



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

MAR 18 2004

Ms. Celeste Cantú
Executive Director
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812-0100

Dear Ms. Cantú:

Thank you for submitting the Basin Plan Amendments containing total maximum daily loads (TMDLs) for the following pollutants and water bodies:

- Bacteria in Marina Del Rey Harbor Mother's Beach and Back Basins (MDR)
- Nitrogen Compounds and Related Effects in Los Angeles River and its Tributaries (LAR)
- Nitrogen Compounds in Santa Clara River (SCR)

The State submitted letters describing the TMDLs and implementation plans, and supporting documentation from the State Board and Regional Board administrative records, on February 10, 2004 for MDR, and March 5, 2004 for LAR and SCR. The State adopted TMDLs for the following water bodies:

Marina Del Rey

- Marina Del Rey Harbor Mother's Beach
- Back basins D, E and F

Los Angeles River

- Los Angeles River at Sepulveda Basin
- Los Angeles River from Sepulveda Dam to Sepulveda Blvd.
- Los Angeles River from Riverside Dr. to Figueroa St.
- Tunjunga Wash from Hansen Dam to Los Angeles River
- Burbank Western Channel
- Verdugo Wash from Verdugo Wash Rd to Los Angeles River
- Arroyo Secco from West Holly Ave. to Los Angeles River
- Los Angeles River from Figueroa St. to Carson St.
- Rio Hondo at the Spreading Grounds
- Rio Hondo from the Santa Ana Fwy. To Los Angeles River
- Compton Creek
- Los Angeles River from Carson St. to estuary

Santa Clara River

- Santa Clara Estuary to Highway 101 Bridge (EPA Reach 1)
- Highway 101 Bridge to Freeman Diversion (EPA Reach 2)
- Freeman Diversion to Timber Canyon (EPA Reach 3)
- Timber Canyon to Grimes Canyon (EPA Reach 4)

RECEIVED
2004 MAR -5 PM 1:52
SANTA ANA RIVER WATER
CONTROL BOARD
LOS ANGELES REGION

- Grimes Canyon to Propane Road (EPA Reach 5)
- Propane Road to Blue Cut Gauging Station (EPA Reach 6)
- Blue Cut Gauging Station to West Pier Highway 99 (EPA Reach 7)
- West Pier Highway 99 to Bouquet Canyon Road Bridge (EPA Reach 8)
- Bouquet Canyon Road Bridge to above Lang Gauging Station (EPA Reach 9)

Based on EPA's review of the TMDL submittals under Section 303(d), I have concluded that the TMDLs adequately address the pollutants of concern and, upon implementation, will result in attainment of the applicable water quality standards. These TMDLs include wasteload and load allocations as needed, take into consideration seasonal variations and critical conditions, and provide adequate margins of safety.

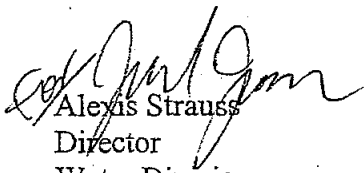
The State has provided adequate opportunities for public review and comment on the TMDLs and demonstrated how public comments were considered in the final TMDLs. All required elements are adequately addressed; therefore, the TMDLs are hereby approved pursuant to Clean Water Act Section 303(d)(2).

The TMDL submittals contain detailed plans for implementing the bacterial density reductions for MDR, and nitrogen species load reductions for LAR and SCR. Furthermore, the implementation plans identify critical monitoring efforts to continually assess the status of the water quality for MDR, LAR and SCR. Current federal regulations do not define TMDLs as containing implementation plans; therefore, EPA is not taking action on the implementation plans provided with the TMDLs. EPA commends the Regional Board's commitment to review the TMDLs and associated data and information upon (1) the completion of the technical reports and studies evaluating and proposing measures to implement necessary pollutant load reductions, and (2) implementation of phased pollutant reductions by major sources.

We would like to continue working with you and the Regional Boards to ensure that future TMDLs are adopted and submitted to EPA on schedule and, in particular, ensure that TMDLs required under the consent decrees are adopted by the State in time to meet the decree deadlines.

The enclosed reviews discuss the basis for these decisions in greater detail. I appreciate the State and Regional Boards' work to complete and adopt these TMDLs and look forward to our continuing partnership in TMDL development. If you have questions concerning this approval, please call me at (415) 972-3435 or David Smith at (415) 972-3416.

Sincerely,


Alexis Strauss
Director
Water Division

18 March 2004

enclosures

cc: Dennis Dickerson, Los Angeles RWQCB

TMDL Checklist

State: California

Waterbodies: Marina Del Rey Harbor Mother's Beach and Back Basins

Pollutant(s): Bacteria

Date of State Submission: February 10, 2004

Date Received By EPA: February 14, 2004

EPA Reviewer: Cindy Lin & David Smith

Review Criteria	Comments
<p>1. Submittal Letter: State submittal letter indicates final TMDL(s) for specific water(s)/pollutant(s) were adopted by state and submitted to EPA for approval under 303(d).</p>	<p>Letter dated February 10, 2004. The Los Angeles Regional Water Quality Control Board (Regional Board) completed the TMDL Staff Report on June 9, 2003. The TMDL was adopted by the Los Angeles Regional Water Quality Control Board (Regional Board) through Resolution No. 2003-012 on August 7, 2003, and by the State Water Resources Control Board (State Board) through SWRCB Resolution 2003-0072 on November 19, 2003. The State Office of Administrative Law approved the TMDL on February 3, 2004.</p> <p>The Regional Board developed a TMDL and determined the primary impairment impacting the 2002 303(d) listed Marina Del Rey Harbor Mother's Beach and back basins is elevated levels of bacterial indicator densities in dry-weather urban runoff and storm water conveyed by storm drains.</p> <p>The Regional Board adopted the TMDL for impaired portions of Marina Del Rey Harbor Mother's Beach and back basins (Final Staff TMDL report and letter dated February 10, 2004).</p> <p>In addition, we note that the TMDL submission identified designated beneficial uses for each of the waters addressed in the TMDL and indicated that State water quality standards apply to each of them (Final Staff TMDL Report, Table 2.2, pp. 16).</p>
<p>2. Water Quality Standards Attainment: TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.</p>	<p>The Final Staff TMDL Report, dated September 2003, pp32-41, and Basin Plan Amendment Summary. The TMDL is designed to implement the existing water quality objectives for bacteria. Mother's Beach is impaired for coliform and beach closures and the back basins of Marina Del Rey Mother's Beach are impaired for coliform.</p> <p>This TMDL is based on a multi-part numeric target based on the updated bacteria objectives for marine waters designated for water contact recreation, REC-1, specified in the Basin Plan Amendment adopted by the Regional Board on October 25, 2001 and approved by the State Water Resources Control Board on July 18, 2002. The State interpreted these WQS objectives to include four bacterial indicators, total coliform, fecal coliform, enterococcus, and the fecal-to-total coliform ratio, and found that these pollutants caused impairments of designated beneficial uses.</p> <p>The Staff TMDL Report analysis concludes that exceedences of the bacterial indicator objectives can adversely affect beneficial uses including recreational</p>

	<p>water contact (REC-1 and REC-2), navigation, commercial and sport fishing, marine habitat, wildlife habitat, preservation of biological habitats, rare threatened, or endangered species habitat, and shellfish harvesting (pp15).</p> <p>Consistent with the water quality standards the geometric mean objectives will be strictly applied. The single sample limits will be applied on a case-by-case basis.</p> <p>The State reasonably concluded that the water quality objectives, as outlined in the Basin Plan, will lead to the attainment of the specified numeric targets, load allocations, and wasteload allocations which call for the effective reduction of targeted pollutant loads. These efforts will result in elimination of the adverse effects associated with high bacterial indicator counts in the water and bring about attainment of the applicable numeric standards.</p>
<p>3. Numeric Target(s): Submission describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. Numeric water quality target(s) for TMDL identified, and adequate basis for target(s) as interpretation of water quality standards is provided.</p>	<p>The Final Staff TMDL Report dated September 2003, pp25, and Basin Plan Amendment Summary Attachment A, pp2-3. TMDL implements numeric WQS for total coliform, fecal coliform, enterococcus, and the fecal-to-total coliform ratio.</p> <p>Numeric targets were expressed as total coliform, fecal coliform and enterococcus densities, and fecal-to-total coliform ratio. In this TMDL, the numeric targets are measured at point zero (i.e., point at which water from the storm drain initially mixes with ocean water), to provide an effective means of protecting the beneficial use by requiring compliance with the objectives wherever water contact recreation occurs (pp.25). For Mother's Beach, Basins D, E and F, the targets will apply at existing or new monitoring sites, with samples taken at ankle depth. These targets apply during dry and wet weather because water contact recreation occurs throughout the year. Geometric mean targets are based on a rolling 30-day period and may not be exceeded at any time (pp 25).</p> <p>To eliminate further adverse effects, the State set the following targets to protect marine waters designated for water contact recreation (REC-1 and REC-2 beneficial uses) (pp.8-9):</p> <p>Geometric Mean</p> <ul style="list-style-type: none"> a. Total coliform density shall not exceed 1,000/100ml; b. Fecal coliform density shall not exceed 200/100ml; c. Enterococcus density shall not exceed 35/100ml. <p>Single Sample</p> <ul style="list-style-type: none"> a. Total coliform density shall not exceed 10,000/100ml; b. Fecal coliform density shall not exceed 400/100ml; c. Enterococcus density shall not exceed 104/100ml. <p>Protection of REC-1 uses will protect REC-2 uses because REC-1 objectives for pathogen indicators are more stringent. The numeric targets in this TMDL are to be applied at point zero, consistent with the Ocean Plan (2001) and the Basin Plan. Point zero, or the point at which water from the discharge initially mixes with ocean water, is consistent with the "point of initial dilution" as defined in the CA Ocean Plan. The staff report concluded that since inadequate data exist to accurately define dilution zones, point zero designation will provide the most protective point at which to meet the objectives.</p> <p>The State's approach is a reasonable and environmentally protective approach for accounting for uncertainty in the relationship between pollutant loading</p>

	<p>levels and attainment of water quality standards, as required by the CWA Section 303(d)(1)(C).</p>
<p>4. Source Analysis: Point, non-point, and background sources of pollutants of concern are described, including the magnitude and location of sources. Submittal demonstrates all significant sources have been considered.</p>	<p>Final Staff TMDL Report, pp26-34 and Basin Plan Amendment Summary Attachment A, pp3-4. The TMDL analysis considered existing information concerning the sources of bacteria indicators impairing Marina Del Rey Mother's Beach and the back basins. The primary sources of high bacterial indicator densities are from storm water and dry weather runoff from storm drains regulated under four NPDES permits (County of LA Municipal Storm Water, CA Dept. of Transportation, Construction Activities Storm Water General Permit, and Industrial Activities Storm Water General Permit) and general NPDES permits, general industrial and/or general construction storm water permits issued in December 2002 (for a list of these general NPDES permits, please see Table 4-1 in the Final Staff TMDL Report, pp27). The bacteria loads associated with the latter group are not expected to be a significant source of bacteria.</p> <p>Runoff from storm drains with elevated levels of bacterial indicators may be caused by sanitary sewer leaks and spills, illicit connections of sanitary lines to the storm drain system, runoff from homeless encampments, pet waste, and illegal discharges from recreational vehicle holding tanks among others (pp26). Overall, source analysis found exceedences of total coliform, fecal coliform and enterococcus during dry and wet weather.</p> <p>Non-point sources of bacterial contamination at Mother's Beach and the back basins include marina activities such as waste disposal from boats, boat deck and slip washing, swimmer wash-off, restaurant washouts and natural sources from birds, waterfowl and other wildlife. Waste disposal from boats is not considered a significant source of bacterial loading.</p> <p>The Staff TMDL report adequately considered all significant sources by examining data from primary sources and augmenting existing information; specifically, the Regional Board conducted a characterization of wet-weather bacteria densities from various land uses and in major waterways in conjunction with other stakeholders. The TMDL sufficiently described all sources of impairments.</p>
<p>5. Allocations: Submittal identifies appropriate waste load allocations for point sources and load allocations for non-point sources. If no point sources are present, waste load allocations are zero. If no non-point sources are present, load allocations are zero.</p>	<p>Final Staff TMDL Report, pp39-49 and Basin Plan Amendment Summary Attachment A, pp4-5. The TMDL includes both specific waste load allocations and a general load allocation.</p> <p>EPA concludes that the State's approach of setting the TMDLs and allocations in terms of the number of sample days that may exceed a bacterial density amount is appropriate for the waters and pollutants of concern and consistent with the provisions of 40 CFR 130.2(i), which authorizes expression of TMDLs in terms of "mass per time, toxicity, or other appropriate measure."</p> <p>The TMDL sets the relevant allocations as "allowable number of exceedence days" because bacterial density and the frequency of single sample exceedences are most relevant to public health. For the single sample targets, each existing monitoring site is assigned an allowable number of exceedance days for three time periods (1) summer dry-weather (April 1 to October 31), (2) winter dry weather (November 1 to March 31), and (3) wet-weather (defined as days with 0.1 inch of rain or greater and the three days following the rain event) (Basin Plan Amendment Attachment A to Resolution No. 2003-012, pp3).</p> <p>The WLA and LAs are expressed as the number of daily or weekly sample days</p>

that may exceed the single sample targets identified at a monitoring site. WLAs and LAs are expressed as allowable exceedance days because the bacterial density and frequency of single sample exceedences are the most relevant to public health protection. For each monitoring site, allowable exceedance days are set on an annual basis as well as for three other time periods identified in Section 3 (Numeric Targets) above.

The allowable number of exceedance days for a monitoring site for each time period is based on the lesser of two criteria (1) exceedance days in the designated reference system and (2) exceedance days based on historical bacteriological data at the monitoring site. This ensures that bacteriological water quality is at least as good as that of a largely undeveloped system and that there is no degradation of existing water quality (Attachment A of Basin Plan Amendment Summary, pp4).

Wasteload Allocations

All WLAs for summer dry-weather are zero (0) days of allowable exceedences. The WLAs for winter dry-weather and wet weather vary by monitoring location as identified in Table 7.5 of the Final TMDL Staff Report (pp 49).

The proposed waste load allocation for the rolling 30-day geometric mean for the County of Los Angeles, City of Los Angeles, Culver City, and CalTrans is zero (0) days of allowable exceedences. Since discharges from general NPDES permits, general industrial storm water permits and general construction storm water permits are not expected to be a significant source of bacteria, the proposed WLAs for these dischargers are zero (0) days of allowable exceedences for all three time periods and for the single sample limits and the rolling 30-day geometric mean (pp39). Any future enrollees under a general NPDES permit, general industrial storm water permit or general construction storm water permit within the Marina Del Rey watershed will also be subject to a WLA of zero days of allowable exceedences.

Load Allocations

Since all storm water runoff to Mother's Beach and the back basins is regulated as a point source, load allocations (LAs) of zero (0) days of allowable exceedences for non-point sources are proposed in this TMDL for each time period. The LA for the rolling 30-day geometric mean for non-point sources is zero (0) days of allowable exceedences (pp39).

Based on the information in the Staff TMDL Report, Basin Plan Amendment Summary Attachment A, and the letter of July 14, 2003, EPA concludes that the TMDLs include as appropriate waste load and load allocations which are consistent with the TMDLs and with the provisions of the Clean Water Act and federal regulations. The Regional Board's TMDL acknowledges the presence of significantly high bacterial indicator densities. TMDL is defined in the federal regulation as the sum of all waste load allocations from point sources and load allocations for non-point sources and natural background (40 CFR 130.2(i)). The State's TMDL focuses permissibly, and in EPA's view properly, on point source loadings of the bacterial indicators from four NPDES dischargers and seven general NPDES, general industrial storm water and general construction storm water permittees.

6. Link Between Numeric Target(s) and Pollutant(s) of

Final Staff TMDL Report, pp35-36. The Regional Board provided adequate linkage analysis for the bacterial indicators. Analyses of bacterial indicator

<p>Concern: Submittal describes relationship between numeric target(s) and identified pollutant sources. For each pollutant, describes analytical basis for conclusion that sum of wasteload allocations, load allocations, and margin of safety does not exceed the loading capacity of the receiving water(s).</p>	<p>density exceedance probabilities were calculated to determine the potential for impairment at different points in Mother's Beach and the back basins. The results show a clear indication that storm water is the primary source of bacteria loading within the marina. Studies show that bacterial degradation and dilution during transport from the watershed to the receiving water do not significantly affect bacterial indicator densities (Appendices H and G). Consequently, the loading capacity is defined in terms of bacterial indicator densities and is equivalent to the numeric targets set for this TMDL (pp36).</p> <p>EPA concludes the analysis sufficiently describes the link between numeric targets and the pollutant sources in Marina Del Rey Mother's Beach and the back basins.</p>
<p>7. Margin of Safety: Submission describes explicit and/or implicit margin of safety for each pollutant.</p>	<p>Final Staff TMDL Report, pp37 and Basin Plan Amendment Summary Attachment A, pp7. The TMDL includes an implicit and explicit margin of safety. The implicit margin of safety is included through several conservative assumptions. The TMDL assumes that no dilution takes place between the storm drain and where the effluent initially mixes with the receiving water, and that bacterial degradation rates are not fast enough to affect bacteria densities in the receiving water. An explicit margin of safety is incorporated by allowing the load allocations to have exceedences of the single sample targets not more than 5% of the time on an annual basis, based on the cumulative allocations proposed for dry and wet weather in the WLAs and LAs discussion (pp37). Currently, the Regional Board concludes the presence of water quality impairment if more than 10% of the samples at a site exceed the single sample bacteria objectives annually.</p> <p>EPA considers this a permissible and appropriate way of dealing with uncertainty concerning the relationships between WLAs and water quality.</p>
<p>8. Seasonal Variations and Critical Conditions: Submission describes method for accounting for seasonal variations and critical conditions in the TMDL(s)</p>	<p>Final Staff TMDL Report, pp36 and Basin Plan Amendment Summary Attachment A, pp7-8. Seasonal variations is defined by three time periods (summer dry-weather, winter-dry weather, and wet-weather) based on public health concerns and observed natural background levels of exceedance of bacterial indicators. The critical condition for bacteria loading occurs during wet weather. To set the allowable number of exceedance days, the Regional Board selected the 90th percentile storm (in terms of wet days) as the reference year. This 90th percentile storm reference year was selected to adequately address compliance and respond to jurisdictions and responsible agencies to plan for a "worst-case scenario (pp36). In 10% of the wetter years, more than the number of exceedance days is expected.</p> <p>Since responsible jurisdictions and agencies will plan for a worst-case scenario, fewer exceedance days than the maximum allowed in drier years is expected (pp8).</p> <p>The TMDL adequately accounts for the seasonal variations and critical conditions by examining the existing flow record and water quality data. The impairment assessment sufficiently included these situations in the analysis and margin of safety.</p>
<p>9. Public Participation: Submission documents provision of public notice and public comment opportunity; and explains how public comments were considered in the final TMDL(s).</p>	<p><u>Regional Board Documents:</u> The following public meetings were provided by the Regional Board: CEQA Scoping Meeting and Workshop, May 6, 2003; Public Discussion of Marina Del Rey Bacteria TMDL Meeting, July 17, 2003; Regional Board Public Hearing, August 7, 2003. Summary of responses to public comments by Regional Board, August 2003.</p>

	<p>The Regional Board provided public notice and opportunities to comment on the TMDL through mailings to the Basin Plan mailing lists, by holding public meetings, and by hearing the public comments at these meetings of the TMDL. Several public comments were received in writing and in oral testimony. The State demonstrated how it considered these comments in its final decision by providing reasonably detailed responsiveness summaries, which include responses to each comment.</p>
<p>10. Technical Analysis: Submission provides appropriate level of technical analysis supporting TMDL elements.</p>	<p>The TMDL analysis provides a thorough review and summary of available information concerning bacterial indicators and beach closures in the specific areas of concern. We conclude the Regional Board was reasonably diligent in its technical analysis of the four bacterial density indicators at Marina Del Rey Mother's Beach and back basins, and other locations along Mother's Beach.</p>

TMDL Checklist

State: California

Waterbodies: Los Angeles River and its Tributaries

Pollutant(s): Nitrogen Compounds and Related Effects

Date of State Submission: March 5, 2004

Date Received By EPA: March 9, 2004

EPA Reviewer: Cindy Lin & David Smith

Review Criteria	Comments
<p>1. Submittal Letter: State submittal letter indicates final TMDL(s) for specific water(s)/pollutant(s) were adopted by state and submitted to EPA for approval under 303(d).</p>	<p>Letter dated March 5, 2004. The Los Angeles Regional Water Quality Control Board (Regional Board) completed the Los Angeles River Nitrogen Compounds and Related Effects TMDL on May 2, 2003. TMDL was adopted by the Los Angeles Regional Water Quality Control Board through Resolution No. 2003-009 on July 10, 2003, and by the State Water Resources Control Board (State Board) through Resolution 2003-0074 on November 19, 2003. The State Office of Administrative Law approved the TMDL on February 27, 2004.</p> <p>The Regional Board developed multiple TMDLs for the Los Angeles River and its many tributaries (based on the 1998 California 303(d) list of impaired waterbodies) to address elevated levels of nutrients that adversely impact the water and contribute to algae, odors, scum, foam and toxicity (please see Table 1, pp14, of the TMDL Staff Report for the listed tributaries). Ammonia, pH, nutrients (including nitrite and nitrate), algae, odors, scum/foam are addressed through limitations on nitrogen compounds (TMDL Staff Report, pp1). These TMDLs address Analytical Unit 11 of the 1999 Consent Decree.</p> <p>EPA has concluded that the State's determinations that the Los Angeles River and its tributaries are impaired due to nitrogen compounds and that a TMDL should be established are reasonable and consistent with the requirements of Section 303(d).</p> <p>In addition, we note that the Regional Board approved a Basin Plan amendment to update the ammonia objectives in inland surface waters on April 25, 2002 to protect beneficial uses pertaining to aquatic life. Publicly Owned Treatment Works (POTWs) were required to make the necessary adjustments and improvements to meet the water quality objectives for ammonia or conduct studies leading to site-specific objective for ammonia to meet the updated objectives.</p>
<p>2. Water Quality Standards Attainment: TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.</p>	<p>The Staff TMDL Report, dated May 2, 2003. The TMDL is designed to implement the existing numeric and narrative objectives for all nitrogen compounds and related effects (Staff TMDL Report, pp17). The Basin Plan provides Water Quality Objectives for nitrogen compounds and their related effects, including numeric and narrative objectives. The TMDL uses the water quality objectives established in the Basin Plan to address ammonia, nitrate, nitrite, total nitrogen, pH, toxicity, and biostimulatory substances.</p>

The State reasonably concluded that attainment of the specified numeric targets and associated TMDLs and waste load allocations which call for the effective reduction of targeted pollutant loads, will result in elimination of the adverse effects associated with high nutrient concentrations in the water and bring about attainment of the applicable numeric standards.

3. Numeric Target(s):

Submission describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. Numeric water quality target(s) for TMDL identified, and adequate basis for target(s) as interpretation of water quality standards is provided.

The Staff TMDL Report dated May 2, 2003, pp17-24, and Basin Plan Amendment Summary, pp6. The numeric targets for ammonia are based on the "USEPA 1999 Update of Ambient Water Quality Criteria for Ammonia (USEPA 1999)", and have already been adopted by the Regional Board (Resolution No. 2002-11). The revised ammonia criteria reflects research and data analyzed since 1985 and includes improved modification of the relationship between ammonia toxicity, pH and temperature, and recognizes the increased sensitivity of early life stage forms of fish to ammonia toxicity. For ammonia, numeric targets are pH and temperature dependent, and concentration based to protect water quality criteria for aquatic life. This TMDL appropriately used a numeric target for oxidized nitrogen compounds that is based on existing objectives in the Basin Plan and covers nitrate, nitrite, and total nitrogen, which are known to promote plant and algae growth (Staff TMDL Report, pp22). Specific numeric water quality objectives for pH and toxicity are provided in the Basin Plan (Staff TMDL Report, pp23). Narrative objectives are provided for biostimulatory substances, color, suspended, or settleable materials, taste and odor, and floating material in the Basin Plan. The State interpreted these narrative objectives to mean that the biostimulatory substances shall not cause excessive growth in a manner that can cause water quality problems (e.g., pH altered beyond acceptable range), aesthetic problems (e.g., scum, odor), and other results such as decreased flow velocity and reduction of recreational uses (pp24). Since data are not sufficient to develop and implement a numeric target for algae in this TMDL, algal biomass and DO concentrations will be measured as part of the TMDL monitoring plan, and observations will be recorded of odors and scum during monitoring. EPA concurs with the States' analysis that the large nitrogen and ammonia reductions required by these TMDLs and implementation plans should be sufficient to address the observed violations of numeric objectives for pH and toxicity and of narrative objectives (e.g., for biostimulatory substances).

The Staff TMDL Report analysis identifies six of the beneficial uses most sensitive to nitrogen compounds and related effects, such that protection of these six uses will serve to protect all beneficial uses, include warm freshwater habitat, wildlife habitat, wetland habitat, rare, threatened, or endangered species, ground water recharge, water contact recreation (REC-1) and non-contact recreation (REC-2).

Numeric targets for this TMDL are listed as follows:
Receiving water correspondent to major discharge point

Total Ammonia (NH₃-N)

Los Angeles River Reach 5 – Donald C. Tillman WRP

1 Hr Avg	4.7 mg/L
30 day Avg	1.6 mg/L

Los Angeles River Reach 3 – Los Angeles-Glendale WRP

1 Hr Avg	8.7 mg/L
30 day Avg	2.4 mg/L

	<p>Burbank Western Channel – Burbank WRP 1 Hr Avg 10.1 mg/L 30 day Avg 2.3 mg/L</p> <p>Nitrate-nitrogen & Nitrite-nitrogen</p> <p>Nitrate-nitrogen 30 day Avg 8 mg/L</p> <p>Nitrite-nitrogen 30 day Avg 1 mg/L</p> <p>Nitrate-nitrogen + nitrite-nitrogen 30 day Avg 8 mg/L</p> <p>The State’s approach is a reasonable and environmentally protective approach for accounting for uncertainty in the relationship between pollutant loading levels and attainment of water quality standards, as required by the CWA Section 303(d)(1)(C).</p>
<p>4. Source Analysis: Point, nonpoint, and background sources of pollutants of concern are described, including the magnitude and location of sources. Submittal demonstrates all significant sources have been considered.</p>	<p>Staff TMDL Report, pp39-51 and Basin Plan Amendment Summary, pp7. The TMDL analysis considered existing information concerning the sources of nitrogen compounds into the Los Angeles River. The primary source of nitrogen compounds to the Los Angeles River is discharge from the major POTWs, Donald C. Tillman Water Reclamation Plant (WRP), the Los Angeles-Glendale WRP, and the Burbank WRP. During dry weather, the major POTWs contribute 84.1% of the total dry weather nitrogen load (Basin Plan Amendment Summary, pp7). The total nitrogen loading from the major POTWs averaged 2,243 MT/yr from 1995-2000. The minor sources of nitrogen are from Tapia Water Reclamation Facility, Whittier Narrows WRP, the Los Angeles Zoo WRP, and storm water and urban runoff from municipal separate storm sewer systems (MS4s). These minor sources are not considered a significant source of nitrogen into the Los Angeles River. Non-point source contributions of nitrogen to the Los Angeles River are minimal.</p> <p>The Regional Board Staff TMDL report adequately considered all significant sources by examining NPDES and effluent data from all major and minor POTWs, in addition to other primary sources, such as the separate storm sewer systems. The Regional Board collected supplementary samples and conducted further monitoring to augment the existing information; specifically, the Regional Board conducted a survey of the algal biomass in the Los Angeles River. The TMDL sufficiently described all sources of impairments.</p>
<p>5. Allocations: Submittal identifies appropriate wasteload allocations for point sources and load allocations for nonpoint sources. If no point sources are present, wasteload allocations are zero. If no nonpoint sources are present, load allocations are zero.</p>	<p>Staff TMDL Report, pp61-66 and Basin Plan Amendment Summary, pp7-9. The TMDL includes specific wasteload allocations for all significant sources.</p> <p>EPA concludes that the State’s approach of setting the TMDLs and allocations on a concentration basis is appropriate for the waters and pollutants of concern and consistent with the provisions of 40 CFR 130.2(i), which authorizes expression of TMDLs in terms of “mass per time, toxicity, or other appropriate measure.”</p> <p>Waste load Allocations for Major Point Sources</p> <p>Waste load allocations are included for the Donald C. Tillman, Los Angeles-Glendale and Burbank POTWs, which represent approximately 85% of the total nitrogen loadings to the system. The waste load allocations are concentrations</p>

based for these three POTWs to meet in-stream water quality objectives for ammonia, nitrate-N + nitrite-N, nitrate, and nitrite. A 20% explicit margin of safety has been included for nitrate, nitrite, and nitrate + nitrite to account for any lack of knowledge concerning the relationships between effluent limitations and water quality (TMDL Staff Report, pp62).

Ammonia (mg/L)	1 Hr Avg WLA	30 Day Avg WLA
Donald C. Tillman WRP	4.2	1.4
Los Angeles-Glendale WRP	7.8	2.2
Burbank WRP	9.1	2.1

Nitrate-N, Nitrite-N, Nitrate-N + Nitrite-N (mg/L)	NO3-N		
	NO3-N	NO2-N	NO3-N + NO2-N
Donald C. Tillman WRP	7.2	0.9	7.2
Los Angeles-Glendale WRP	7.2	0.9	7.2
Burbank WRP	7.2	0.9	7.2

Wasteload Allocations for Minor Point Sources

WLAs for minor point sources vary depending upon the reaches into which the sources discharge, based on variations in instream pH and temperature conditions in different reaches (TMDL Staff Report, p64). These WLAs apply to all point sources regulated by the NPDES program that discharge to these reaches.

Ammonia (mg/L)	1 Hr Avg WLA	30 Day Avg WLA
Los Angeles River above Los Angeles-Glendale WRP	4.7	1.6
Los Angeles River below Los Angeles-Glendale WRP	8.7	2.4
Los Angeles River Tributaries	10.1	2.3

WLAs for nitrate-N, nitrite-N and nitrate-N + nitrite-N are set equal to numeric targets in mg/L as listed below:

	30 Day Avg WLA
NO3-N	8
NO2-N	1
NO3-N + NO2-N	8

Concentrations of ammonia, nitrate and nitrite in runoff from other land uses during both dry and wet weather are very low relative to POTW discharge concentrations. It is estimated that WLAs for the POTWs, which represent 85% of the total nitrogen and 97% of the ammonia loadings, will result in the attainment of water quality objectives (TMDL Staff Report, pp65).

Load Allocations

Source assessment analysis indicates that nitrogen loads from non-point sources are not significant compared with loads from point sources. Load allocations are not included in the TMDLs, but the State indicates that load allocations may need to be established if future monitoring following the implementation of the load reductions shows significant loads do discharge from non point sources (TMDL Staff Report, pp66).

	<p>EPA concludes that the TMDLs include as appropriate wasteload allocations which are consistent with the TMDLs and with the provisions of the Clean Water Act and federal regulations. The Regional Board's TMDL acknowledges the presence of significantly high nitrogen loads almost entirely from point sources. TMDL is defined in the federal regulation as the sum of all waste load allocations from point sources and load allocations for non-point sources and natural background (40 CFR 130.2(i)). The State's TMDL focuses permissibly, and in EPA's view properly, on point source loadings of total nitrogen loadings from three major POTWs.</p>
<p>6. Link Between Numeric Target(s) and Pollutant(s) of Concern: Submittal describes relationship between numeric target(s) and identified pollutant sources. For each pollutant, describes analytical basis for conclusion that sum of wasteload allocations, load allocations, and margin of safety does not exceed the loading capacity of the receiving water(s).</p>	<p>Staff TMDL Report, pp51-60 and Tetra Tech Report: <u>Modeling Approach and Calibration Report for the Los Angeles River Basin Nutrient and Fecal Coliform TMDLs, 2002</u>, and Basin Plan Amendment Summary, pp7. The Regional Board provided adequate linkage analysis for total nitrogen loadings in the Los Angeles River. The linkage between nutrient sources and in-stream water quality was assessed by using hydrodynamic and water quality models. The Environmental Fluid Dynamics Code 1-D was used to model the hydrodynamic characteristics of the Los Angeles River and the Water Quality Analysis Simulation Program was used to model water quality. In addition, studies were conducted to develop the residence time and determine the nutrient uptake rates by algae.</p> <p>The model was calibrated for flow and velocity and validated with measured in-stream nitrogen species concentrations. In general, the model tends to over predict the in-stream concentrations compared with measured data. The model was also used to assess the effectiveness of various load reduction strategies to meet numeric targets for ammonia and nitrate+nitrite.</p> <p>EPA concludes the analysis sufficiently describes the link between numeric targets and the pollutant sources in the Los Angeles River.</p>
<p>7. Margin of Safety: Submission describes explicit and/or implicit margin of safety for each pollutant.</p>	<p>Staff TMDL Report, pp67 and Basin Plan Amendment Summary, pp9. The TMDL includes an explicit margin of safety of 10% for ammonia, nitrate, nitrite and nitrate + nitrite loads to account for uncertainty in the sources and linkage analysis. An implicit margin of safety is also included in the model through conservative model assumptions and statistical analysis to ensure the number of samples exceeding the water quality objectives will be less than 10% of the samples measured in-stream.</p> <p>EPA considers this a permissible and appropriate way of dealing with uncertainty concerning the relationships between TMDLs, WLAs and water quality conditions.</p>
<p>8. Seasonal Variations and Critical Conditions: Submission describes method for accounting for seasonal variations and critical conditions in the TMDL(s)</p>	<p>Staff TMDL Report, pp66 and Basin Plan Amendment Summary, pp10. Based on long-term data reflecting river flow and in-stream measurements of temperature and pH, the critical season for loading is during low flow (dry weather) in summer. Low flow is a critical period for impacts on the Los Angeles River and tributaries because less surface flow is available to dilute effluent discharge. The critical condition for this TMDL is based on the low flow condition defined as the 7Q10 (i.e., lowest consecutive seven-day flow in a ten-year period).</p> <p>The TMDL adequately accounts for the seasonal variations and critical conditions by examining the existing flow record and water quality data. The impairment assessment sufficiently included these situations in the analysis and margin of safety.</p>
<p>9. Public Participation:</p>	<p><u>Regional Board Documents (Regional Water Quality Control Board</u></p>

<p>Submission documents provision of public notice and public comment opportunity; and explains how public comments were considered in the final TMDL(s).</p>	<p><u>Administrative Record):</u> Public Stakeholder Steering Committee Meetings composed of vested stakeholders and technical scientists were held in May and August of 2001 to discuss the technical components and related decisions of the TMDL. The following public meetings were held for the Los Angeles River Nitrogen Compounds and Related Effects TMDL: Meeting to discuss implementation, February 25, 2002; CEQA Scoping Meeting, April 10, 2003; Public Hearing, July 10, 2003. Summary of responses to public comments by Regional Board, July 2003.</p> <p>The Regional Board provided public notice and opportunities to comment on the TMDL through mailings to the Basin Plan mailing lists, by holding public meetings, and by hearing the public comments at these meetings of the TMDL. Several public comments were received in writing and in oral testimony. The State demonstrated how it considered these comments in its final decision by providing reasonably detailed responsiveness summaries, which include responses to each comment.</p>
<p>10. Technical Analysis: Submission provides appropriate level of technical analysis supporting TMDL elements.</p>	<p>The TMDL analysis provides a thorough review and summary of available information concerning nitrogen compound loadings in the specific areas of concern. We conclude the Regional Board was reasonably diligent in its technical analysis of ammonia, nitrate, nitrite and nitrate+nitrite loads into Los Angeles River and its tributaries. Neither the Regional Board nor public commenters identified research nor study results which provided an analytical basis for setting the TMDL at a level higher than identified at this time.</p>

TMDL Checklist

State: California
Waterbodies: Santa Clara River
Pollutant(s): Nitrogen Compounds
Date of State Submission: March 5, 2004
Date Received By EPA: March 9, 2004
EPA Reviewer: Cindy Lin & David Smith

Review Criteria	Comments
<p>1. Submittal Letter: State submittal letter indicates final TMDL(s) for specific water(s)/pollutant(s) were adopted by state and submitted to EPA for approval under 303(d).</p>	<p>Letter dated March 5, 2004. The Los Angeles Regional Water Quality Control Board (Regional Board) completed the TMDL on June 16, 2003. The TMDL was adopted by the Los Angeles Regional Water Quality Control Board through Resolution No. 03-011 on August 7, 2003, and by the State Water Resources Control Board (State Board) through Resolution No. 2003-0073 on November 19, 2003. The State Office of Administrative Law approved the TMDL on February 27, 2004.</p> <p>The Regional Board developed a TMDL and determined the primary pollutants impacting the 2002 303(d) listed Santa Clara River are ammonia, nitrate and nitrite. In order of impact, the sources of impairment are point source discharges, groundwater and non-point source loading and other non-point sources.</p>
<p>2. Water Quality Standards Attainment: TMDL and associated allocations are set at levels adequate to result in attainment of applicable water quality standards.</p>	<p>The Staff TMDL Report, dated June 16, 2003. The TMDL is designed to implement the existing numeric and narrative objectives for nitrogen compounds and their related effects (Staff TMDL Report, pp20-34). The Regional Board's Basin Plan provides numeric water quality objectives for ammonia (acute and chronic criteria), nitrate, nitrite, and nitrate + nitrite. Narrative objectives are provided for biostimulatory substances and toxicity. The existing water quality objectives are also protective of the ground water beneficial use (Staff TMDL Report, pp29).</p> <p>The State reasonably concluded that attainment of the specified numeric and narrative targets and associated TMDLs; load allocations, and wasteload allocations which call for the reduction of targeted pollutant loads, will result in elimination of the adverse effects associated with nitrogen loads in the water and bring about attainment of the applicable standards.</p>
<p>3. Numeric Target(s): Submission describes applicable water quality standards, including beneficial uses, applicable numeric and/or narrative criteria. Numeric water quality target(s) for TMDL identified, and adequate basis for target(s) as interpretation of water quality standards is provided.</p>	<p>The Staff TMDL Report dated June 16, 2003, pp34-40 and Basin Plan Amendment Summary, pp6. TMDL implements numeric WQS for ammonia, nitrate, nitrite and nitrate + nitrite. The Staff TMDL Report analysis concludes that exceedences of the these nitrogen compounds can adversely affect the beneficial uses including municipal and domestic supply, groundwater recharge, agricultural supply, industrial and surface water quality, recreational water contact (REC-1 and REC-2) and sensitive habitat uses (pp21).</p> <p>Numeric targets in this TMDL are based on the water quality objectives in the Basin Plan and an explicit margin of safety (10%) (Staff TMDL Report, pp34).</p>

The numeric targets for ammonia are based on the "USEPA 1999 Update of Ambient Water Quality Criteria for Ammonia (USEPA 1999)", and have already been adopted by the Regional Board (Resolution No. 2002-11). For ammonia, numeric targets are pH and temperature dependent, and concentration based to protect water quality criteria for aquatic life.

The ammonia numeric targets are based on median concentrations of pH and temperature and do not assume application of an ammonia water effects ratio.

Numeric targets for this TMDL are listed as follows:

Total Ammonia (NH₃-N) (mg/L)

	1Hr Avg	30 day Avg
Reach 8	14.8	3.2
Reach 7 above Valencia	4.8	2.0
Reach 7 below Valencia	5.5	2.0
Reach 7 County Line	3.4	1.2
Reach 3 above Sta Paula	2.4	1.9
Reach 3 at Sta Paula	2.4	1.9
Reach 3 below Sta Paula	2.2	1.7

In accordance with the Basin Plan, the numeric targets for nitrate, nitrite and nitrate+nitrite are daily maximum values.

Nitrate-nitrogen & Nitrite-nitrogen (mg/L)

	NO ₃ -N	NO ₂ -N	NO ₃ -N+NO ₂ -N
Reach 8	4.5	0.9	4.5
Reach 7	4.5	0.9	4.5
Reach 6	9.0	0.9	9.0
Reach 5	4.5	0.9	4.5
Reach 4	4.5	0.9	4.5
Reach 3	4.5	0.9	4.5
Reach 2	9.0	0.9	9.0
Reach 1	9.0	0.9	9.0

In addition, the Basin Plan designates ground water recharge (GWR) as a beneficial use of the Los Angeles River. For all ground waters of the Region, "ground waters shall not exceed 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen (NO₃-N + NO₂-N), 45 mg/L as nitrate (NO₃), 10 mg/L as nitrate-nitrogen (NO₃-N), or 1 mg/L as nitrite-nitrogen (NO₂-N).

Narrative objectives for biostimulatory substances and toxicity are based on the Basin Plan. The TMDL analysis shows that the numeric targets will implement the narrative objectives. As a precautionary practice, the Implementation Plan will provide monitoring and special studies to verify that the TMDL will implement the narrative objectives.

The State's approach is a reasonable and environmentally protective approach for accounting for uncertainty in the relationship between pollutant loading levels and attainment of water quality standards, as required by the CWA Section 303(d)(1)(C).

<p>nonpoint, and background sources of pollutants of concern are described, including the magnitude and location of sources. Submittal demonstrates all significant sources have been considered.</p>	<p>TMDL analysis provided a detailed summary of all nutrient sources in the Santa Clara River watershed and found the direct sources include discharge sources and sources transported via surface runoff or groundwater flow. Discharge sources include reservoir releases and direct point source discharges from the Saugus and Valencia WRPs and the Fillmore and Santa Paula POTWs. Groundwater sources include septic system discharges. Surface runoff sources are a result of land application activities and include diversions for groundwater recharge and/or irrigation, agricultural pumping, atmospheric deposition, and fertilizer application. Utilizing information from discharge monitoring reports, NPDES permits, groundwater quality data, rainfall data from nearby meteorological stations, fertilization loading rates, etc., loadings were computed for dry and wet periods for ammonia and nitrate by reach (Table 12, Staff TMDL Report, pp43).</p> <p>Source analysis identified all potential sources and determined that point source loads contribute almost all of ammonia, nitrite, and phosphorus in the water quality impaired segments of the Santa Clara River Watershed. The source of nitrate is due to a combination of point, non-point and groundwater sources. Non-point source loads are greater during the wet year than dry year and contribute nitrate to the impaired river segments through groundwater accretion (Staff TMDL Report, pp43). Further evaluation of non-point sources is established in the Implementation Plan.</p> <p>The source analysis provided an effective basis for evaluating the source loads in the watershed and determined the primary water quality parameters of concern are nutrients, specifically ammonia, nitrite and nitrate.</p> <p>The Staff TMDL report adequately considered all significant sources by examining data from primary sources. The TMDL sufficiently described all sources of impairments.</p>
<p>5. Allocations: Submittal identifies appropriate wasteload allocations for point sources and load allocations for nonpoint sources. If no point sources are present, wasteload allocations are zero. If no nonpoint sources are present, load allocations are zero.</p>	<p>Staff TMDL Report, pp55-66 and Basin Plan Amendment Summary, pp7-8. The TMDL includes both waste load allocations for point sources and load allocations for non point sources.</p> <p>EPA concludes that the State's approach of setting the TMDLs and allocations on a concentration basis is appropriate for the waters and pollutants of concern and consistent with the provisions of 40 CFR 130.2(i), which authorizes expression of TMDLs in terms of "mass per time, toxicity, or other appropriate measure."</p> <p>Waste load Allocations</p> <p>Waste load allocations are established for the Water Reclamation Plants and Publicly Owned Treatment Works, and the municipal separate storm sewer system permittees in the upper reaches of the watershed. Waste load allocations for four different alternatives (1. setting effluent concentrations at the numeric target, 2. reducing the ammonia loading, 3. & 4. evaluate loads based on expected upgrades of WRP with a nitrate effluent concentration of 8.0 mg/L or 6.7 mg/L) were considered and were calculated using the WARMF model. The tightest condition (Alternative 4) was selected because it provided full compliance in all reaches and both the ammonia and nitrate+nitrite targets will be met.</p> <p>Concentration-based waste loads are allocated to the Fillmore and Santa Paula POTWs, major point sources of ammonia and nitrate+nitrite in Reach 3; concentration-based waste loads are allocated to Valencia and Saugus WRPs,</p>

major point sources of ammonia and nitrate+nitrite in Reaches 7 and 8.

Total Ammonia (NH3-N) mg/L:

POTW	1 Hr-Avg	30 Day Avg
Saugus WRP	5.6	2.0
Valencia WRP	5.2	1.75
Fillmore POTW	4.2	2.0
Santa Paula POTW	4.2	2.0

Nitrate (NO3-N), Nitrite (NO2-N) and Nitrate+Nitrite (NO2-N + NO3-N)

30 Day Avg WLA*

POTW	NO2-N	NO3-N	NO2-N + NO3-N
Saugus WRP	0.9	7.1	7.1
Valencia WRP	0.9	6.8	6.8
Fillmore POTW	0.9	8.0	8.0
Santa Paula POTW	0.9	8.0	8.0

*Receiving water monitoring is required on a weekly basis to ensure compliance with the water quality objectives for nitrite, nitrate, nitrite + nitrate, and dissolved oxygen.

Minor Point Sources

Minor waste load allocations are set equivalent to the water quality objectives for ammonia, nitrite, nitrate and nitrate + nitrite. WLAs for minor dischargers discharging into the following reaches are:

	mg/L		
	30-Day Avg NH3-N	1 Hr Avg NH3-N	30-Day Avg NO3-N+NO2-N
Reach 7	1.75	5.2	6.8
Reach 3	2.0	4.2	8.1

MS4 and Stormwater Sources

Concentration-based waste loads are allocated to municipal, industrial and construction stormwater sources regulated under the NPDES permits. WLAs for stormwater permittees discharging into the following reaches are:

	mg/L		
	30-Day Avg NH3-N	1 Hr Avg NH3-N	30-Day Avg NO3-N+NO2-N
Reach 7	1.75	5.2	6.8
Reach 3	2.0	4.2	8.1

In general, minor point sources (including MS4 and Stormwater sources) are not considered a significant source of ammonia, nitrite or nitrate loads to the Santa Clara River. However, due to potential localized effects on water quality, these waste loads will be implemented through the individual NPDES permits

and the Monitoring and Reporting Programs associated with those permits (Staff TMDL Report, pp61).

Load Allocations

Concentration-based loads for nitrogen compounds are allocated for non-point sources. LAs for non point sources discharging into the following reaches are:

	mg/L
	NH3-N + NO2-N + NO3-N
Reach 7	8.5
Santa Clara River	10
Mint Cyn Reach 1	10
Wheeler Canyon/Todd Barranca	10
Brown/Long Canyon	10

Additional monitoring will be established in the Implementation Plan to verify the nitrogen non point source loadings from agricultural and urban runoff and groundwater discharge.

Based on the information in the Staff TMDL Report, Basin Plan Amendment, and the letter of March 5, 2004, EPA concludes that the TMDLs include as appropriate waste load and load allocations which are consistent with the TMDLs and with the provisions of the Clean Water Act and federal regulations. The Regional Board's TMDL acknowledges the presence of significantly high nutrient loadings from both point and non-point sources. TMDL is defined in the federal regulation as the sum of all waste load allocations from point sources and load allocations for non-point sources and natural background (40 CFR 130.2(i)). The State's TMDL focuses permissibly, and in EPA's view properly, on point source loadings of ammonia, nitrate and nitrite from major WRPs and POTWs and minor dischargers and MS4 and stormwater sources, and non point source loadings of ammonia, nitrate and nitrite from surface runoff and groundwater discharge.

6. Link Between Numeric Target(s) and Pollutant(s) of Concern: Submittal describes relationship between numeric target(s) and identified pollutant sources. For each pollutant, describes analytical basis for conclusion that sum of wasteload allocations, load allocations, and margin of safety does not exceed the loading capacity of the receiving water(s).

Staff TMDL Report, pp44-55 and Appendix A, and Basin Plan Amendment Summary, pp6. The Regional Board provided adequate linkage analysis between nitrogen sources and the in-stream water quality. An appropriate linkage was established by using hydrodynamic and water quality models. The Watershed Analysis Risk Management (WARMF) was used to model the hydrodynamic characteristics and water quality of the Santa Clara River. WARMF can simulate the physical and chemical processes that affect river hydrology and water quality. Model analysis showed major point sources (WRPS and POTWs) were the primary contributors to in-stream ammonia and nitrate plus nitrite loads. Non-point sources and minor point sources composed a much smaller fraction of the loads.

The model defines the storm flow conditions and adequately accounts for critical conditions (i.e., wet and dry weather months) and allows estimation of an implicit margin of safety associated with conservative assumptions in the model. The model includes a sensitivity analysis to account for parameter inputs with high uncertainty. The model was calibrated against critical conditions and monitoring data to verify its range of accuracy (pp48-55).

EPA concludes the analysis sufficiently describes the link between numeric targets and the pollutant sources in Santa Clara River.

<p>7. Margin of Safety: Submission describes explicit and/or implicit margin of safety for each pollutant.</p>	<p>Staff TMDL Report, pp66-69 and Basin Plan Amendment Summary, pp9. The TMDL includes an implicit and explicit margin of safety. The implicit margin of safety is included in the model through conservative model assumptions and statistical analysis. An explicit margin of safety is incorporated by reserving 10% of the load for uncertainty circumstances and limited data set availability. In addition, a number of special studies (e.g., rapid nitrogen compound disappearance, nitrate loading via groundwater) are planned to address the many assumptions built in the model.</p> <p>EPA considers this a permissible and appropriate way of dealing with uncertainty concerning the relationships between WLAs and water quality.</p>
<p>8. Seasonal Variations and Critical Conditions: Submission describes method for accounting for seasonal variations and critical conditions in the TMDL(s)</p>	<p>Staff TMDL Report, pp71-73 and Basin Plan Amendment Summary, pp9. The critical condition identified for this TMDL is based on the low flow condition defined as the 7Q10. Furthermore, the driest six months of the year are identified as a more critical condition for nitrogen compounds because less surface flow is available to dilute effluent discharge. The critical conditions for water quality in the Santa Clara River for nitrogen compounds are during low flow conditions, in particular at the end of the dry season. Model results also suggest the first strong storm events after a dry period can lead to significant short-term increases of nitrate compounds in the river. The implementation plan includes monitoring to verify this latter potential critical condition.</p> <p>The TMDL adequately accounts for the seasonal variations and critical conditions by examining the existing flow record and water quality data. The impairment assessment sufficiently included these situations in the analysis and margin of safety.</p>
<p>9. Public Participation: Submission documents provision of public notice and public comment opportunity; and explains how public comments were considered in the final TMDL(s).</p>	<p><u>Regional Board Documents (Regional Board Administrative Record):</u> Public Stakeholder Steering Committee Meetings composed of vested stakeholders were held on a monthly basis from January 2002 to June 2003. The following public meetings were held for the Santa Clara River Nitrogen Compounds TMDL: Stakeholder meetings, October 15, 2002 and July 23, 2003; CEQA Scoping Meeting, June 12, 2003; Public Hearing, August 7, 2003. Summary of responses to public comments by Regional Board, July 2003.</p> <p>The Regional Board provided public notice and opportunities to comment on the TMDL through mailings to the Basin Plan mailing lists, by holding public meetings, and by hearing the public comments at these meetings on the TMDL. Several public comments were received in writing and in oral testimony. The State demonstrated how it considered these comments in its final decision by providing reasonably detailed responsiveness summaries, which include responses to each comment.</p>
<p>10. Technical Analysis: Submission provides appropriate level of technical analysis supporting TMDL elements.</p>	<p>The TMDL analysis provides a thorough review and summary of available information concerning nitrogen compounds impairing the specific areas of concern. We conclude the Regional Board was reasonably diligent in its technical analysis of nitrogen compounds in the Santa Clara River and its tributaries. Neither the Regional Board nor public commenters identified research nor study results which provided an analytical basis for setting the TMDL at a level higher than identified at this time.</p>