Conceptual Process to Update the Santa Ana Basin Plan to Comply with the 2018 Recycled Water Policy

August 12, 2019

WEI
WILDERMUTH ENVIRONMENTAL, INC.

Recycled Water Policy

- State Board 2009 Recycled Water Policy
  - To encourage and enable increased use of recycled water and stormwater
  - Guidelines for state-wide development of SNMPs
  - Santa Ana Watershed as the model – 2004 Basin Plan innovations:
    - Recognized the need for increasing recycled water reuse, but that compliance with Basin Plan objectives can pose challenges (maximum-benefit SNMP applied for the first time)
    - Actionable implementation plan to track trends and assess antidegradation
    - Regional collaboration as key to success
- Santa Ana Regional Board complied with R8-2010-0012 (Declaration of Conformance)

Current SNMP

- Compile agency data and prepare annual report of Santa Ana River water quality
- Compile agency data and recompute ambient water quality and assimilative capacity every three years
  - New findings of no assimilative capacity triggers potential antidegradation analysis of waste discharges that impact salinity (recycled water discharge and reuse)
- Compile agency historical wastewater discharge and planning data and assess compliance with Reach 2 and 3 surface water objectives with the WLAM
  - Fining of non-compliance with groundwater quality objectives triggers antidegradation analysis of waste discharges to the GMZ
  - Finding of non-compliance with surface water objectives triggers update to the wasteload allocation and waste discharge permits
- Maximum-benefit SNMPs with more detailed action plans to protect beneficial uses
- Cooperative agreement modeling to support imported water recharge (not in the Basin Plan)

2018 Amendments to Recycled Water Policy – Section 6 SNMP Guidelines

- The level of analysis in an SNMP need not be the same for every basin – a prioritization scheme should be used to establish level of analysis
- ‘high-priority’ basins must have an SNMP which addresses both current and future projections of water quality and assimilative capacity for assessing basin plan compliance
- Revised Basin Plan objectives and implementation plan may be a necessary outcome of developing and SNMP
- Monitoring program must be representative – designed to address SNMP
- Monitoring data must be submitted every year
- SNMP must be assessed and updated, if necessary, every five years

Required Components of an SNMP

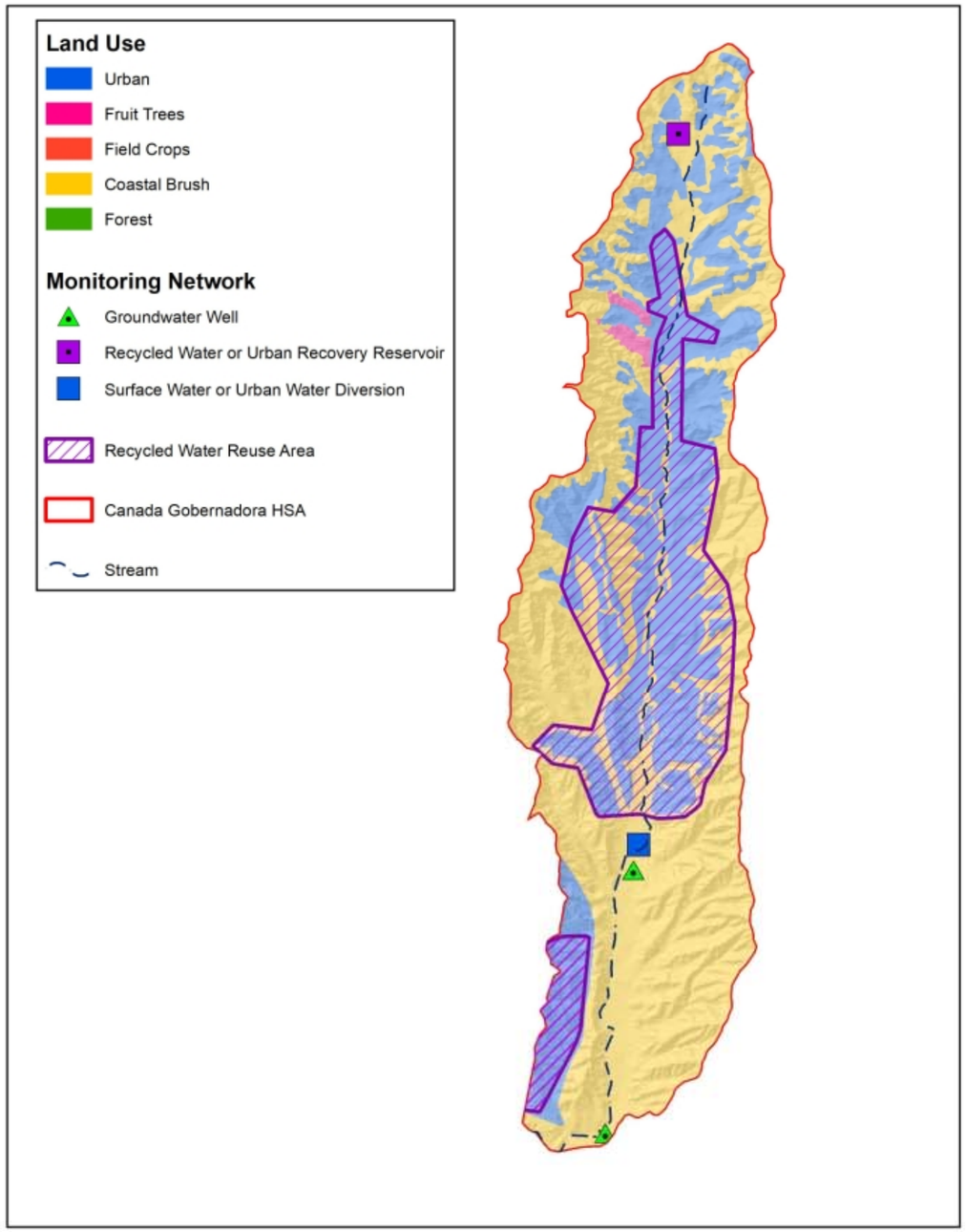
- ❑ Water recycling goals and objectives
- ❑ Water quality characterization
  - ❑ Salt and nutrient source identification and loading estimates (reactive only)
    - ✓ Assimilative capacity
  - ❑ Fate and transport of salts and nutrients (cautions use of mixing model)
- ✓ Implementation measures to manage salt loading in the basin
- ❑ Antidegradation analysis demonstrating that existing and reasonably foreseeable future projects and other loading will satisfy antidegradation requirements

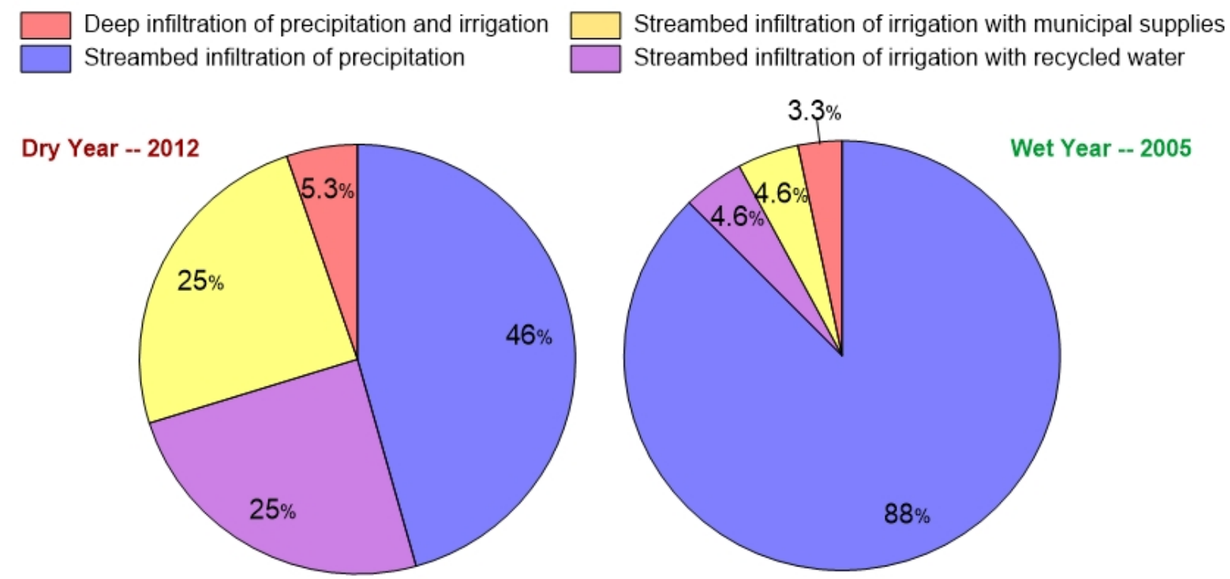
Required Components of an SNMP

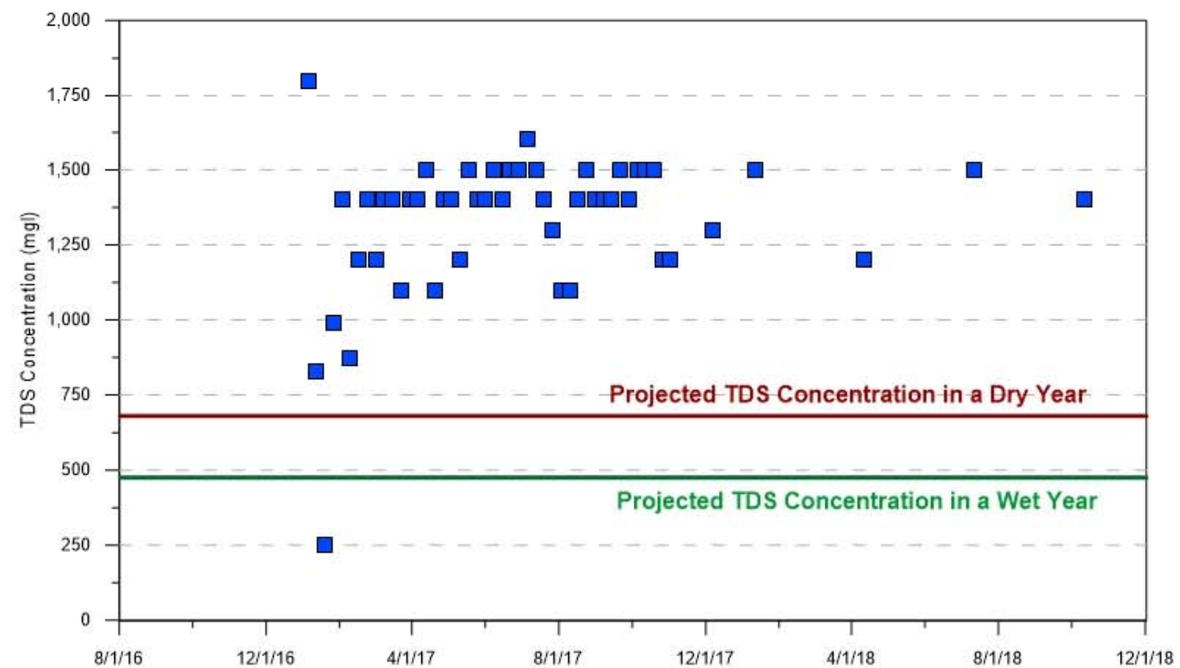
- ❑Monitoring plan. The plan must include:
  - ✓Focus on water supply wells (cautions use of only water supply wells)
  - ❑Focus on areas proximate to large water recycling projects
  - ❑Focus on areas proximate to other salt and nutrient loading sources
  - ❑Identify the stakeholders responsible for monitoring the wells in the plan
  - ❑Annual electronic reporting of data

2018 Amendments to Recycled Water Policy SNMP Guidelines – Periodic Assessments

- Assessments of monitoring data should occur every five years:
  - compare observed trends with projections
  - evaluate ability of monitoring network to representatively characterize groundwater quality
  - evaluate ability of models to adequately simulate groundwater quality
  - determine assimilative capacity based on data and observed trends
  - consider impacts of new projects and changed conditions
- Regional Board must review the SNMP to determine if it should be updated (based on assessment results)







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0 0.5 1 1.5 2 Miles
0 1 2 3 Km

Five-Year Update to the SNMP
San Juan Creek Watershed

SOCWA
South Orange County Wastewater Authority

Land Use, Recharge and AWQ
Gobernadora HSA

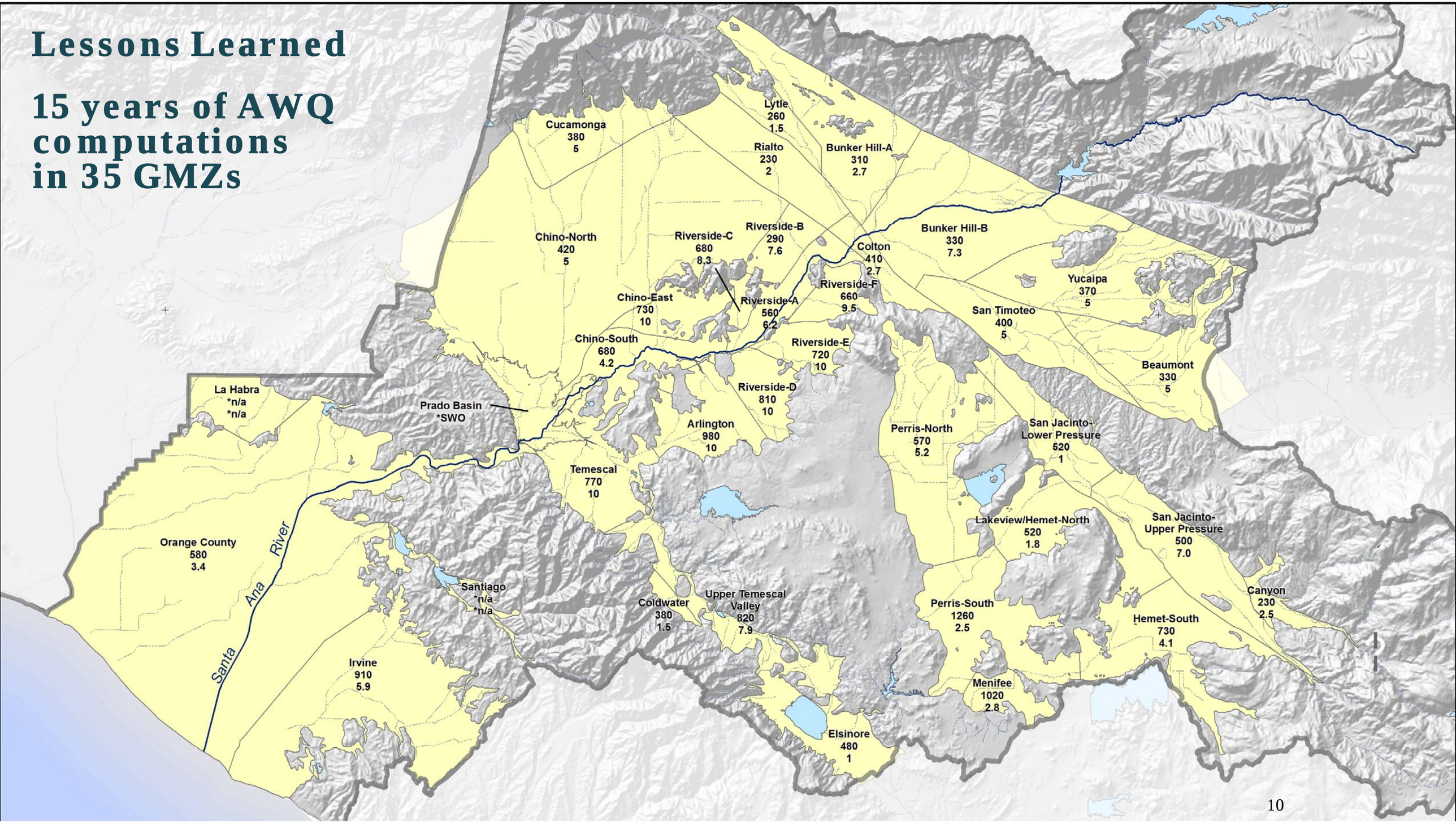
Exhibit 3-4

Rationale for an Alternative SNMP Approach

- State Board's Recycled Water Policy Amendments may require it
- Lessons learned in implementing current SNMP
- Regional Water Management and Regulatory Compliance Challenges – Today's challenges are greater than the past
  - Groundwater quality degradation
  - Climate change
  - Water quality management in drought conditions

Lessons Learned

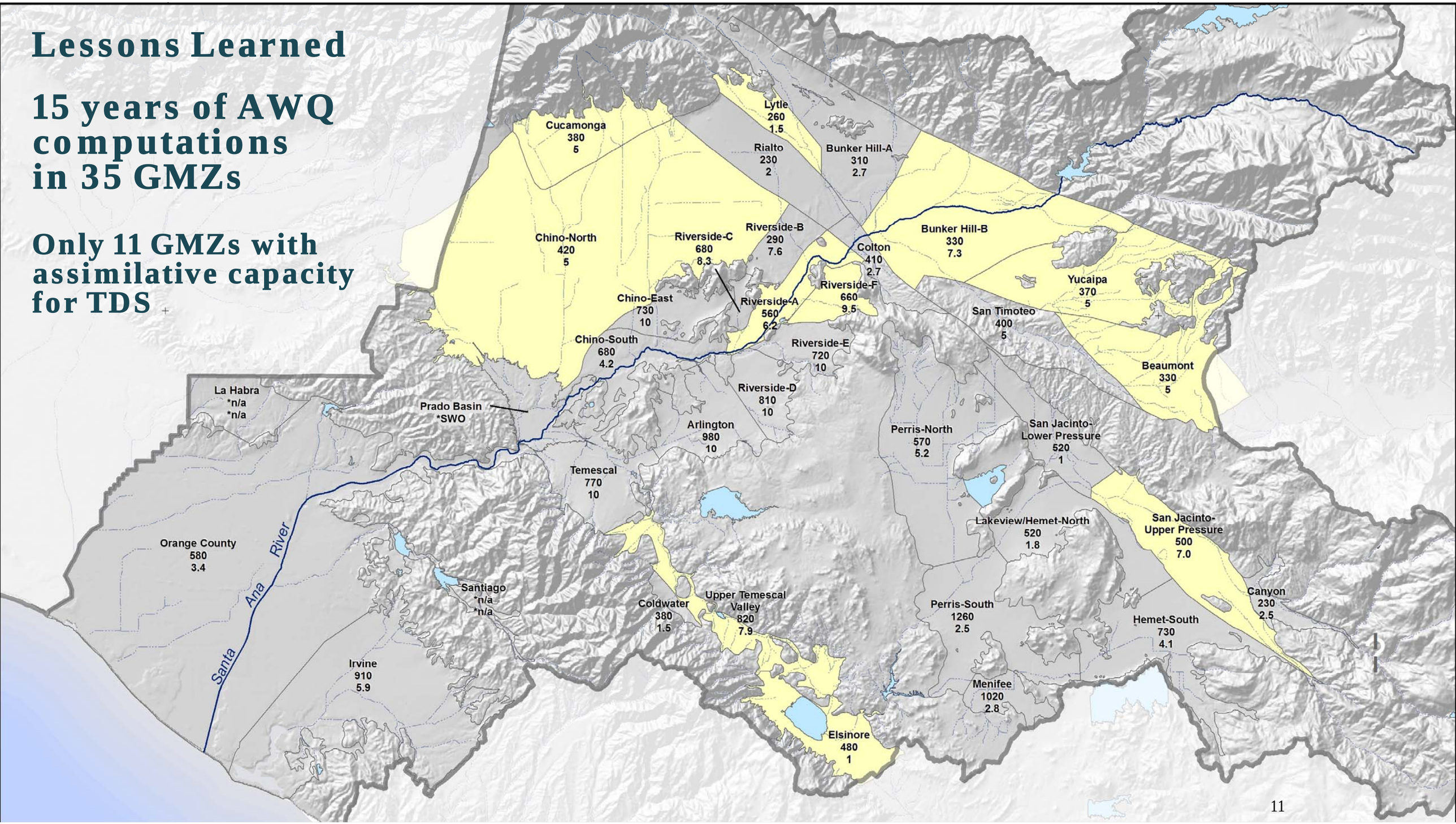
15 years of AWQ computations in 35 GMZs



Lessons Learned

15 years of AWQ computations in 35 GMZs

Only 11 GMZs with assimilative capacity for TDS

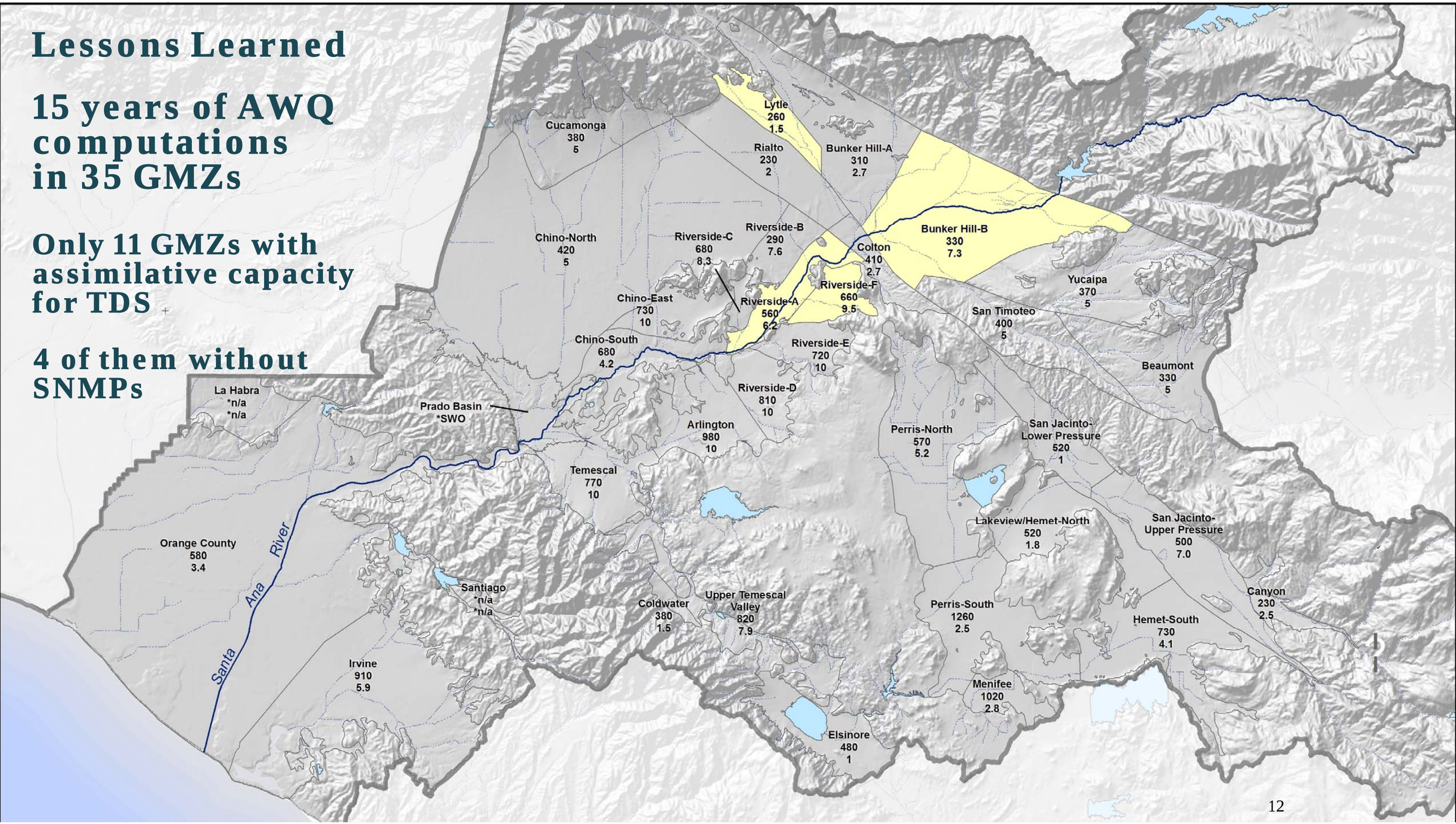


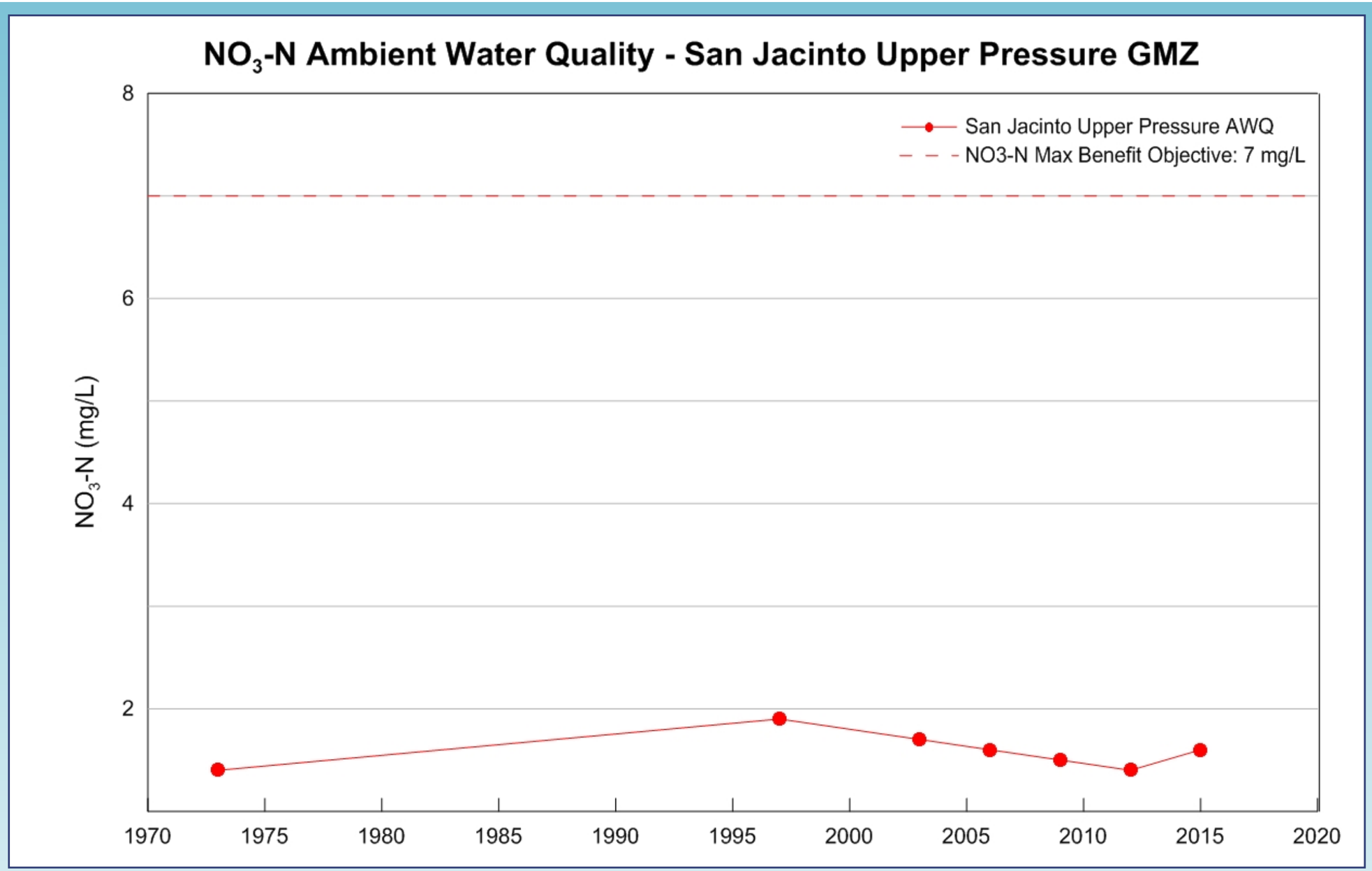
Lessons Learned

15 years of AWQ computations in 35 GMZs

Only 11 GMZs with assimilative capacity for TDS

4 of them without SNMPs




NO3-N Ambient Water Quality - San Jacinto Upper Pressure GMZ
San Jacinto Upper Pressure AWQ
NO3-N Max Benefit Objective: 7 mg/L
NO3-N (mg/L)
8
6
4
2
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020

Proposed Technical Approach

- Develop a revised implementation plan for the Basin Plan SNMP that is consistent with the amendments to the Recycled Water Policy and includes:
  - a prioritization scheme that defines priority for SNMP analyses, including the level of assimilative capacity analysis required for each GMZ, based on the characteristics and water quality management challenges of the GMZ (**DUE BY April 8, 2021**)
  - An actionable, time-certain schedule to perform monitoring and analyses that have a direct nexus to demonstrating Basin Plan compliance
  - Mechanisms to address water quality challenges associated with climate change, drought, and water quality degradation
- Perform technical work pursuant to the revised implementation plan **(DUE BY April 8, 2024)**

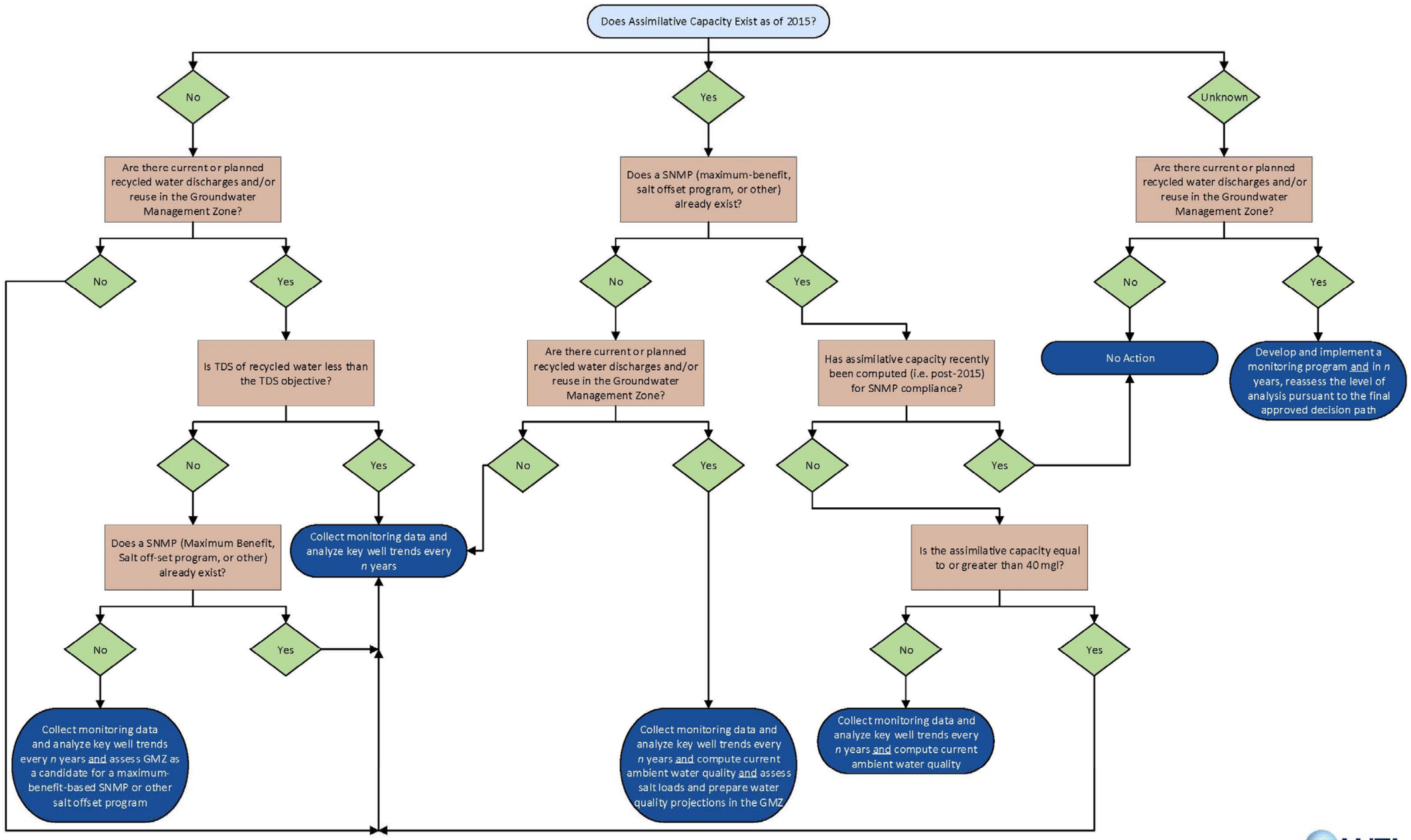
Phase 1: Develop a Revised Implementation Plan for the Basin Plan SNMP

- **Step 1a.** Collect information to characterize the salinity management and regulatory compliance challenges for the GMZs in the SAR Watershed.
- **Step 1b**. Develop prioritization scheme and level of assimilative capacity analysis for each GMZ
- **Step 1c.** Define the criteria and technical methodologies for implementing each level of assimilative capacity analysis defined in step 1b.
- **Step 1d.** Document implementation plan for eventual incorporation into the Basin Plan SNMP.

Basin Prioritization - Factors for Consideration

- salt and nutrient trends in groundwater (wells and basin-scale)
- Location of current and planned recycled water reuse – direct use and recharge
- imported water use
- reliance on groundwater supply for beneficial uses
- land use
- population growth
- prevalence of septic systems
- agriculture and CAFOs
- hydrogeologic conditions
- location of groundwater wells relative to salt and nutrient loading sources

Figure 4-1 ***Decision-Path Flow Chart to Define Level of Assimilative Capacity Analysis for Santa Ana River Watershed Groundwater Management Zones***

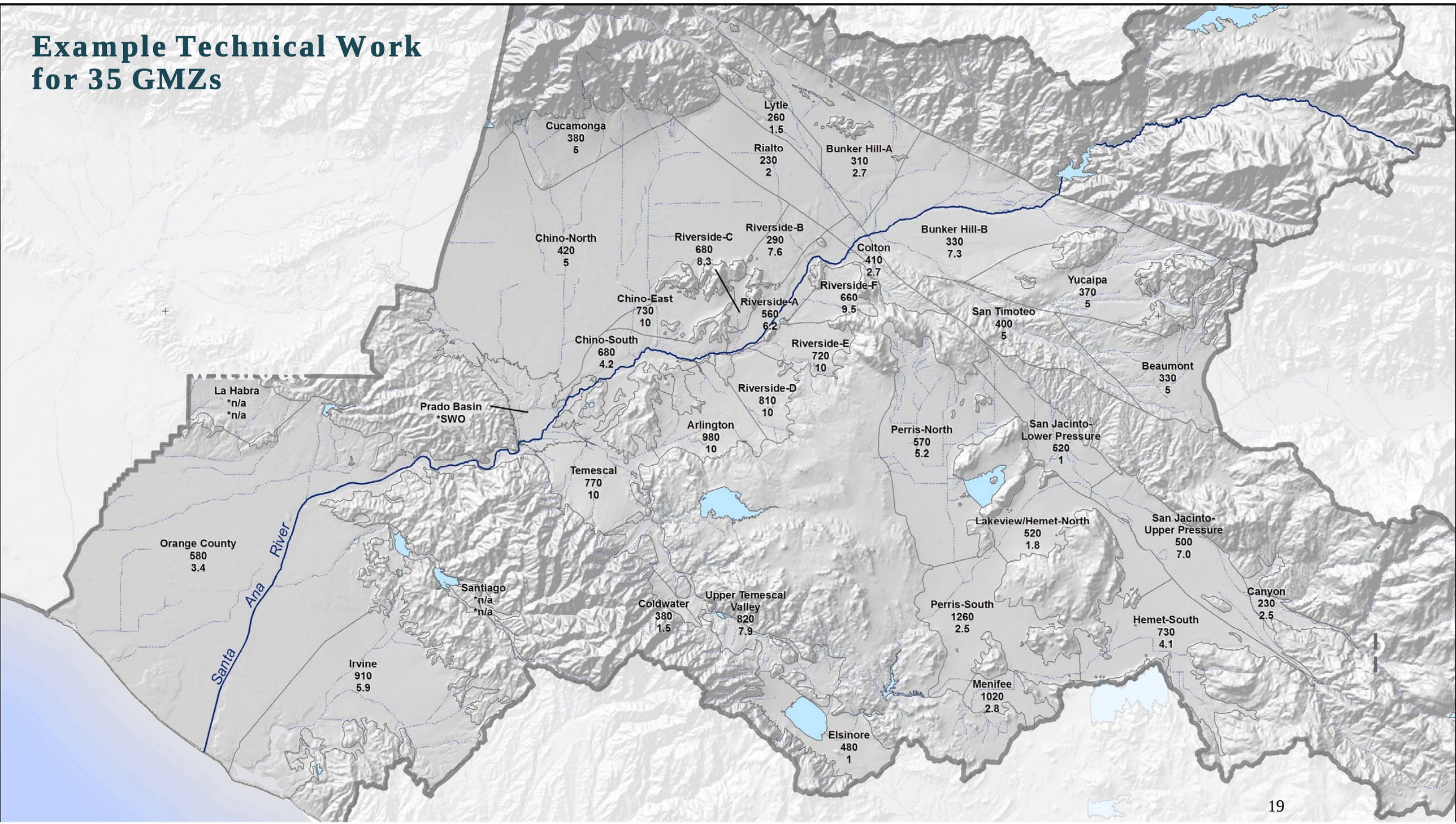


Phase 2: Perform Assimilative Capacity Analyses Pursuant to the Implementation Plan in Task 1

Example Analysis Endpoints

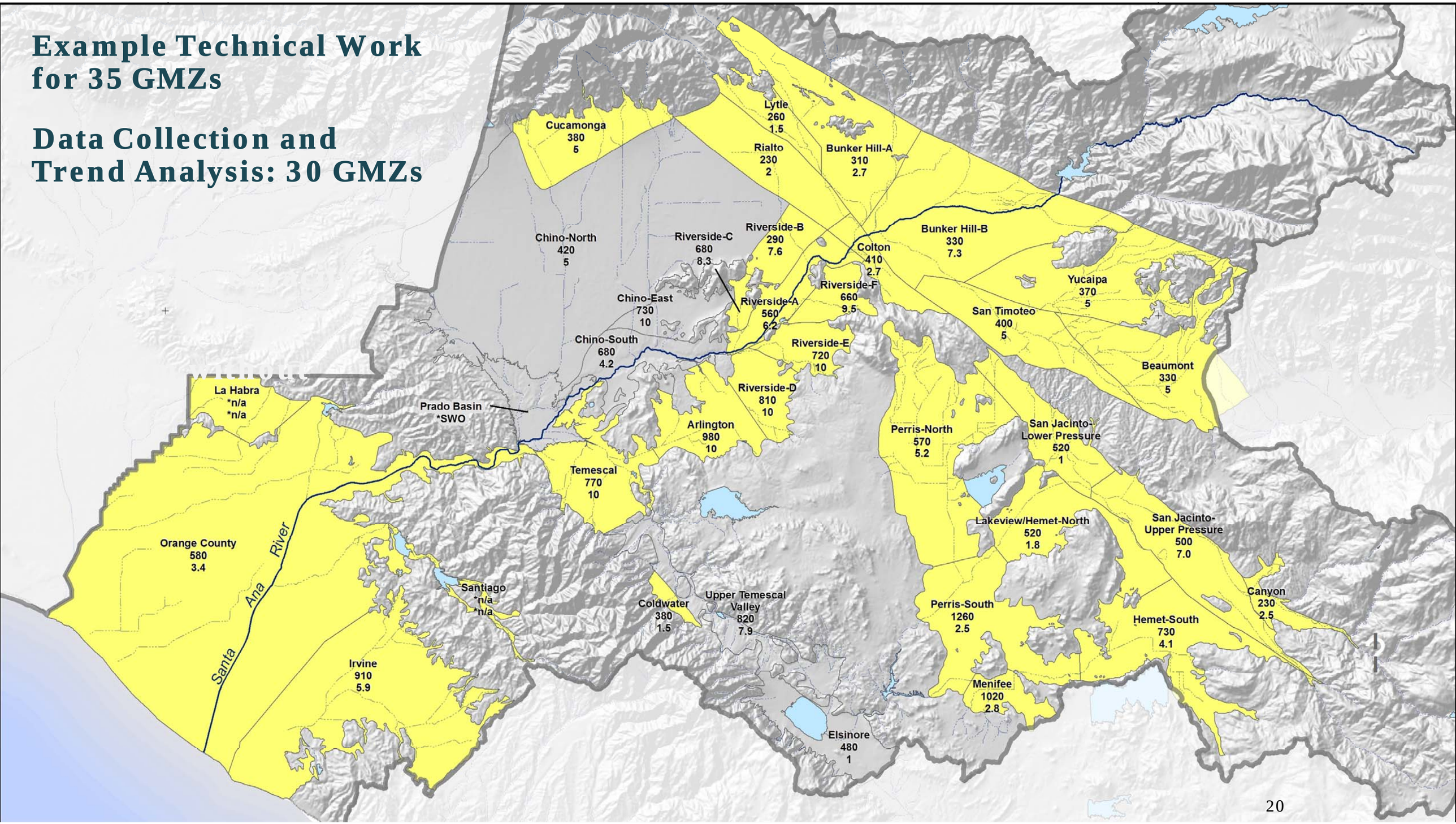
- Collect monitoring data and analyze key well trends
- Collect monitoring data and analyze key well trends *and* compute ambient water quality
- Collect monitoring data and analyze key well trends *and* compute ambient water quality *and* assess salt loads and prepare water quality projections
- Collect monitoring data and analyze key well trends *and* compute ambient water quality *and* assess salt loads and prepare water quality projections *and* assess as candidate for maximum benefit
- Develop and implement monitoring program
- No Action

Example Technical Work for 35 GMZs



Example Technical Work for 35 GMZs

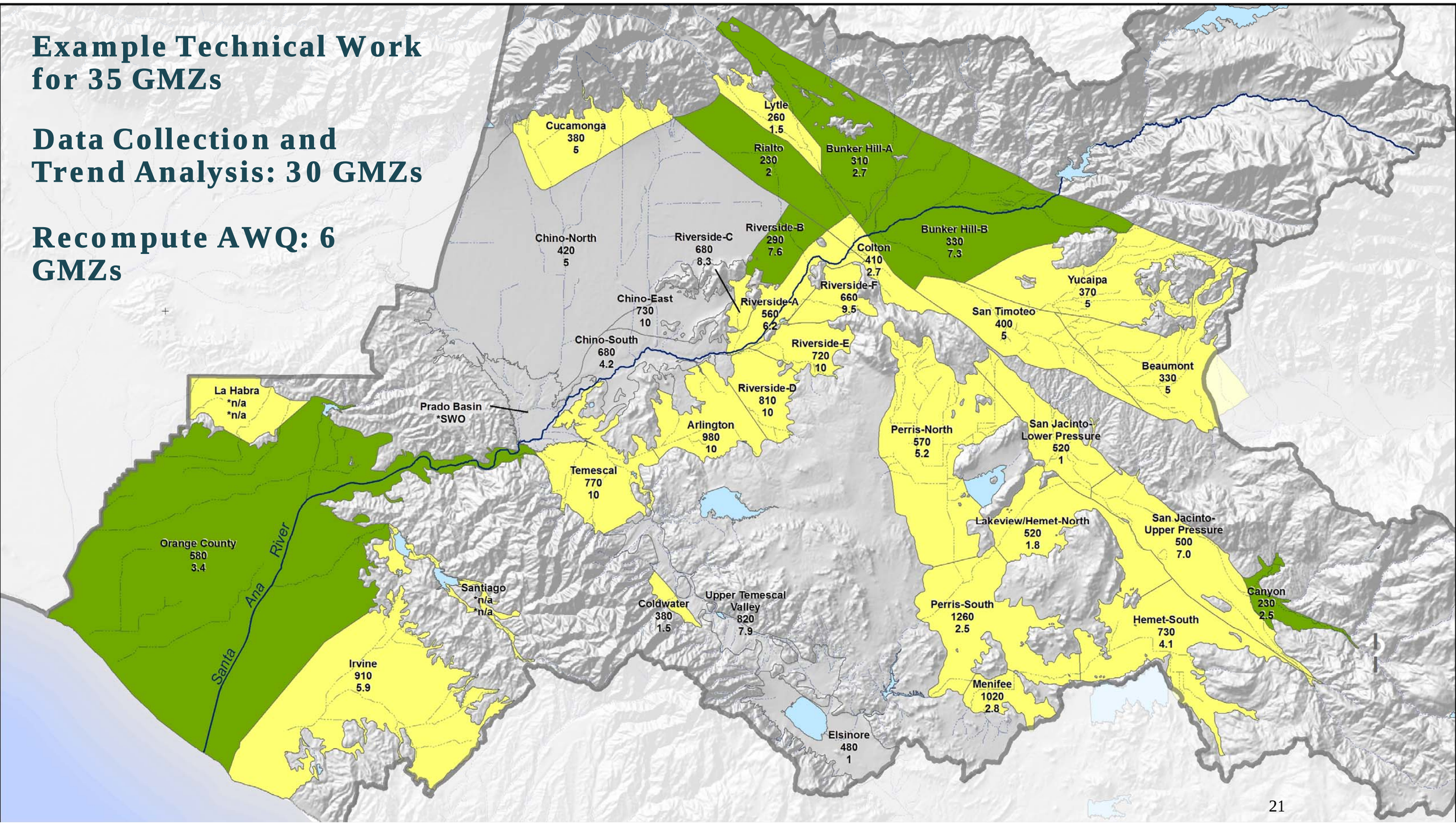
Data Collection and Trend Analysis: 30 GMZs



Example Technical Work for 35 GMZs

Data Collection and Trend Analysis: 30 GMZs

Recompute AWQ: 6 GMZs

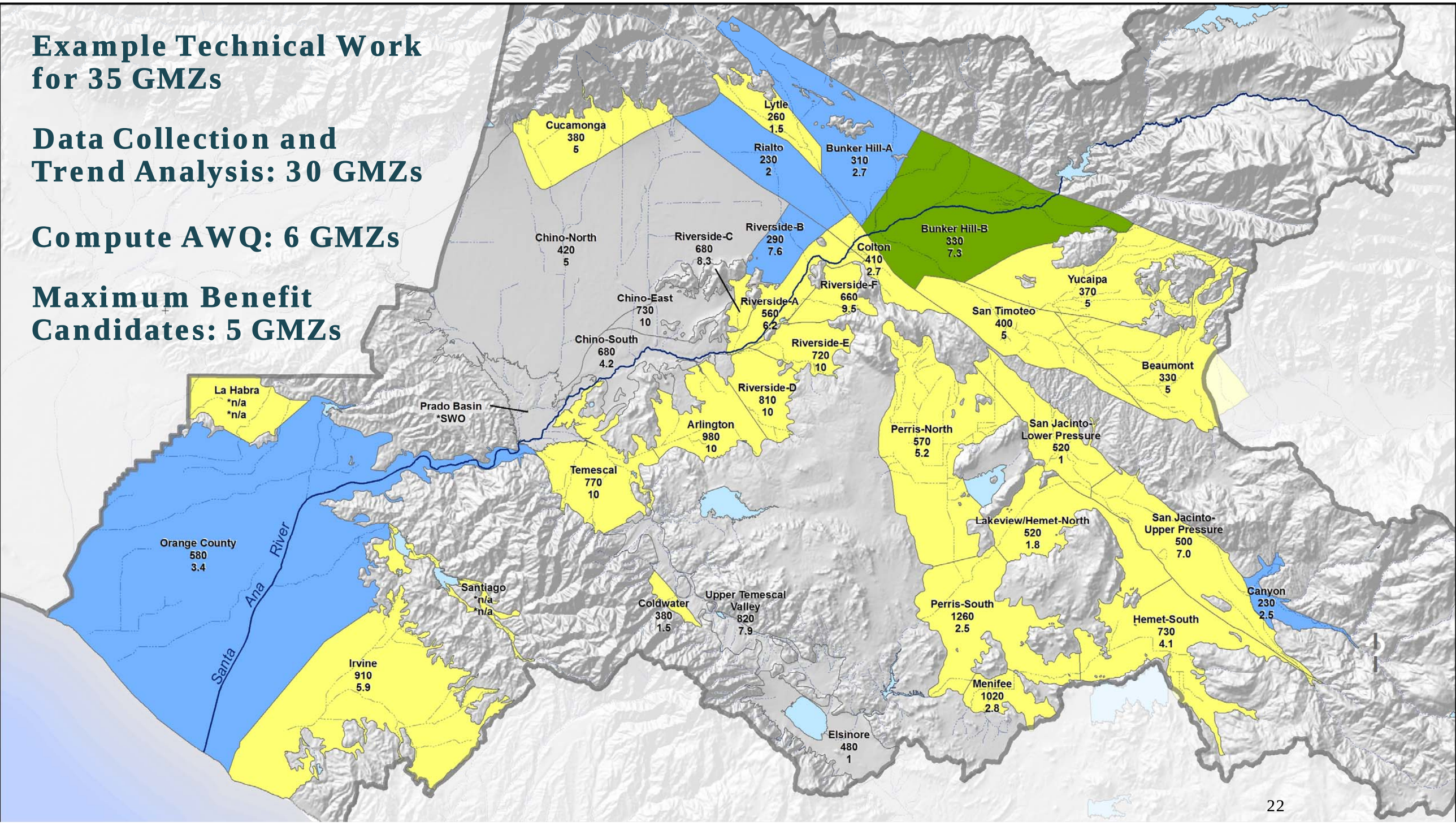


Example Technical Work for 35 GMZs

Data Collection and Trend Analysis: 30 GMZs

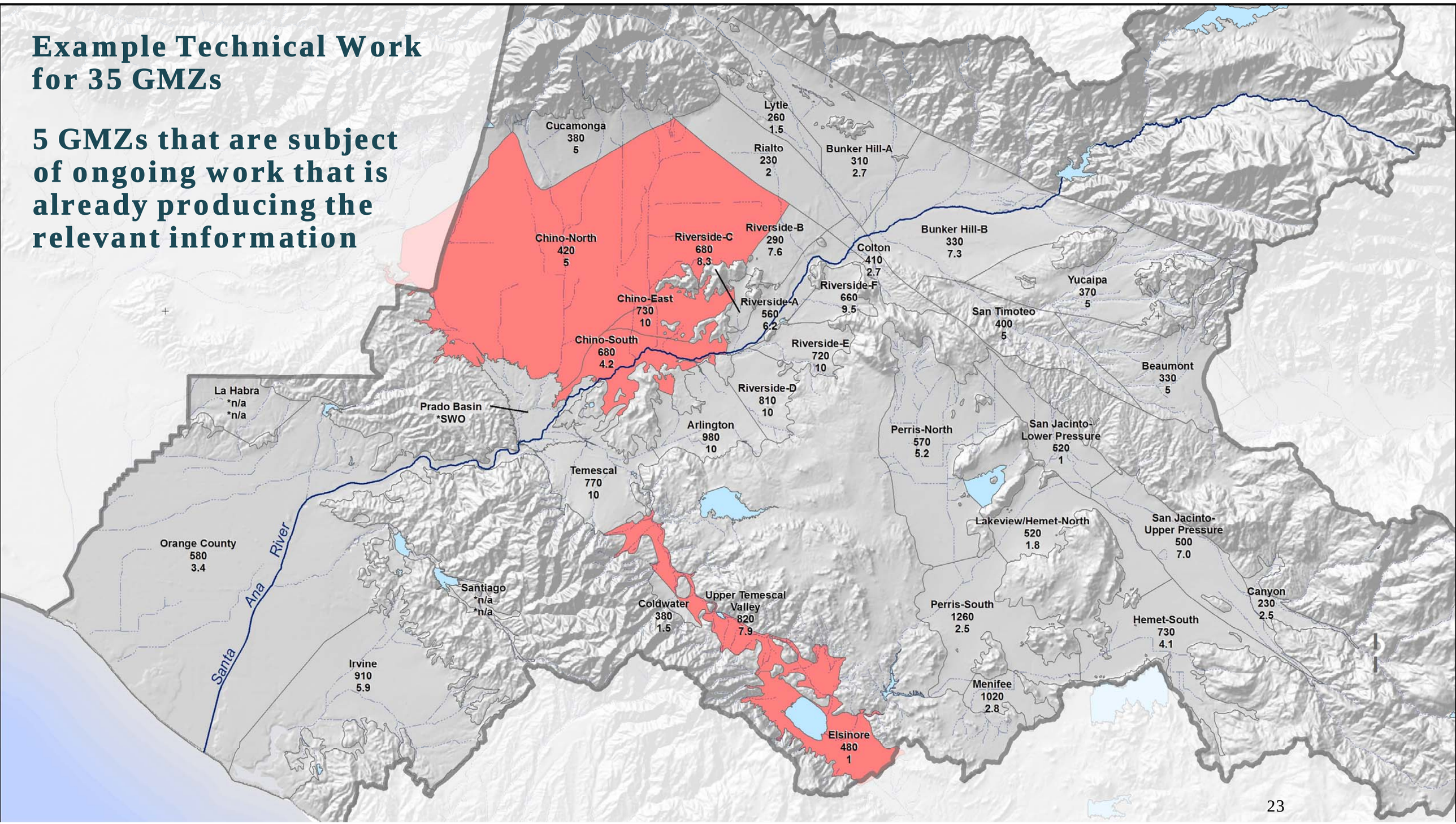
Compute AWQ: 6 GMZs

Maximum Benefit Candidates: 5 GMZs



Example Technical Work for 35 GMZs

5 GMZs that are subject of ongoing work that is already producing the relevant information



Recap of Features and Benefits of WEI Approach

- Replaces the existing process with one that is consistent with the State Board's amendments to the Recycled Water Policy
- Is more efficient for the watershed stakeholders in that it:
  - defines a definitive regulatory nexus for every monitoring and reporting activity performed
  - Leverages the work that is already planned to be done pursuant to the Cooperative Agreement
  - reduces the frequency of data analysis for Basin Plan compliance
- Proactive management creates more certainty
  - in the water and recycled water planning environment for the SAR Watershed stakeholders
  - for the Regional Board and watershed stakeholders in complying with the amended Recycled Water Policy

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