacterial indicators to Middle Santa Ana River Watershed waterbodies. The plan shall also include a proposed schedule for completion of each of the steps identified. The proposed schedules can include contingency provisions that reflect uncertainty concerning the schedule for completion of the SWQSTF work and/or other investigations that may affect the steps that are proposed. The USEP shall be implemented upon Regional Board approval at a duly noticed public meeting.

4.2 Revise the San Bernardino County Municipal Storm Water Management Program (MSWMP)

Provision XVI.3. of Order No. R8-2002-0012 (see 1.1, above) requires the permittees to revise their Municipal Storm Water Management Program (MSWMP) to include TMDL requirements. Revisions to the MSWMP may be necessary based on the results of Task 4.1, Basin Plan amendments to address recommendations of the SWQSTF, or other investigations. Because of uncertainties regarding the timing of completion of these studies, it is not feasible to identify an explicit date whereby the revision of the MSWMP is to be accomplished. Instead, the Executive Officer shall notify the permittees of the need to revise the MSWMP. Within 90 days of notification by the Executive Officer, the permittees shall submit for Regional Board approval, a plan and schedule to review and revise the MSWMP as necessary to incorporate measures to address the results of the USEP and/or other studies. Further review and revision of the MSWMP needed to address these TMDLs shall be completed in accordance with the requirements of Order No. R8-2002-0012 or amendments thereto that are adopted by the Regional Board at a public hearing. The MSWMP revisions shall include schedules for meeting the bacterial indicator wasteload allocations based on the schedule established in these TMDLs. In order to facilitate any needed update of the numeric targets and/or the TMDLs and urban discharge WLAs, the proposed schedule shall take into consideration the Regional Board's triennial review schedule. The permittees shall also provide a proposal and schedule for 1) evaluating the effectiveness of BMPs and other control actions implemented and 2) evaluating compliance with the bacterial indicator waste load allocations for urban runoff. The plan and schedule to review the MSWMP must be implemented upon approval by the Regional Board after public notice and public hearing, or upon approval by the Executive Officer if no significant comments are received during the public notice period.

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[3] The San Bernardino MS4 permit requires the development and implementation of a Municipal Stormwater Management Program (MSWMP) to address stormwater discharges from existing urban activities. For the Riverside County MS4 permit, the Drainage Area Management Plan (DAMP) addresses stormwater discharges from existing urban activities.

4.3 **Revise the Riverside County Drainage Area Management Plan (DAMP)**
Provision XIII.B. of Order No. R8-2002-0011 (see 1.2, above) requires the permittees to revise their Drainage Area Management Plan (DAMP) to include TMDL requirements. Revisions to the DAMP may be necessary based on the results of Task 4.1, Basin Plan amendments to address recommendations of the SWQSTF, or other investigations. Because of uncertainties regarding the timing of completion of these studies, it is not feasible to identify an explicit date whereby the revision of the DAMP is to be accomplished. Instead, the Executive Officer shall notify the permittees of the need to revise the DAMP. Within 90 days of notification by the Executive Officer, the permittees shall submit for Regional Board approval, a plan and schedule to review and revise the DAMP as necessary to incorporate measures to address the results of the USEP and/or other studies. Further review and revision of the DAMP needed to address these TMDLs shall be completed in accordance with the requirements of Order No. R8-2002-0011 or amendments/updates thereto that are adopted by the Regional Board at a public hearing. The DAMP revisions shall include schedules for meeting the bacterial indicator wasteload allocations based on the schedule established in these TMDLs. In order to facilitate review and update of the numeric targets and/or the TMDLs and urban discharge WLAs, the proposed schedule shall take into consideration the Regional Board's triennial review schedule. The revised DAMP shall also include a proposal and schedule for 1) evaluating the effectiveness of BMPs and other control actions implemented and 2) evaluating compliance with the bacterial indicator waste load allocations for urban runoff. The plan and schedule to review and revise the DAMP must be implemented upon approval by the Regional Board after public notice and public hearing, or upon approval by the Executive Officer if no significant comments are received during the public notice period.

4.4 **Revise the San Bernardino County Water Quality Management Plan (WQMP)**
Provision XII.B. 1. of Order No. R8-2002-0012 requires the permittees to develop and submit a WQMP for new developments and significant redevelopments by January 2004 for the Executive Officer's approval. Revisions to the WQMP may be necessary based on the results of Task 4.1, Basin Plan amendments to address recommendations of the SWQSTF, or other investigations. Because of uncertainties regarding the timing of completion of these studies, it is not feasible to identify an explicit date whereby the revision of the WQMP is to be accomplished. Instead, the Executive Officer shall notify the permittees of the need to revise the WQMP. Within 90 days of notification by the Executive Officer, the permittees shall submit for Regional Board approval a plan and schedule to review and revise the WQMP that addresses the bacterial indicator input from new developments and significant redevelopments to assure compliance with the bacterial indicator wasteload allocations for urban runoff. Further review and revision of the WQMP necessary to address TMDL requirements, shall be completed in accordance with the requirements of Order No. R8-2002-0012 or amendments/updates thereto that are adopted by the Regional Board at a public hearing.

4.5 **Revise the Riverside County Water Quality Management Plan (WQMP)**
Provision VIII.B. of Order No. R8-2002-0011 (see 1.2, above) requires the permittees to develop and submit a WQMP for new developments and significant redevelopments by June 2004 for approval. On September 17, 2004, the Board approved a WQMP developed by the permittees. The approved WQMP includes source control BMPs, design BMPs and treatment control BMPs. Further revisions to the WQMP may be necessary to meet the WLA for urban runoff. Such revisions may be necessary based on the results of Task 4.1, Basin Plan amendments to address recommendations of the SWQSTF, or other investigations. Because of uncertainties regarding the timing of completion of these studies, it is not feasible to identify an explicit date whereby the revision of the WQMP is to be accomplished. Instead, the Executive Officer shall notify the permittees of the need to revise the WQMP. Within 90 days of notification by the Executive

Officer, the permittees shall submit for Regional Board approval a plan and schedule for review and revision of the WQMP that addresses the bacterial indicator input from new developments and significant redevelopments to assure compliance with the bacterial indicator wasteload allocations for urban runoff. Further review and revision of the WQMP necessary to address TMDL requirements, shall be completed in accordance with the requirements of Order No. R8-2002-0011 or amendments/updates thereto that are adopted by the Regional Board at a public hearing.

If the results of studies conducted pursuant to Tasks 3 and 4.1 above demonstrate that either the Phase II non-traditional small MS4 discharges covered under the statewide Waste Discharge Requirements for Stormwater Discharges from Small Municipal Separate Storm Systems (Order No. 2003-0005-DWQ) or industrial discharges from facilities covered by the statewide Industrial Stormwater General Permit (Order 97-03-DWQ) or any Regional Board individual industrial permit, are responsible, to a significant degree, for exceedances of the urban WLAs, the Regional Board will take the appropriate regulatory steps to address these discharges.

Task 5: Agricultural Discharges

Agricultural discharges include stormwater runoff, wastewater release and tailwater runoff from agricultural land uses. Tailwater runoff is irrigation water that runs off of agricultural land. Agricultural land uses include concentrated animal feeding operations and irrigated and dry-land farming in the Middle Santa Ana River Watershed. Concentrated animal feeding operations are regulated under WDRs (see Task 1.3,above); irrigated agriculture and dry-land farming are not currently regulated.

5.1 **Develop and Implement Bacterial Indicator Agricultural Source Evaluation Plans**
On or before (*6 *months from the effective date of this Basin Plan amendment**), concentrated animal feeding facility operators and agricultural operators in the Middle Santa Ana River Watershed shall develop and implement Bacterial Source Agricultural Source Evaluation Plans (AGSEP). These plans shall include steps needed to identify specific activities, operations, and processes in agricultural areas that contribute bacterial indicators to Middle Santa Ana River Watershed waterbodies. The plan shall also include a proposed schedule for completion of each of the steps identified. The proposed schedules can include contingency provisions that reflect uncertainty concerning the schedule for completion of the SWQSTF work and/or other investigations that may affect the steps that are proposed. The AGSEP shall be implemented upon Regional Board approval at a duly noticed public meeting.

The Regional Board expects that the AGSEP will be submitted and implemented pursuant to these TMDL requirements. Where and when necessary to implement these requirements, the Regional Board will utilize appropriate waste discharge requirements including those for concentrated animal feeding operations (see 1.3, above), or other Water Code authorities.

In lieu of a coordinated source evaluation plan, one or more of the parties identified above may submit a proposed individual or group AGSEP to conduct the above studies for areas within their jurisdiction. Any such individual or group plan shall also be submitted for Regional Board approval no later than. (*6 *months from the effective date of this Basin Plan amendment**). This AGSEP shall be implemented upon Regional Board approval at a duly noticed public meeting.

5.2 **Develop and Implement a Bacterial Indicator Agricultural Source Management Plan**
Based on the results of Task 5.1 or other studies conducted in the watershed, concentrated animal feeding operators and agricultural operators within the Middle Santa Ana River Watershed shall, as a group, submit a proposed Bacterial Indicator Agricultural Source Management Plan (BASMP). Because of uncertainties regarding the timing of completion of these studies and in recognition that readily identifiable steps may be taken to reduce bacterial discharges from agricultural lands, it is not feasible to identify an explicit date whereby the development and implementation of the BASMP is to be accomplished. Instead, the Executive Officer shall notify agricultural operators of the need to submit the proposed BASMP in whole or to submit plans and schedule to address a subset of tasks identified in the AGSEP. Within 90 days of notification by the Executive Officer, the proposed BASMP, or a subset thereof, shall be submitted. The BASMP, or subset thereof, shall be implemented upon Regional Board approval at a duly noticed public meeting. At a minimum, the BASMP shall include, plans and schedules for the following:

A implementation of bacterial indicator controls, BMPs and reduction strategies designed to meet load allocations;
B evaluation of effectiveness of BMPs; and
C development and implementation of compliance monitoring program(s).

The Regional Board expects that the BASMP will be submitted and implemented pursuant to these TMDL requirements. Where and when necessary to implement these requirements, the Regional Board will utilize appropriate waste discharge requirements or other Water Code authorities.

In lieu of a coordinated plan, one or more of the parties identified above may submit a proposed individual or group BASMP to develop and implement the above plan for areas within their jurisdiction. Any such individual or group plan shall also be submitted for Regional Board approval. Because of uncertainties regarding the timing of completion of these studies and in recognition that readily identifiable steps may be taken to reduce bacterial discharges from agricultural lands, it is not feasible to identify an explicit date whereby the development and implementation of the BASMP is to be accomplished. Instead, the Executive Officer shall notify agricultural operators of the need to submit the proposed BASMP in whole or to submit plans and schedule to address a subset of tasks identified in the AGSEP. Within 90 days of notification by the Executive Officer, the proposed BASMP, or a subset therefore, shall be submitted. This BASMP, or a subset thereof, shall be implemented upon Regional Board approval at a duly noticed public meeting.

Task 6: Review/Revision of the Bacterial Indicator TMDL (TMDL "Re-opener")

The basis for the TMDLs and implementation schedule will be re-evaluated at least once every three years[4] to determine the need for modifying the load and wasteload allocations, numeric targets and TMDLs. Regional Board staff will continue to review all data and information generated pursuant to the TMDL requirements on an ongoing basis. Based on results generated through the monitoring programs, special studies, modeling analysis, efforts of the Storm Water Quality Standards Task Force[5] and/or

[4] The three-year schedule will coincide with the Regional Board's triennial review schedule.

Stakeholders formed the Storm Water Quality Standards Task Force (Task Force) in 2002 to support review and update of the bacterial quality objectives for REC1 waters and to review the REC1 designations themselves to assure their accuracy. Participants include representatives from the Santa Ana Watershed Project Authority, (SAWPA) flood control agencies from the 3 counties within the Santa Ana Region, POTW dischargers and stormwater staff from various municipalities in the watershed. Environmental groups, Regional Board staff and USEPA staff are also participants. SAWPA staff serve as facilitators for the Task Force.

special studies by one or more responsible parties, changes to the TMDLs, including revisions to the numeric targets, WLAs and LAs, may be warranted. Such changes would be considered through the Basin Plan Amendment process.

The Regional Board is committed to the review of this TMDL every three years, or more frequently if warranted by the results of monitoring and/or other relevant studies

References

California Regional Water Quality Control Board, Total Maximum Daily Load for Bacterial Indicators in the Middle Santa Ana River Watershed, February 3, 2005

2 US Environmental Protection Agency (USEPA), Ambient Water Quality Criteria for Bacteria, 1986