California Regional Water Quality Control Board
Santa Ana Region

RESOLUTION NO. R8-2004-0037

Resolution Amending the Water Quality Control Plan for the Santa Ana River Basin to Incorporate Nutrient Total Maximum Daily Loads (TMDLs) for Lake Elsinore and Canyon Lake

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

1. 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 Basin Plan specifies the following beneficial uses for Lake Elsinore: warm freshwater aquatic habitat (WARM), body contact recreation (REC1), non-body contact recreation (REC2) and wildlife habitat (WILD).

3. The Basin Plan specifies the following beneficial uses for Canyon Lake: warm freshwater aquatic habitat (WARM), body contact recreation (REC1), non-body contact recreation (REC2), wildlife habitat (WILD), municipal and domestic water supply (MUN), agriculture water supply (AGR) and groundwater recharge (GWR).

4. The Basin Plan specifies the narrative water quality objective for algae for inland surface waters, including Lake Elsinore and Canyon Lake, that waste discharges shall not contribute to excessive algae growth in receiving waters.

5. For WARM designated inland surface waters, the Basin Plan specifies the narrative objective that dissolved oxygen levels shall not be depressed below 5 mg/L.

6. The narrative water quality objectives pertaining to excessive algae growth and dissolved oxygen are not being met in Lake Elsinore, as demonstrated by a history of significant algae blooms and low dissolved oxygen concentrations. Lake Elsinore beneficial uses adversely impacted include WARM, WILD, REC1 and REC2.

7. The narrative objectives pertaining to excessive algae growth and dissolved oxygen are not being met in Canyon Lake, as demonstrated by occasional excessive algae growth, and by low dissolved oxygen concentrations. Canyon Lake beneficial uses adversely impacted include MUN, WARM, WILD, REC1 and REC2.

8. As a result of the beneficial use impacts to the two lakes, the Regional Board listed Lake Elsinore and Canyon Lake 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 the impairment. Phosphorus and nitrogen are the nutrients causing the impairment. Section 303(d) also requires the allocation of the TMDL among the sources of nutrient inputs. State law requires an implementation plan and

schedule to ensure that the TMDL is met and that compliance with water quality standards is achieved.

9. The 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 amendment is proposed for incorporation into Chapter 5 "Implementation", of the Basin Plan. The proposed Basin Plan amendment includes background information concerning the water quality impairment being addressed, and the sources of nutrients to Canyon Lake and Lake Elsinore. The proposed TMDL is supported by a detailed report prepared by Regional Board staff and titled "Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Loads", June 2004 (hereinafter, "TMDL Report").

10. The Basin Plan amendment specifies final numeric targets for total phosphorus for both Lake Elsinore and Canyon Lake, and final numeric targets for total nitrogen for both lakes. Control of nitrogen and phosphorus is needed to ensure compliance with relevant numeric and narrative water quality objectives specified in the Basin Plan, including those pertaining to excessive algae growth and dissolved oxygen.

11. The Basin Plan amendment specifies interim and final response numeric targets for chlorophyll *a* and dissolved oxygen for both Lake Elsinore and Canyon Lake. These response numeric targets provide a method to track improvements in water quality resulting from reduction in the loading of nitrogen and phosphorus.

12. The Basin Plan amendment specifies final TMDLs, wasteload allocations for point source discharges (WLA), load allocations for nonpoint source discharges (LA) for total phosphorus for Lake Elsinore and Canyon Lake. The Basin Plan amendment specifies final TMDLs, wasteload allocations for point source discharges and load allocations for nonpoint source discharges for total nitrogen for both lakes.

13. The Basin Plan amendment specifies an implementation plan for nutrient reduction. The implementation plan includes compliance schedules for the numeric targets, TMDLs, wasteload allocations and load allocations, as well as a monitoring program to track progress toward compliance.

14. The 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).

15. The Regional Board has considered the costs associated with implementation of this amendment, as well as costs resulting from failure to implement nutrient control measures necessary to prevent adverse effects on beneficial uses. The implementation plan in the Basin Plan, 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.

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

17. The adoption of these TMDLs is necessary to reduce loadings of nutrients to Lake Elsinore and Canyon Lake and to address water quality impairments that arise therefrom.

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

19. The Regional Board submitted the relevant technical documents that serve as the basis for the proposed amendment to an external scientific review panel and has considered the comments and recommendations of that panel in drafting the amendment.

20. The proposed amendment will result in revisions to the Basin Plan Chapter 5 "Implementation".

21. The Regional Board discussed this matter at a workshops conducted on June 4, 2004 and September 17, 2004 after notice was given to all interested persons in accordance with Section 13244 of the California Water Code. Based on the discussion at those workshops, the Board directed staff to prepare the appropriate Basin Plan amendment and related documentation to incorporate the Lake Elsinore and Canyon Lake Nutrient TMDLs.

22. The Regional Board prepared and distributed written reports (staff reports) regarding adoption of the 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).

23. 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 Basin Plan amendment package includes staff reports, an Environmental Checklist, an assessment of the potential environmental impacts of the Basin Plan amendment, and a discussion of alternatives. The Basin Plan amendment, Environmental Checklist, staff reports, and supporting documentation are functionally equivalent to an Environmental Impact Report or Negative Declaration.

24. On December 20, 2004, the Regional Board held a Public Hearing to consider the Basin Plan amendment. Notice of the Public Hearing was given to all interested persons and published in accordance with Water Code Section 13244.

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

26. 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).

27. 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:

1. 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 Basin Plan amendment to the SWRCB in accordance with the requirements of Section §13245 of the California Water Code.

3. The Regional Board requests that the SWRCB approve the 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 December 20, 2004.

Gerard J. Thibeault
Executive Officer

ATTACHMENT TO RESOLUTION NO. R8-2004-0037

Chapter 5 - Implementation Plan
(NOTE: The following language is proposed to be inserted into 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.)

Lake Elsinore/San Jacinto River Watershed

The Lake Elsinore/San Jacinto River Watershed is located in Riverside County and includes the following major waterbodies: Lake Hemet, San Jacinto River, Salt Creek, Canyon Lake and Lake Elsinore. The total drainage area of the San Jacinto River watershed is approximately 782 square miles. Over 90 percent of the watershed (735 square miles) drains into Canyon Lake. Lake Elsinore is the terminus of the San Jacinto River watershed. The local tributary area to Lake Elsinore, consisting of drainage from the Santa Ana Mountains and the City of Lake Elsinore, is 47 square miles.

Land use in the watershed includes open/forested, agricultural (including concentrated animal feeding operations such as dairies and chicken ranches, and irrigated cropland), and urban uses, including residential, industrial and commercial. Vacant/open space is being converted to residential uses as the population in the area expands. The municipalities in the watershed include the cities of San Jacinto, Hemet, Perris, Canyon Lake, Lake Elsinore and portions of Moreno Valley and Beaumont.

1. Lake Elsinore and Canyon Lake Nutrient Total Maximum Daily Load (TMDL)

Lake Elsinore and Canyon Lake are not attaining water quality standards due to excessive nutrients (nitrogen and phosphorus). Reports prepared by Regional Board staff describe the impact nutrient discharges have on the beneficial uses of Lake Elsinore and Canyon Lake [Ref. #1, 2] Lake Elsinore was formed in a geologically active graben area and has been in existence for thousands of years. Due to the mediterranean climate and watershed hydrology, fluctuations in the level of Lake Elsinore have been extreme, with alternate periods of a dry lake bed and extreme flooding. These drought/flood cycles have a great impact on lake water quality. Fish kills and excessive algae blooms have been reported in Lake Elsinore since the early 20th century. As a result, in 1994, the Regional Board placed Lake Elsinore on the 303(d) list of impaired waters due to excessive levels of nutrients and organic enrichment/low dissolved oxygen.

Canyon Lake, located approximately 5 miles upstream of Lake Elsinore, was formed by the construction of Railroad Canyon Dam in 1928. Approximately 735 square miles of the 782 square mile San Jacinto River watershed drain to Canyon Lake. During most years, runoff from the watershed terminates at Canyon Lake without reaching Lake Elsinore, resulting in the buildup of nutrients in Canyon Lake. While Canyon Lake does not have as severe an eutrophication problem as Lake Elsinore, there have been periods of algal blooms and anecdotal reports of occasional fish kills. Accordingly, in 1998, the Regional Board added Canyon Lake to the 303(d) list of impaired waters due to excessive levels of nutrients.

A TMDL technical report prepared by Regional Board staff describes the nutrient related problems in Canyon Lake and Lake Elsinore in greater detail and discusses the technical basis for the TMDLs that follow [Ref. # 3].

A. Lake Elsinore and Canyon Lake Nutrient TMDL Numeric Targets

Numeric targets for Lake Elsinore and Canyon Lake are based on reference conditions when beneficial uses in the lakes were not significantly impacted by nutrients. Table 5-9n shows both "causal" and "response" interim and final numeric targets for both lakes. Causal targets are those for phosphorus and nitrogen. Phosphorus and nitrogen are the primary limiting nutrients in Lake Elsinore and Canyon Lake, respectively. However, under certain conditions, nitrogen may be limiting in Lake Elsinore and phosphorus may be limiting in Canyon Lake. Targets for both nutrients are therefore necessary . Reduction in nitrogen inputs will be necessary over the long-term and only final targets are specified. Response targets include chlorophyll *a* and dissolved oxygen. These targets are specified to assess water quality improvements in the lakes. Finally, ammonia targets are specified to prevent un-ionized ammonia toxicity to aquatic life.

Table 5-9n
Lake Elsinore and Canyon Lake Nutrient TMDL Numeric Targets*

Indicator	Lake Elsinore	Canyon Lake
Total P concentration (Final)	Annual average no greater than 0.1 mg/L; to be attained no later than 2020	Annual average no greater than 0.1 mg/L; to be attained no later than 2020
Total N concentration (Final)	Annual average no greater than 0.75 mg/L; to be attained no later than 2020	Annual average no greater than 0.75 mg/L; to be attained no later than 2020
Ammonia nitrogen concentration (Final) [Ref. #4]	Calculated concentrations to be attained no later than 2020 Acute: 1-hour average concentration of total ammonia nitrogen (mg/L) not to exceed, more than once every three years on the average, the CMC (acute criteria), where $CMC = 0.411/(1+10^{7.204-pH}) + 58.4/(1+10^{pH-7.204})$ Chronic: thirty-day average concentration of total ammonia nitrogen (mg/L) not to exceed, more than once every three years on the average, the CCC (chronic criteria) $CCC = (0.0577/(1+10^{7.688-pH}) + 2.487/(1+10^{pH-7.688})) * \min(2.85, 1.45*10^{0.028(25-T)})$	Calculated concentrations to be attained no later than 2020 Acute: 1-hour average concentration of total ammonia nitrogen (mg/L) not to exceed, more than once every three years on the average, the CMC (acute criteria), where $CMC = 0.411/(1+10^{7.204-pH}) + 58.4/(1+10^{pH-7.204})$ Chronic: thirty-day average concentration of total ammonia nitrogen (mg/L) not to exceed, more than once every three years on the average, the CCC (chronic criteria) $CCC = (0.0577/(1+10^{7.688-pH}) + 2.487/(1+10^{pH-7.688})) * \min(2.85, 1.45*10^{0.028(25-T)})$
Chlorophyll *a* concentration (Interim)	Summer average no greater than 40 ug/L; to be attained no later than 2015	Annual average no greater than 40 ug/L; to be attained no later than 2015
Chlorophyll *a* concentration (Final)	Summer average no greater than 25 ug/L; to be attained no later than 2020	Annual average no greater than 25 ug/L; to be attained no later than 2020
Dissolved oxygen concentration (Interim)	Depth average no less than 5 mg/L; to be attained no later than 2015	Minimum of 5 mg/L above thermocline; to be attained no later than 2015
Dissolved oxygen concentration (Final)	No less than 5 mg/L 1 meter above lake bottom; to be attained no later than 2020	Daily average in hypolimnion no less than 5 mg/L; to be attained no later than 2020.

* compliance with targets to be achieved as soon as possible, but no later than the date specified

B. Lake Elsinore and Canyon Lake Nutrient TMDLs, Wasteload Allocations, Load Allocations and Compliance Dates

As discussed in the technical TMDL report, nutrient loading to Canyon Lake and Lake Elsinore varies depending on the hydrologic conditions that occur in the San Jacinto watershed. As part of the TMDL analysis and development, three hydrologic scenarios and the relative frequency of each of these conditions (based upon an 87 year record of flow data at the USGS Gauging station downstream of Canyon Lake), were identified as shown in Table 5-9o. The resulting TMDLs, wasteload allocations and load allocations are based on 10-year running flow weighted average nutrient loads, taking into account the frequency of the three hydrologic conditions and the nutrient loads associated with each of them. Phosphorus and nitrogen TMDLs for Canyon Lake and Lake Elsinore are shown in Table 5-9p. The TMDLs, expressed as 10–year running averages, will implement the numeric targets and thereby attain water quality standards,. Phosphorus and nitrogen wasteload allocations for point source discharges and load allocations for nonpoint source discharges, also expressed as 10-year running averages, are shown in Tables 5-9q and 5-9r. No TMDLs, wasteload allocations or load allocations are specified for chlorophyll a, dissolved oxygen or ammonia. Chlorophyll a and dissolved oxygen targets are intended to serve as measures of the effectiveness of phosphorus and nitrogen reductions implemented to meet TMDL requirements. Until ammonia transformations, and nitrogen dynamics in general, are better understood, no ammonia TMDLs, wasteload allocations or load allocations are specified.

Table 5-9o
San Jacinto River Hydrologic Conditions with Relative Flow Frequency at the USGS Gauging Station Downstream of Canyon Lake (Station No. 1170500)

Hydrologic Condition	Representative Water Year	Years of Hydrologic Condition	Relative Frequency (%)	Description
Wet	1998	14	16	Both Canyon Lake and Mystic Lake overflow; flow at the USGS gauging station 11070500 17,000 AF or greater
Moderate	1994	36	41	No Mystic Lake overflow; Canyon Lake overflowed; flow at the USGS gauging station 11070500 less than 17,000 AF and greater than 271 AF
Dry	2000	37	43	No overflows from Mystic Lake or Canyon Lake; flow at the USGS gauging station 11070500 371 AF or less

Table 5-9p
Nutrient TMDLs and Compliance Dates for Lake Elsinore and Canyon Lake

TMDL	Final Total Phosphorus TMDL (kg/yr)[a, b]	Final Total Nitrogen TMDL (kg/yr)[a, b]
Canyon Lake	8,691	37,735
Lake Elsinore	28,584	239,025

[a] Final compliance to be achieved as soon as possible, but no later than December 31, 2020.
[b] TMDL specified as 10-year running average.

Table 5-9q

Canyon Lake
Nitrogen and Phosphorus Wasteload and Load Allocations[a]

Canyon Lake Nutrient TMDL	Final Total Phosphorus Load Allocation (kg/yr)[b, c]	Final Total Nitrogen Load Allocation (kg/yr)[b, c]
TMDL	**8,691**	**37,735**
WLA	487	6,248
Supplemental water	48	366
Urban	306	3,974
CAFO	132	1,908
LA	**8,204**	**31,487**
Internal Sediment	4,625	13,549
Atmospheric Deposition	221	1,918
Agriculture	1,183	7,583
Open/Forest	2,037	3,587
Septic systems	139	4,850

[a] The TMDL allocations for Canyon Lake apply to those land uses located upstream of Canyon Lake.
[b] Final allocation compliance to be achieved as soon as possible, but no later than December 31, 2020.
[c] TMDL and allocations specified as 10-year running average.

Table 5-9r

Lake Elsinore
Nitrogen and Phosphorus Wasteload and Load Allocations[a]

Lake Elsinore Nutrient TMDL	Final Total Phosphorus Load Allocation (kg/yr)[b,c]	Final Total Nitrogen Load Allocation (kg/yr)[c,d]
TMDL	**28,584**	**239,025**
WLA	3,845	7,791
Supplemental water[d]	3,721	7,442
Urban	124	349
CAFO	0	0
LA	**21,969**	**210,461**
Internal Sediment	21,554	197,370
Atmospheric Deposition	108	11,702
Agriculture	60	213
Open/Forest	178	567
Septic systems	69	608
CL Watershed[e]	2,770	20,774

[a] The Lake Elsinore TMDL allocations for urban, agriculture open/forest, septic systems and CAFOs only apply to those land uses located downstream of Canyon Lake.
[b] Final allocation compliance to be achieved as soon as possible, but no later than December 31, 2020.
[c] TMDL and allocations specified as 10-year running average.
[d] WLA for supplemental water should met as soon as possible as a 5 year running average.
[e] Allocation for Canyon Lake overflows

The TMDL distributes the portions of the waterbody's assimilative capacity to various pollution sources so that the waterbody achieves its water quality standards. The Regional Board supports the trading of pollutant allocations among sources, where appropriate. Trading can take place between point/point, point/nonpoint, and nonpoint/nonpoint pollutant sources. Optimizing alternative point and nonpoint control strategies through allocation tradeoffs may be a cost-effective way to achieve pollution reduction benefits. (See Section E. TMDL Implementation, Task 11, below).

C. Margin of Safety

The Canyon Lake and Lake Elsinore Nutrient TMDLs include an implicit margin of safety (MOS) as follows:

- the derivation of numeric targets based on the 25th percentile of data for Lake Elsinore; Canyon Lake numeric targets to be consistent with the Lake Elsinore targets;
- the use of multiple numeric targets to measure attainment of beneficial uses and thereby assure TMDL efficacy;
- the use of conservative literature values in the absence of site-specific data for source loading rates in the watershed nutrient model;
- the use of conservative assumptions in modeling the response of Lake Elsinore and Canyon Lake to nutrient loads; and
- requiring load reductions to be accomplished during hydrological conditions when model results indicate, in some instances, that theoretical loads could be higher.

D. Seasonal Variations/Critical Conditions

The Canyon Lake and Lake Elsinore Nutrient TMDLs account for seasonal and annual variations in external and internal nutrient loading and associated impacts on beneficial uses by the use of a 10-year running average allocation approach. This 10-year running average approach addresses variation in hydrologic conditions (wet, moderate and dry) that can dramatically affect both nutrient loading and lake response.

Compliance with numeric targets will ensure water quality improvements that prevent excessive algae blooms and fish kills, particularly during the critical summer period when these problems are most likely to occur.

E. TMDL Implementation

Typically, under dry and moderate conditions, the internal nutrient loading drives the nutrient dynamics in both Canyon Lake and Lake Elsinore. However, it is the extreme (albeit infrequent) loading that occurs during wet conditions that provides the nutrients to the lakes that remain in the lakes as internal nutrient sources in subsequent years. Given the complexity of the San Jacinto River watershed hydrology, control of nutrients input to the lakes is needed for all hydrologic conditions. Collection of additional monitoring data is critical to developing long-term solutions for nutrient control. With that in mind, the submittal of plans and schedules to implement the TMDLs should 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 5-9s is expected to achieve compliance with water quality standards. Each of these tasks is described below.

Table 5-9s

Lake Elsinore and Canyon Lake Nutrient TMDL Implementation Plan/Schedule Report Due Dates

Task	Description	Compliance Date-As soon As Possible but No Later Than
TMDL Phase 1		
Task 1	Establish New Waste Discharge Requirements	*(*6 months after BPA approval*)*
Task 2	Revise Existing Waste Discharge Permits	*(*6 months after BPA approval*)*
Task 3	Identify Agricultural Operators	*(*1 month after BPA approval*)*
Task 4	Nutrient Water Quality Monitoring Program 4.1 Watershed-wide Nutrient Monitoring Plan(s) 4.2 Lake Elsinore Nutrient Monitoring Plan(s) 4.3 Canyon Lake Nutrient Monitoring Plan(s)	• Initial plan/schedule due *(*3 months after BPA approval*)* • Annual reports due August 15 • Revised plan/schedule due *(*15 months after BPA approval*)*
Task 5	Agricultural Discharges – Nutrient Management Plan	Plan/schedule due *(*2 years after BPA approval*)*
Task 6	On-site Disposal Systems (Septic Systems) Management Plan	Dependent on State Board approval of relevant regulations (see text).
Task 7	Urban Discharges 7.1 Revision of Drainage Area Management Plan (DAMP) 7.2 Revision of the Water Quality Management Plan (WQMP) 7.3 Update of the Caltrans Stormwater Management Plan and Regional Plan 7.4 Update of US Air Force, March Air Reserve Base SWPPP	Plan/schedule due: 7.1 August 1, 2006 7.2 August 1, 2006 7.3 April 1, 2006 7.4 Dependent on Task 3 results. See text.
Task 8	Forest Area – Review/Revision of Forest Service Management Plans	Plan/schedule due *(*2 years after BPA approval*)*
Task 9	Lake Elsinore In-Lake Sediment Nutrient Reduction Plan	Plan/schedule due *(*18 months after BPA approval)**
Task 10	Canyon Lake In-Lake Sediment Treatment Evaluation	Plan/schedule due *(*18 months after BPA approval*)*
Task 11	Watershed and Canyon Lake and Lake Elsinore In-Lake Model Updates	Plan/schedule due *(*18 months after BPA approval*)*
Task 12	Pollutant Trading Plan	Plan/schedule due *(*2 years after BPA approval*)*
Task 13	Review and Revise Nutrient Water Quality Objectives	December 31, 2009
Task 14	Review of TMDL/WLA/LA	Once every 3 years to coincide with the Regional Board's triennial review

[Note: BPA => Basin Plan Amendment]

Task 1: Establish New Waste Discharge Requirements

On or before (**6 months from the effective date of this BPA*), the Regional Board shall issue new waste discharge requirements (NPDES permit) to Elsinore Valley Municipal Water District for supplemental water discharges to Canyon Lake that incorporate the appropriate interim and final wasteload allocations, compliance schedule and monitoring program requirements.

Other proposed nutrient discharges will be addressed and permitted as appropriate.

Task 2: Review and/or Revise Existing Waste Discharge Requirements

There are five Waste Discharge Requirements (WDRs) issued by the Regional Board regulating discharge of various types of wastes in the San Jacinto watershed. On or before (**6 months from the effective date of this Basin Plan amendment**), each of these WDRs shall be reviewed and revised as necessary to implement the Lake Elsinore and Canyon Lake Nutrient TMDLs, including the appropriate nitrogen and phosphorus interim and final wasteload allocations, compliance schedules and/or monitoring program requirements.

2.1 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 6.1, below). In light of these provisions, revision of the Order may not be necessary to address TMDL requirements.

2.2 Watershed-Wide Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with New Developments in the San Jacinto Watershed, Order No. 01-34, NPDES No. CAG 618005. It is expected that this Order will be rescinded once the Regional Board/Executive Officer approves a Water Quality Management WQMP) under Order No. R8-2002-0011 (see 2.1, above and Task 6.2, below)

2.3 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).

2.4 Waste Discharge and Producer/User Reclamation Requirements for the Elsinore Valley Municipal Water District, Regional Water Reclamation Facility Riverside County, Order No. 00-1, NPDES No. CA8000027. Revised permit specifications will take into consideration the Lake Elsinore Recycled Water Pilot Project findings.

2.5 Waste Discharge Requirements for Eastern Municipal Water District, Regional Water Reclamation System, Riverside County, Order No. 99-5, NPDES No. CA8000188[1]. Revised permit specifications will take into consideration the Lake Elsinore Recycled Water Pilot Project findings.

2.6 Waste Discharge Requirements for US Air Force, March Air Reserve Base, Storm Water Runoff, Riverside County, Order No. R8-2004-0033, NPDES CA 00111007

[1] Contingent on Eastern Municipal Water District discharge of recycled water to Lake Elsinore.

Task 3: 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 operators in the San Jacinto watershed that will be responsible for implementing requirements of this TMDL. The Regional Board will send a notice to these operators informing them of their TMDL responsibility and alerting them to potential regulatory consequences of failure to comply.

Task 4: Monitoring

No later than (**3 months from effective date of this Basin Plan amendment* *), the US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont, Eastern Municipal Water District[1], Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators within the San Jacinto watershed shall, as a group, submit to the Regional Board for approval monitoring program as required by Tasks 4.1, 4.2 and 4.3.

If modifications to the monitoring program are warranted, no later than (*15 *months from effective date of this Basin Plan amendment* *), the US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont, Eastern Municipal Water District[1], Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators within the San Jacinto watershed shall, as a group, submit to the Regional Board for approval a revised proposed Watershed nutrient monitoring program (Task 4.1), Lake Elsinore monitoring program (Task 4.2) and Canyon Lake nutrient monitoring program (Task 4.3).

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 for the monitoring program specified in tasks 4.1, 4.2 and 4.3. Any such individual or group monitoring plan is due no later than (*3 *months from effective date of this Basin Plan amendment**). If needed, any individual or group revised monitoring plan is due no later than (*15 months from effective date of this Basin Plan amendment*).

4.1 Watershed-wide Nutrient Water Quality Monitoring Program

The US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont, Eastern Municipal Water District[1], Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators within the San Jacinto watershed shall, as a group, submit to the Regional Board for approval a proposed watershed-wide nutrient monitoring program that will provide data necessary to review and update the Lake Elsinore and Canyon Lake Nutrient TMDL. Data to be collected and analyzed shall address, at a minimum: (1) determination of compliance with interim and/or final nitrogen and phosphorus allocations; and (2) determination of compliance with the nitrogen and phosphorus TMDL, including the WLAs and LAs.

At a minimum, the stations specified in Table 5-9t and shown in Figure 5-3, at the frequency specified in Table 5-9t, shall be considered for inclusion in the proposed monitoring plan. If one or more of these monitoring stations are not included, rationale shall be provided and proposed alternative monitoring

locations shall be identified in the proposed monitoring plan. In addition to water quality samples, at a minimum, daily discharge (stream flow) determinations shall be made at all stations shown in Table 5-9t.

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

- organic nitrogen
- nitrite nitrogen
- total phosphorus
- total hardness
- total suspended solids (TSS)
- biological oxygen demand (BOD)
- ammonia nitrogen
- nitrate nitrogen
- ortho-phosphate (SRP)
- total dissolved solids (TDS)
- turbidity
- chemical oxygen demand (COD)
- pH
- water temperature

The proposed monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report summarizing the data collected for the year and evaluating compliance with the WLAs/LAs shall be submitted by August 15 of each year.

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. This individual monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report of data collected pursuant to approved individual/group plan(s) shall be submitted by August 15 of each year. The report shall summarize the data and evaluate compliance with the WLAs/LAs.

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 implemented upon the Regional Board's approval.

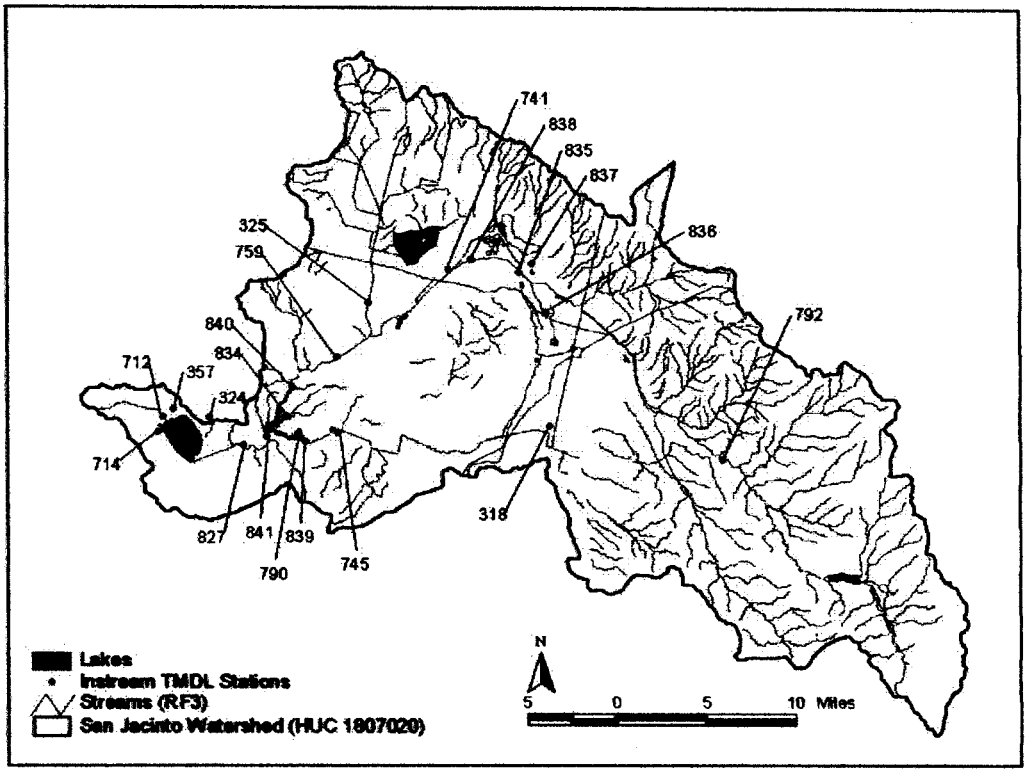

Figure 5-3 – San Jacinto River Watershed Nutrient TMDL Water Quality Stations Locations

Table 5-9t
Lake Elsinore and Canyon Lake Watershed
Minimum Required Sampling Station Locations

Station Number	Station Description
792	San Jacinto River @ Cranston Guard Station
318	Hemet Channel at Sanderson Ave.
745	Salt Creek @ Murrieta Road
759	San Jacinto River @ Goetz Rd
325	Perris Valley Storm Drain @ Nuevo Rd.
741	San Jacinto River @ Ramona Expressway
827	San Jacinto River upstream of Lake Elsinore
790	Fair Weather Dr. Storm Drain in Canyon Lake
357	4 Corners Storm Drain in Elsinore
714	Ortega Flood Channel in Elsinore
324	Lake Elsinore Outlet Channel
712	Leach Canyon Channel in Elsinore
834	Sierra Park Drain in Canyon Lake
835	Bridge Street and San Jacinto River
836	North Side of Ramona Expressway near Warren Road
837	Mystic Lake inflows
838	Mystic Lake outflows
841	Canyon Lake spillway

Frequency of sampling at all stations: dry season – none; wet season; minimum of 3 storms/year whenever possible and 8 samples across each storm hydrograph

4.2 Lake Elsinore: In-Lake Nutrient Monitoring Program

The US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont, Eastern Municipal Water District[1], Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators within the San Jacinto watershed shall, as a group, submit to the Regional Board for approval a proposed Lake Elsinore nutrient monitoring program that will provide data necessary to review and update the Lake Elsinore Nutrient TMDL. Data to be collected and analyzed shall address, at a minimum: determination of compliance with interim and final nitrogen, phosphorus, chlorophyll *a*, and dissolved oxygen numeric targets. In addition,

the monitoring program shall evaluate and determine the relationship between ammonia toxicity and the total nitrogen allocation to ensure that the total nitrogen allocation will prevent ammonia toxicity in Lake Elsinore.

At a minimum, the proposed plan shall include the collection of samples at the stations specified in Table 5-9u and shown in Figure 5-4, at the specified frequency indicated in Table 5-9u. With the exception of dissolved oxygen and water temperature, all samples to be analyzed shall be depth integrated.

The monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report summarizing the data collected for the year and evaluating compliance with the TMDL shall be submitted by August 15 of each year.

Table 5-9u
Lake Elsinore Minimum Required Sampling Station Locations

Station Number	Station Description
LE 14	Lake Elsinore – inlet
LE 15	Lake Elsinore – four corners
LE 16	Lake Elsinore – mid-lake

Frequency of sampling at all stations: monthly October through May; bi-weekly June through September.

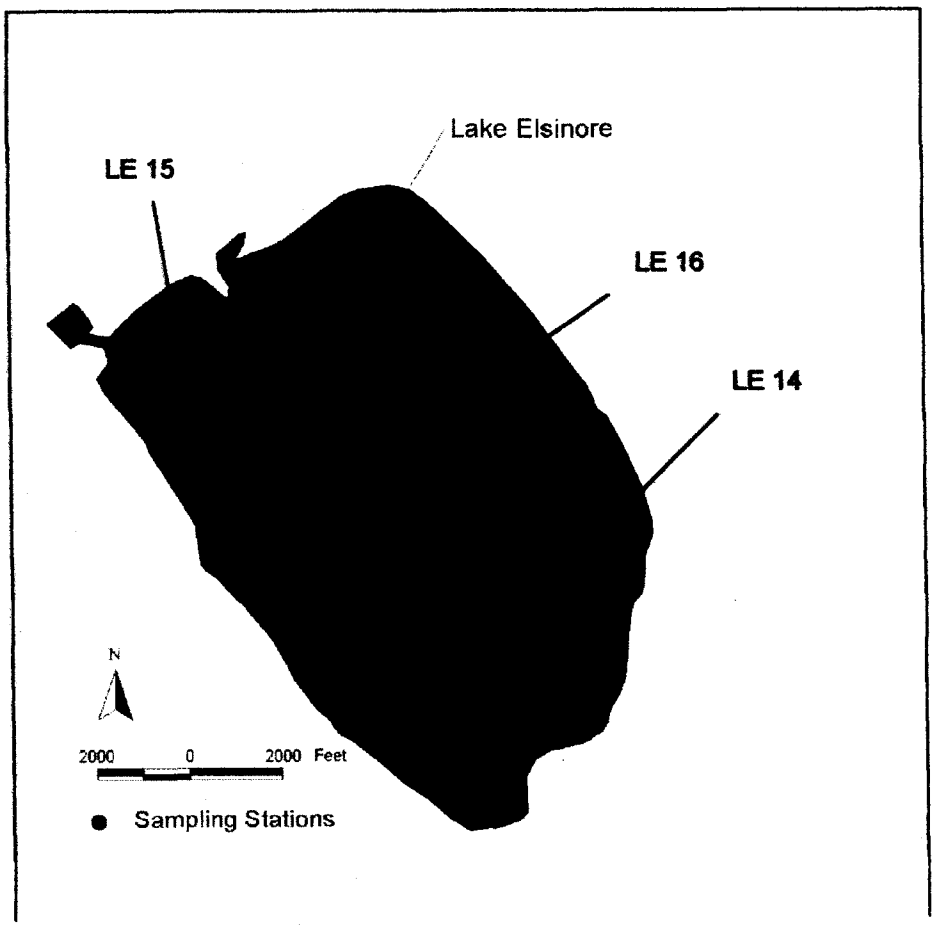

Figure 5-4 Lake Elsinore TMDL monitoring Stations

At a minimum, in-lake samples must be analyzed for the following constituents:

- specific conductance
- water temperature
- pH
- chlorophyll *a*
- organic nitrogen
- nitrite nitrogen
- organic phosphorus
- total hardness
- total dissolved solids (TDS)
- chemical oxygen demand (COD)
- dissolved oxygen
- water clarity (secchi depth)
- ammonia nitrogen
- nitrate nitrogen
- turbidity
- ortho-phosphate (SRP)
- total suspended solids (TSS)
- biological oxygen demand (BOD)

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. This individual monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report of data collected pursuant to approved individual/group plan(s), shall be submitted by August 15 of each year. The report shall summarize the data and evaluate compliance with the numeric targets.

It may be that implementation of these 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 implemented upon the Regional Board's approval.

4.3 Canyon Lake Nutrient Monitoring Program

The US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont, Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators within the San Jacinto watershed shall, as a group, submit to the Regional Board for approval a proposed Canyon Lake nutrient monitoring program that will provide data necessary to review and update the Canyon Lake Nutrient TMDL. Data to be collected and analyzed shall address, at a minimum: determination of compliance with interim and final nitrogen, phosphorus, chlorophyll *a*, and dissolved oxygen numeric targets. In addition, the monitoring program shall evaluate and determine the relationship between ammonia toxicity and the total nitrogen allocation to ensure that the total nitrogen allocation will prevent ammonia toxicity in Canyon Lake.

At a minimum, the proposed plan shall include the collection of samples at the stations specified in Table 5-9v and shown in Figure 5-5, at the specified frequency indicated in Table 5-9v. Discrete samples in Canyon Lake are to be collected in the epilimnion, hypolimnion and thermocline when and where appropriate.

The monitoring plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report summarizing the data collected for the year and evaluating compliance with the TMDL shall be submitted by August 15 of each year.

Table 5-9v

Canyon Lake Minimum Required Sampling Station Locations

Station Number	Station Description
CL 07	Canyon Lake – At the Dam
CL 08	Canyon Lake – North Channel
CL 09	Canyon Lake – Canyon Bay
CL 10	Canyon Lake – East Bay

Frequency of sampling at all stations: monthly October through May; bi-weekly June through September.

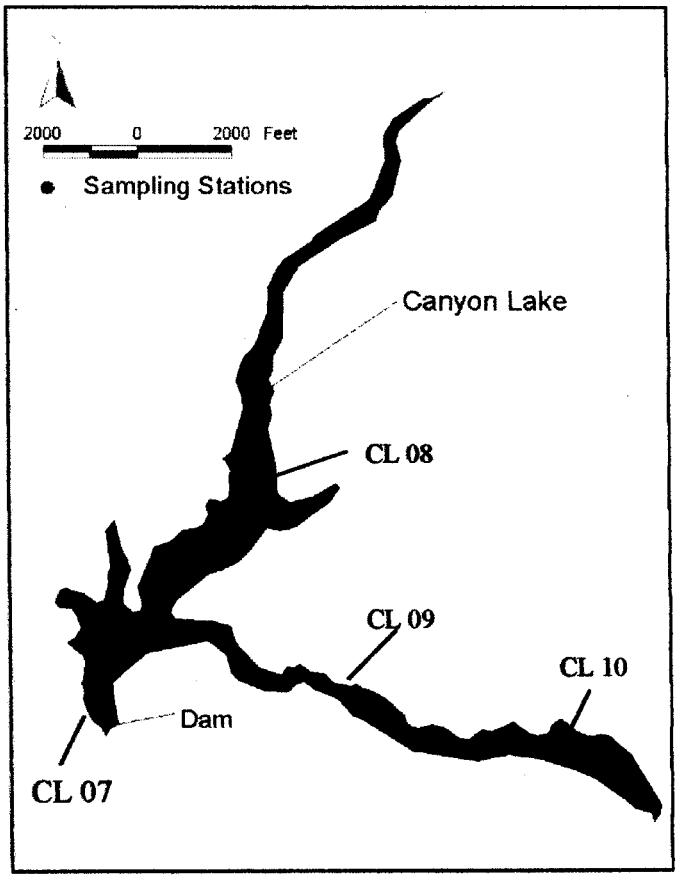

Figure 5-5 – Canyon Lake Nutrient TMDL Monitoring Station Locations

At a minimum, in-lake samples must be analyzed for the following constituents:

- specific conductance
- water temperature
- pH
- chlorophyll *a*
- organic nitrogen
- nitrite nitrogen
- organic phosphorus
- total hardness
- total dissolved solids (TDS)
- chemical oxygen demand (COD)
- dissolved oxygen
- water clarity (secchi depth)
- ammonia nitrogen
- nitrate nitrogen
- turbidity
- ortho-phosphate (SRP)
- total suspended solids (TSS)
- biological oxygen demand (BOD)

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. This individual plan shall be implemented upon Regional Board approval at a duly noticed public meeting. An annual report of data collected pursuant to approved individual/group plan(s) shall be submitted by August 15 of each year. The report shall summarize the data and evaluate compliance with the numeric targets.

It may be that implementation of these 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 implemented upon the Regional Board's approval.

Task 5: Agricultural Activities

No later than (*2 *years from effective date of this Basin Plan amendment* *), the agricultural operators within the Lake Elsinore and Canyon Lake watershed (see Task 2), in cooperation with the Riverside County Farm Bureau, the UC Cooperative Extension, Western Riverside County Ag Coalition shall, as a group, submit a proposed Nutrient Management Plan (NMP). The Nutrient Management Plan shall be implemented upon Regional Board approval at a duly noticed public meeting.

In lieu of a coordinated plan, one or more of the parties identified above may submit a proposed individual or group Nutrient Management Plan 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 (*2 *years from effective date of this Basin Plan amendment* *). This Nutrient Management Plan shall be implemented upon Regional Board approval at a duly noticed public meeting.

At a minimum, the NMP shall include, plans and schedules for the following. In order to facilitate any needed update of the numeric targets and/or the TMDLs and/or agricultural LA, the proposed schedule shall take into consideration the Regional Board's triennial review schedule.

- implementation of nutrient controls, BMPs and reduction strategies designed to meet load allocations;
- evaluation of effectiveness of BMPs;
- development and implementation of compliance monitoring; and
- development and implementation of focused studies that will provide the following data and information

- inventory of crops grown in the watershed;
- amount of manure and/or fertilizer applied to each crop with corresponding nitrogen and phosphorus amounts; and
- amount of nutrients discharged from croplands.

The Regional Board expects that the NMP will be submitted and implemented pursuant to these TMDL requirements. Where and when necessary to implement these requirements, the Regional Board will issue appropriate waste discharge requirements.

Compliance with the agricultural load allocation may be achieved through a Regional Board approved pollutant trading program.

Task 6: On-site Disposal Systems (Septic System) Management Plan

No later than 6 months of the effective date of an agreement between the County of Riverside and the Regional Board to implement regulations adopted pursuant to Water Code Sections 13290-13291.7, or if no such agreement is required or completed, within 12 months of the effective date of these regulations, the County of Riverside and the Cities of Perris, Moreno Valley and Murrieta shall, as a group, submit a Septic System Management Plan to identify and address nutrient discharges from septic systems within the San Jacinto watershed. The Septic System Management Plan shall implement regulations adopted by the State Water Resources Control Board pursuant to California Water Code Section 13290 – 13291.7.

At a minimum, the Septic System Management Plan shall include plans and schedules for the development and implementation of the following. In order to facilitate any needed update of the numeric targets and/or the TMDLs and septic system LA, the proposed schedule shall take into consideration the Regional Board's triennial review schedule.

- public education program;
- tracking system, including maintenance thereof;
- maintenance standards;
- enforcement provisions;
- monitoring program; and
- sanitary survey.

In lieu of a coordinated plan, one or more of the agencies with septic system oversight responsibilities may submit an individual or group Management Plan to develop the above Plan for areas within their jurisdiction. Any such individual or group plan shall also be submitted no later than (**6 months from effective date of this Basin Plan amendment* *). This Septic System Management Plan shall be implemented upon Regional Board approval at a duly noticed public meeting.

Compliance with the septic systems load allocation may be achieved through a Regional Board approved pollutant trading program.

Task 7: Urban Discharges

Urban discharges. including stormwater runoff, are those from the cities and unincorporated communities in the San Jacinto River watershed. These discharges are regulated under the Riverside County MS4 NPDES permit, the San Jacinto Watershed Construction Activities Storm Water permit, the State Board's General Permit for Storm Water Runoff from Construction Activities, and the State Board's General Permit for Storm Water Runoff from Industrial Activities. Nuisance and stormwater runoff from state

highways and right of ways is regulated under the State of California, Department of Transportation (Caltrans) statewide general NPDES permit. Finally, nuisance and stormwater runoff from the March Air Reserve Base is also regulated through an NPDES permit.

7.1 Revision to the Drainage Area Management Plan (DAMP)

Provision XIII.B. of Order No. R8-2002-0011 (see 2.1, above) requires the permittees to revise their Drainage Area Management Plan (DAMP) to include TMDL requirements. By August 1, 2006, the permittees shall review and revise the DAMP and or WQMP (see 7.2 below) as necessary to address the requirements of these nutrient TMDLs. 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 interim and final nutrient wasteload allocations. In order to facilitate any needed update of the numeric targets and/or the TMDLs and urban discharge WLA, the proposed schedule shall take into consideration the Regional Board's triennial review schedule. The revised DAMP/WQMP shall also include a proposal for 1) evaluating the effectiveness of BMPs and other control actions implemented and 2) evaluating compliance with the nutrient waste load allocation for urban runoff. The proposal 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.

7.2 Revision of the Water Quality Management Plan (WQMP)

Provision VIII.B. of Order No. R8-2002-0011 (see 2.1, above) requires the permittees to develop and submit a WQMP 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 and/or the DAMP may be necessary to meet the WLA for urban runoff. By August 1, 2006, the permittees shall submit a revised WQMP and/or revised DAMP (see 7.1 above) that addresses the nutrient input from new developments and significant redevelopments to assure compliance with the nutrient wasteload allocations for urban runoff. The WQMP shall also address requirements currently in Order No. 01-34 (see 2.2, above). Once the WQMP is approved, Order No. 01-34 may be rescinded. Further review and revision of the WQMP necessary to assure that TMDL requirements are addressed 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.

7.3 Revision of the State of California, Department of Transportation (Caltrans) Stormwater Permit

Provision E.1 of Order No. 99-06-DWQ requires Caltrans to maintain and implement a Storm Water Management Plan (SWMP). Annual updates of the SWMP needed to maintain an effective program are required to be submitted to the State Water Resources Control Board.

Provision E.2 of Order No. 99-06-DWQ requires Caltrans to submit a Regional Workplan by April 1 of each year for the Executive Officer's approval. By April 1, 2006, Caltrans shall submit a Regional Workplan that includes plans and schedules for meeting the interim and final nutrient wasteload allocations, and provides a proposal for 1) evaluating the effectiveness of BMPs and other control actions implemented and 2) evaluating compliance with the nutrient waste load allocations for urban runoff, which includes runoff from Caltrans facilities. In order to facilitate any needed update of the numeric targets and/or the TMDLs and urban discharge WLA, the proposed schedule shall take into consideration the Regional Board's triennial review schedule. The proposal shall be

implemented upon the Executive Officer's approval. Annual updates to the Regional Workplan shall include, as necessary, revised plans and schedules for meeting the interim and final nutrient wasteload allocations and revised proposals for evaluating the efficacy of control actions and compliance with the nutrient wasteload allocations.

7.4 Revision to the United States Air Force, March Air Reserve Base, Stormwater Permit

Order No. R8-2004-0033 specifies monitoring and reporting requirements for stormwater runoff from the US Air Force, March Air Reserve facility. Provision C.17 indicates that the order could be reopened to incorporate TMDL requirements. Provisions C.18.a and C.18.b require that March Air Reserve Base submit a report and revise the Stormwater Pollution Prevention Plan (SWPPP) to address any pollutants that may be causing or contributing to exceedances of water quality standards. Results from the TMDL nutrient monitoring program conducted pursuant to Task 3, shall serve as the basis for revision of the SWPPP and/or reopening the order.

Development of the Municipal permittee's WQMP and revisions to their DAMP, development of the Caltrans SWMP and Regional Workplan, and Revision to the March Air Reserve Base SWPPP, shall address the urban component of the nutrient TMDL.

Compliance with the urban wasteload allocation may be achieved through a Regional Board approved pollutant trading program.

Task 8: Forest Area –Identification of Forest Lands Management Practices

No later than (**2 years from effective date of this Basin Plan amendment* *), the US Forest Service shall submit for approval a plan with a schedule for identification, development and implementation of Management Practices to reduce nutrient discharges emanating from the Cleveland National Forest and the San Bernardino National Forest . The Plan shall identify watershed-specific appropriate Best Management Practices (BMPs) that will be implemented to achieve the interim and final load allocations for forest/. The proposal shall include specific recommendations and a schedule for 1) evaluating the effectiveness of control actions implemented to reduce nutrient discharges from forest and 2) evaluating compliance with the nutrient load allocation from forest/open space. The revised watershed-specific Management Practices shall be implemented upon Regional Board approval at a duly noticed public meeting.

Compliance with the open space/forest load allocation may be achieved through a Regional Board approved pollutant trading program.

Task 9: Lake Elsinore Sediment Nutrient Reduction Plan

No later than (**18 months from effective date of this Basin Plan amendment* *), the US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, the State of California, Department of Transportation (Caltrans), the State of California, Department of Fish and Game, the County of Riverside, the cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont, Eastern Municipal Water District[1], Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators within the San Jacinto watershed shall, as a group, submit to the Regional Board for approval a proposed plan and schedule for in-lake sediment nutrient reduction for Lake Elsinore. The proposed plan shall include an evaluation of the applicability of various in-lake treatment technologies to prevent the release of nutrients from lake sediments to support development of a long-term strategy for control of nutrients from the sediment. The submittal shall also contain a proposed sediment nutrient monitoring program to evaluate

the effectiveness of any strategies that are implemented. The Lake Elsinore In-lake Sediment Nutrient Reduction Plan shall be implemented upon Regional Board approval at a duly noticed public meeting.

In lieu of this coordinated plan, one or more of the parties identified above may submit a proposed individual or group In-lake Sediment Nutrient Reduction Plan for approval by the Regional Board. Any such individual or group 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.

Compliance with the Lake Elsinore Sediment Nutrient Reduction Plan requirement may be achieved through a Regional Board approved pollutant trading program.

Task 10: Canyon Lake Sediment Nutrient Treatment Evaluation Plan

No later than (**18 months from effective date of this Basin Plan amendment* *), the US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Murrieta, Riverside and Beaumont, Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators within the San Jacinto watershed shall, as a group, submit to the Regional Board for approval a proposed plan and schedule for evaluating in-lake sediment nutrient treatment strategies for Canyon Lake. The proposed plan shall include an evaluation of the applicability of various in-lake treatment technologies to prevent the release of nutrients from lake sediments in order to develop a long-term strategy for control of nutrients from the sediment. The submittal shall also contain a proposed sediment nutrient monitoring program to evaluate the effectiveness of any strategies that are implemented. The Canyon Lake In-lake Sediment Nutrient Treatment Plan shall be implemented upon Regional Board approval at a duly noticed public meeting.

In lieu of this coordinated plan, one or more of the parties identified above may submit a proposed individual or group In-lake Sediment Nutrient Treatment Evaluation Plan for approval by the Regional Board. Any such individual or group 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.

Task 11: Update of Watershed and In-Lake Nutrient Models

No later than (**18 months from effective date of this Basin Plan amendment* *), the US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Riverside and Beaumont, Eastern Municipal Water District[1], Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators shall, as a group, submit to the Regional Board for approval a proposed plan and schedule for updating the existing Lake Elsinore/San Jacinto River Nutrient Watershed Model and the Canyon Lake and Lake Elsinore in-lake models. The plan and schedule must take into consideration additional data and information that are generated from the respective TMDL monitoring programs. In order to facilitate any needed update of the numeric targets and/or the TMDLs/WLAs/LAs, the proposed schedule shall take into consideration the Regional Board's triennial review schedule. The plan for updating the Watershed and In-lake Models shall be implemented upon Regional Board approval at a duly noticed public meeting.

In lieu of this coordinated plan, one or more of the parties identified above may submit a proposed individual or group plan for update of the Lake Elsinore/San Jacinto River Nutrient Watershed Model and

the Canyon Lake and Lake Elsinore in-lake models. The plan and schedule must take into consideration additional data and information that are generated from the respective TMDL monitoring programs. In order to facilitate any needed update of the numeric targets and/or the TMDLs/WLAs/LAs, the proposed schedule shall take into consideration the Regional Board's triennial review schedule. Any such individual or group 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.

Task 12: Pollutant Trading Plan

No later than (**2 years from effective date of this Basin Plan amendment* *), the US Forest Service, the US Air Force (March Air Reserve Base), March Joint Powers Authority, California Department of Transportation (Caltrans), California Department of Fish and Game, the County of Riverside, the cities of Lake Elsinore, Canyon Lake, Hemet, San Jacinto, Perris, Moreno Valley, Riverside and Beaumont, Eastern Municipal Water District[1], Elsinore Valley Municipal Water District, concentrated animal feeding operators and other agricultural operators shall, as a group, submit to the Regional Board for approval a proposed Pollutant Trading Plan. At a minimum, this plan shall contain a plan, schedule and funding strategy for project implementation, an approach for tracking pollutant credits and a schedule for reporting status of implementation of the Pollutant Trading Plan to the Regional Board, The Pollutant Trading Plan shall be implemented upon Regional Board approval at a duly noticed public meeting.

In lieu of this coordinated plan, one or more of the parties identified above may submit a proposed individual or group Pollutant Trading Plan. Any such individual or group Plan is due no later than (*2 years *from effective date of this Basin Plan amendment**) and shall be implemented upon Regional Board approval at a duly noticed public meeting.

Task 13: Review and Revision of Water Quality Objectives

By December 31, 2009, the Regional Board shall review and revise as necessary the total inorganic nitrogen numeric water quality objectives for Lake Elsinore and Canyon Lake. In addition, the Regional Board shall evaluate the appropriateness of establishing total phosphorus and un-ionized ammonia numeric water quality objectives for both Lake Elsinore and Canyon Lake. Given budgetary constraints, completion of this task is likely to require substantive contributions from interested parties.

Task 14: Review/Revision of the Lake Elsinore/Canyon Lake Nutrient TMDL

The basis for the TMDLs and implementation schedule will be re-evaluated at least once every three years[2] to determine the need for modifying the load 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, and/or special studies by one or more responsible parties, changes to the TMDL, including revisions to the numeric targets, 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 these or other studies

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

References

1. California Regional Water Quality Control Board, Lake Elsinore Nutrient TMDL Problem Statement, October, 2000.

2. California Regional Water Quality Control Board, Canyon Lake Nutrient TMDL Problem Statement, October 2001.

3. California Regional Water Quality Control Board, Total Maximum Daily Load for Nutrients in Lake Elsinore And Canyon Lake, May 2004

4. Environmental Protection Agency, Update of Ambient Water Quality Criteria for Ammonia. EPA-822-R-99-014, 1999.