

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

**EXECUTIVE OFFICER SUMMARY REPORT  
JUNE 12, 2019**

**ITEM No.8**

**SUBJECT**

Update on the Santa Margarita River Estuary Water Quality Restoration Strategy and Investigative Order No. R9-2019-0007. (*Hiram Sarabia*)

**STAFF RECOMMENDATION**

This is an informational item and the Board will not take an action.

**KEY ISSUES**

1. The Santa Margarita River Estuary (Estuary) is a high priority water body because it provides significant refuge, foraging, and breeding areas for several threatened and endangered species, making it a Key Area for habitat and ecosystems. While these ecological functions occur in the Estuary, its aquatic life beneficial uses are impaired by eutrophic conditions. Instead of adopting a traditional Total Maximum Daily Load (TMDL), Board staff are pursuing an alternative Water Quality Restoration Strategy (Strategy) to reduce nutrient loading to the Estuary that relies on full compliance and implementation of existing permits for storm water and agriculture.
2. In order to have a reliable monitoring and assessment program in place to measure progress towards Estuary restoration, the Executive Officer recently issued an Investigative Order (Order) to Marine Corps Base Camp Pendleton and the Phase I MS4 permittees in the watershed. Data from the Order will also verify model assumptions of the linkage between nutrient loading to the Estuary and eutrophic conditions therein.
3. This project involves significant stakeholder collaboration, commitment, and resources. Since 2011, staff have worked with the Santa Margarita River Nutrient Initiative Stakeholder Group to develop a water quality restoration strategy for the Estuary.

**PRACTICAL VISION**

Existing and proposed efforts to address nutrients in the Santa Margarita River Estuary support important goals of the San Diego Water Board's Practical Vision:

1. Healthy waters realized through collaborative, outcome-focused efforts (Chapter 3 goals);
2. Achieving healthy waters through strategic and effective government actions, targeting high priority waters (Chapter 1 goals); and
3. Improving physical and biological integrity in naturally occurring wetlands and supporting vulnerable native species (Chapter 3 goals).

## DISCUSSION

The Estuary's watershed (Watershed) is the largest of the San Diego region's eleven watersheds covering approximately 750 square miles and encompassing portions of both Riverside County and San Diego County (Supporting Document 1). Approximately 73.5 percent of the Watershed land surface falls within Riverside County, which includes all or portions of the Cities of Murrieta, Temecula, and Wildomar. The remaining 26.5 percent of the Watershed is located in San Diego County and includes Marine Corps Base Camp Pendleton and the unincorporated communities of Fallbrook and Rainbow.

The Estuary is a high priority, or [key water body](#), because it is one of the few remaining and largely unmodified coastal estuaries in southern California, providing 192 acres of valuable estuarine habitat including mudflats, salt pannes, salt marsh, and subtidal habitats.<sup>1</sup> This unique estuarine habitat provides important refuge, foraging areas, and breeding grounds for several threatened and or endangered species, as well as coastal marine species. These include populations of State and federally endangered or threatened species such as the California Least Tern (*Sternula antillarum browni*), Western Snowy Plover (*Charadrius alexandrinus nivosus*), Tidewater Goby (*Eucyclogobius newberryi*), Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*), Light-footed Ridgway's Rail (*Rallus obsoletus levipes*), Least Bell's Vireo (*Vireo bellii pusillus*) and Southern California Steelhead (*Oncorhynchus mykiss*). In addition, the aquifer immediately upstream of the Estuary provides nearly all of Marine Corps Base Camp Pendleton's drinking water.

In the 1990s, the San Diego Water Board and others observed that more total nitrogen and total phosphorus (nutrients) were entering the Santa Margarita River Estuary than it could assimilate. Those excess nutrients led to unsightly algal blooms and eutrophic conditions that harmed aquatic life, impaired the ecosystem, and impacted aesthetic beneficial uses of the Estuary (Supporting Document No. 2). To investigate the impairment of the Estuary, the San Diego Water Board issued an Investigative Order (Order No. R9-2006-0076) in July of 2006, which required monitoring of several lagoons and sloughs in the San Diego region. Since this process began, however, two historic major discharges of nutrients to the Estuary have ceased (treated sewage from Camp Pendleton and groundwater dewatering from the North County Transit District) and agricultural discharges from the former Stuart Mesa Agricultural Fields have been substantially reduced. In addition, the San Diego Water Board has revised the regional municipal storm water permit and issued new permits for commercial agriculture and for Camp Pendleton that directly address watershed sources of nutrients that are the root causes of eutrophic conditions in the Estuary.

---

<sup>1</sup> See Resolution No. R9-2017-0030 for Key Beneficial Uses and Key Areas at [http://www.waterboards.ca.gov/sandiego/water\\_issues/programs/key\\_areas/](http://www.waterboards.ca.gov/sandiego/water_issues/programs/key_areas/)

Since 2011, staff have worked collaboratively with the Santa Margarita River Watershed Nutrient Initiative Stakeholder Group (Stakeholder Group) (Supporting Document No. 3) to address eutrophic conditions in the Estuary and the Santa Margarita River watershed in an integrated fashion.<sup>2</sup> The Stakeholder Group agreed to assess the Estuary through a nutrient numeric endpoint (NNE) process — a scientific methodology implemented for California estuaries by the Southern California Coastal Water Research Project that uses multiple lines of evidence and numeric models to more reliably measure ecological health, rather than relying solely on ambient nutrient concentrations.

At the Board's September 2017 meeting,<sup>3</sup> staff provided an update on the progress of the Stakeholder Group, its selection of the NNE-based numeric targets of dissolved oxygen and algal biomass, and the calculated TMDLs, load allocations, and waste load allocations to achieve the targets. Staff informed the Board that ultimately the results of this TMDL analysis may be used by the San Diego Water Board to adopt a formal, rule-making TMDL or to justify a decision to endorse an alternative restoration approach.

### **Preferred Restoration Strategy**

Board staff favors using an alternative TMDL approach to reduce nutrient loading to the Estuary because it provides more flexibility for adaptive management. This approach relies on continued collaboration with the Stakeholder Group, which is currently investigating nutrients in the Santa Margarita River. The success of the strategy depends primarily on the full compliance and implementation of existing requirements and discharge prohibitions in the Regional MS4 Permit; Commercial Agriculture WDRs; and Phase II Storm Water Permit; and on having a reliable monitoring and assessment program in place to measure progress towards Estuary restoration.

To that end, Investigative Order No. R9-2019-0007 (Order) was recently issued (Supporting Document No. 4). The Order requires investigation of the condition of the Santa Margarita River Estuary and the linkage between the nutrient loading trends and the restoration of the water quality and beneficial uses in the Estuary resulting from implementation actions by the Cities of Murrieta, Temecula, and Wildomar, the Counties of San Diego and Riverside, the Riverside Flood Control and Water Conservation District, and the United States Marine Corps Base Camp Pendleton. The Order requires the implementation of monitoring and assessment for a period of four years from 2020 to 2023.

Staff is also prepared to supplement discharger water quality monitoring in the watershed as needed using resources of the Monitoring, Assessment, and Research Unit. Altogether, staff will monitor progress of the restoration Strategy toward achieving the NNE-based targets by analyzing information from the aforementioned monitoring efforts and permit compliance reports.

Progress updates of the restoration strategy will be provided in future Executive Officer reports to the Board.

---

<sup>2</sup> The Santa Margarita River and its main tributaries in San Diego and Riverside Counties are impaired for several pollutants, including phosphorus and toxicity.

<sup>3</sup> See September 13, 2017 Item 7, "Information Item: Status Update on a Pathway to Water Quality Restoration in the Santa Margarita River Estuary." [https://www.waterboards.ca.gov/sandiego/board\\_info/agendas/2017/Sep/Sep13.html](https://www.waterboards.ca.gov/sandiego/board_info/agendas/2017/Sep/Sep13.html)

## **LEGAL CONCERNS**

None

## **PUBLIC NOTICE**

The Meeting Notice and Agenda for today's meeting was posted on the Board's website and sent to those who subscribed to the email list for Board Meetings on May 22, 2019. This item was publicly noticed in the Meeting Notice and Agenda for the June 12, 2019 meeting.

## **SUPPORTING DOCUMENTS**

1. Map of the Santa Margarita River Estuary Watershed
2. Santa Margarita River Estuary, California. Nutrients Total Maximum Daily Load Project Draft Staff Report (July 2018)
3. Santa Margarita River Nutrient Initiative Stakeholder Group Participants
4. Investigative Order No. R9-2019-0007: An Order Directing the Cities of Murrieta, Temecula, and Wildomar, the Counties of San Diego and Riverside, the Riverside Flood Control and Water Conservation District, and the United States Marine Corps Base Camp Pendleton to Design and Implement a Water Quality Improvement Monitoring and Assessment Program for Eutrophic Conditions in the Santa Margarita River Estuary and Watershed, California