

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

**EXECUTIVE OFFICER SUMMARY REPORT
APRIL 10, 2024**

ITEM 3

SUBJECT

Informational Item: Santa Margarita River Estuary and Watershed monitoring and assessment results for the Estuary nutrient Water Quality Restoration Plan, presented by the Santa Margarita River Nutrient Initiative Group (*Melissa Liotta*)

STAFF RECOMMENDATION

Informational item only; no recommendation.

KEY ISSUES

The Santa Margarita River Estuary (Estuary) and the Santa Margarita River (River) are considered high priorities by the San Diego Water Board for restoration of habitat and ecosystem beneficial uses. Both are listed as impaired due to excess nutrient loading driving eutrophic conditions that degrade the water quality protective of each waterbodies' beneficial uses.

In 2019, the San Diego Water Board Executive Officer approved the Santa Margarita River Estuary Water Quality Restoration Plan (Estuary Restoration Plan) and issued Investigative Order No. [R9-2019-0007](#) to establish a four-year monitoring and assessment program to measure progress towards restoration of the Estuary's water quality. The Santa Margarita River Nutrient Initiative Group will present an assessment of the Estuary based upon the completed monitoring program.

To further restore water quality throughout the Watershed, San Diego Water Board staff are developing the Santa Margarita River Water Quality Restoration Plan (River Restoration Plan). Environmental Scientist Melissa Liotta from the Restoration & Protection Planning Unit will provide an update on the plan's development.

PRACTICAL VISION

The Santa Margarita River Watershed restoration plans have been considered and developed in alignment with several important goals of the San Diego Water Board's Practical Vision (PV):

PV Chapter 1, *Strategizing for Healthy Waters*, is focused on achieving healthy waters in the San Diego Region through the Key Beneficial Use and Key Areas Approach. The Estuary and River Restoration Plans provide restoration strategies to protect the most sensitive key beneficial uses in the Watershed: Estuarine Habitat; Spawning, Reproduction, and or Early Development; Migration of Aquatic Organisms; Rare, Threatened, or Endangered Species; Warm Freshwater Habitat; and Cold Freshwater Habitat.

PV Chapter 2, *Monitor and Assess*, addresses the need for robust and increased water quality information from monitoring and assessment programs to better protect waters and increase communication and transparency with communities in the San Diego Region. The data collected in collaboration with various stakeholders to support the Estuary and River Restoration Plans has improved all stakeholders' understanding of the nutrient-related impairments and potential restoration strategies.

PV Chapter 3, *Recover Stream, Wetland, and Riparian Areas*, prioritizes a meaningful net gain of wetland habitats and protection and restoration of streams and riparian areas. The Estuary and River both represent rare sparse development of Southern California coastal wetland and free-flowing river habitats with unique beneficial uses that contribute to climate change resiliency in our Region. The Estuary and River Restoration Plans aim to restore and maintain these habitats to mitigate climate change, protect our region's most sensitive beneficial uses, and continue the ecosystem services that these vital habitats provide.

PV Chapter 7, *Mitigate Climate Change Impacts*, emphasizes the San Diego Water Board's commitment to using robust and current scientific information on climate change and strategies to mitigate its effects. To inform restoration strategies, the River Restoration Plan applies watershed-specific climate change modeling to better understand how the River's water quality would likely respond under a range of plausible climate scenarios.

DISCUSSION

The Santa Margarita River Estuary Water Quality Restoration Plan

The Santa Margarita River Nutrient Initiative Group (Stakeholder Group) will present an update on the status of the Estuary based upon findings from the completed four years of monitoring required under Investigative Order No. R9-2019-0007. In addition, Environmental Scientist Hiram Sarabia of the Monitoring, Assessment, and Research Unit will present on monitoring efforts in three tributaries to the River.

The Estuary is one of the few remaining and largely unmodified coastal estuaries in southern California and provides 192 acres of estuarine habitat for several Federal and State threatened and endangered species (Supporting Document 1). Since 2011, San Diego Water Board staff have worked collaboratively with the Stakeholder Group (Supporting Document 2) to address eutrophic conditions in the Estuary and the greater Watershed. This collaborative effort resulted in the development and approval of the Estuary Restoration Plan and Investigative Order No. R9-2019-0007.

The Estuary Restoration Plan's goal is to restore water quality protective of the Estuary's beneficial uses by reducing nutrient loading into the Estuary. Assessment of wildlife beneficial uses affected by excess nutrient loading is based on numeric targets for algal biomass concentration, dissolved oxygen, and healthy benthic invertebrate biodiversity. The plan follows the framework of a USEPA Advance Restoration Plan^{1,2}, which relies on existing regulatory mechanisms to adaptively manage restoration efforts in the Estuary.

The Investigative Order (Supporting Document 3) established a four-year monitoring and assessment workplan (Workplan) to track progress towards achieving the numeric targets outlined in the Estuary Restoration Plan and nutrient loading reductions.

The Workplan, approved by the Board staff in January 2020, required tracking of restoration progress in the Estuary in dry weather for all seasons, through a comprehensive program that included monitoring of:

- Groundwater resurfacing and discharge rates from the Santa Margarita Valley Groundwater Basin,
- Continuous water quality probes to understand year-round trends,
- Estuary and lower River mainstem surface water quality,
- Algal biomass,
- Estuary sediment, and
- Benthic invertebrate community condition.

Additionally, San Diego Water Board staff in the Monitoring, Assessment, and Research Unit (MARU) monitor three tributaries of the River dominated by agricultural land uses to track how loading from these tributaries contributes to eutrophic conditions in the lower River and subsequently in the Estuary. MARU will present an update on its monitoring efforts.

¹USEPA. 2015. Information Concerning 2016 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions. Available: [2016 IR Memo](#) [Accessed Aug 21, 2023].

²USEPA. 2023. Information Concerning 2024 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions. Available: [2024 IR Memo](#) [Accessed Aug 31, 2023].

The Stakeholder Group completed the four-years of monitoring in 2023 and are scheduled to submit a cumulative monitoring and assessment report on March 31st, 2024. San Diego Water Board staff in collaboration with the Stakeholder Group will use this data to assess the status of the Estuary and consider if any adjustments are needed to the Estuary Restoration Plan.

The Santa Margarita River Water Quality Restoration Plan

Environmental Scientist Melissa Liotta from the Restoration & Protection Planning Unit will provide an update on the development of the River Restoration Plan's.

The Santa Margarita River spans 27 miles (Supporting Document 1) and is one of the longest free-flowing undammed rivers in Southern California, providing a vital migratory corridor and perennial cold water refuge pools for the Federally endangered Southern California Steelhead (*Oncorhynchus mykiss*) and other temperature sensitive species. Beginning in 2019, in continuing collaboration with the Stakeholder Group, San Diego Water Board staff have been developing the River Restoration Plan to address eutrophication in the River. Similar to the Estuary Restoration Plan, the goal of the River Plan will be to reduce nutrient loading into the River mainstem and achieve numeric targets for dissolved oxygen, algal biomass concentration, and healthy algal biodiversity.

Development of the River Plan is a project within the [San Diego Water Board's 2021 Triennial Basin Plan Review](#) workplan. The Stakeholder Group, MS4 dischargers, and the Water Board funded scientific support, studies, and analyses provided by the Southern California Coastal Water Research Project, Tetra Tech, and the Naval Information Warfare Center Pacific. This includes updated hydrology and climate change modeling to help ensure that the River Restoration Plan is successful as temperature and hydrology changes over the next several decades. Similar to the Estuary Restoration Plan, the River Restoration Plan will likely employ an Advance Restoration Plan framework and rely on existing regulatory measures, such as NPDES storm water permits and WDRs for agricultural discharges, to achieve restoration of the water quality protective of the beneficial uses of the River.

San Diego Water Board staff have completed several milestones in the River Restoration Plan's development, including the California Environmental Quality Act scoping meeting in 2020, calculations of the nutrient assimilative capacity of the River and hydrology and climate change modeling in 2021, and submission of the draft staff report for external scientific peer review in 2024.

LEGAL CONCERNS

None

PUBLIC NOTICE

The agenda notice for today's meeting was posted on the San Diego Water Board's website and sent to the board's email subscription lists for Board meetings, Santa Margarita River Watershed TMDLs, Santa Margarita River Nutrient Initiative Group, and Basin Planning. This satisfies the Bagley-Keene Open Meeting Act requirements to publish the meeting notice and agenda.

SUPPORTING DOCUMENTS

- 1) Map of the Santa Margarita River Watershed
- 2) Santa Margarita River Nutrient Initiative Stakeholder Group Participants
- 3) Investigative Order No. R9-2019-0007