Santa Ana Regional Water Quality Control Board

Triennial Review Medium Priority List of the Water Quality Control Plan for the Santa Ana River Basin Fiscal Years 2024-2027

Draft Project Descriptions

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CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

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INTRODUCTION

The Santa Ana Region covers parts of southwestern San Bernardino County, western Riverside County, and northwestern Orange County. The *Water Quality Control Plan for the Santa Ana River Basin* (Basin Plan) contains the basis for the Santa Ana Region's regulatory programs. Additionally, the Basin Plan prescribes water quality standards for surface and ground water in the region. Water quality standards as used in the federal Clean Water Act (CWA), includes both the beneficial uses of specific waterbodies and the levels of water quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the Santa Ana Regional Water Quality Control Board (Santa Ana Water Board), and others that are necessary to achieve and maintain the water quality standards and protect beneficial uses.

The Porter-Cologne Water Quality Control Act (California Water Code section 13240) and the CWA both mandate the periodic review of basin plans and the water quality standards contained therein. Section 303(c)(1) of the CWA requires that a state review its water quality standards and, as appropriate, modify and adopt standards at least once every three years, hence the term "triennial review." The purpose of the review is to identify necessary updates and revisions to water quality standards and other elements of the Basin Plan. Updates and revisions may be necessary due to changes in law, regulation, or policies, new/revised water quality criteria, or physical changes in the region, to name a few. The triennial review assists to identify potential priority issues to address through subsequent Basin Plan amendment projects. These Basin Plan amendment projects are referred to as the Triennial Review Priority List.

The Triennial Review High Priority List provides prioritization informed by multiple factors, including Santa Ana Water Board direction and/or key priorities. In addition to the development of a Triennial Review High Priority List, Santa Ana Water Board staff have developed a Medium Priority List for projects that are unlikely to be completed during this triennial review period because of other regional priorities. However, Santa Ana Water Board staff will monitor and work with interested parties on these projects as necessary.

TRIENNIAL REVIEW MEDIUM PRIORITY LIST PROJECT DESCRIPTIONS

Project 1: Consider/Develop a Selenium Site-Specific Objectives for Freshwater within the Newport Bay Watershed

San Diego Creek Reach 1 is the largest tributary to upper Newport Bay and in 2010, was listed as impaired for selenium on the CWA section 303 (d) list. On August 4, 2017, the Santa Ana Water Board adopted total maximum daily loads (TMDLs) for selenium in freshwater for the Newport Bay Watershed. The California Toxic Rule (CTR) establishes criteria for the protection of aquatic life for selenium for freshwater and enclosed bays and estuaries based on water column criteria. The listing for San Diego Creek Reach 1 was based on water column data. However, since the primary route for selenium bioaccumulation is through diet, the impairment assessment was completed using the numeric targets selected for both freshwater fish tissue and bird egg issue and water column concentrations from the CTR. The TMDLs problem statement acknowledges that targets focused on tissue-based ecological risk are more appropriate than the CTR water concentration targets.

In the 2024 303 (d) list, San Diego Creek Reach 1 was listed again as impaired for selenium. In addition, Peter's Canyon Wash, a tributary to San Diego Creek Reach 1, was also listed as impaired for selenium.

The USEPA has been developing new selenium guidance, which will be used to incorporate site-specific objectives with numeric targets for fish tissue and bird egg concentrations rather than numeric water column-based targets. As a result, the TMDLs CTR water column criteria will be eliminated with the implementation of site-specific objectives. These site-specific objectives will allow a better assessment and measurement of selenium impacts in the Newport Bay Watershed.

Selenium is a naturally occurring element that may bioaccumulate through the food chain to levels that can cause adverse effects on higher-level aquatic life and wildlife, including fish and birds that prey on fish and invertebrates. The beneficial uses most at risk from selenium bioaccumulation are warm freshwater habitats, estuarine habitats, marine habitats, preservation of biological habitats of special significance, wildlife habitats, rare, threatened, or endangered species, spawning, reproduction, and development. Selenium toxicity transfers especially to bird eggs, which subsequently impacts reproduction. Bird species that feed and nest in San Diego Creek and other freshwater streams in the area, such as Big Canyon Wash and Peters Canyon Wash, are the most susceptible to the adverse effects of selenium concentrations.

Delays in guidance from the USEPA may prevent this project from being completed during the triennial review period; however, Santa Ana Water Board staff will continue to review fish, bird egg tissue and assessment data submitted by permittees of the TMDLs.

Project 2: Review the Total Maximum Daily Loads for Sediment in the Newport Bay/San Diego Creek Watershed

Upper Newport Bay was included on the CWA 303(d) list as impaired by sediment in 1986, and both reaches of San Diego Creek were listed for sediment in 1996. The Santa Ana Water Board adopted Sediment TMDLs for the Newport Bay Watershed in 1998.
The overall goal of the Sediment TMDLs is to lengthen the interval between dredging events in the Upper Bay to once every twenty to thirty years. The Sediment TMDLs include three targets:

1) Limiting sediment loads to Newport Bay to 62,500 tons/year on a 10-year annual average basis,

2) Requiring that two existing in-bay sediment trapping basins be maintained at an elevation of -7 feet mean sea level or deeper, and

3) Limiting sediment-driven habitat change in Upper Newport Bay to less than one percent.

The 2022 Sediment TMDLs compliance annual report shows that the TMDLs numeric target for loading is currently being attained. The 10-year average annual load is currently 15,297 tons; it is anticipated that it will continue to remain below the TMDLs target due to urbanization of former agricultural areas, stabilization of eroding channels, periodic removal of sediment in San Diego Creek and its tributaries, and periodic removal of sediment from sedimentation basins in the foothills of the watershed (Foothill Retarding Basins).

The TMDLs target for in-bay basin depths is also being achieved. From 2006 to 2010, nearly two million cubic yards of sediment from the Upper Newport Bay were dredged, which lowered the in-bay basin depths to an average of nearly -22 feet mean sea level. Preliminary modeling projections[1] indicate that sediment accumulation in the basins is not likely to reach -7 feet mean sea level for 22 years in Basin Unit I/III and 88 years in Basin Unit II.

Achieving the third TMDLs target (regarding habitat change) has shown mixed results. The habitat surveys and vegetation monitoring indicate a loss and gain of salt marsh over the past 10 years, with losses occurring along the lower edges and gains occurring in mudflat areas. Pickleweed and cordgrass have shown declines over time, which has impacted the federally endangered light-footed Ridgeway's rail (the Ridgeway rail nests in coastal salt marshes where dense stands of cordgrass are present). This overall goal of the Sediment TMDLs has been achieved. However, the Sediment TMDLs may need to be modified to improve the salt marsh habitat in areas to improve wildlife habitat.
In addition, the TMDLs requires that the San Diego Creek in-channel basins and Foothill Retarding Basins be maintained with at least 50% available capacity. The 2022 TDML

[1] "Bathymetric Monitoring" Marine Taxonomic Services, 2020

Basin Capacity Report, determined that Basin 3 in San Diego Creek has slightly less than the required capacity and will require sediment removal.

It is unlikely that a Basin Plan amendment to revise the Sediment TDMLs will be complete during this triennial review period due to other regional priorities and lack of staff resources to develop an alternative regulatory approach. However, Santa Ana Water Board staff will continue to monitor the Sediment TMDLs and work with Orange County Public Works to achieve compliance with sediment discharges and possibly promote salt marsh restoration efforts.

Project 3: Review and Revise the Nutrient Objective for San Diego Creek

The numeric water quality objective for nitrogen (as total inorganic nitrogen) in San Diego Creek Reach 2 (5 mg/L) was established in 1975 and 1983 for Reach 1 (13 mg/L). These objectives were frequently exceeded in the 1980s, resulting in significant algae blooms, and both San Diego Creek and Upper Newport Bay were listed on the CWA 303(d) list as impaired for nutrients. To address the impairment, in 1998, Nutrient TMDLs were developed requiring a 50 percent reduction in nutrient loading (nitrogen and phosphorus) to Newport Bay to reduce algae biomass.

Compared with the pre-TMDLs annual Total Nitrogen loads (1,087,000 lbs.), significant reductions have been achieved. These reduced concentrations have greatly reduced nutrient loading and drastically eliminated excessive algal blooms in Newport Bay. As a result of improved water quality, in 2015, a revised regional monitoring program was approved. The revision included reducing the number of monitoring stations as well as the frequency of monitoring and reporting. The most recent annual report for 2021-2022 shows that all the TMDLs targets are being met except for the annual urban total phosphorus waste load allocation.

Santa Ana Water Board staff has considered implementing new science and policy guidance developed by the State Water Resources Control Board's (State Water Board) Biostimulatory Substances Project to propose new nitrogen objectives for San Diego Creek. The Biostimulatory Substances Project has not yet developed guidance or objectives. As a result, other regional priorities, and pending guidance this issue will likely not be addressed during this triennial review period. During this review period, Santa Ana Water Board staff will work with the interested parties, participate in working groups, and review annual reports to continue to implement the TMDLs.

Project 4: Review of Use Attainability Analyses for Waters De-Designated for the Water Contact and Non-Water Contact Beneficial Uses

Santa Ana Water Board staff conducted Use Attainability Analyses (UAAs) for several waterbodies in the Santa Ana Region following federal regulation (40 CFR 131.10 (g) and USEPA guidance. The UAAs determined that the water contact recreation (REC1) use and non-contact water recreation (REC2) for one reach were not being attained for the following regional waters:

- Santa Ana Delhi Channel (Reaches 1, 2, and the Tidal Prism),

- Greenville-Banning Channel Reach 1 and the Tidal Prism. For Reach 1 of the Greenville-Banning Channel the beneficial use REC2 was also de-designated
- Temescal Creek Reaches 1a and 1b, and
- Cucamonga Creek Reach 1

Federal regulation requires that every three years waters, in which UAAs were used to de-designate uses specified in CWA 101 (a)(2) (also referred to as fishable swimmable uses) must be reviewed and reconsidered to determine if the de-designations are still justified [2]. If new information indicates that the uses are attainable, then the Santa Ana Water Board must revise the uses accordingly through a Basin Plan amendment process.

Santa Ana Water Board staff submitted a report on the status of the Region's de-designated waters in early 2024 to USEPA. Depending on USEPA's review, Santa Ana Water Board staff may have to revise some of the de-designation waters. It is anticipated that at the end of this triennial review period, Santa Ana Water Board staff will complete another review of the UAAs to determine if the de-designations are at that time justified.

Project 5: Develop a Plan to Review Salinity Objectives in Chapter 4 of the Basin Plan

During the 2010 Integrated Report cycle, stakeholders indicated an interest in reviewing the appropriateness of the surface water Total Dissolved Solids (TDS) and other mineral objectives for Chino Creek Reach 1B. In the 2016 Integrated Report, it was stated that although there were exceedances of the TDS objective in Chino Creek Reach 1B, none of the exceedances would cause an impairment to any of the beneficial uses assigned to Chino Creek Reach 1B (REC1, REC2, WARM, WILD, and RARE). State Water Board staff agreed, and Chino Creek Reach 1B was not listed on the 303 (d) list for TDS. Additionally, the 2016 Integrated Report pointed out that the objectives for Chino Creek Reach 1B, which include TDS, Hardness, Sodium, Chlorides, Total Inorganic Nitrogen, Sulfate, and Chemical Oxygen Demand were based on historical values. These anti-degradation objectives were intended to be protective of the groundwater aquifers underlying this water and other regional surface waters.

Considering that the salinity objectives were based on anti-degradation levels to protect groundwater it may be appropriate to reevaluate the objectives. Due to other priorities, lack of resources, and the project complexities may prevent a formal determination of the appropriateness of the salinity objectives within the triennial review period. However, Santa Ana Water Board staff will continue to work with the Basin Monitoring Task Force and other interested parties to assess the appropriateness of the revising the surface water salinity objectives. A related salinity objective issue is included as part of the

[2] 40 CFR 131.20(a)(1)

Triennial Review High Priority List (Issue No. 6) to clarify monitoring procedures for salinity objectives for certain regional surface waters, including Chino Creek.

Project 6: Consider/Revise Total Dissolved Solids Objectives for Rattlesnake, Syphon, and Sand Canyon Reservoirs Based on Storage of Recycled Water

The Irvine Ranch Water District (IRWD) has requested Santa Ana Water Board staff to consider revising the TDS water quality objective for Rattlesnake, Sand Canyon, and Syphon Reservoirs located in Orange County, which are owned and operated by IRWD. The Rattlesnake, Sand Canyon, and Syphon Reservoirs are currently utilized for the storage of recycled water produced at the Michelson Water Reclamation Plant. The current TDS water quality objective in the Basin Plan for all three reservoirs is 720 mg/L. IRWD staff anticipate that the projected increase in water conservation requirements for residences will lead to increases in TDS in the Michaelson Plant effluent (which is sent directly to the reservoirs) that by 2030, the 720 mg/L objective will be exceeded in the reservoirs. IRWD requests that Santa Ana Water Board staff review the reservoir objectives during the triennial review to determine the most appropriate TDS effluent limit and possibly TDS water quality objective that could be established while protecting the beneficial uses of the reservoirs.

IRWD will have to provide appropriate studies to justify revisions to the objective. During this triennial review period, Santa Ana Water Board staff will coordinate with IRWD to determine what technical and environmental documents are necessary to revise the TDS objective and develop a Basin Plan amendment.

Project 7: Consider Revision of the Fecal Indicator Bacteria Objective for the Middle Santa Ana River Total Maximum Daily Loads by Developing a Site-Specific Objective

The Middle Santa Ana River (MSAR) TMDLs Task Force has funded studies, reviewed recent research, and has considered the efforts of other Regional Boards and the State Water Board regarding the relationship between fecal indicator bacteria concentrations in waters of the state and apparent risk levels involved with water contact recreation in those water bodies. Recent studies[1] suggest that the current TMDLs objective does not assess risk accurately, and a site-specific objective with a revised objective or with a different indicator might be better at assessing risk and protecting public health. During the 2024-2027 Triennial Review period, the MSAR Task Force and Santa Ana Water Board staff will continue to review data related to fecal indicator bacteria and consider the development of site-specific objectives for this TMDLs.

A site-specific objective for the MSAR TDMLs could be a better indicator of risk to public health for the REC-1 beneficial use in the MSAR.

Project 8: Consider Adopting Clean Water Act Section 304 (a) Recommended Criteria

Section 304(a)(1) of the CWA requires the USEPA to develop national criteria for water quality that accurately reflects the latest scientific knowledge. These criteria are based on data and scientific judgments on pollutant concentrations and environmental or human health effects. Section 304(a) also provides guidance and recommendations to

states in adopting water quality standards. Criteria are developed for the protection of aquatic life as well as for human health. The Water Boards have the authority to incorporate, as necessary, the USEPA 304(a) recommended criteria. Currently, the State Water Board has not adopted for statewide use these criteria.

The USEPA published in the Federal Register revised national 304(a) recommended criteria. During the triennial review period, Santa Ana Water Board staff will consider adopting the aquatic life and human health criteria, which include:

- Aquatic Life: acrolein, ammonia, cadmium, carbaryl, copper, diazinon, nonylphenol, selenium freshwater, tributyltin, and:
- Human Health: Human Heath Criteria Updates for 94 pollutants.

Of particular importance to the Santa Ana Water Board is USEPA's 2013 Aquatic Life Ambient Water Quality Criteria for Ammonia in Freshwater. The Santa Ana Water Board has adopted two freshwater nutrient TMDLs. Additionally, many effluent dominated waters (i.e., Santa Ana River Reaches, 2, 3, and 4), storm water runoff, and runoff from dairies have the potential to increase ammonia concentrations in surface waters. The Basin Plan's current freshwater ammonia objective does not accurately determine ammonia concentrations in waters with pH and/or temperature outside the ranges specified in the objective, which limits the Santa Ana Water Board's ability to assess waters under CWA section 303 (d) for impairment.

To adopt the Ammonia Criteria may require surveying the regional freshwaters to determine presence or absence of the sensitive aquatic species that the criteria was designed to protect. Staff resources are not sufficient to work on adoption of these criteria. The adoption of these criteria may be more efficiently accomplished by the State Water Board, as the criteria are of statewide importance. Santa Ana Water Board staff will consider adding approved statewide criteria as necessary to the Basin Plan. Where appropriate Santa Ana Water Board staff will incorporate 304 (a) recommended criteria into TMDLs and permits.

Project 9: Consider Adding and Revising Waters to Table 3-1 and 4-1 and Designate Appropriate Beneficial Uses

During the triennial review period, Santa Ana Water Board staff will consider adding and revising regional waters and designate appropriate beneficial uses and water quality objectives, which include the following:

a. List the Rhine Channel separately from Lower Newport Bay. Rhine Channel was an area of much boat repair and other commercial activities which was generally different from the rest of lower Newport Bay. As a result, the Rhine Channel has been significantly impacted by pollutants such as mercury, lead, and zinc much more than the rest of Lower Newport Bay. Rhine Channel is listed on 2024 303 (d) list separately from Upper Newport Bay. Listing Rhine Channel as distinct from lower Newport Bay would provide clarity in defining potential remediation

efforts and the standards that apply to Rhine Channel. The beneficial uses designated would be the same as currently designated in Table 3-1 of the Basin Plan for Lower Newport Bay.

b. Consider changing the San Diego Creek Reach designations. The existing reach designations divide San Diego Creek into two reaches: an approximately eight-mile reach (Reach 1) extending from Newport Bay to Jeffrey Road, and a six-mile reach (Reach 2) continuing from Jeffrey Road to Laguna Woods. Due to extensive land use and other changes in the watershed, these reach designations are no longer representative of hydrogeological conditions along San Diego Creek. Redefining the reaches to better match the local hydrogeology will allow a more effective application of water quality standards. The beneficial uses designated would likely include those currently listed in Table 3-1 of the Basin Plan for this waterbody.

c. Add reach designations to Peters Canyon Wash. Peters Canyon Wash is not divided into reaches although the character of the wash changes significantly where it intersects the area of shallow groundwater in the lower portion of the Tustin Plain. Dividing the Peters Canyon Wash into two reaches based on the location where groundwater begins to exert a significant impact on hydrology and water chemistry will facilitate the implementation of targeted water quality standards. The beneficial uses designated would likely be similar to those currently listed in Table 3-1 of the Basin Plan for this water body.

d. Consider adding to Table 3-1 of the Basin Plan waters tributary to Anaheim Bay and Huntington Beach Wetlands: Bolsa Chica, Westminster, East Garden Grove Wintersburg, Huntington Beach, Talbert, and Anaheim Barber Channels. Santa Ana Water Board staff's preliminary recommendation is to designate these waters with the following beneficial uses existing or potential Water Contact Recreation, Non-contact Water Recreation, Wildlife Habitat, Warm Freshwater Habitat, Estuarine Habitat, and Rare Threatened or Endangered Species.