



SANTA ANA WATERSHED
PROJECT AUTHORITY

Santa Ana River Reach 3 Total Dissolved Solids Special Study Request for Proposals

Commission Meeting
Item No. 6.A

Ian Achimore, Senior Watershed Manager
Santa Ana Watershed Project Authority

November 19, 2024

A decorative graphic at the bottom of the slide consists of two overlapping, wavy bands. The upper band is a medium green color, and the lower band is a darker blue color. Both bands curve upwards from left to right, creating a sense of movement and flow.

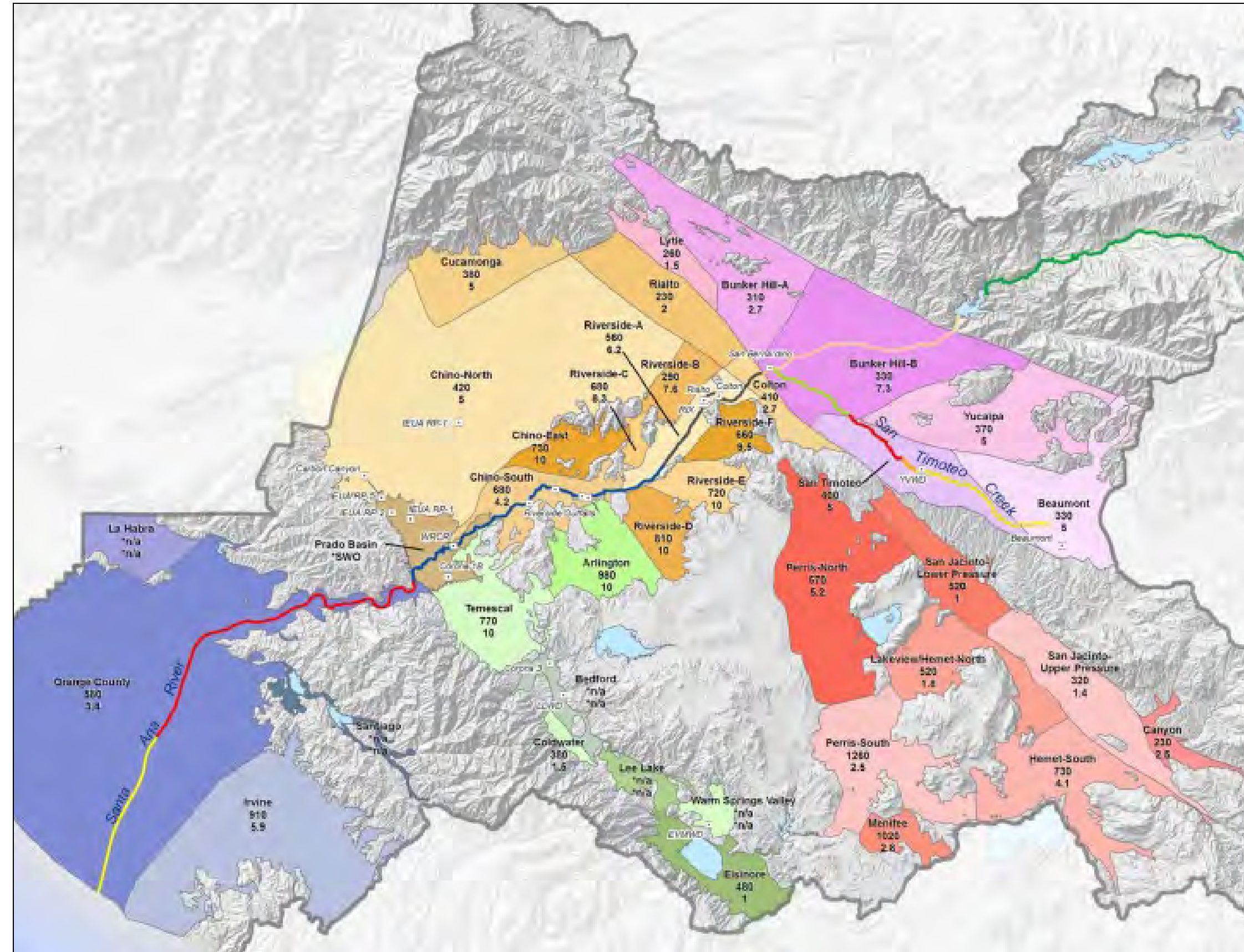
Recommendation

To direct the General Manager to issue Request for Proposals for a Monitoring Plan - Santa Ana River Reach 3 Total Dissolved Solids (TDS) Special Study.

SAWPA Basin Monitoring Program Task Force Formed to Implement TDS/N Management Plan

Roles & Activities

- Conducts analysis of TDS and nitrate in watershed groundwater every three (now five) years to identify trends
- Prepares Annual Santa Ana River surface water quality report
- Creates and updates Santa Ana River Wasteload Allocation model to confirm compliance of river discharges with ground water quality objectives
- Conducts salt and nitrogen investigations as necessary



RFP Prepared for Basin Monitoring Program Task Force

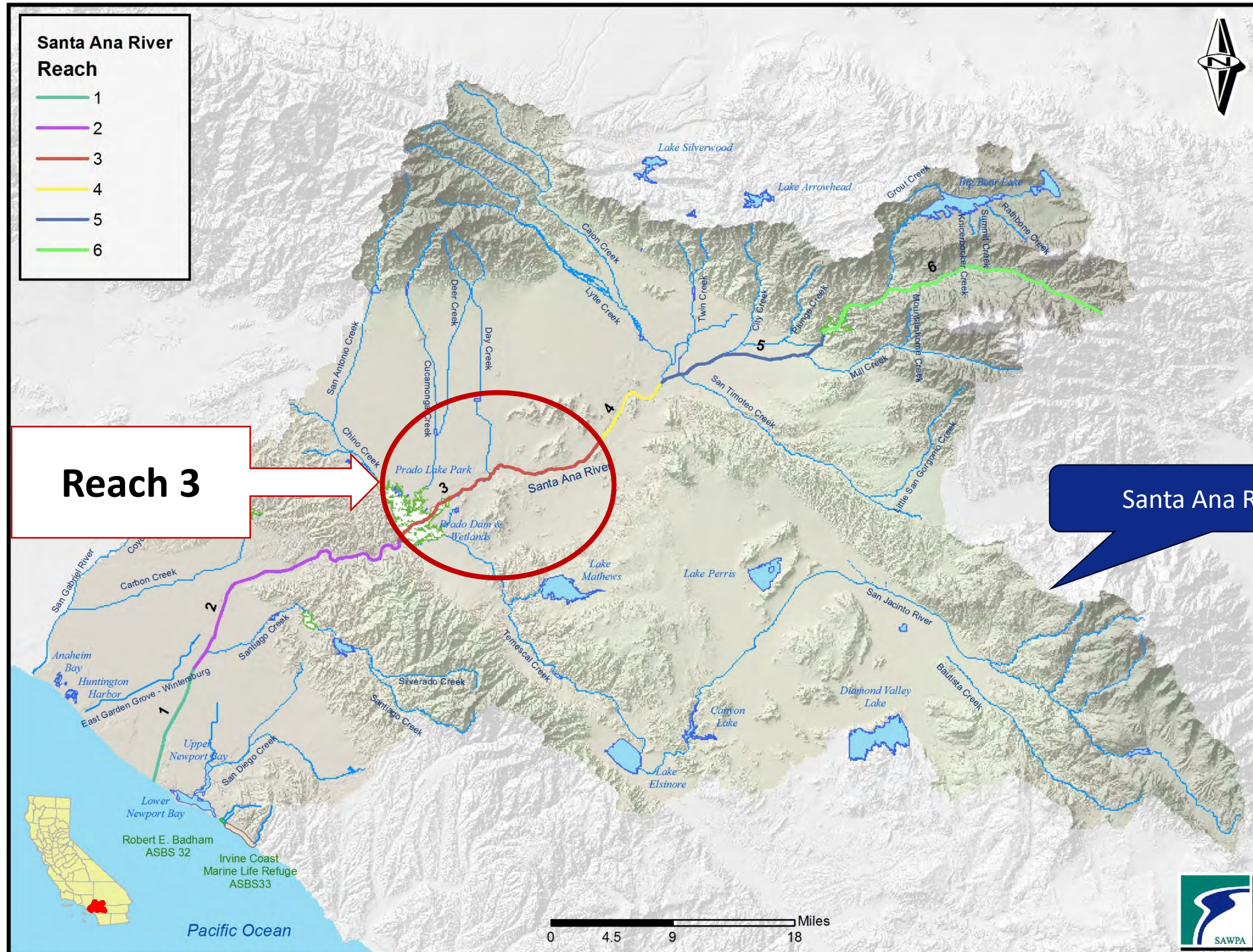
Task Force Members

Beaumont Cherry Valley Water District	Elsinore Valley Municipal Water District
Chino Basin Watermaster	Inland Empire Utilities Agency
City of Banning	Irvine Ranch Water District
City of Beaumont	Jurupa Community Services District
City of Corona	Orange County Water District
City of Redlands	San Bernardino Valley Municipal Water District
City of Rialto	San Geronio Pass Water Agency
City of Riverside	Temescal Valley Water District
Colton/San Bernardino Regional Tertiary Treatment and Wastewater Reclamation	Western Riverside Co Regional Wastewater Authority/Western Municipal Water District
Eastern Municipal Water District	Yucaipa Valley Water District



- Santa Ana Regional Board also a non-funding task force agency

Santa Ana River Reaches



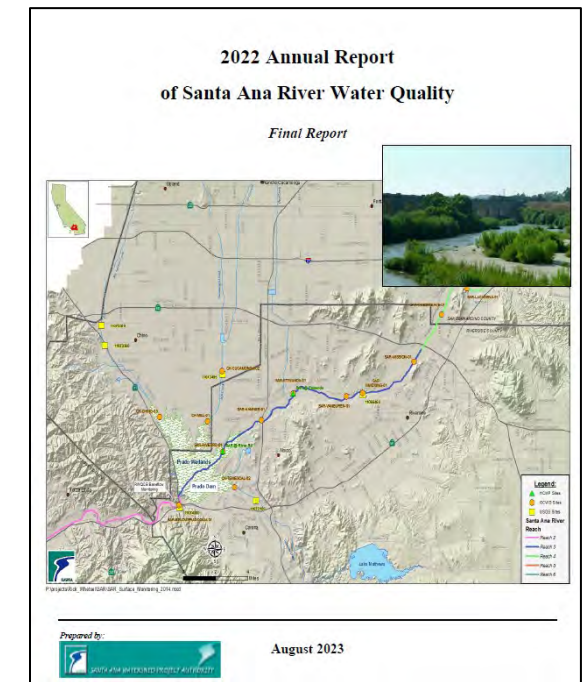
Key Definitions Related to RFP

- Total Dissolved Solids (TDS) – Measured on a sample of water that has passed through a very fine filter to remove suspended solids.
 - The water passing through the filter is evaporated and the residue represents the dissolved solids.
- Basin Plan – The regulatory document that has water body descriptions and antidegradation objectives for water bodies.
 - Santa Ana River Reach 3 antidegradation objective for TDS is 700 mg/L.



Key Definitions (Continued)

- Annual Report of Santa Ana River Water Quality – Annual Task Force document that reports water quality data related to antidegradation objectives such as Santa Ana River Reach 3.
- “Base flow” – Surface water flows that don’t occur during or soon after precipitation events.
 - The current definition for Reach 3 baseflow is when the following occur – 1) it is August and September of each year and, 2) there are no precipitation events in the last four days.
 - A proposed definition was recently developed by the Task Force and includes several conditions such as the surface water elevation of the Prado Dam conservation pool, as well as a longer time period (April through October).



Key Definitions (Continued)

- Integrated Report – The federal Clean Water Act requires that California report on the quality of its surface waterbodies every two years.
 - The State Water Board leads this effort through its release of the Integrated Report and coordinates its work with the individual Regional Water Boards.
- Impaired Water List – A component of the Integrated Report.
 - Placing a waterbody on the Report’s 303(d) impaired list initiates the prioritization of Total Maximum Daily Load (“TMDL”) development, or another alternative restoration project, to restore and maintain water quality standards.

Regional Water Boards

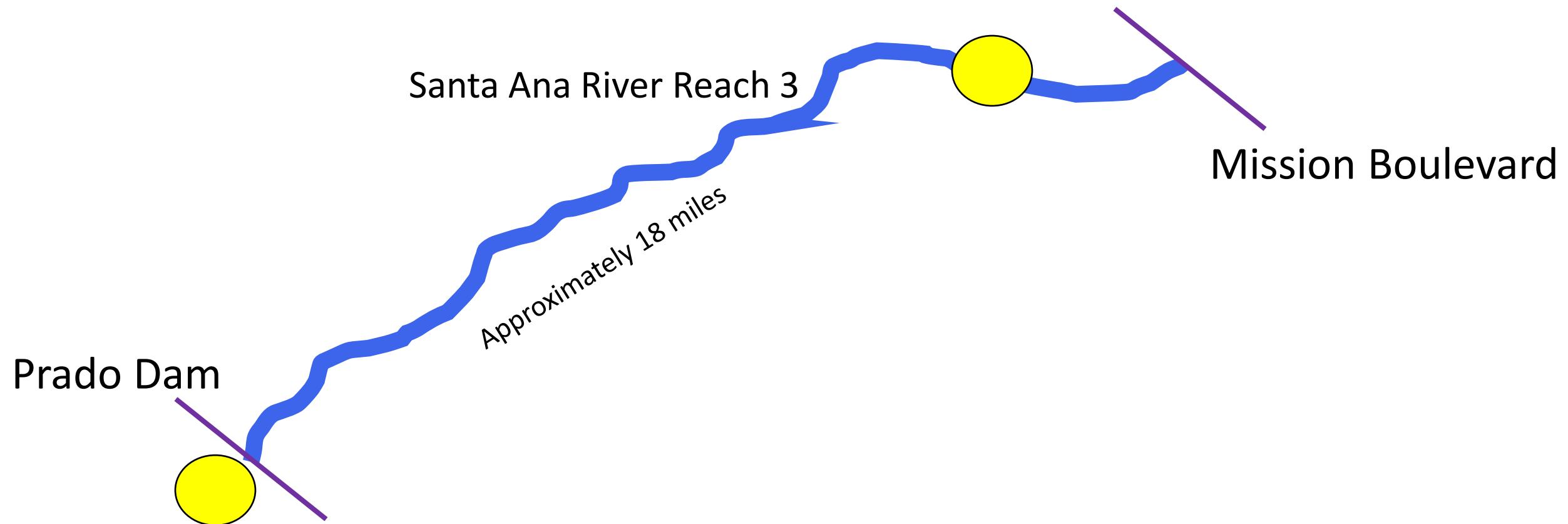


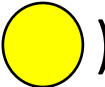
Impetus for Project

- The first recent* excursion of TDS over 700 mg/L occurred in 2013 and was reported in the 2013 Annual Report.
 - There has been several excursions over 700 mg/L since 2013 as reported in the Annual Report.
- Sound science is needed to understand fluctuating TDS level on downstream end of Reach 3 (below Prado Dam).
- The next Integrated Report data collection effort will occur in approximately the middle of 2026.

*A non-recent excursion of TDS over 700 mg/L at the downstream end of Reach 3 (below Prado Dam) was reported first in 1983 through a past Annual Report.

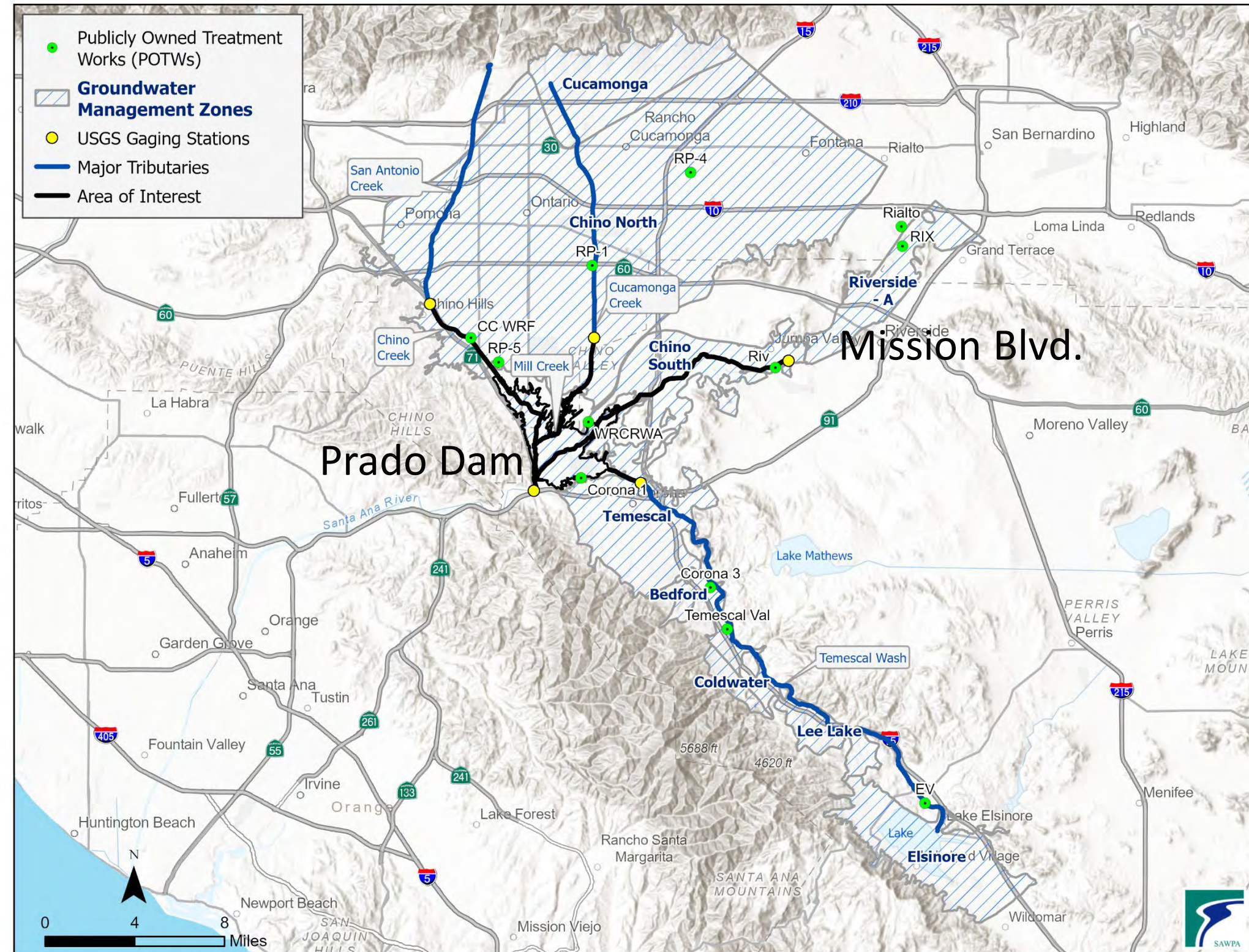
Reach 3 (Basin Plan Definition)



- Santa Ana River Reach 3 is described in the Basin Plan as “Prado Dam to Mission Boulevard in [the City of] Riverside.”
- There are several stream gaging stations (shown as ) in this area along the Santa Ana River.
- There are several tributaries that connect to Reach 3 (Temescal Wash, Chino Creek, and Cucamonga/Mill Creek).

Area of Interest for Project (Black Lines)

- Area of interest is bounded by areas with regularly collected streamflow data, making it easier to quantify TDS fluctuations.
- Area includes tributaries to Reach 3 (to their upstream extent with stream stations).
- The nearby and underlying groundwater management zones highlighted in RFP for consultants. They may factor them in for their proposed scope of work.



2015 BMP Task Force Analysis Related Reach 3

- Analysis titled “Investigation and Characterization of the Cause(s) of Recent Exceedances of the TDS Concentration Objective for Reach 3 of the Santa Ana River” (Wildermuth, February 2015)
 - The results of the investigation indicated that average TDS concentrations in August and September were fluctuating near 700 mg/L because the lower-TDS discharges from the Publicly Owned Treatment Works (POTWs) in the Santa Ana River were decreasing in volume.

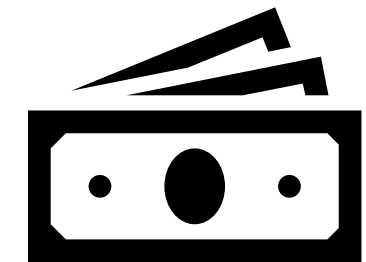
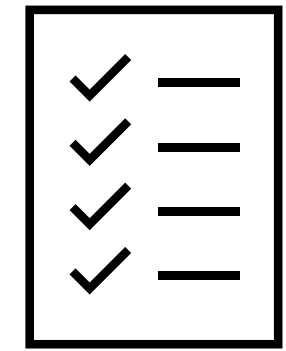


Waste Load Allocation Model and Reach 3

- The Waste Load Allocation Model (WLAM) is a tool the BMP Task Force currently has to represent and evaluate the causes of TDS in this area of the River.
- It is a comprehensive model that simulates water quantity (ground water and surface water) and quality (TDS and Nitrate) through a complex mass balance method for the Santa Ana River Watershed, including Reach 3.
- The 2020 WLAM Summary Report identifies three areas of rising groundwater. There are data gaps in these areas related to surface and groundwater interaction.

Deliverable/Objective of Project

- Develop a **monitoring plan** to help guide the Task Force on what to monitor to answer the question –
 - “Why are there fluctuating TDS concentrations during baseflow conditions at the downstream terminus of the Santa Ana River Reach 3?”
 - Note: Both the current and proposed “baseflow condition” are used in the Project.
- Monitoring plan will include **what** items should be monitored, and what their **costs are**.
 - Such as evapotranspiration rates for vegetation along Reach 3.



Funding Source for Project

- Funding is provided by annual dues of the Task Force members.

Schedule for Work

Calendar Year	2024				2025				2026				2027				2028			
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
This Project																				
Phase 2 - Monitoring [Phase 2 as part of separate scope]									First Year of Monitoring				Second Year of Monitoring				Third Year of Monitoring			

- It is expected that the monitoring, as prescribed through the final monitoring plan, will take place over at least three years.
- A new contract will be procured by the Task Force to implement the monitoring that is agreed upon by the Task Force through the finalization of the monitoring plan.

RFP Schedule

Milestone	Date
Commission Considers RFP; Release RFP if Approved	November 19, 2024
Question Deadline	January 13, 2025
SAWPA Responds to Final Question(s)	January 16, 2025
RFP Responses Due	January 23, 2025
Possible Interviews	January 27 Week, 2025
Commission Approval of Contract with Successful Consultant	February 18, 2025
Kick-Off Meeting with Consultant	February 19 Week, 2025

Recommendation

To direct the General Manager to issue Request for Proposals for a Monitoring Plan - Santa Ana River Reach 3 Total Dissolved Solids (TDS) Special Study.

Thank You

Ian Achimore
Santa Ana Watershed Project Authority
Office (951) 354-4220 | Direct (951) 354-4233
ian@sawpa.gov
sawpa.gov



@sawpa_water



@sawpatube