

**STATE OF CALIFORNIA  
REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION**

**STAFF REPORT FOR REGULAR MEETING OF 5–6, 2013**  
Prepared October, 2013

**ITEM NUMBER:** 16

**SUBJECT:** Adopting a Total Maximum Daily Load for Nitrate in the Arroyo Paredon Watershed, Santa Barbara County, California

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**THIS ACTION:** Adopt Resolution No. R3-2013-0050

**SUMMARY**

Staff recommends adoption of the proposed Total Maximum Daily Load (TMDL) for nitrate in the Arroyo Paredon Watershed.

Arroyo Paredon is on the 2006 Clean Water Act section 303(d) list of impaired waters due to excessive levels of nitrate. The water quality objective protective of the municipal and domestic water supply beneficial use (MUN) is a nitrate concentration of 10 mg/L-N; nitrate concentration in Arroyo Paredon exceeds this water quality objective.

The geographic scope of this TMDL (the project area) encompasses approximately 2,791 acres of the Arroyo Paredon Watershed located in Santa Barbara County. The watershed flows from the steep southern face of the Santa Ynez Mountains to the Pacific Ocean just northwest of Carpinteria. The Arroyo Paredon is listed as impaired because the water quality objectives for Municipal and Domestic Supply (MUN) are not being met due to the excessive concentration of nitrate.

The proposed TMDL, numeric targets, and load allocations for nitrate will result in meeting narrative water quality objectives for Municipal and Domestic Supply in the Arroyo Paredon Watershed. Central Coast Water Board staff has identified sources of nitrate that are causing or contributing to water quality impairment, has identified parties responsible for these sources, and has proposed load allocations necessary to achieve the TMDL.

Staff has identified the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands in the Central Coast Region (Agricultural Order) as the existing regulatory mechanism to achieve the TMDL. No new regulatory mechanism is being proposed to implement and achieve the TMDL.

This TMDL is being adopted not through a basin plan amendment, but through the Central Coast Water Board's approval of the resolution associated with this agenda item, which includes findings that the Agricultural Order will implement the TMDL. According to state policy, the Board is encouraged to take this approach of TMDL approval when the impairments can be addressed through a single action by the Board; the approach conserves valuable state resources and avoids regulatory redundancy.

In this agenda item, staff recommends the Central Coast Water Board approve the resolution (Attachment 1 to this Staff Report) that establishes a Total Maximum Daily Load (TMDL) for nitrate in the Arroyo Paredon Watershed.

Staff developed the technical basis for the TMDL and associated allocations, which is provided in the Final Project Report (Attachment 2 to this staff report). The Project Report is provided at the Central Coast Water Board's website:

[http://www.waterboards.ca.gov/centralcoast/water\\_issues/programs/tmdl/docs/arroyo\\_paredon\\_nitrate/index.shtml](http://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/docs/arroyo_paredon_nitrate/index.shtml)

## DISCUSSION

### Project Development for the TMDL

Staff developed the TMDL using data and information from the Central Coast Ambient Monitoring Program (CCAMP) and Central Coast Cooperative Monitoring Program (CMP). Staff also used land use data and conversations with staff from other agencies.

### Numeric Targets

The Central Coast Region's Water Quality Control Plan (Basin Plan) contains specific water quality objectives that apply to all inland surface waters, enclosed bays and estuaries (CCRWQCB, 1994, pg. III-3). Relevant water quality objectives for this project include the Basin Plan Water Quality Objective for Municipal and Domestic Supply (MUN), which states:

*Waters shall not contain concentrations of chemical constituents in excess of the limits specified in California Code of Regulations, Title 22, Article 4, Chapter 15, Section 64435, Tables 2 and 3 as listed in Table 3-2 (Region 3 Basin Plan, p III-3). In Table 3-2, the maximum contaminant level (MCL) for Nitrate (as NO<sub>3</sub>) in Domestic or Municipal Supply is 45 milligrams per liter (mg/L).*

The MUN water quality objective of 45 mg/L nitrate as nitrate (NO<sub>3</sub> as NO<sub>3</sub>) is equivalent to 10 mg/L nitrate as nitrogen (NO<sub>3</sub> as N).

The Basin Plan contains general water quality objectives for all inland surface waters, enclosed bays, and estuaries. The narrative water quality objective for toxicity states, in part:

*All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in human, plant, animal, or aquatic life.*

Staff selected water column numeric target values for nitrate as a direct measure of water quality conditions for the protection of municipal and domestic supply (MUN) beneficial use. The Basin Plan numeric water quality objective for nitrate (as nitrogen) is 10 mg/L; therefore, the nitrate target is set at the Basin Plan water quality objective as follows:

- *Receiving water column nitrate must not exceed 10 mg/L-N.*

**Source Analysis**

Discharges from irrigated agriculture in the project area are the single controllable source causing impairment due to nitrate. Staff described sources of nitrate in the project area in Chapter 4 of the Final Project Report (which is Attachment 2 of this staff report).

**TMDL and Allocations**

The TMDL for nitrate in Arroyo Paredon Creek is a concentration-based TMDL and is equal to the numeric target, as described in the numeric targets section above. Concentration-based TMDLs are an appropriate expression of TMDLs and meet USEPA requirements for TMDL approval.

Owners and operators of agricultural lands using nitrate are assigned load allocations equal to the TMDL and numeric targets. Note that the TMDL and allocation is a receiving water concentration equal to the existing water quality objective in place to protect the municipal and domestic water supply beneficial use (MUN).

**Implementation and Monitoring**

Compliance with the Agricultural Order will implement the TMDL. Implementing parties will comply with the Agricultural Order (Order R3-2012-0011) and the Monitoring and Reporting Programs in accordance with Orders R3-2012-0011-01, R3-2012-0011-02, and R3-2012-0011-03 to meet load allocations and achieve the TMDL. Current requirements in the Agricultural Order that will result in achieving the load allocations include:

- Enroll in the Agricultural Order.
- Implement, and update as necessary, management practices to reduce nutrient loading.
- Maintain existing, naturally occurring, riparian vegetative cover in aquatic habitat areas.
- Develop, update, and implement Farm Plans.

The Agricultural Order includes monitoring and reporting requirements. Owners and operators of irrigated agricultural lands will perform monitoring and reporting in accordance with Monitoring and Reporting Program Orders R3-2012-0011-01, R3-2012-0011-02, and R3-2012-0011-03, as applicable to the operation. Current monitoring requirements include a sampling site at Arroyo Paredon and include nitrate monitoring. Additionally, individual reporting requirements include a description of individual nitrate discharges. Information gathered from the Cooperative Monitoring Program, the Central Coast Ambient Monitoring Program, and individual reporting requirements will inform progress toward achieving this TMDL.

**Determination of Compliance with Load Allocations for Irrigated Lands**

Demonstration of compliance with the load allocations is consistent with compliance with the Agricultural Order. Load allocations will be achieved through a combination of implementation of management practices and strategies to reduce nitrogen compound loading, and water quality monitoring. Flexibility to allow owners/operators of irrigated lands to demonstrate compliance with load allocations is a consideration; additionally, staff is aware that not all implementing parties are necessarily contributing to or causing surface water impairment.

To allow for flexibility, Water Board staff will assess compliance with load allocations using one or a combination of the following:

- A. Attaining the load allocations in the receiving water.
- B. Demonstrating quantifiable receiving water mass load reductions.
- C. Implementing management practices that are capable of achieving load allocations identified in this TMDL.
- D. Providing sufficient evidence to demonstrate that they are and will continue to be in compliance with the load allocations; such evidence could include documentation submitted by the owner/operator to the Executive Officer that the owner/operator is not causing waste to be discharged to impaired waterbodies resulting or contributing to violations of the load allocations.

#### **Time Schedule for Tracking Progress and Achieving the TMDL**

The target date to achieve the allocations, numeric targets, and TMDL in the impaired waterbodies addressed in this TMDL is October 1, 2016. This date coincides with the time schedule of milestones described in Table 4 of the Agricultural Order. Additionally, staff concludes that the TMDL is achievable by this date because the results of best management practices will be realized quickly. Best management practices will benefit water quality quickly because groundwater is not significantly contributing to surface water nitrate loading (4.77 percent of the total load). Also, available information suggests that a relatively small number of agricultural operations are contributing to the impairment.

Water Board staff will reevaluate impairments caused by nitrate when monitoring data is submitted and during renewals of the Agricultural Order. Water Board staff will modify the conditions of the Agricultural Order, if necessary, to address remaining impairments.

#### **ANTI-DEGRADATION**

The proposed TMDL is consistent with the provisions of the State Water Resources Control Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California" and 40 CFR 131.12. The adoption of the proposed TMDL and TMDL implementation strategy will not de-designate or limit beneficial use designations, will not relax any water quality standard, and will not result in lowering of water quality; therefore, state and federal anti-degradation analyses are not required.

#### **PUBLIC INVOLVEMENT**

Staff conducted stakeholder outreach efforts during TMDL development. Staff held a public workshop in September 2013 and engaged with stakeholders during the development of the TMDL. Staff provided a formal written comment period where comments were solicited from a range of stakeholders including local land owners and land operators, agricultural representatives, resource professionals, and public agencies.

The staff report, resolution, and technical project reports were made available for a 30-day public comment commencing on October 1, 2013. Water Board staff solicited public comment from a range of stakeholders including local land owners and land operators, agricultural representatives, environmental representatives, resource professionals, and public agencies.

One public comment letter was received from:

1. Ms. Janet Parrish, TMDL Liaison, U.S. Environmental Protection Agency (USEPA), Region IX, San Francisco, in a letter dated October 28, 2013. Ms. Parrish states that USEPA supports and recommends adoption of this TMDL by the Central Coast Water Board.

**RECOMMENDATION**

Adopt Resolution No. R3-2013-0050

**ATTACHMENTS:**

The attachments are available at:

[http://www.waterboards.ca.gov/centralcoast/water\\_issues/programs/tmdl/docs/arroyo\\_paredon\\_nitrate/index.shtml](http://www.waterboards.ca.gov/centralcoast/water_issues/programs/tmdl/docs/arroyo_paredon_nitrate/index.shtml)

1. Draft Resolution No. R3-2013-0050
2. Final Project Report: "Total Maximum Daily Load for Nitrate in Arroyo Paredon Watershed, Santa Barbara County"
3. Notice of Public Hearing