NORTH AMERICAN Subbasin

Groundwater Sustainability Plan

Water Year 2025 Annual Report

March 2026

SGA SUTTER COUNTY

RECLAMATION DISTRICT NO. 1001

SSWD South Sutter Water District

WEST PLACER GROUNDWATER SUSTAINABILITY AGENCY

North American Groundwater Subbasin Water Year 2025 Annual Report and GSP Public Workshop #3

2026 Public Meeting
June 24, 2026

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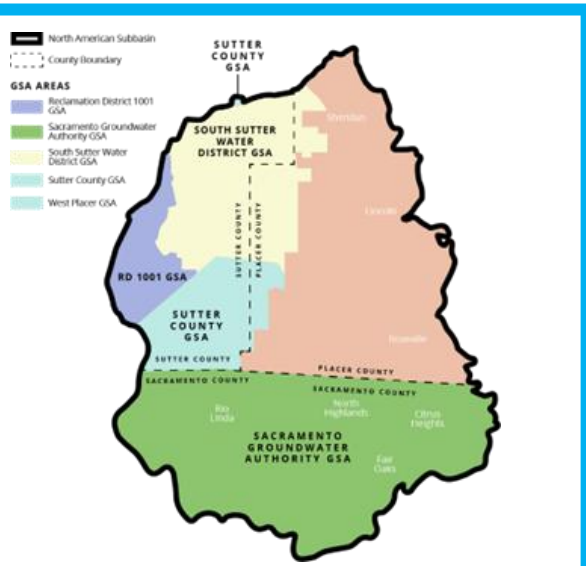
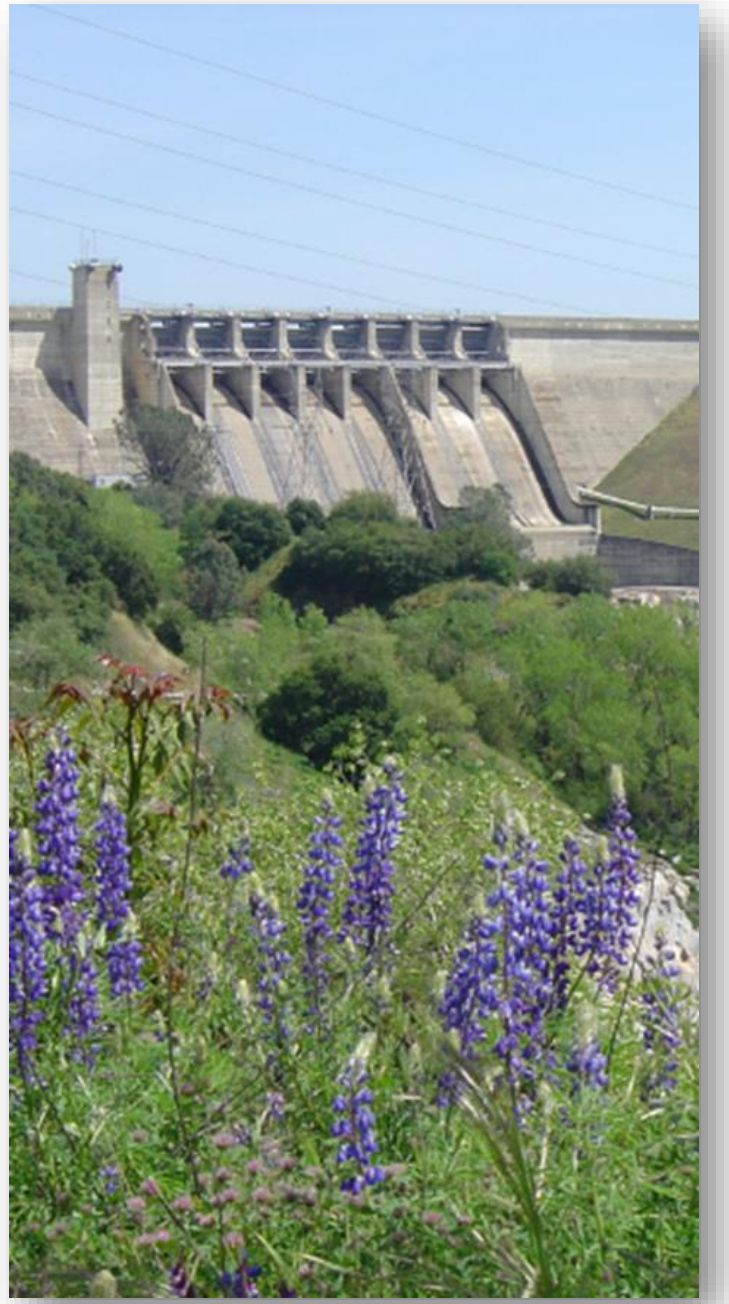


Agenda

- Welcome and Meeting Purpose
- NASb Introduction/SGMA Overview
- 2025 Annual Report Overview
- GSP Amendment/Evaluation Workshop #3 (Interconnected Surface Water Sustainable Management Criteria)
- Questions/Comments



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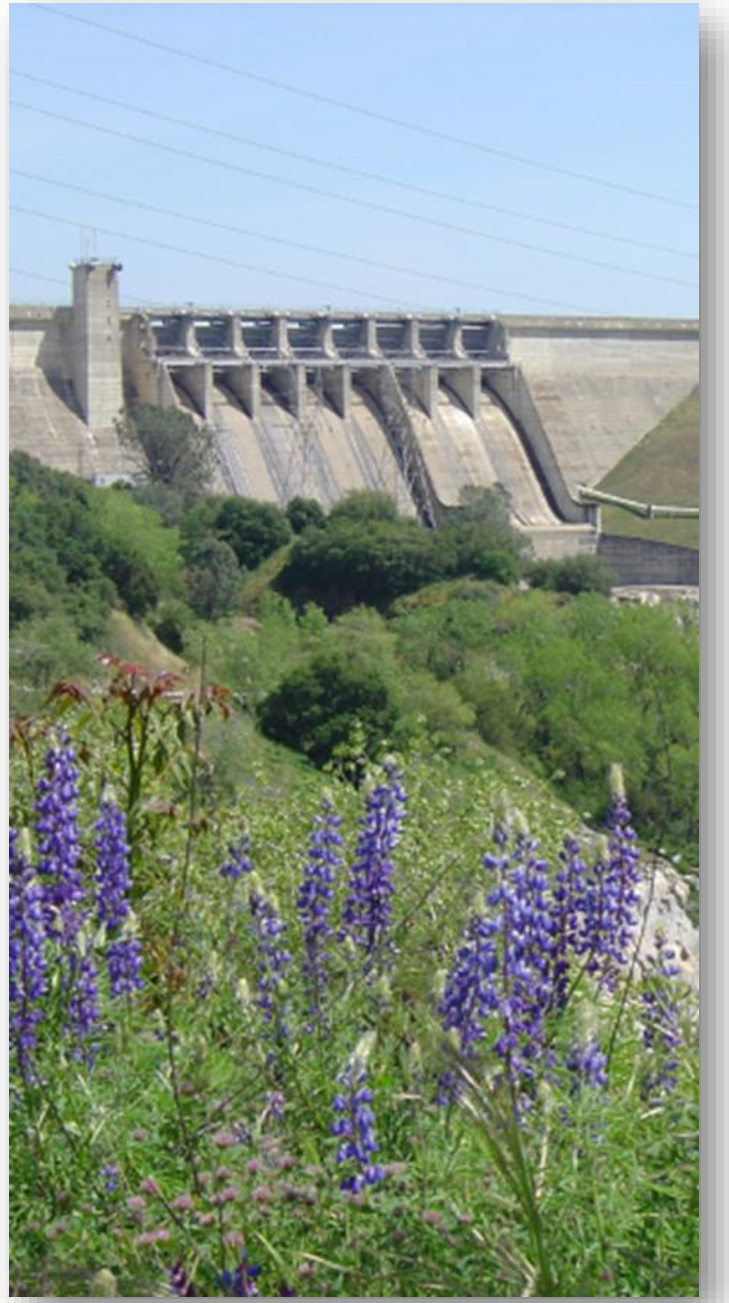

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Acknowledgement of State Funding

Funding for this project has been provided in part from The California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018 and through an agreement with the State Department of Water Resources.

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Meeting Purpose

The purpose of todays meeting is to:

- Present groundwater conditions based on data and information obtained and analyzed within the North American Subbasin (NASb) Water Year (WY) 2025 Annual Report
- Strengthen public understanding of groundwater conditions and update/seek input from the public and other interested parties
- Present an updated approach to refining Interconnected Surface Water Sustainable Management Criteria for the forthcoming GSP Amendment

This first portion of this meeting is being **recorded** and a copy of the presentation, along with additional meeting materials, will be uploaded and available at https://nasbgroundwater.org/

How to Engage During the Meeting

- **On Zoom**:
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SGMA Background/Refresher

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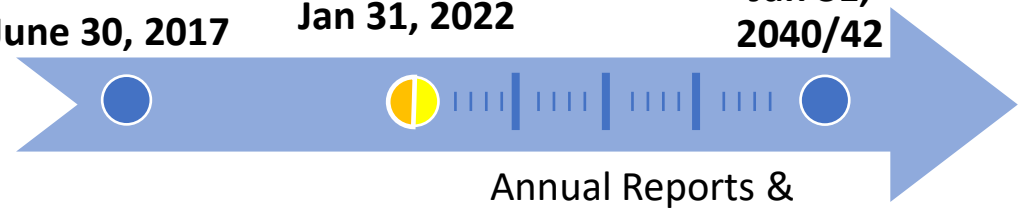
Sustainable Groundwater Management Act (SGMA)

Local Control

"A central feature of these bills is the recognition that groundwater management in California is best accomplished locally."
Governor Jerry Brown, September 2014

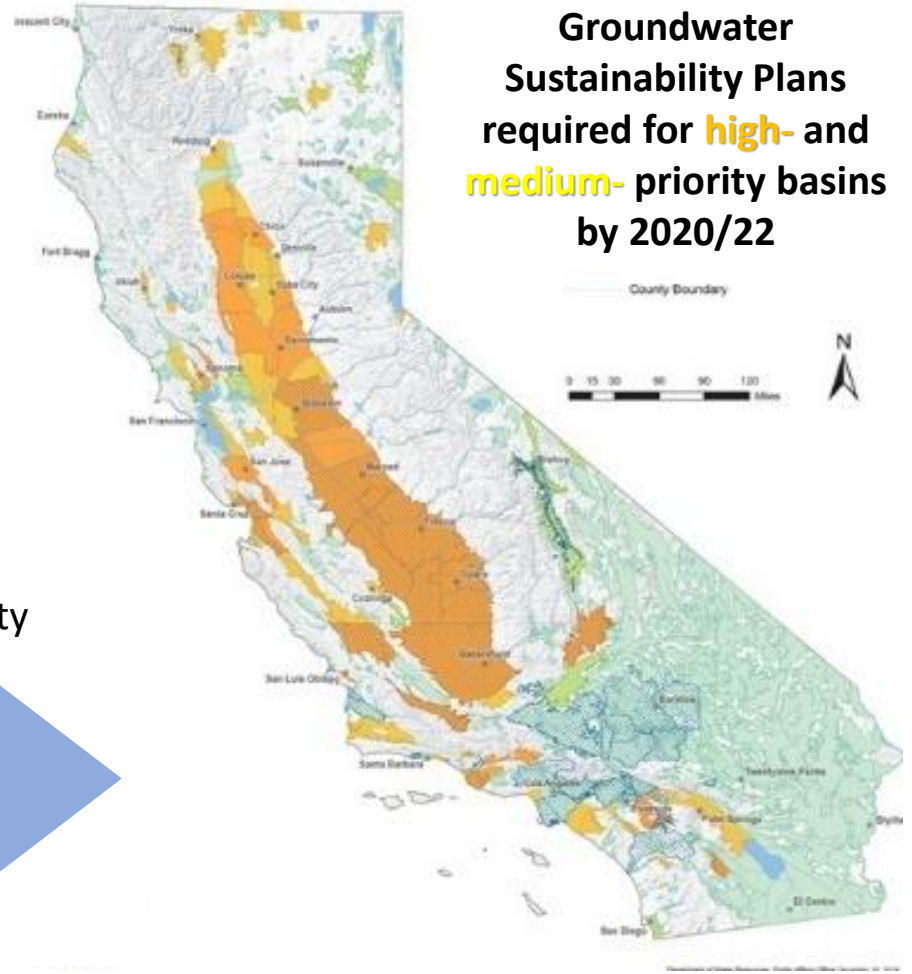
Roles

SGMA Timeline



Groundwater Basins

Groundwater Sustainability Plans required for high- and medium- priority basins by 2020/22



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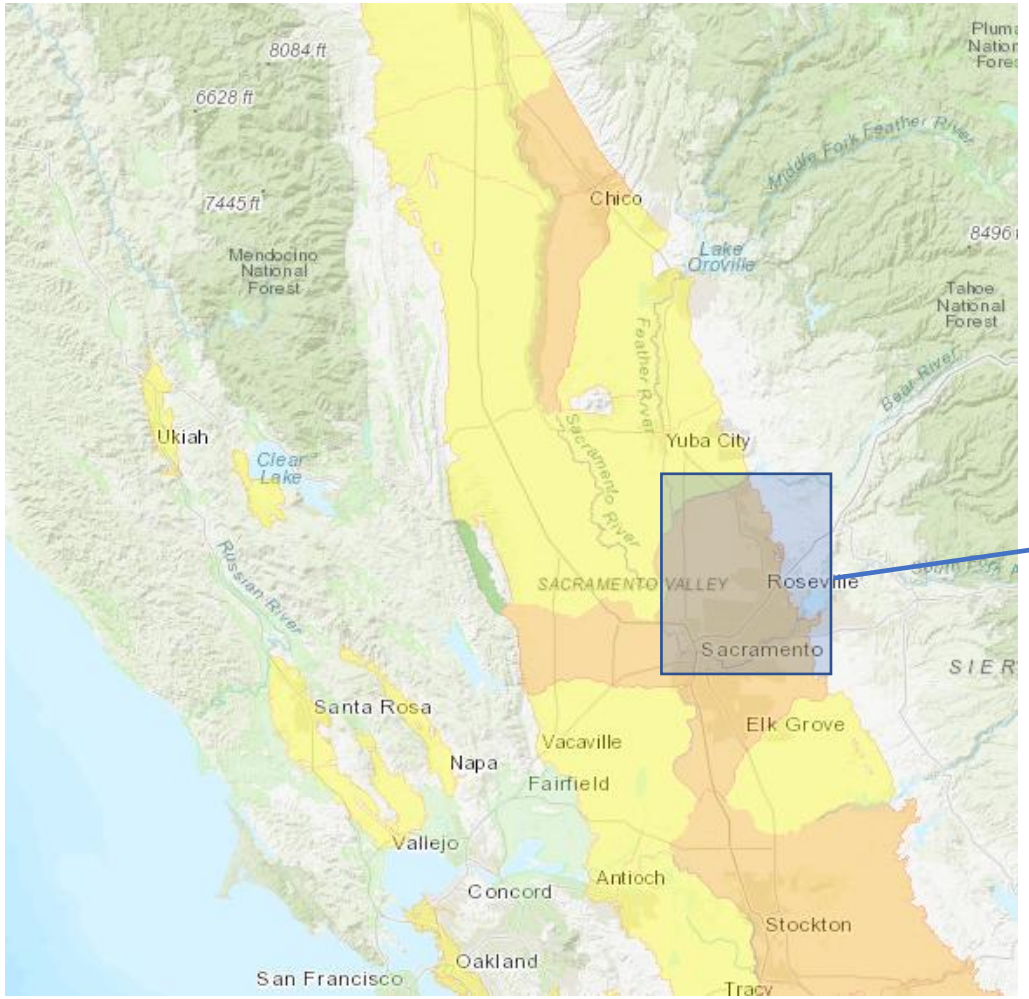
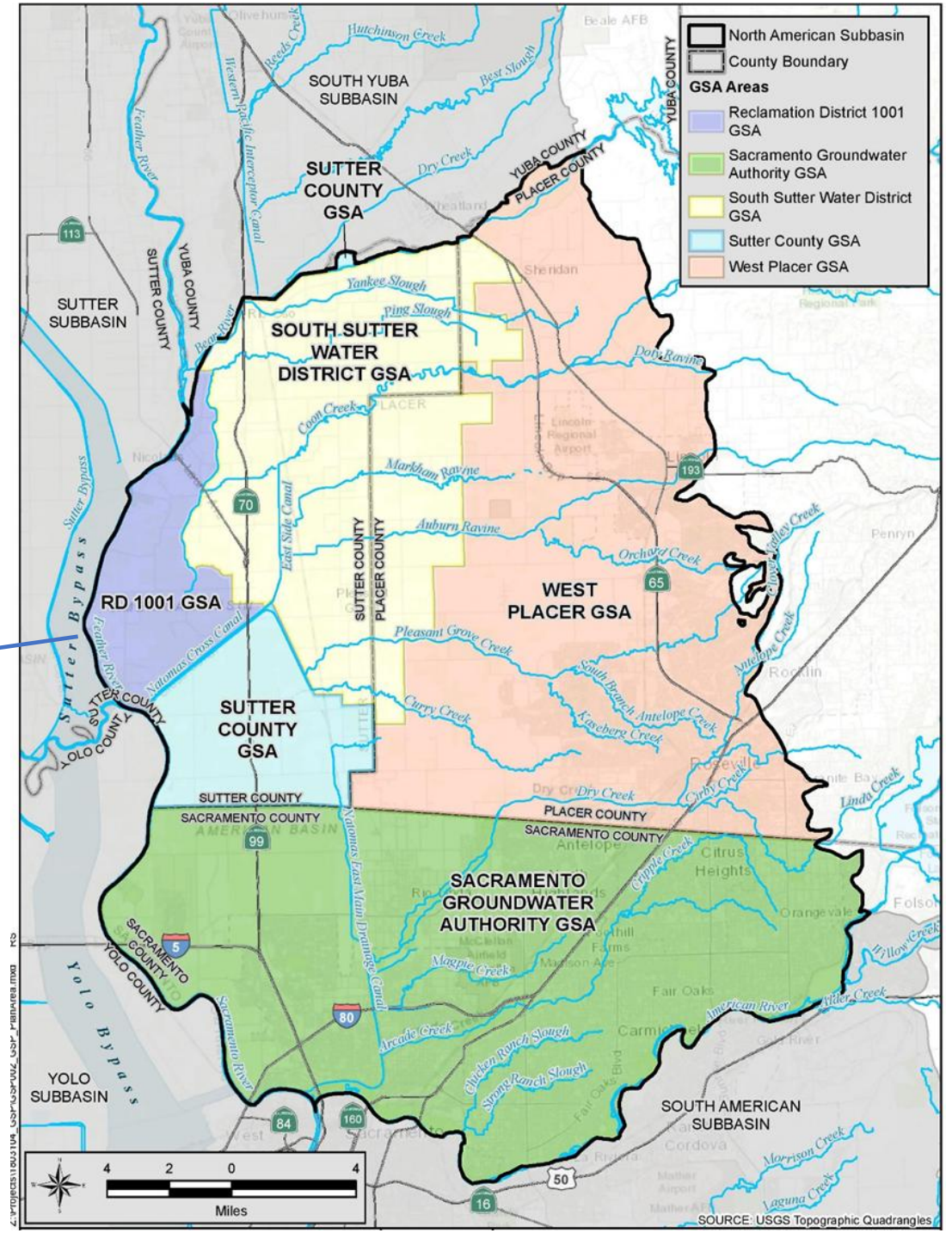
Groundwater Sustainability Agencies (GSAs)





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NASb Overview/GSA Introduction

Reclamation District 1001 (RD 1001 GSA)

Kimberly Reese | General Manager | Reclamation District 1001
1959 Cornelius Ave | Rio Oso, CA 95674
530-656-2318 | kreese@rd1001.org

Sacramento Groundwater Authority GSA (SGA GSA)

Trevor Joseph | Manager of Technical Services | Sacramento Groundwater Authority
2295 Gateway Oaks Drive, Suite 100 | Sacramento, CA 95833
(916) 967-7692 | tjoseph@rwah2o.org

South Sutter Water District GSA

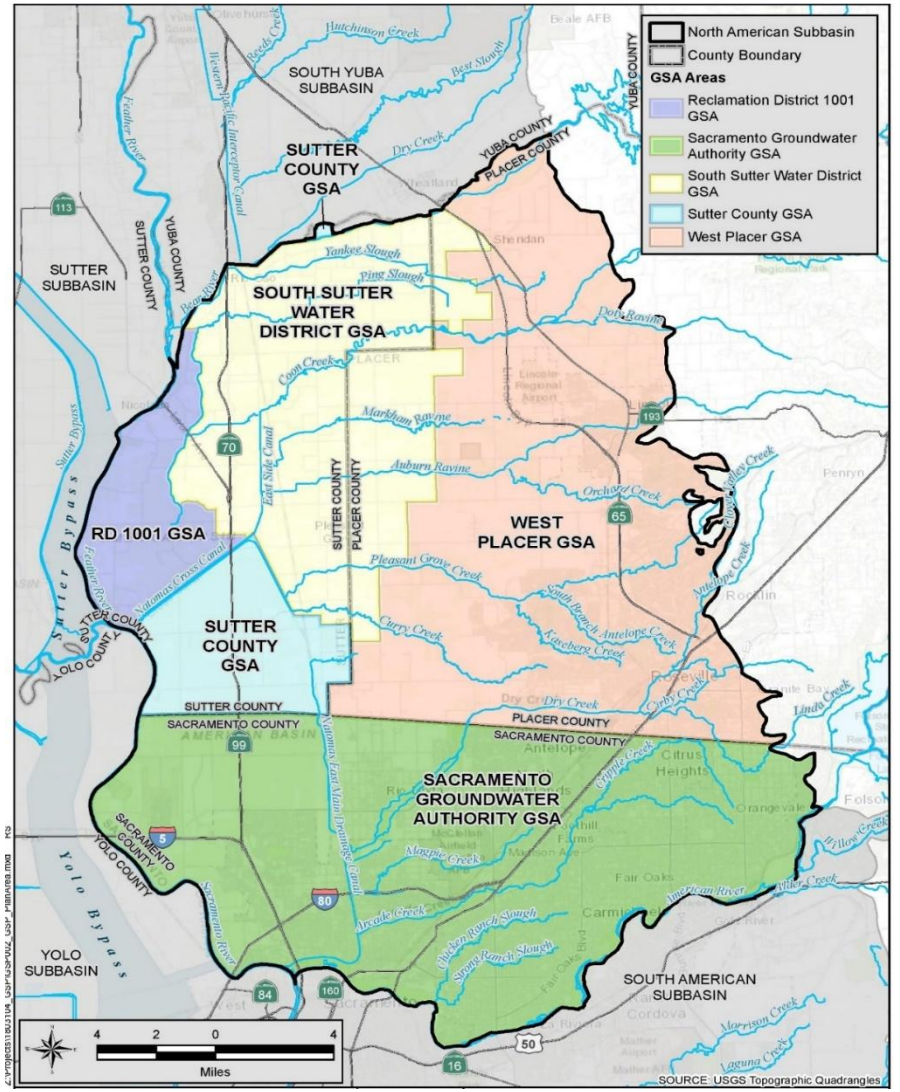
Hayden Cornwell| General Manager | South Sutter Water District
2464 Pacific Ave | Trowbridge, CA 95659
530-656-2242 |hcornwell@southsutterwd.com

Sutter County GSA

Guadalupe Rivera | Principal Engineer | Sutter County
1130 Civic Center Blvd. | Yuba City, CA 95993
530-822-7400 | grivera@co.sutter.ca.us

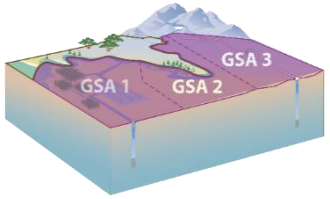
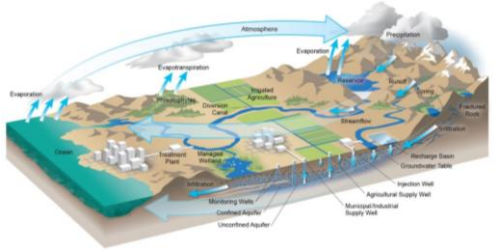
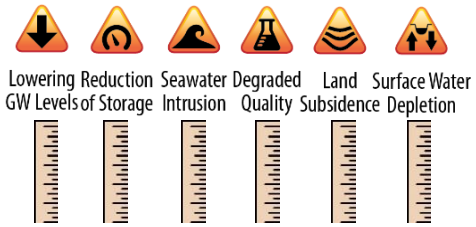
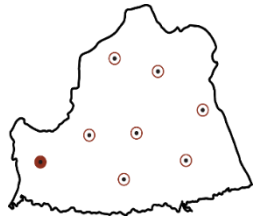
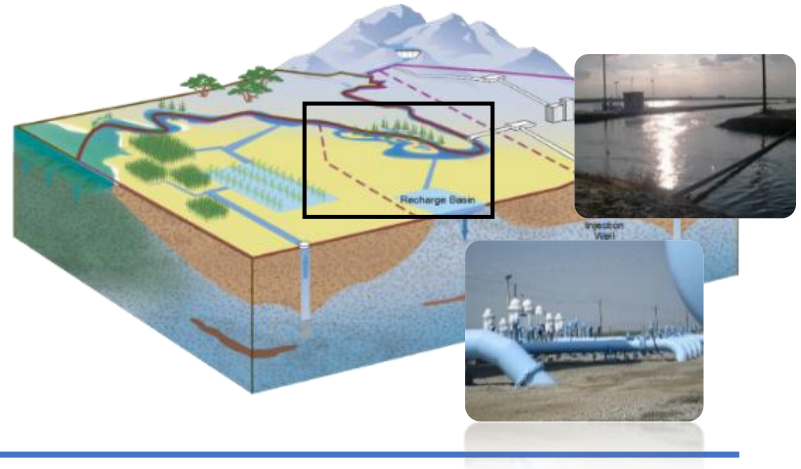
West Placer GSA

Christina Hanson | Public Works Manager| Placer County
3091 County Center Drive, Suite 170 | Auburn, CA 95603
530-886-4965 | chanson@placer.ca.gov



NASb Website: nasbgroundwater.org

Groundwater Sustainability Plan (GSP) Regulations & NASb Sections

GSP Development Phases	1. Understand water users and existing basin conditions	2. Develop criteria that consider beneficial uses and users	3. Develop and implement management actions and/or projects to ensure basin is sustainable
GSP Regulation Requirements	**Who** *- Administrative Information -*  **What** *- Basin Setting -* 	**Where** *- Sustainable Management Criteria -*  *- Monitoring Network -* 	**How** *- Projects & Management Actions -* 
NASb GSP Sections	**1. Administrative Information** 1. Introduction 2. Agency Information 3. Description of Plan Area 4. Notice and Communications **2. Basin Setting** 1. Hydrogeologic Conceptual Model 2. Groundwater Conditions 3. Water Budgets	**3. Sustainable Management Criteria** **4. Monitoring Network**	**5. Projects & Management Actions** **6. Plan Implementation**

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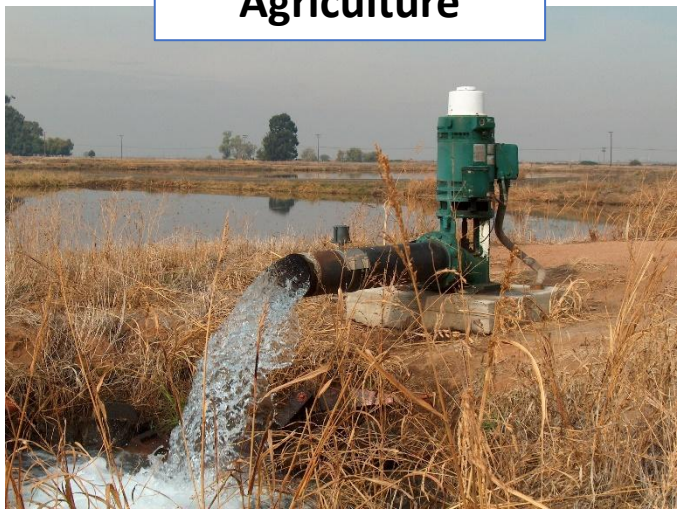
Beneficial Uses and Users

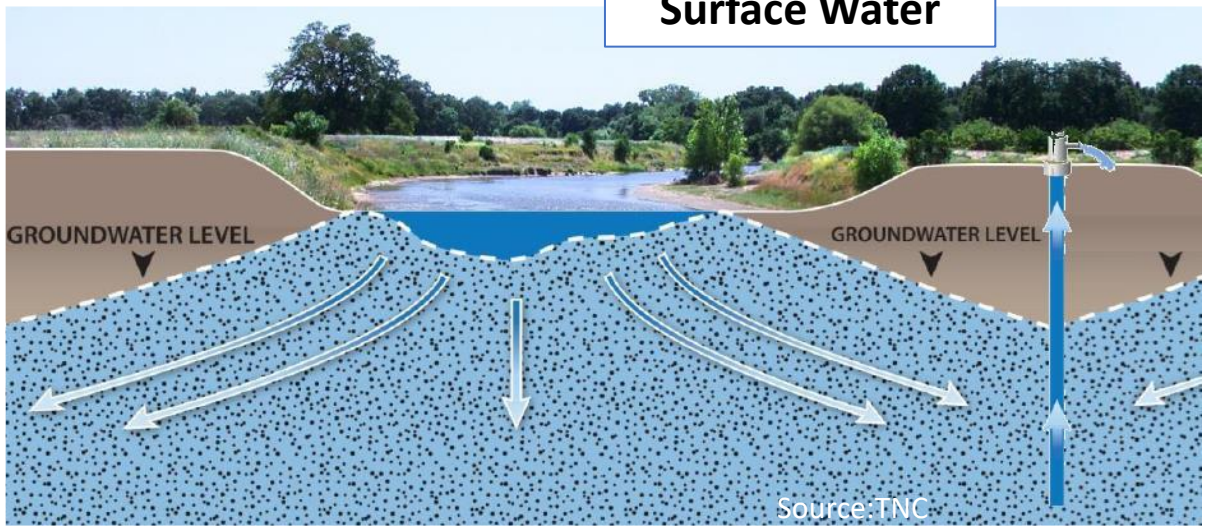
Agriculture



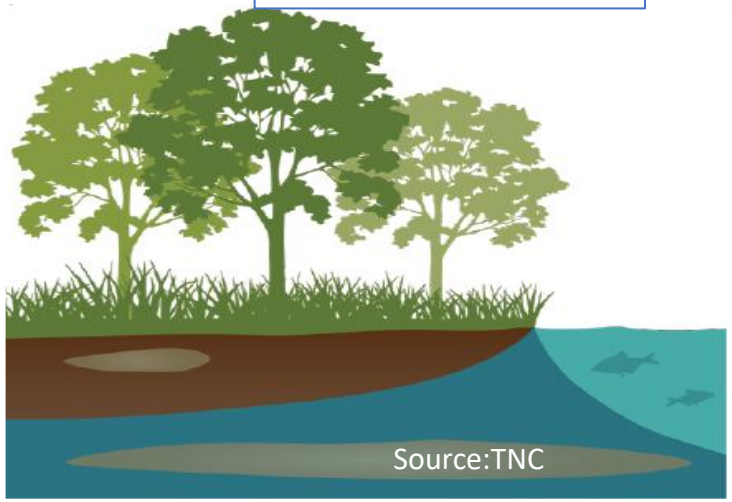
Municipal

Domestic

Surface Water



Environment



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SGMA GSP vs Annual Reports

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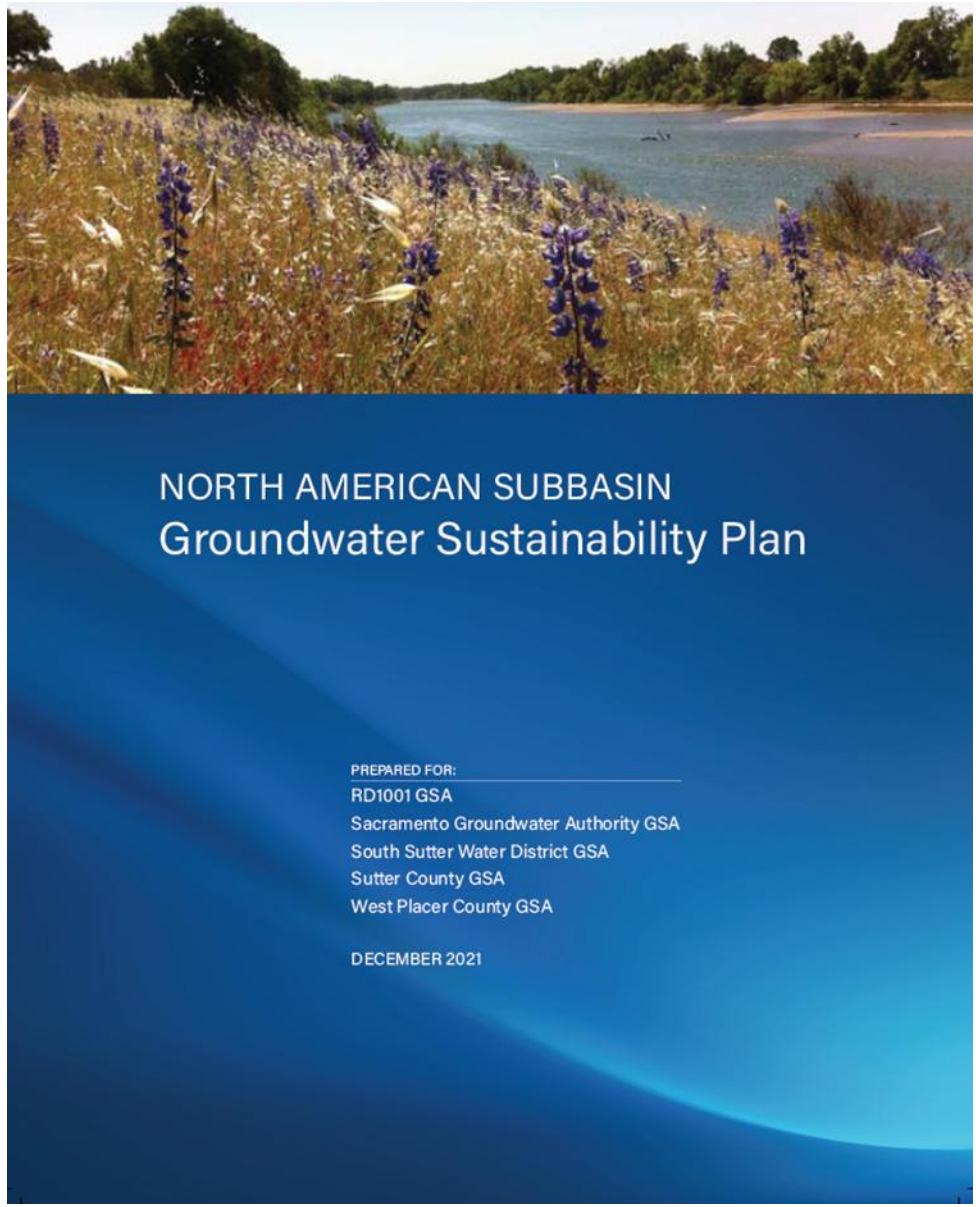

GSP vs Annual Report

- Current Status: Submitted in December 2021 - Department of Water Resources (DWR) initiated their review
  - Determination of Approved GSP received from DWR in July 2023
  - Six recommended corrective actions
- Timing: Periodic evaluation every 5-years (or whenever plan is amended)
- Goal: Ensuring sustainability through projects and programs that will assist in meeting goal

- Water Year: October 1 to September 30
- Current Status: The fifth annual report for Water Year 2025 was submitted to DWR in March
- Timing: Each year submitted to DWR by April 1
- Goal: Non-interpreted data transmittal to DWR, that provides information on groundwater conditions and implementation of GSP for the prior water year

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GSP and Annual Report(s) available at: nasbgroundwater.org

A Break for Questions/ Discussion

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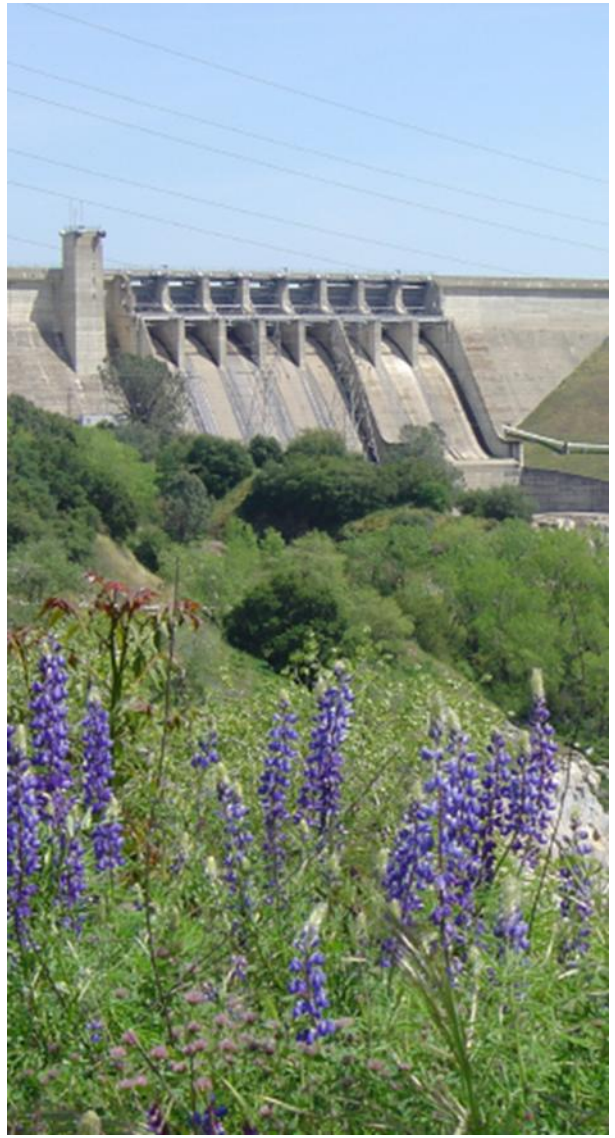

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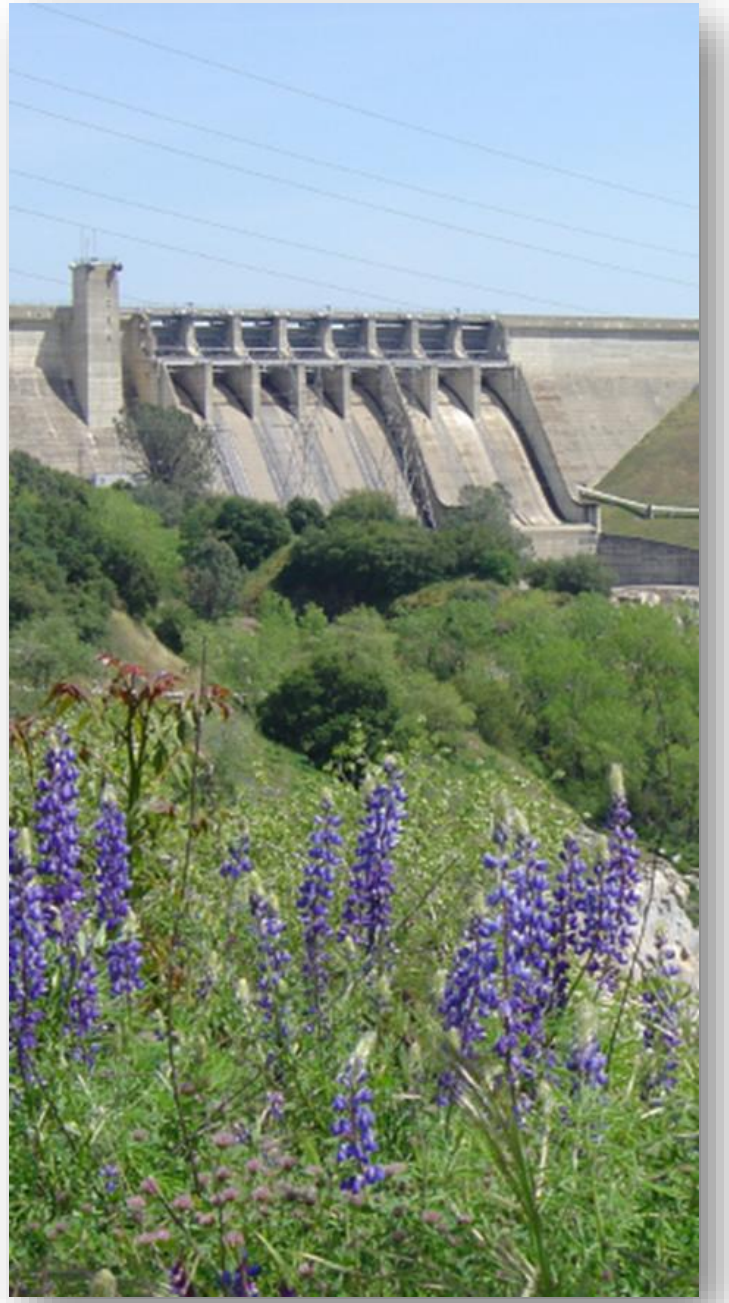

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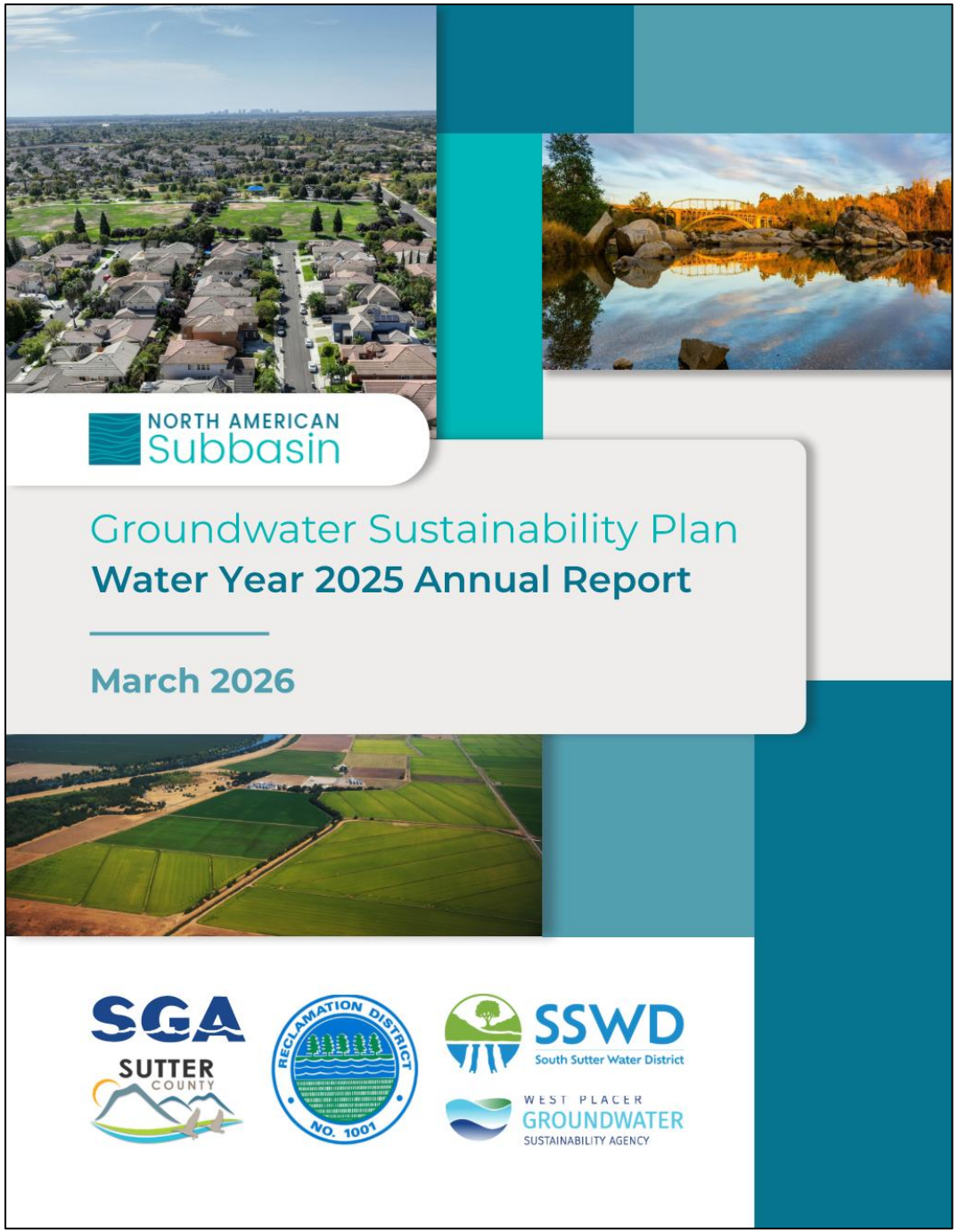
Annual Report

- Hydrologic Conditions
- Water Supply
- Groundwater Levels
- Change in Groundwater Storage
- GSP Implementation
- Sustainability Indicators



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Hydrologic Conditions

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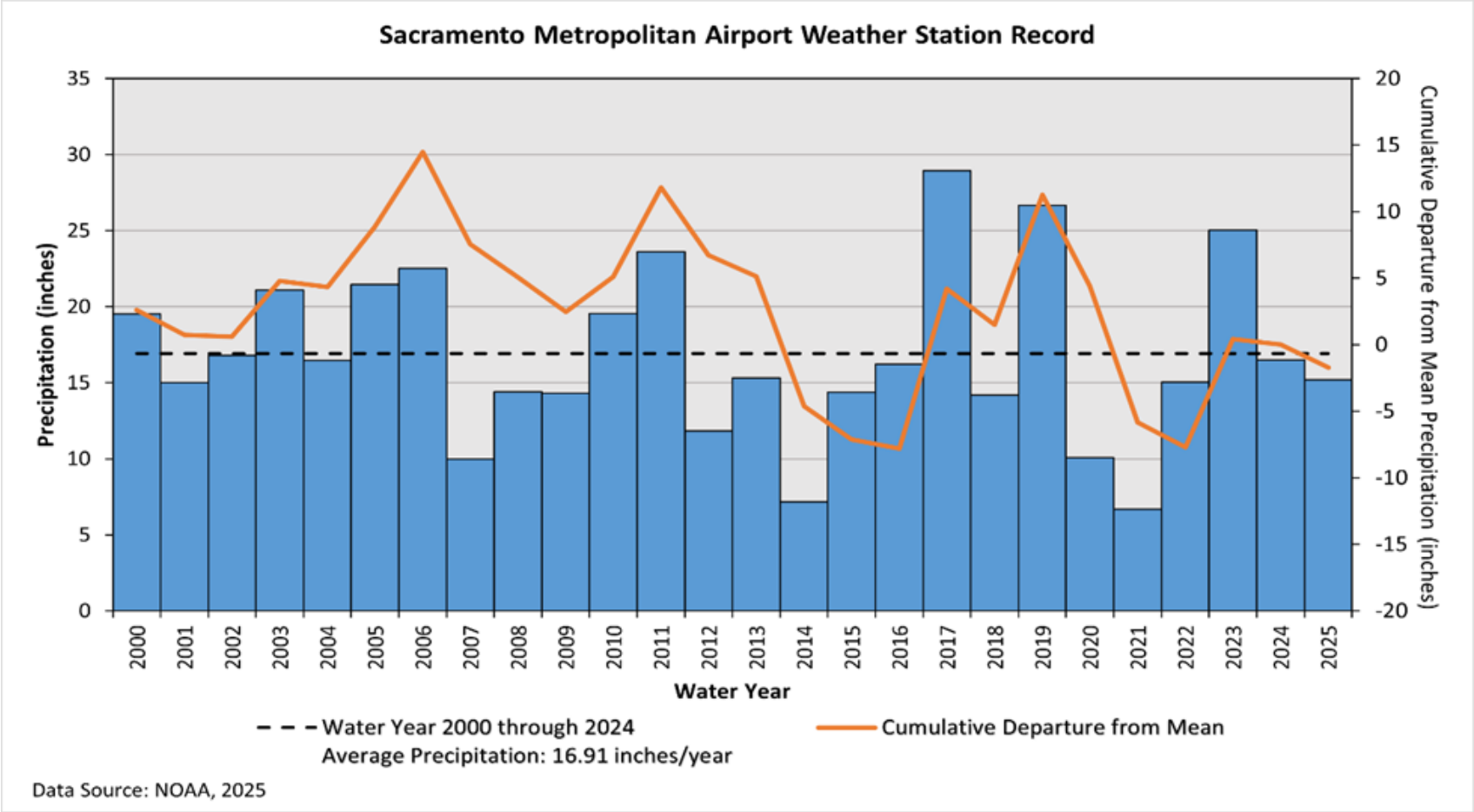
Average Annual Precipitation

- During WY 2025, annual precipitation was 15.20 inches

- Measured localized precipitation data at Sacramento Metropolitan Airport weather station



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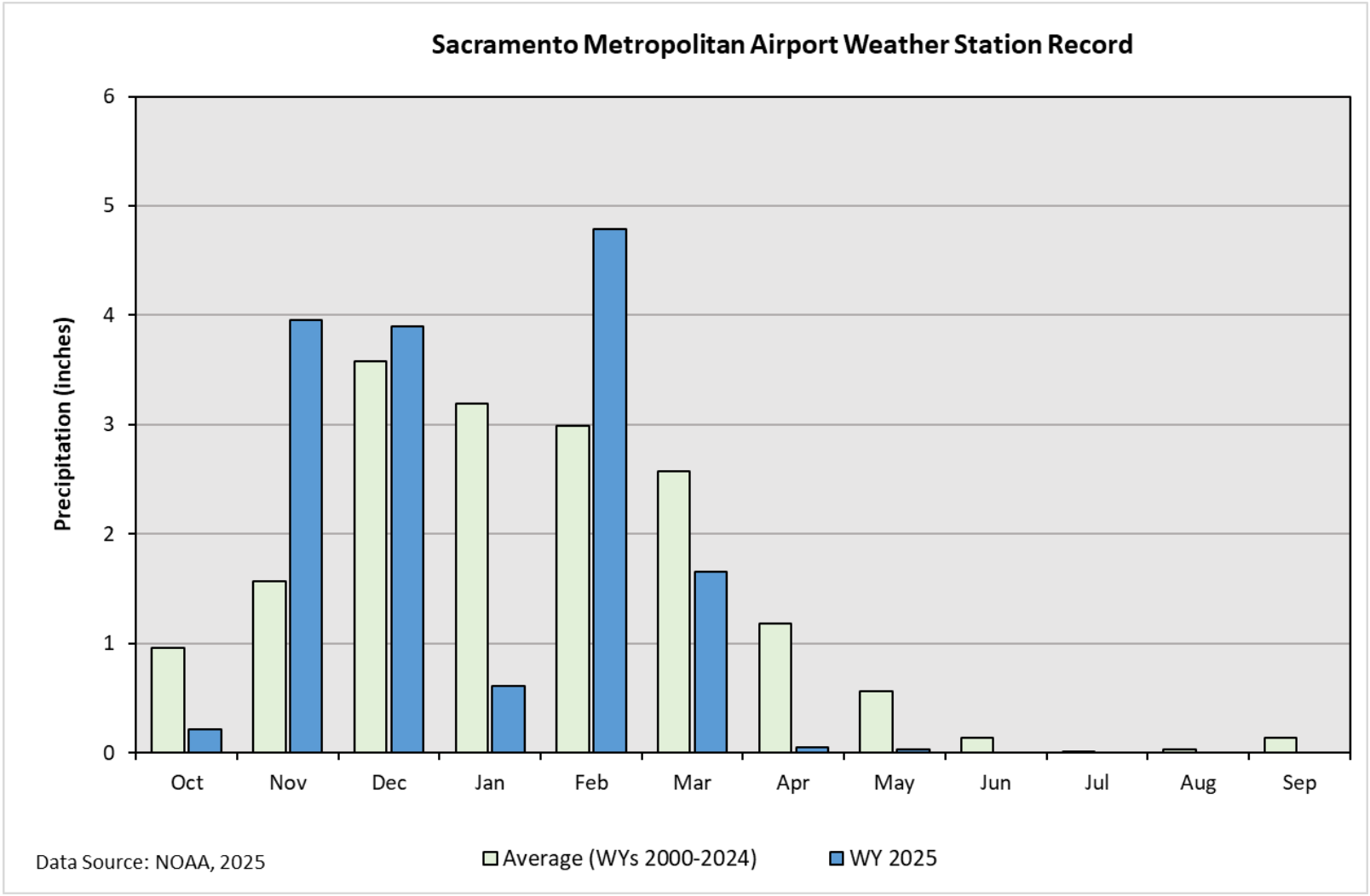
Average Monthly Precipitation

- Three months in WY 2025 received higher than average monthly precipitation
- Nine months in WY 2025 received less than average monthly precipitation



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Water Supply

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WY 2025 Total Water Use by Sector/Source

TABLE 3-4: TOTAL WATER USE BY SECTOR

Sector	WY 2021	WY 2022	WY 2023	WY 2024	WY 2025	Method
Municipal & Industrial	200,900	188,900	178,300	180,800	184,800	Metered
Agricultural	450,000	400,000	410,600	406,100	426,900	Metered and CoSANA
Managed Wetlands	0	0	0	0	0	-
Managed Recharged	0	200	1,800	0	0	Metered
Native Vegetation	0	0	0	0	0	-
Recycled Water	6,600	2,700	6,000	6,100	4,700	Metered
Remediation	3,500	3,300	3,500	3,100	3,500	Metered
Total	**654,400**	**592,200**	**592,400**	**590,000**	**619,900**	

***Note**: Volumes are reported in acre-feet (AF).*

TABLE 3-5: TOTAL WATER USE BY SOURCE

Sector	WY 2021	WY 2022	WY 2023	WY 2024	WY 2025	Methods
Groundwater	400,700	317,600	260,200	263,500	281,400	Metered and CoSANA
Surface Water	250,200	271,300	328,700	323,400	330,300	Metered
Recycled Water	6,600	2,700	6,000	6,100	4,700	Metered
Remediation	3,500	3,300	3,500	3,100	3,500	Metered
Total	**654,400**	**592,200**	**592,400**	**590,000**	**619,900**	

***Note**: Volumes are reported in acre-feet (AF).*

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WY 2025 Surface Water Use Sector

TABLE 3-2: SURFACE WATER USE BY SECTOR

Sector	WY 2021	WY 2022	WY 2023	WY 2024	WY 2025	Method
Municipal & Industrial	112,100	108,300	123,700	133,000	135,200	Metered
Agricultural	130,300	179,200	200,100	187,400	195,100	Metered
Managed Wetlands	0	0	0	0	0	-
Managed Recharge	0	200	1,800	0	0	Metered
Native Vegetation	0	0	0	0	0	-
Recycled Water	6,600	2,700	6,000	6,100	4,700	Metered
Total	**249,000**	**290,400**	**331,600**	**322,900**	**335,000**	

***Note**: Volumes are reported in acre-feet (AF).*

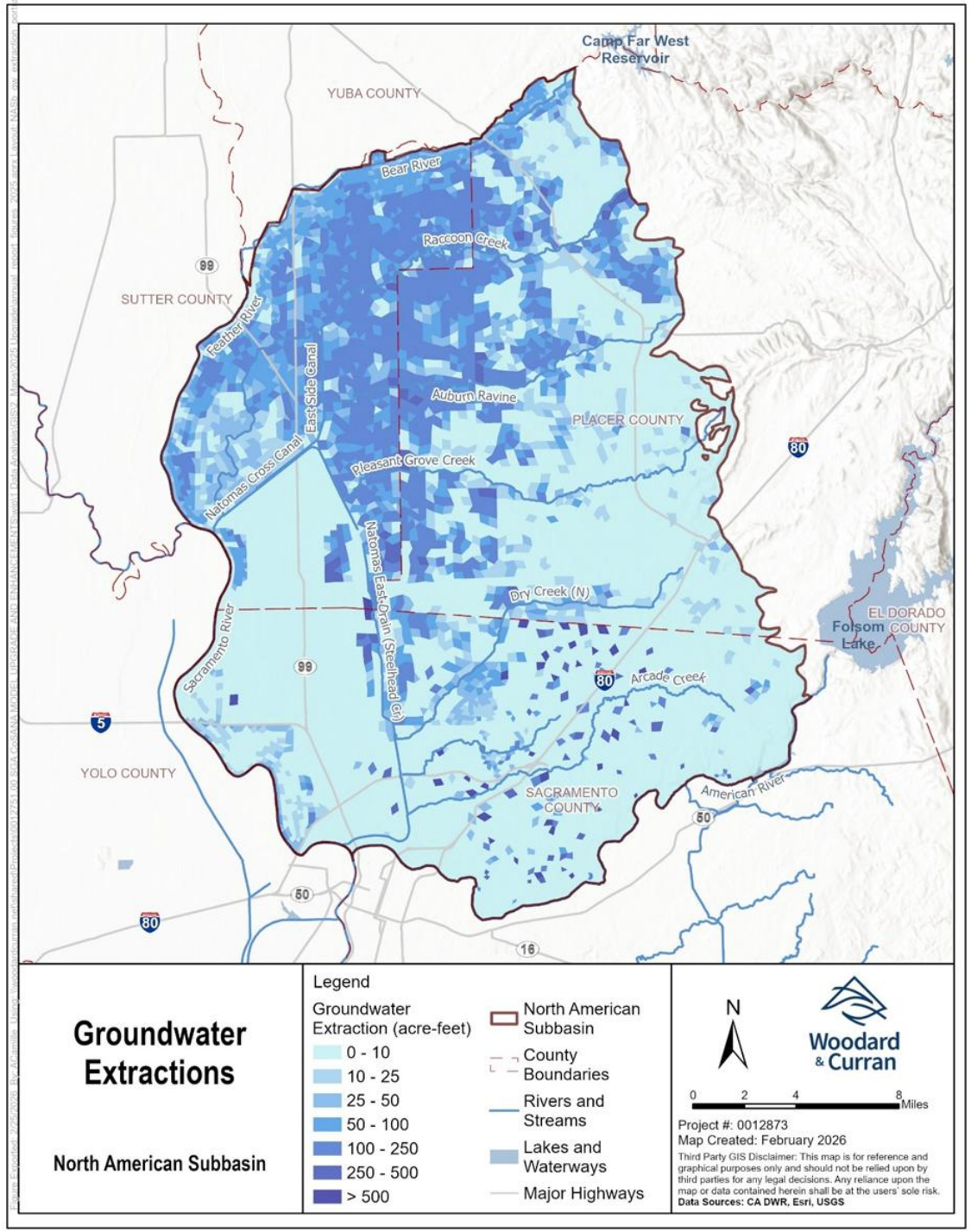
WY 2025 Groundwater Use Sector

TABLE 3-3: GROUNDWATER USE BY SECTOR

Sector	WY 2021	WY 2022	WY 2023	WY 2024	WY 2025	Methods
Municipal & Industrial	88,000	81,700	58,500	47,100	49,600	Metered
Agricultural	312,700	235,900	201,700	216,400	231,800	Metered and CoSANA
Managed Wetlands	0	0	0	0	0	-
Managed Recharge	0	0	0	0	0	-
Native Vegetation	0	0	0	0	0	-
Total	**400,700**	**317,600**	**294,400**	**263,500**	**281,400**	

***Note**: Volumes are reported in acre-feet (AF).*

CoSANA Model – Groundwater Extractions for WY 2025



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Groundwater Levels

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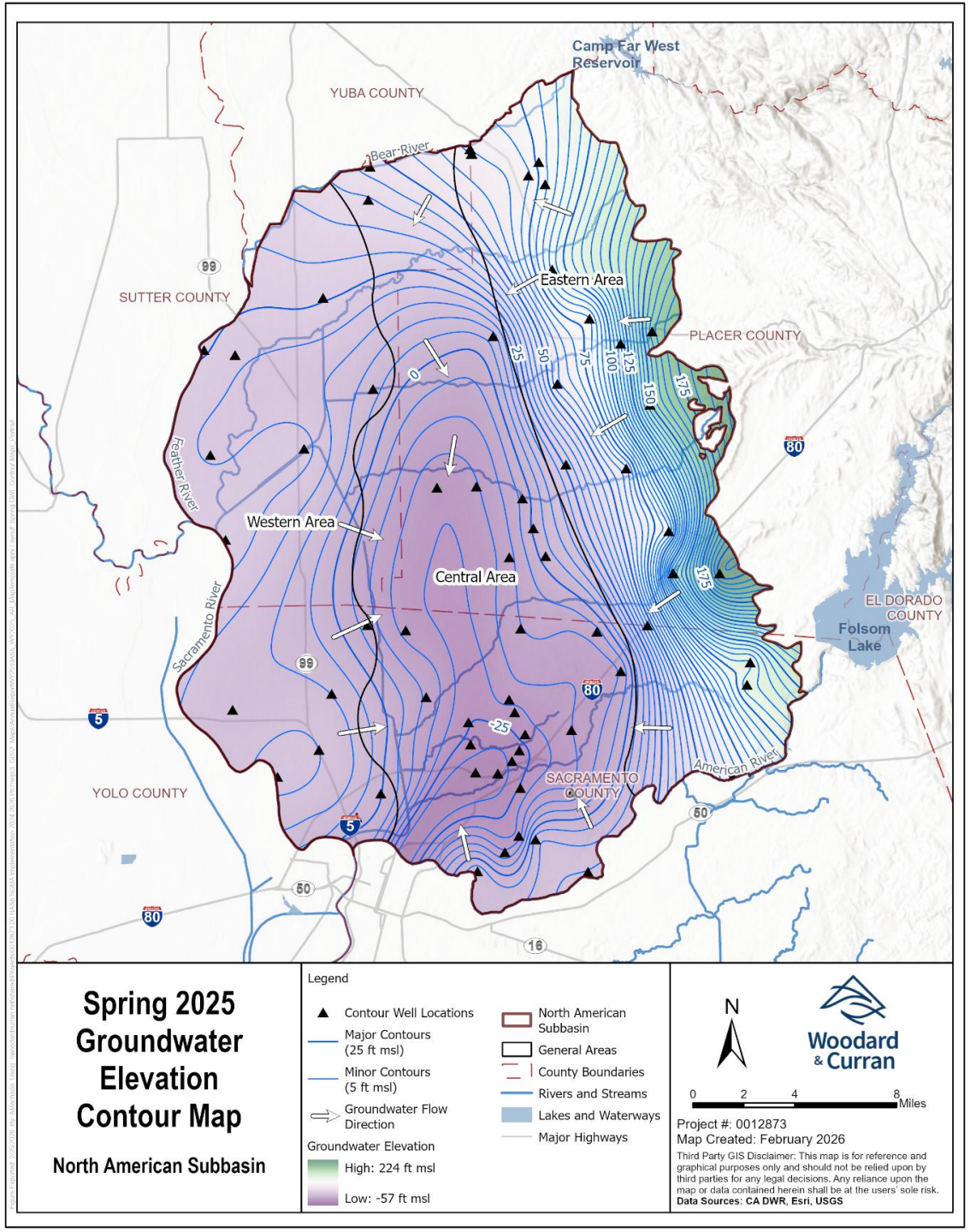
WY 2025 Groundwater Contour Map - Spring

- Spring groundwater elevations ranged from a high of 224 ft msl in the eastern portion of the Subbasin, to a low of -57 ft msl within the central portion of the Subbasin



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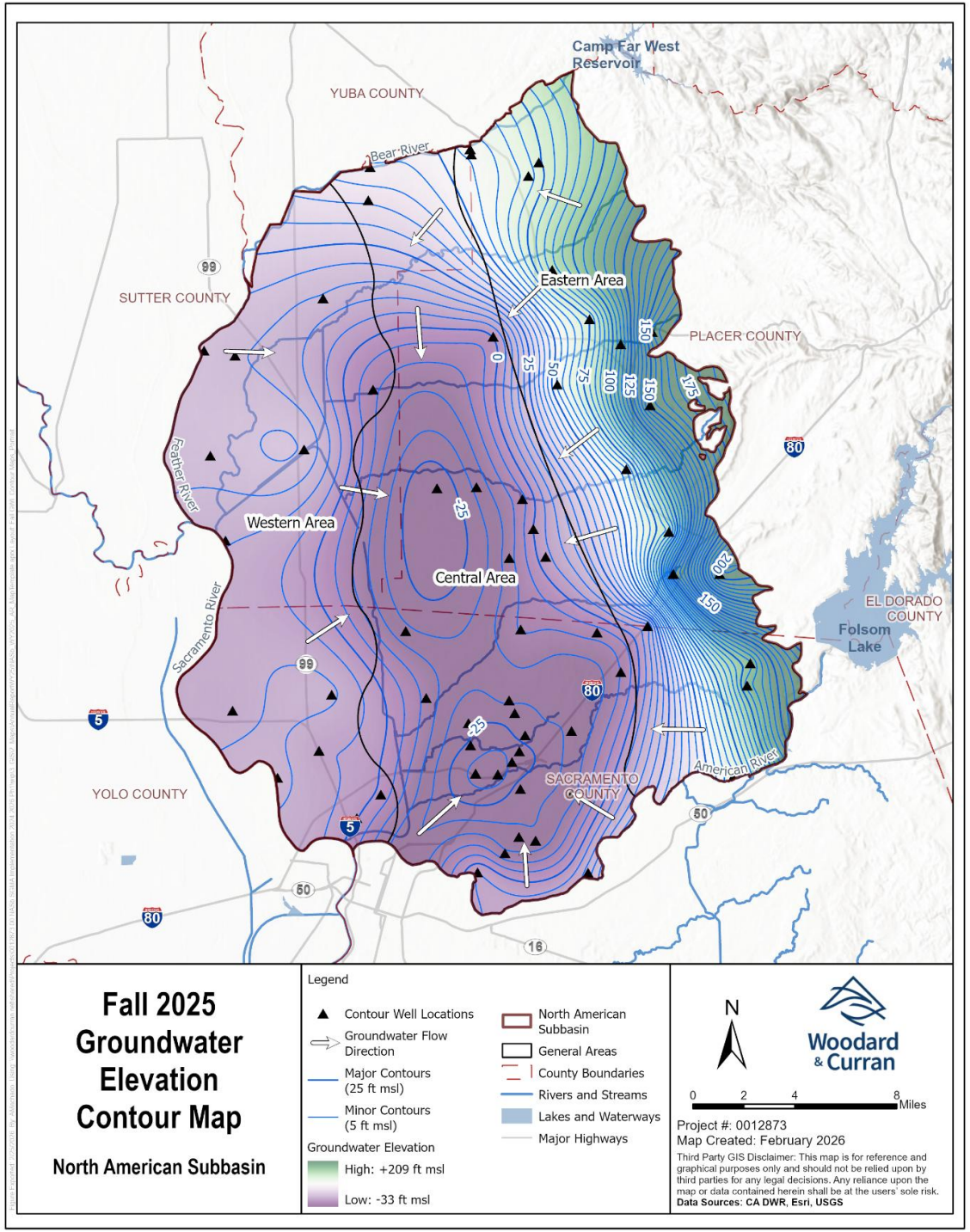
WY 2025 Groundwater Contour Map - Fall

- Fall groundwater elevations tend to be lower, on average, than the spring due to greater groundwater pumping during summer months and lower volumes of recharge

- Fall groundwater elevations ranged from a high of 209 ft msl in the eastern portion of the Subbasin, to a low of -33 ft msl within the central portion of the Subbasin



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Change in Groundwater Storage

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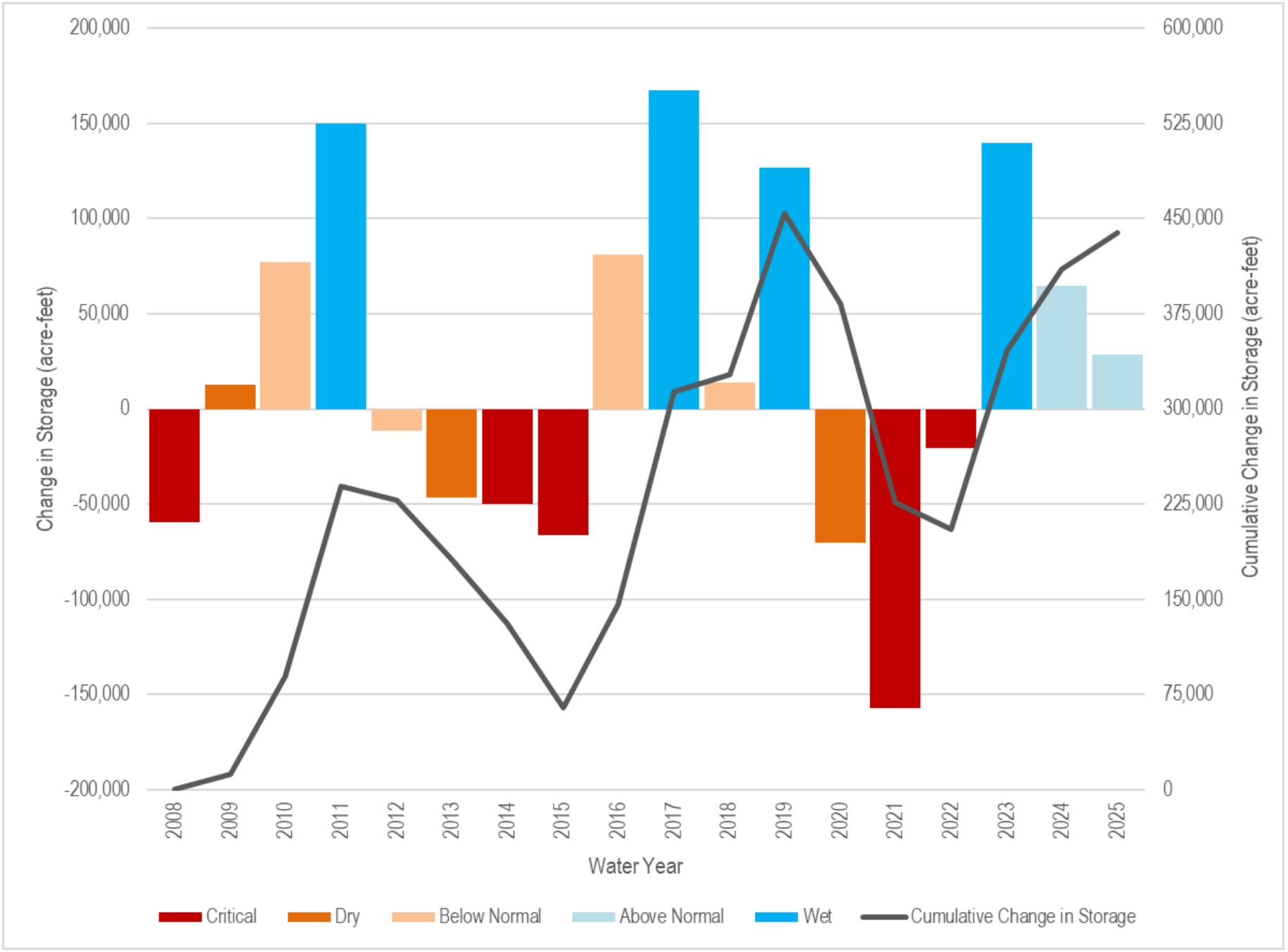
WY 2025 Change in Groundwater Storage

TABLE 5-1: MODELED ANNUAL CHANGE IN GROUNDWATER STORAGE, WATER YEARS 2020-2025

	WY 2021	WY 2022	WY 2023	WY 2024	WY 2025	Method
Water Year Classification	Critically Dry	Critically Dry	Wet	Above Normal	Above Normal	
Groundwater Extractions	404,200	320,900	263,700	266,600	284,900	Metered and CoSANA
Difference to Sustainable Yield[1]	-68,200	15,100	72,900	69,400	51,100	
Estimated Change in Storage	**-157,200**	**-20,600**	**140,000**	**65,500**	**28,400**	CoSANA

***Note**: Volumes are reported in acre-feet (AF).*
(1) Sustainable Yield is 336,000 AFY



Cumulative Change in Groundwater Storage for WY 2025 (and WYs 2008 – 2024)

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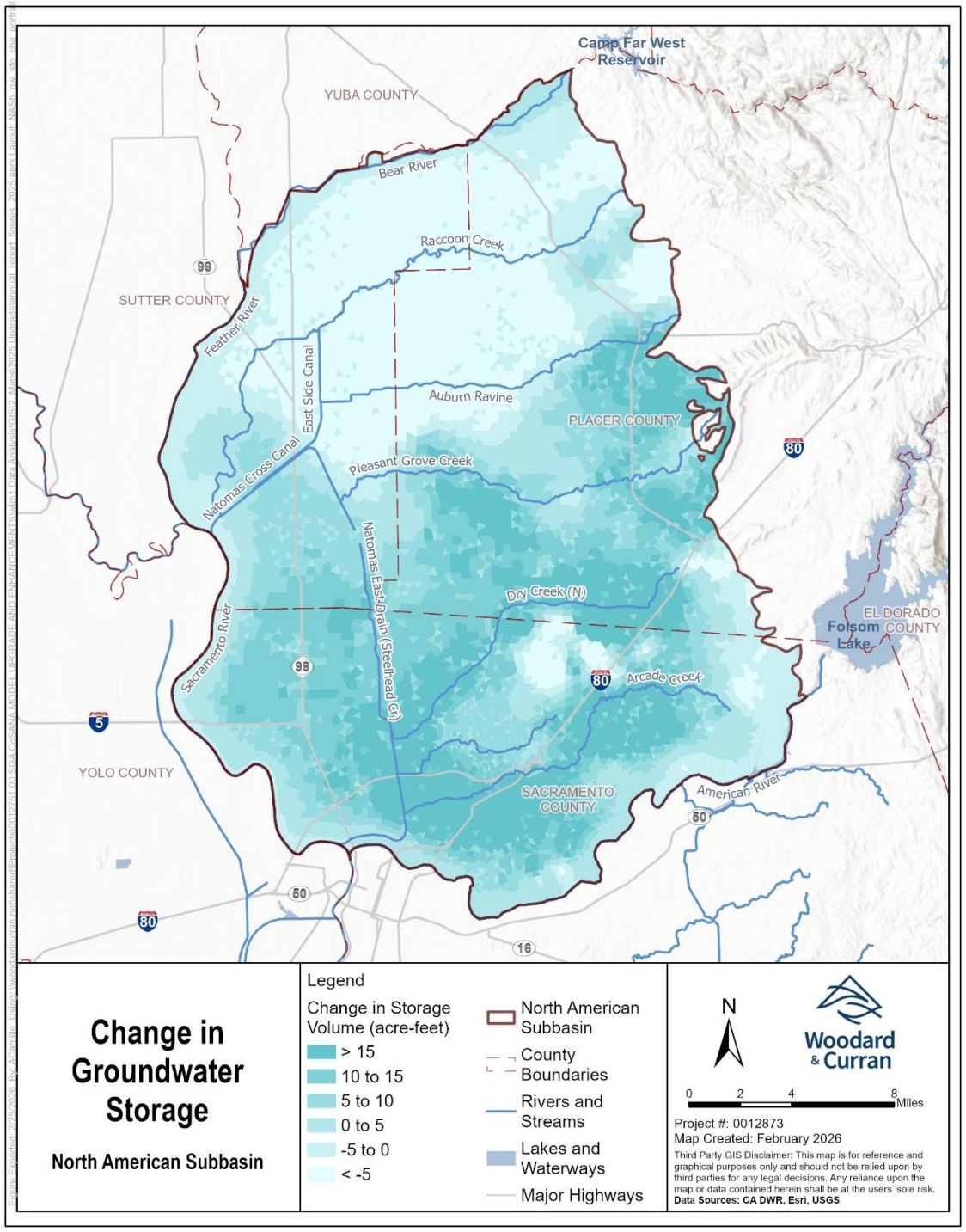
CoSANA Model (Fall 2024 - Fall 2025) Estimated Change in Groundwater Storage for WY 2025



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GSP Implementation

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Projects and Management Actions (PMAs)

Project #1: Regional Conjunctive Use Expansion – Phase 1

- Continuation of implementing conjunctive use in accordance with Water Accounting System (WAS). Additional conjunctive use expansion will occur when Sacramento Regional Water Bank becomes operational.

Project #2: Natomas Cross Canal Stability Berm and Channel Habitat Enhancement Project

- The Project is being coordinated through the CVFPB encroachment permit and USACE Section 408 review process.
- As of March 2026, USACE has determined the Section 408 request is complete and has initiated formal review. Final approval is pending.
- Construction is anticipated in late 2026 or 2027, subject to permit approvals.

Projects and Management Actions

Management Action #1: Complete Planning for Sacramento Regional Water Bank

- In WY 2025, participating local public agencies, including the NASb GSAs:
  - Completed the Water Bank governance document
  - Advanced modeling improvements
  - Started CEQA documentation
  - Evaluated benefits of previously banked water
  - Developed and began piloting the water accounting system
- Completion of the Water Bank is expected in WY 2026.

Management Action #2: Explore Improvements with NASb Well Permitting Programs

- Current efforts include preparation of a technical memorandum outlining options for:
  - Enhanced interagency coordination
  - Updated information requirements for well permit applications
  - Potential siting, construction, and operational considerations in sensitive areas
- No program changes have been adopted to date; coordination and evaluation efforts are ongoing.

Projects and Management Actions

Management Action #3: Proactive Coordination with Land Use Agencies

- The GSAs continue to regularly coordinate with land use planning agencies regarding GSP analysis and implementation.
- Methods include stakeholder communications, annual public meetings, and GSA meetings.
- The GSAs are evaluating active land use plans to evaluate potential future impacts on groundwater management within their jurisdictions.
- The WPGSA and the Placer County Planning Department developed and distributed a SGMA Guidance Document for Analysis of Groundwater Impacts for Development Requiring CEQA Analysis.

Management Action #4: Domestic/Shallow Well – Data Collection and Communication Program

- The GSAs are using DWR's Online System for Well Completion Reports and assessor parcel number data to identify potential domestic well owners and develop a mailing list for areas with high concentrations of domestic wells to:
  - Confirm the presence of a domestic well
  - Establish a voluntary group of domestic well owners interested in local groundwater conditions
  - Provide regular information to interested domestic well owners and well permitting agencies
- SGA completed its analysis and is preparing a summary report and coordinating outreach methods.
- WPGSA completed a domestic well investigation and is developing a targeted outreach mailing list.

Projects and Management Actions

Management Action #5: Groundwater Dependent Ecosystem (GDE) Assessment Program

- NASb GSAs continued to evaluate potential groundwater dependent ecosystems by comparing groundwater levels with vegetation health indicators, including remote sensing data such as Normalized Difference Vegetation Index (NDVI).
  - This helps the GSAs better understand whether vegetation in mapped GDE areas may be supported by groundwater, surface water, urban runoff, treated wastewater discharges, or other sources.
- In WY 2025, three new monitoring wells were installed near areas associated with potential GDEs. These wells improve monitoring coverage and will help the GSAs evaluate groundwater trends near sensitive vegetation areas over time.

Sustainable Management Criteria (SMC)

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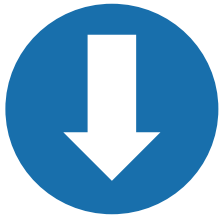
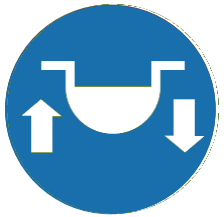
Sustainability Indicators

"effects caused by groundwater conditions throughout the basin that, when significant and unreasonable, cause undesirable results…"

NASb Applicable Sustainability Indicators

					
Chronic Lowering of Groundwater Levels	**Reduction of Groundwater In Storage**	**Degraded Water Quality**	**Inelastic Land Subsidence**	**Depletions of Interconnected Surface Waters**	**Seawater Intrusion (Not Applicable)**

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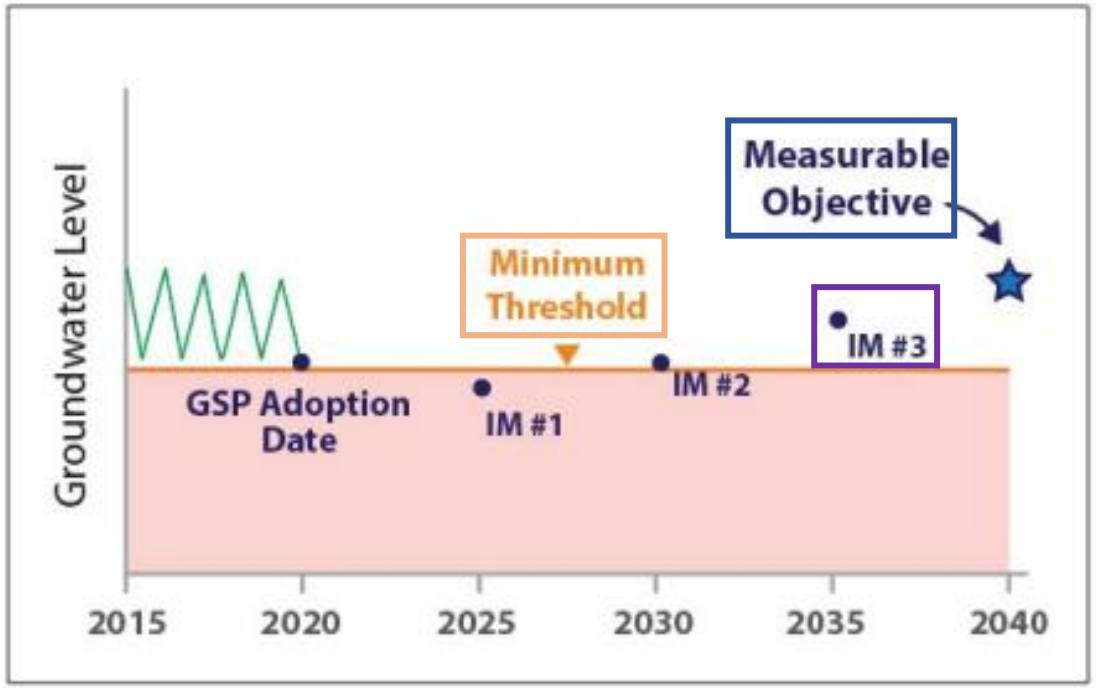
Measurable Objectives and Minimum Thresholds

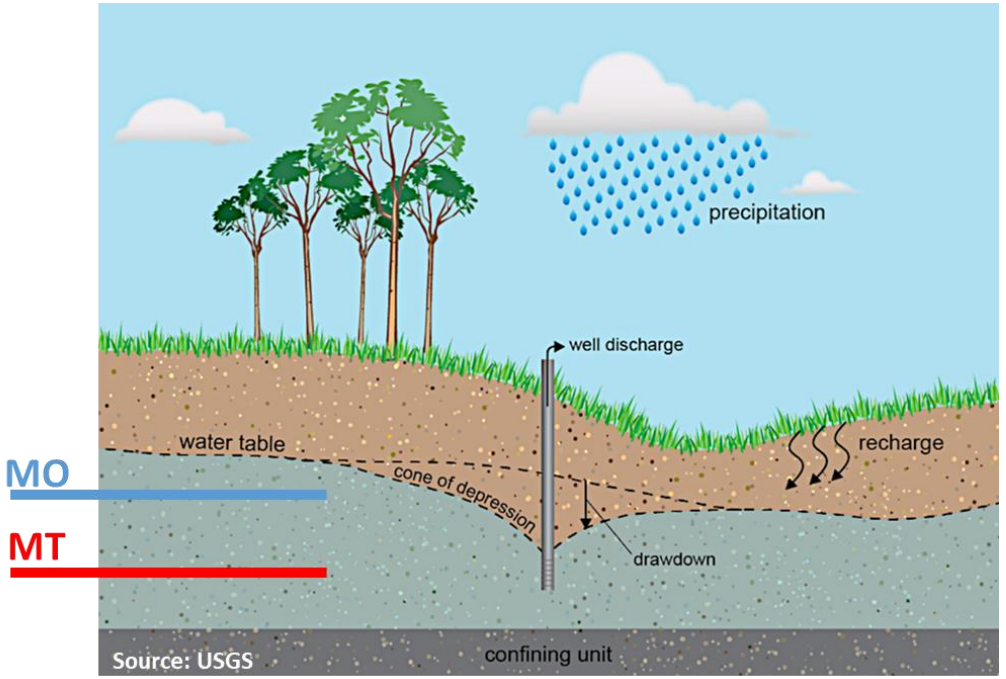
Measurable Objective (MO) = specific, quantifiable goals for the maintenance or improvement of specified groundwater conditions that have been included in an adopted GSP to achieve the sustainability goal for the basin

Interim Milestone (IM) = *a target value representing measurable groundwater conditions, in five-year increments.*

Minimum Threshold (MT) = a numeric value for each sustainability indicator used to define undesirable results



Source: DWR



Sustainability Indicators – Fall 2025 Status

Sustainability Indicator	Minimum Threshold	Interim Milestones	Measurable Objective	Undesirable Result Definition	Fall 2024 Status
Groundwater Levels	Average fall 2014 & 2015 groundwater levels incorporated with change in groundwater levels projected over 50-year period.	Projected in 5-year intervals to meet Measurable Objectives by 2042.	Average spring groundwater level from 2010 through 2019.	20% (8 out of 40 wells) or more of all RMSs have MT exceedances for two consecutive fall measurements.	Five out of 40 wells (13%) exceeded their minimum thresholds for two consecutive years. Thus, an undesirable result did not occur.
Groundwater Storage	Groundwater levels are used as a proxy for this sustainability indicator. Sustainable Management Criteria and conditions are identical to those of groundwater levels.				

NORTH AMERICAN Subbasin

Sustainability Indicators – Fall 2025 Status

Sustainability Indicator	Minimum Threshold	Interim Milestones	Measurable Objective	Undesirable Result Definition	Fall 2024 Status
Water Quality	Secondary Maximum Contaminant Level (SMCL) for **TDS**: 500 mg/L Primary Maximum Contaminant Level (MCL) for **Nitrate (as N)**: 10 mg/L	Identical to Measurable Objectives	<u>Public Water Supply Wells</u> **TDS**: 300 mg/L **Nitrate**: 3 mg/L <u>Shallow Aquifer Wells</u> 10% greater than recently observed **TDS** & **Nitrate** concentrations in each RMS.	<u>Public Water Supply Wells</u> **TDS**: Basin-wide average >400 mg/L in all public water supply wells *Or* **Nitrate**: Basin-wide average >8 mg/L in all public water supply wells. <u>Shallow Aquifer Wells</u> **TDS** & **Nitrate** MCLs are exceeded in 25% RMS.	The average public water supply well concentration for TDS and Nitrate were below concentrations defined for undesirable results. One out of 16 (6%) shallow aquifer sites was equal to the minimum threshold.

Sustainability Indicators – Fall 2025 Status

Sustainability Indicator	Minimum Threshold	Interim Milestones	Measurable Objective	Undesirable Result Definition	Fall 2024 Status
Land Subsidence	Groundwater levels are used as a proxy for this sustainability indicator, equating 1 foot of groundwater level decline to 0.01 feet of subsidence.			The rate of subsidence exceeds 0.5 feet over a 5-year period over an area covering approximately 5 or more square miles.	One out of 40 wells (2%) exceeded their minimum threshold. Thus, there was not an undesirable result.

Sustainability Indicators – Fall 2025 Status

Sustainability Indicator	Minimum Threshold	Interim Milestones	Measurable Objective	Undesirable Result Definition	Fall 2024 Status
Depletions of Interconnected Surface Waters	Groundwater levels are used as a proxy, using a subset of the groundwater level representative monitoring network. Sustainable Management Criteria are identical to those established for groundwater levels.			20% (5 out of 24 wells) or more of the interconnected surface water RMSs have MT exceedances for two consecutive fall measurements.	Three out of 24 wells (13%) exceeded their minimum threshold. Thus, there was not an undesirable result.

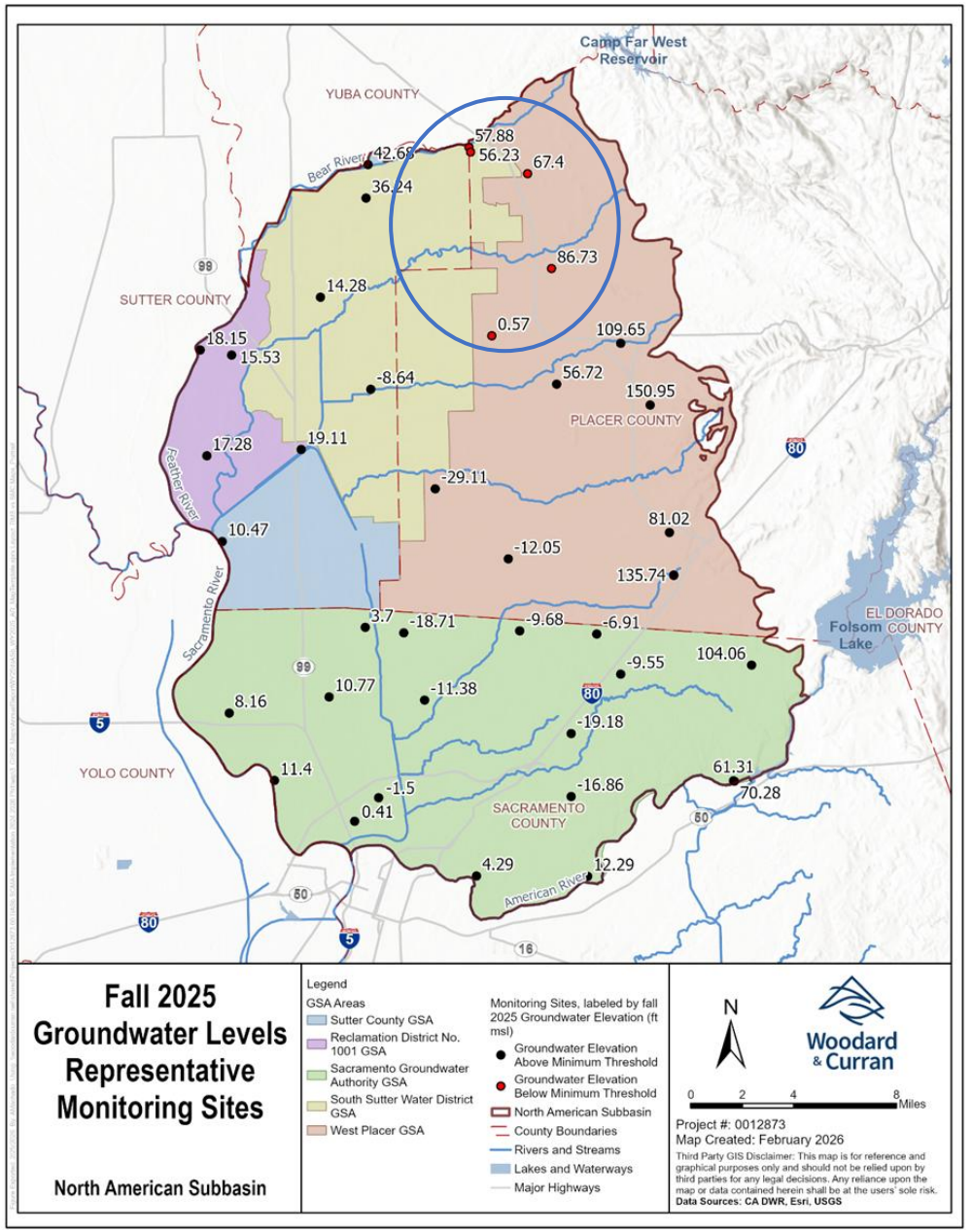
Chronic Lowering of Groundwater and Reductions of Groundwater in Storage

- 40 wells analyzed in WY 2025
  - MT: Varies based on well
  - MO: Varies based on well
  - Minimum: -29.1 ft.
  - Maximum: 150.9 ft.

- 5 representative monitoring wells exceeded the MT
  - All of these wells observed consecutive fall MT exceedances
  - See hydrographs on following slides

- An undesirable result is **not** occurring

Note: An undesirable result occurs if 20% of representative monitoring network wells exceed their MTs



Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

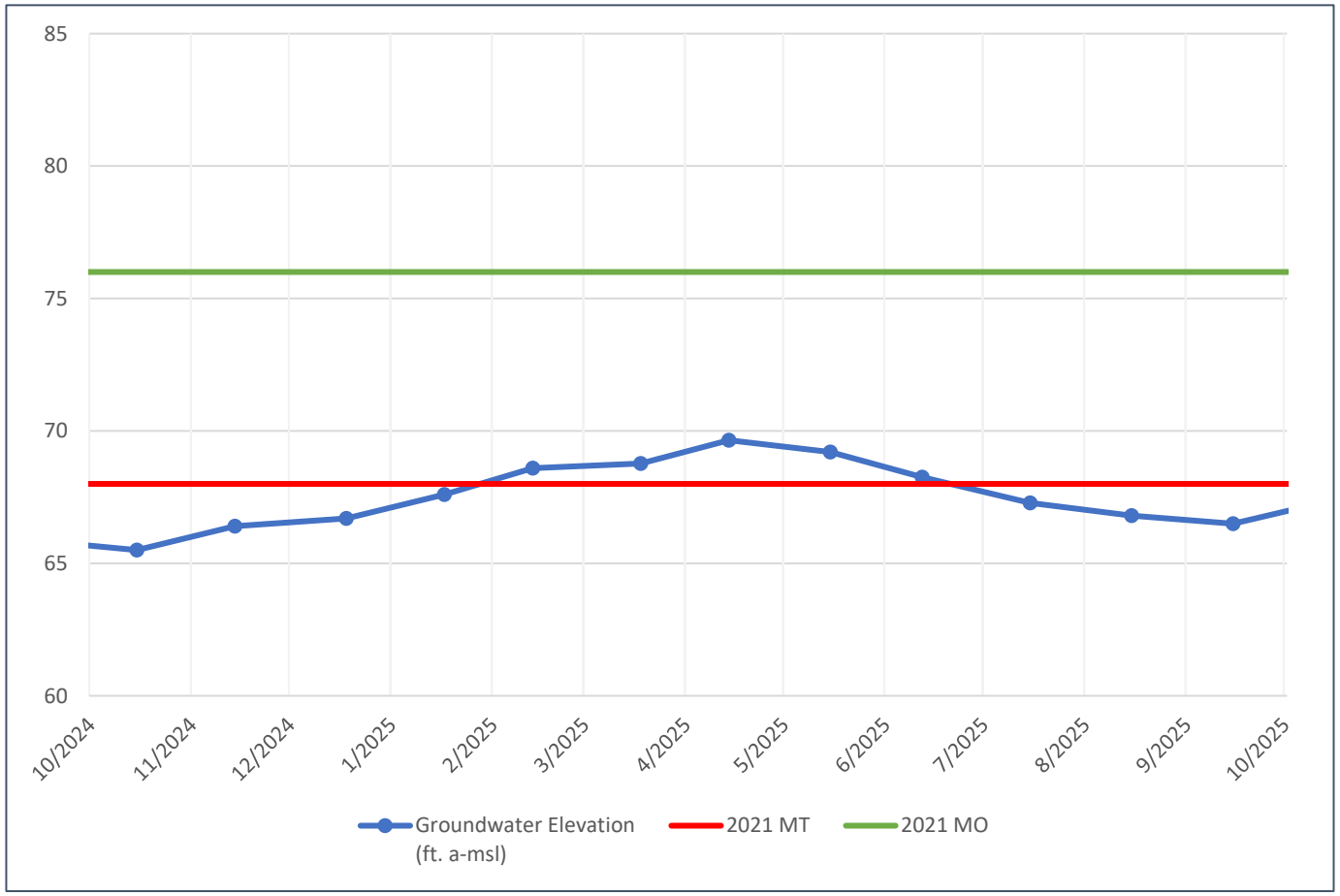
Degraded Water Quality

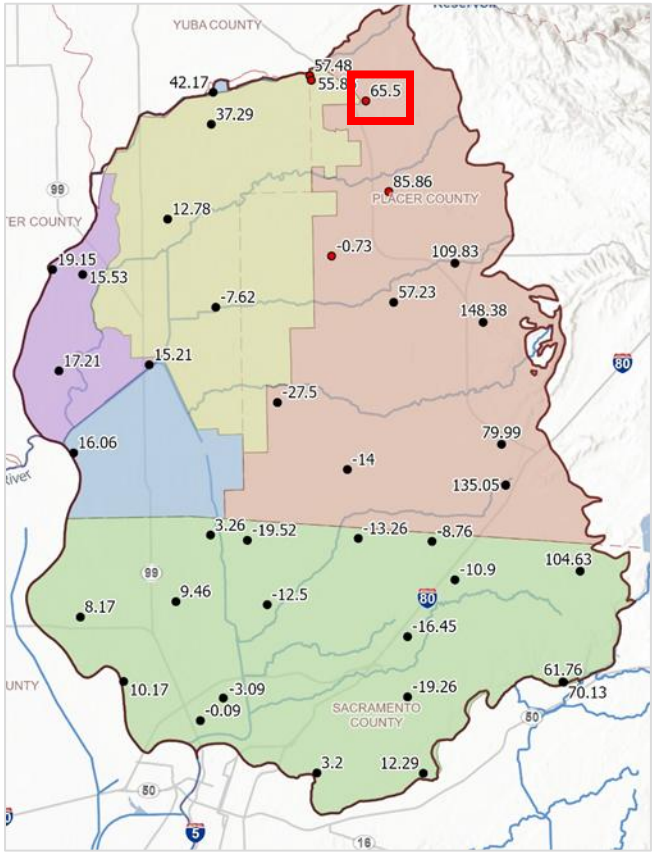
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

Old Well #2
Water Year 2025 Groundwater Levels





Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

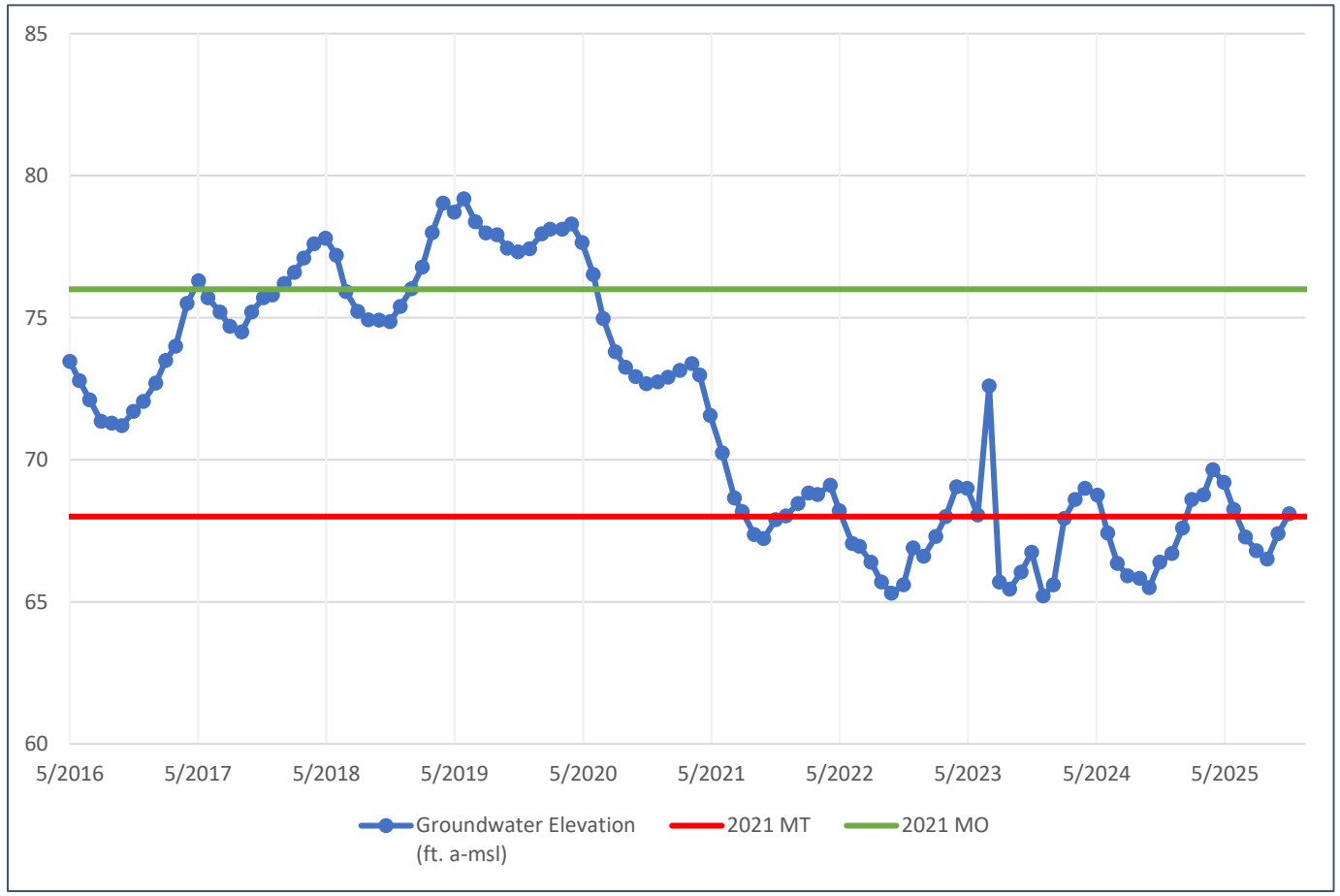
Degraded Water Quality

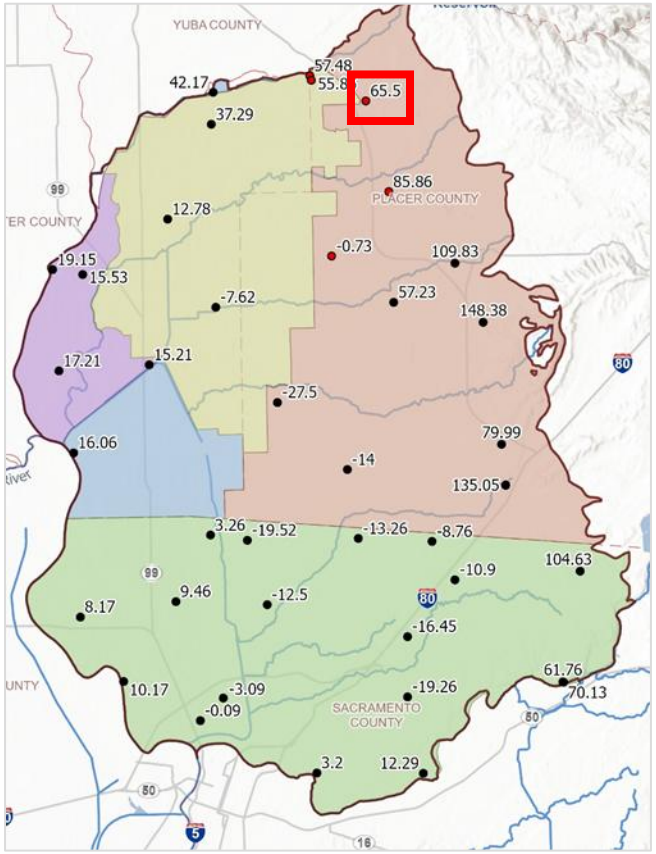
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

Old Well #2
Historic Groundwater Levels (2016-Present)





Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

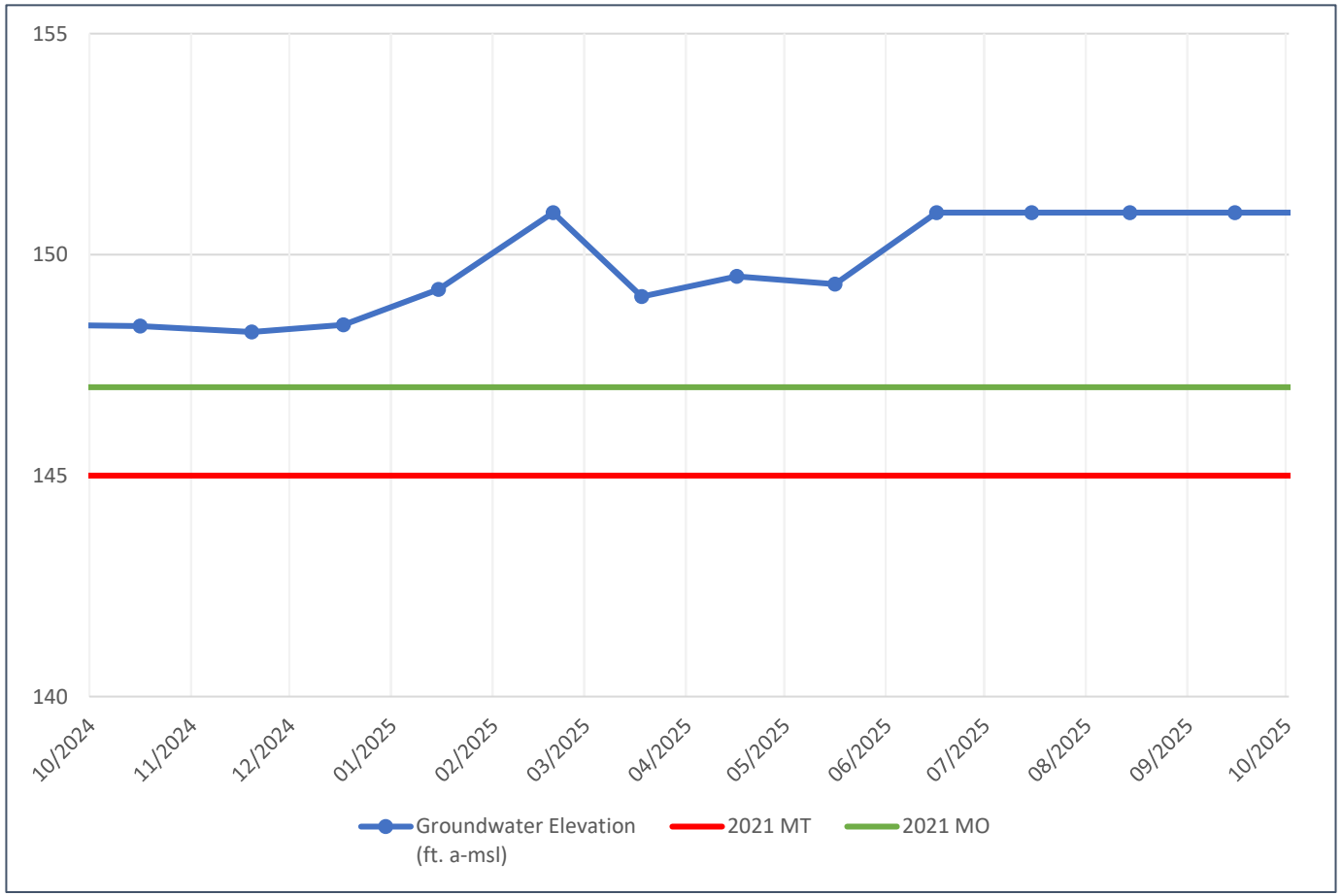
Degraded Water Quality

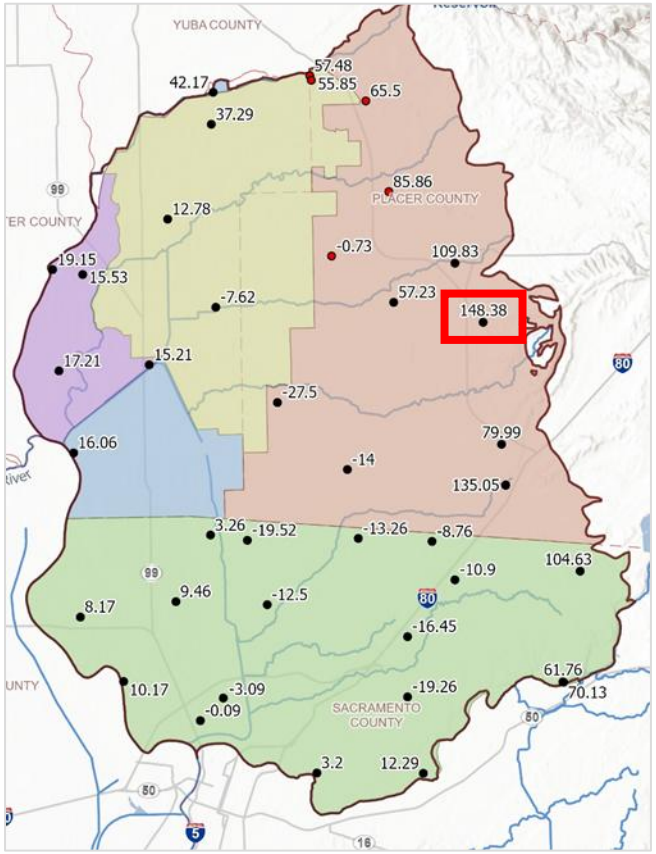
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

WPMW-3A
Water Year 2025 Groundwater Levels





Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

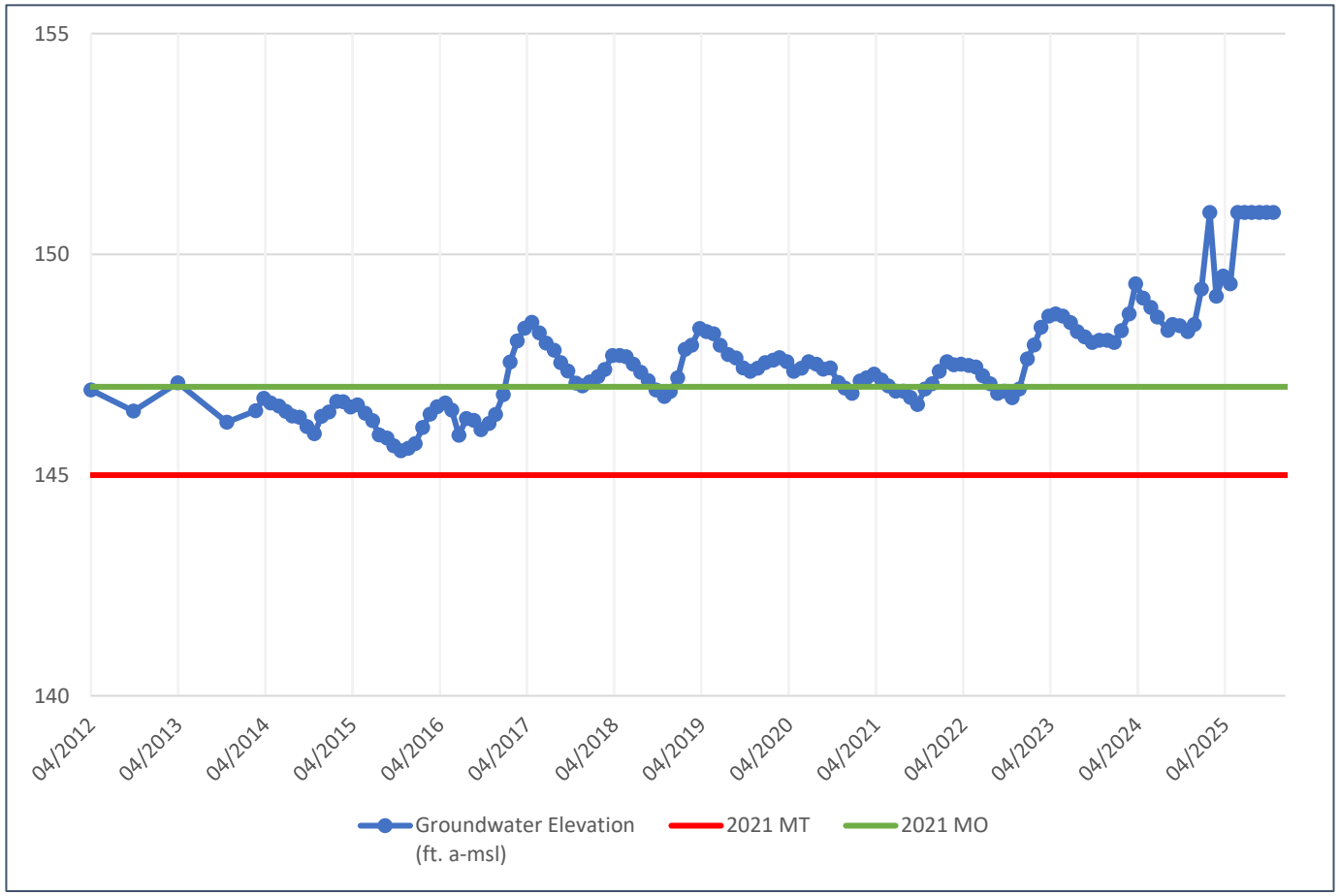
Degraded Water Quality

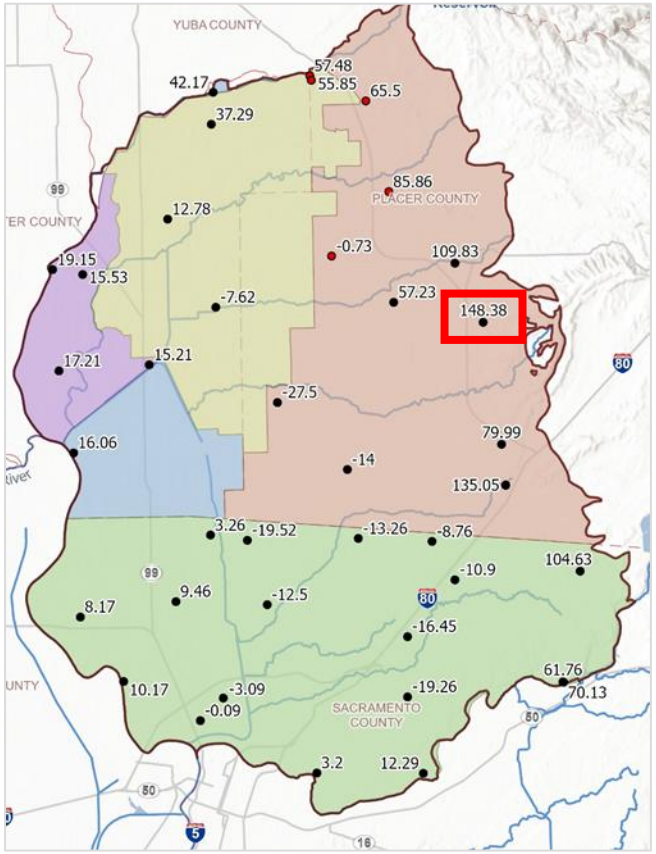
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

WPMW-3A
Historic Groundwater Levels (2012-Present)





Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

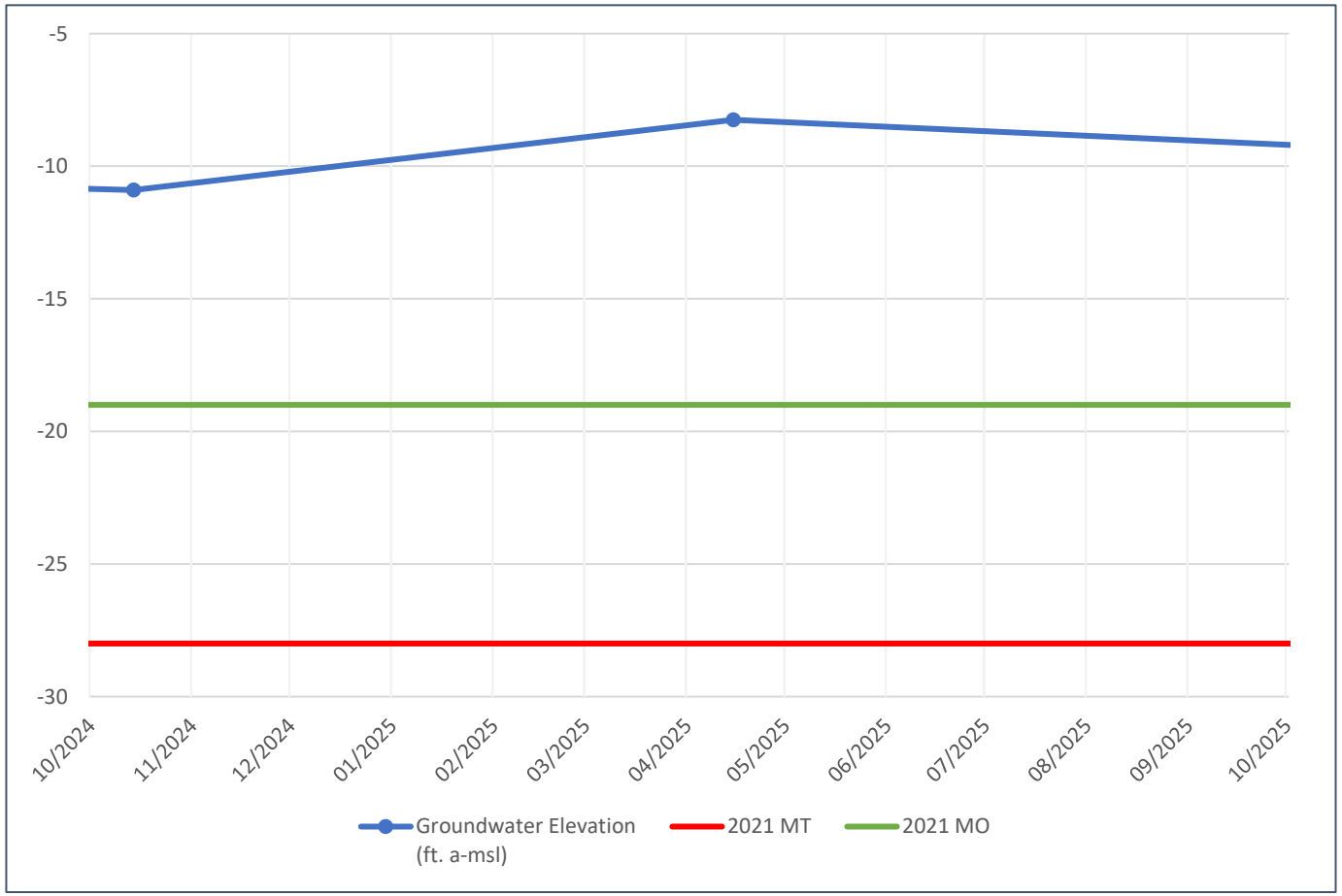
Degraded Water Quality

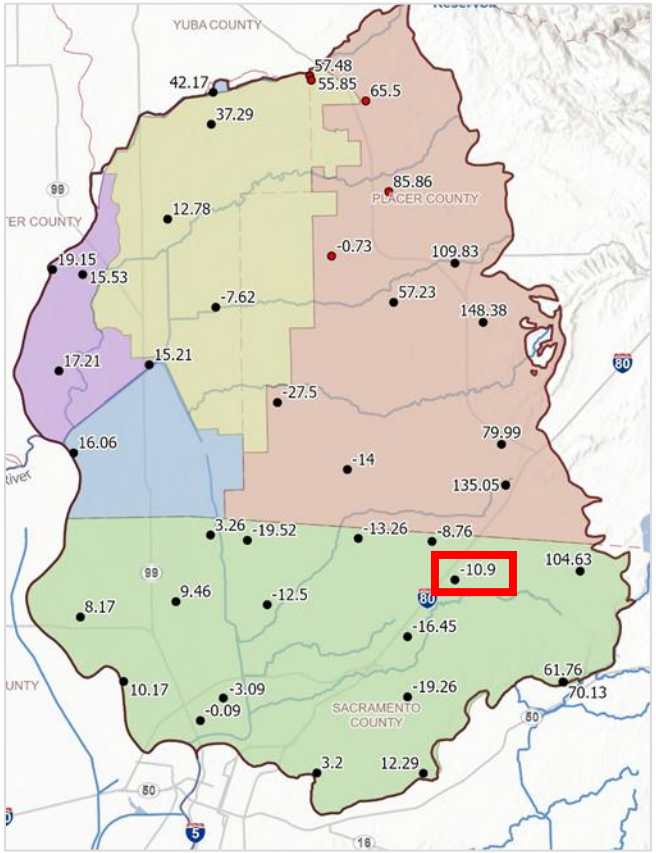
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

Twin Creeks Park
Water Year 2025 Groundwater Levels





Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

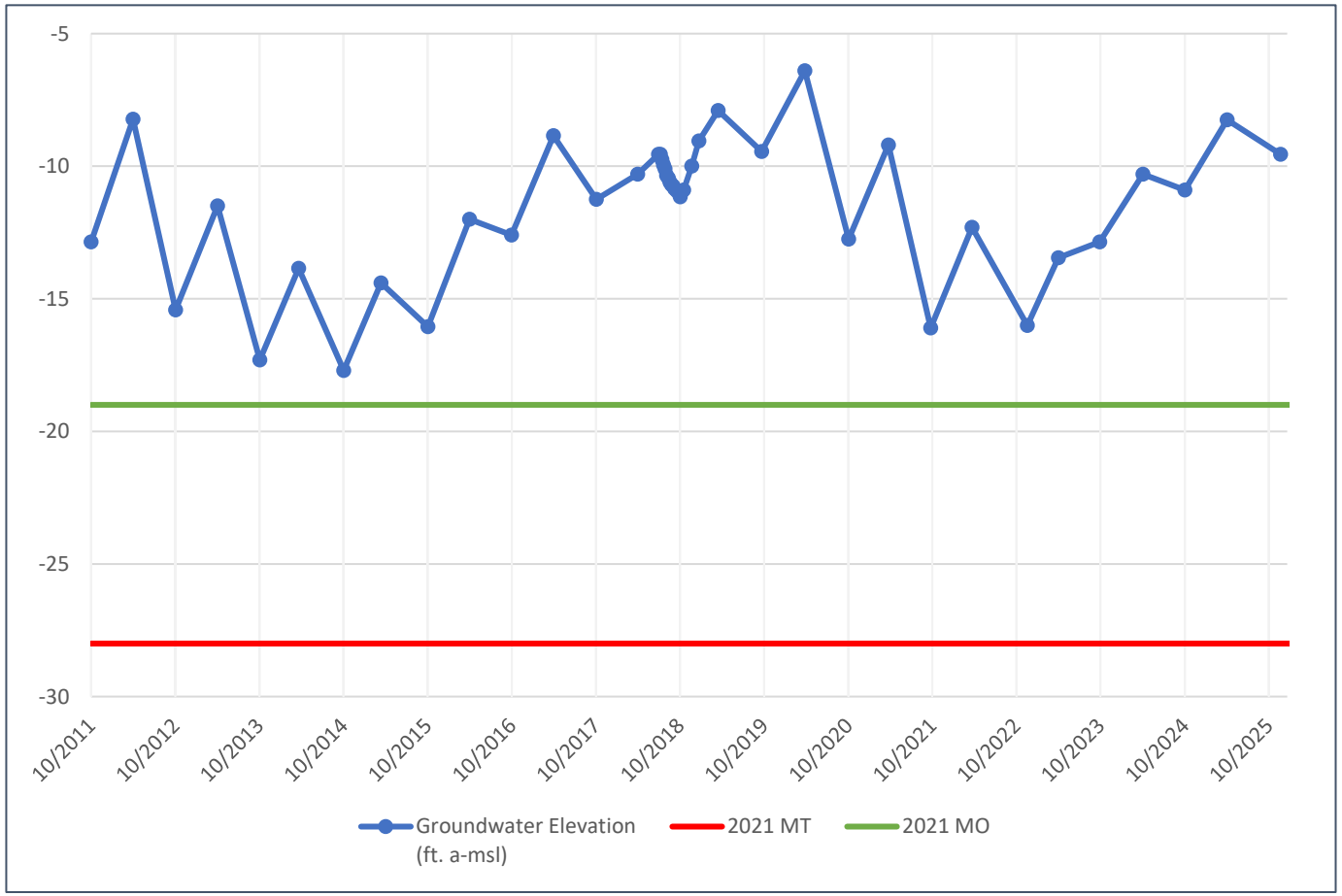
Degraded Water Quality

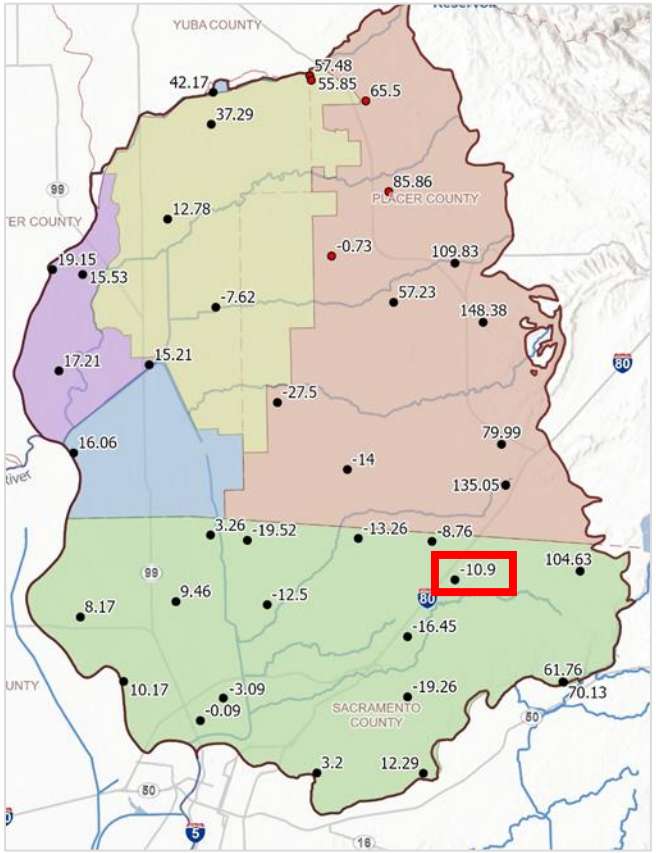
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

Twin Creeks Park
Historic Groundwater Levels (2011-Present)





Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

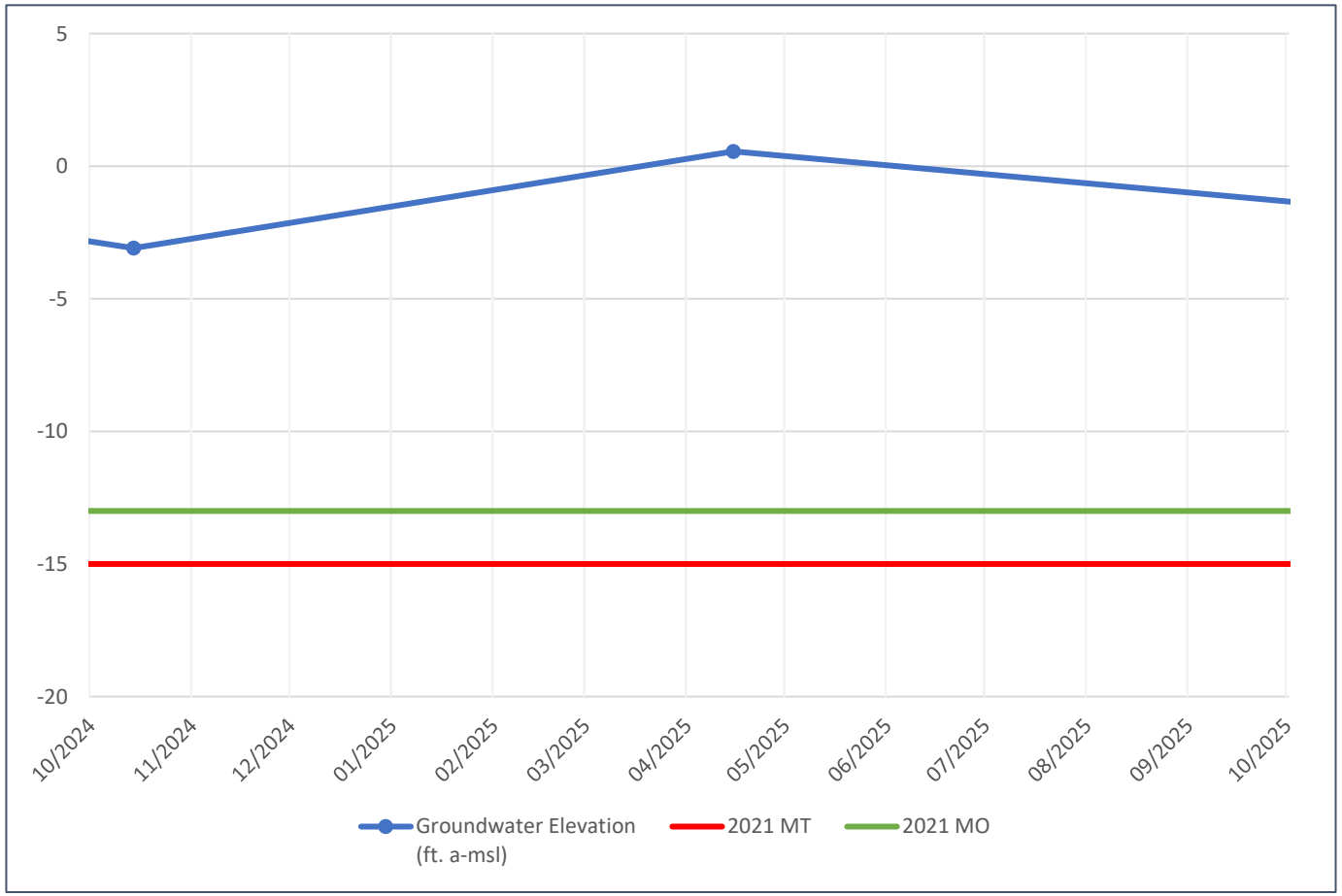
Degraded Water Quality

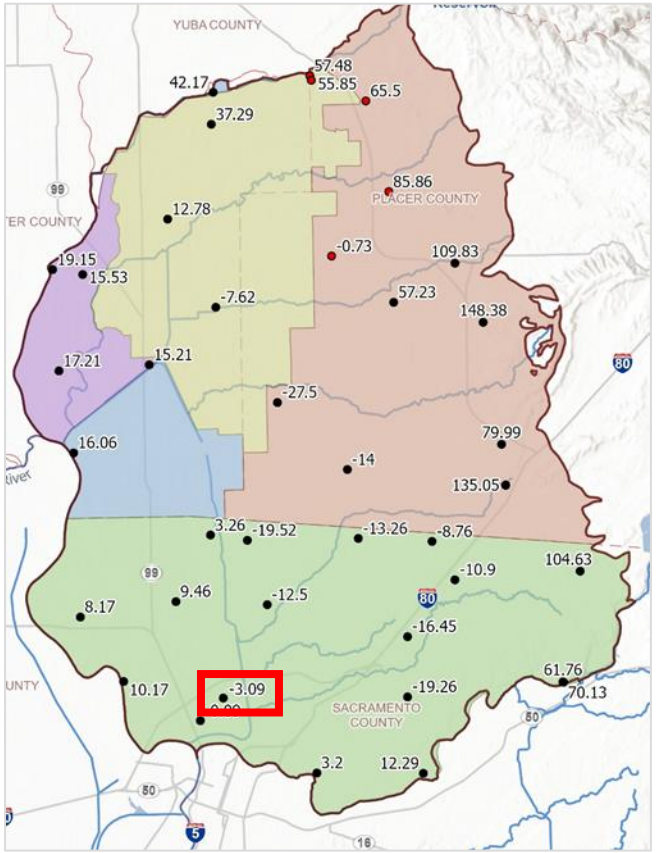
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

Chuckwagon Park
Water Year 2025 Groundwater Levels





Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

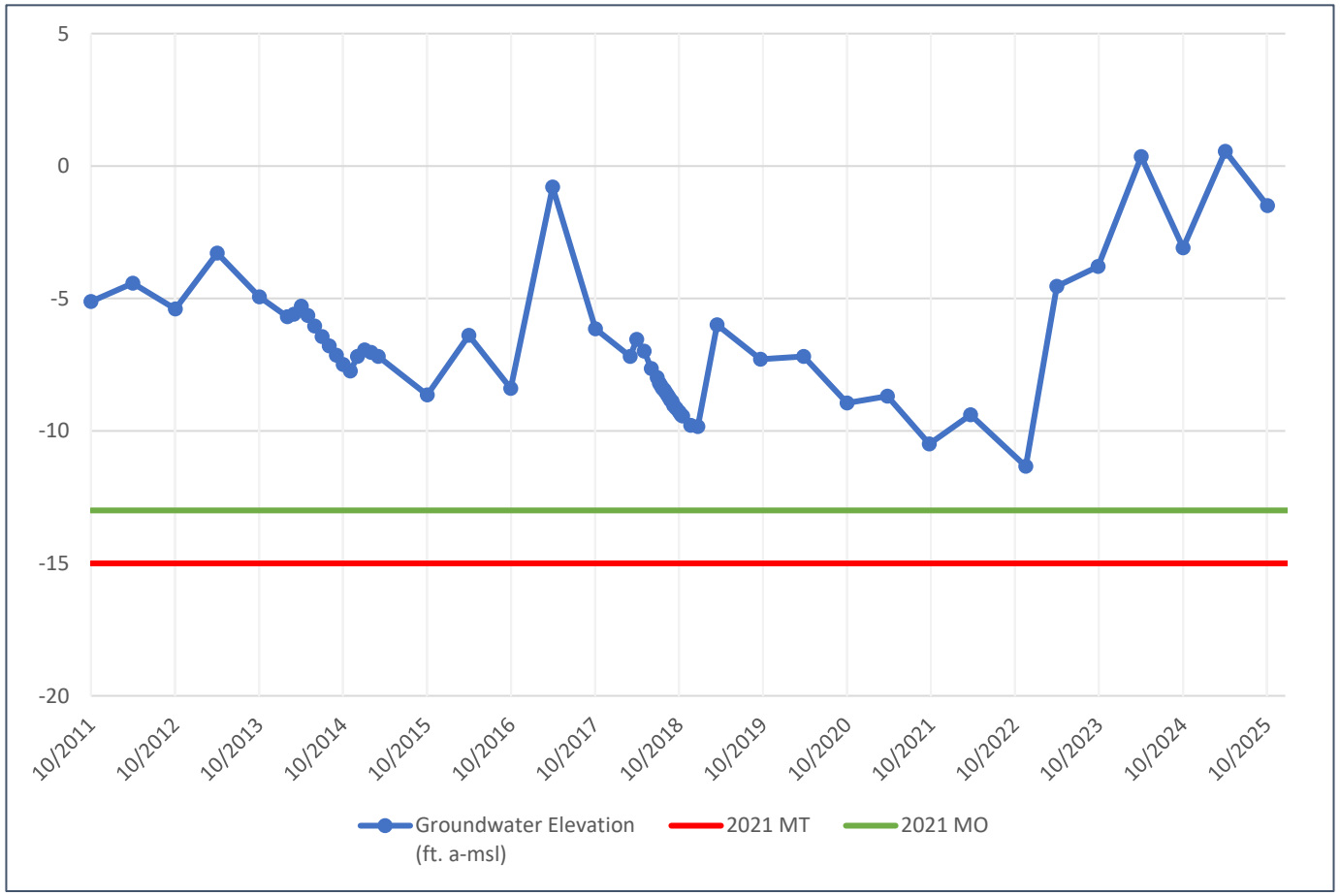
Degraded Water Quality

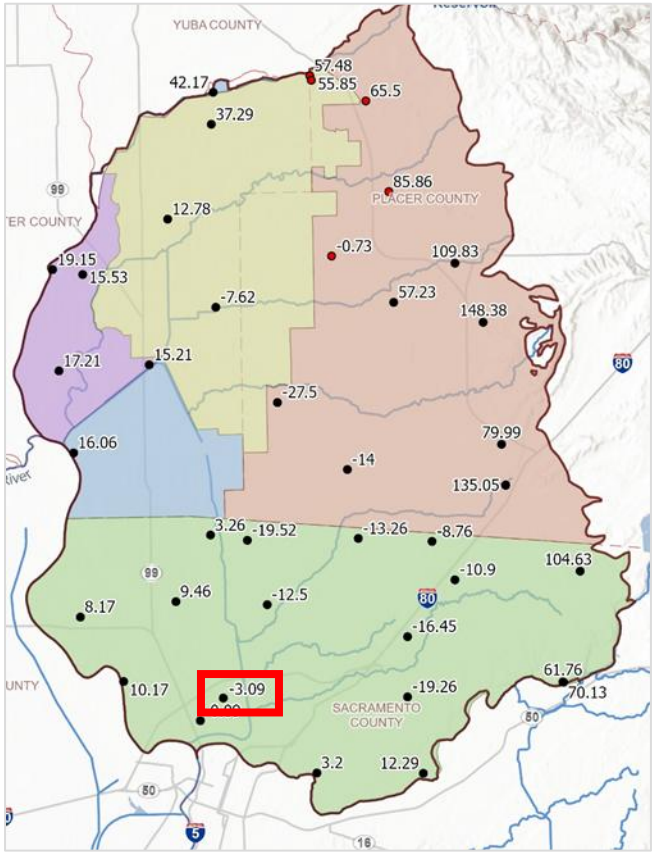
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

Chuckwagon Park
Historic Groundwater Levels (2011-Present)





Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

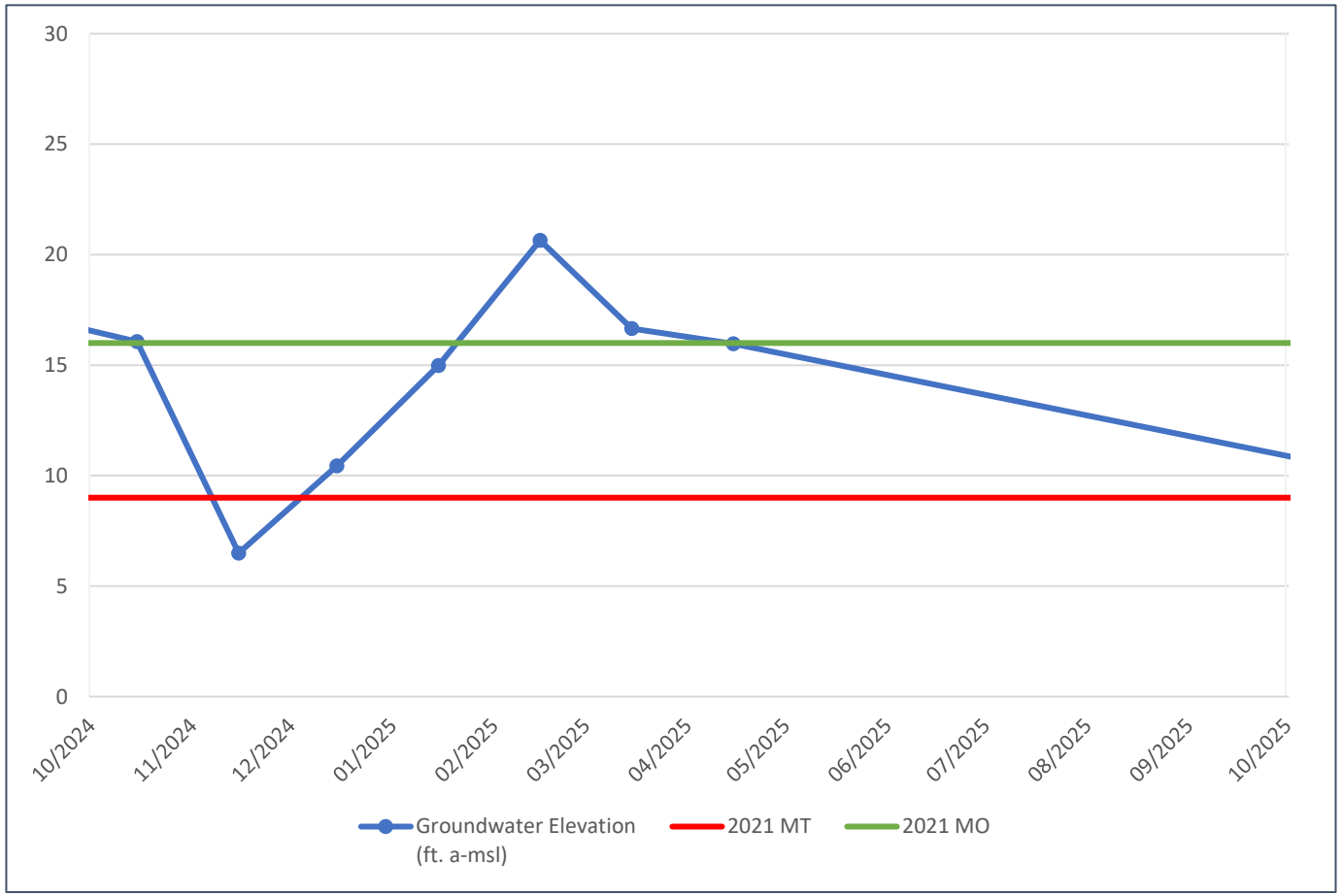
Degraded Water Quality

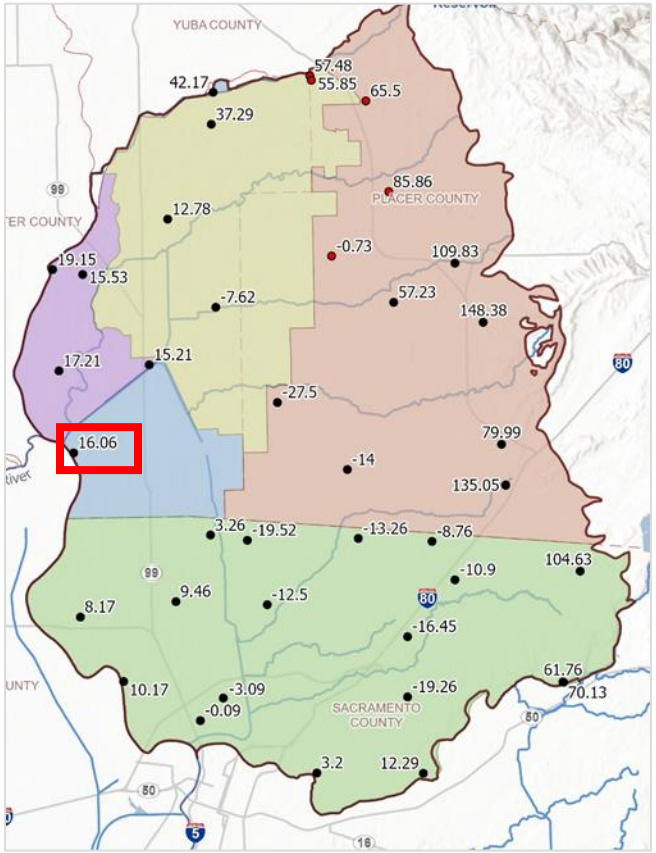
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

SREL-1-27-F1
Water Year 2025 Groundwater Levels





Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

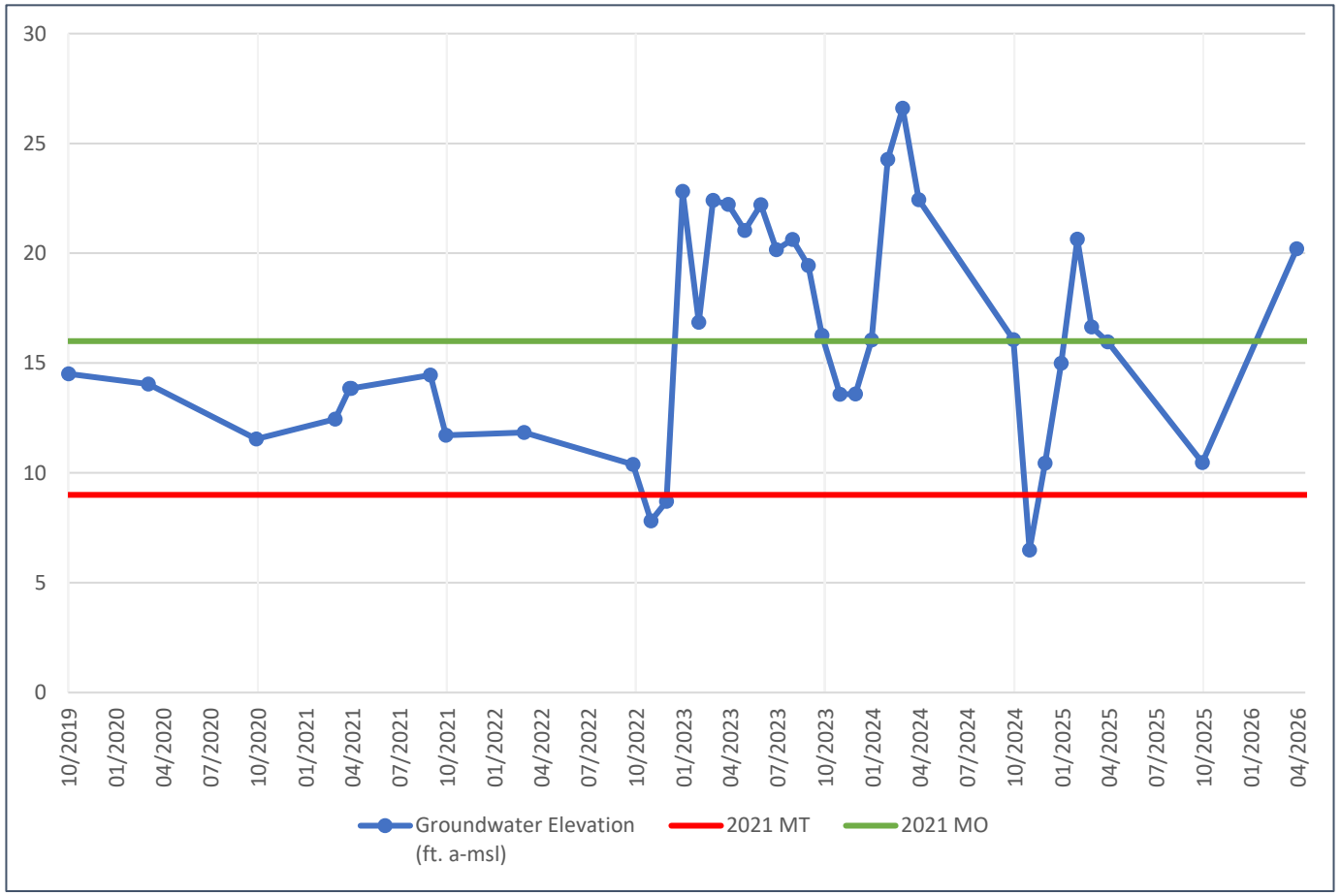
Degraded Water Quality

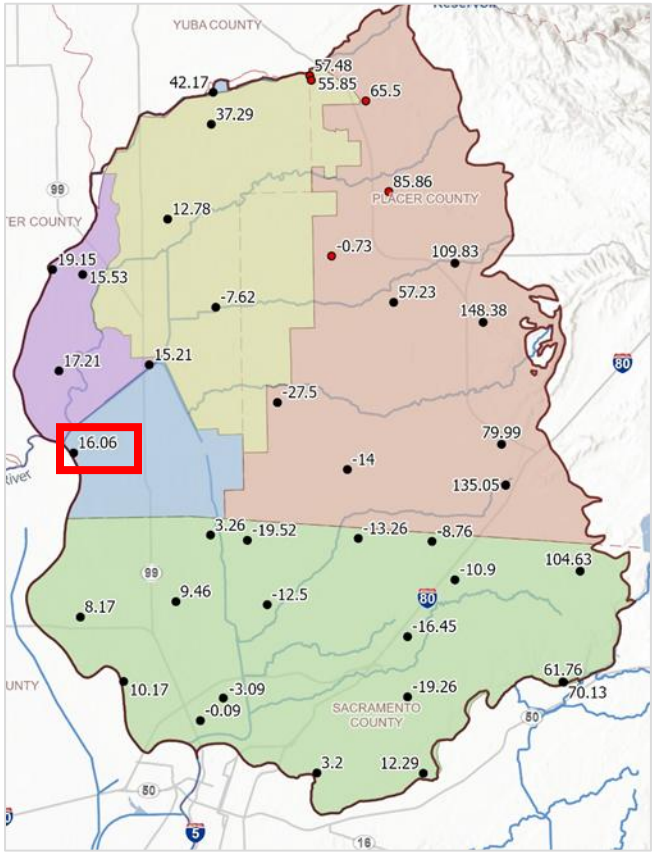
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

SREL-1-27-F1
Historic Groundwater Levels (2019-Present)





Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

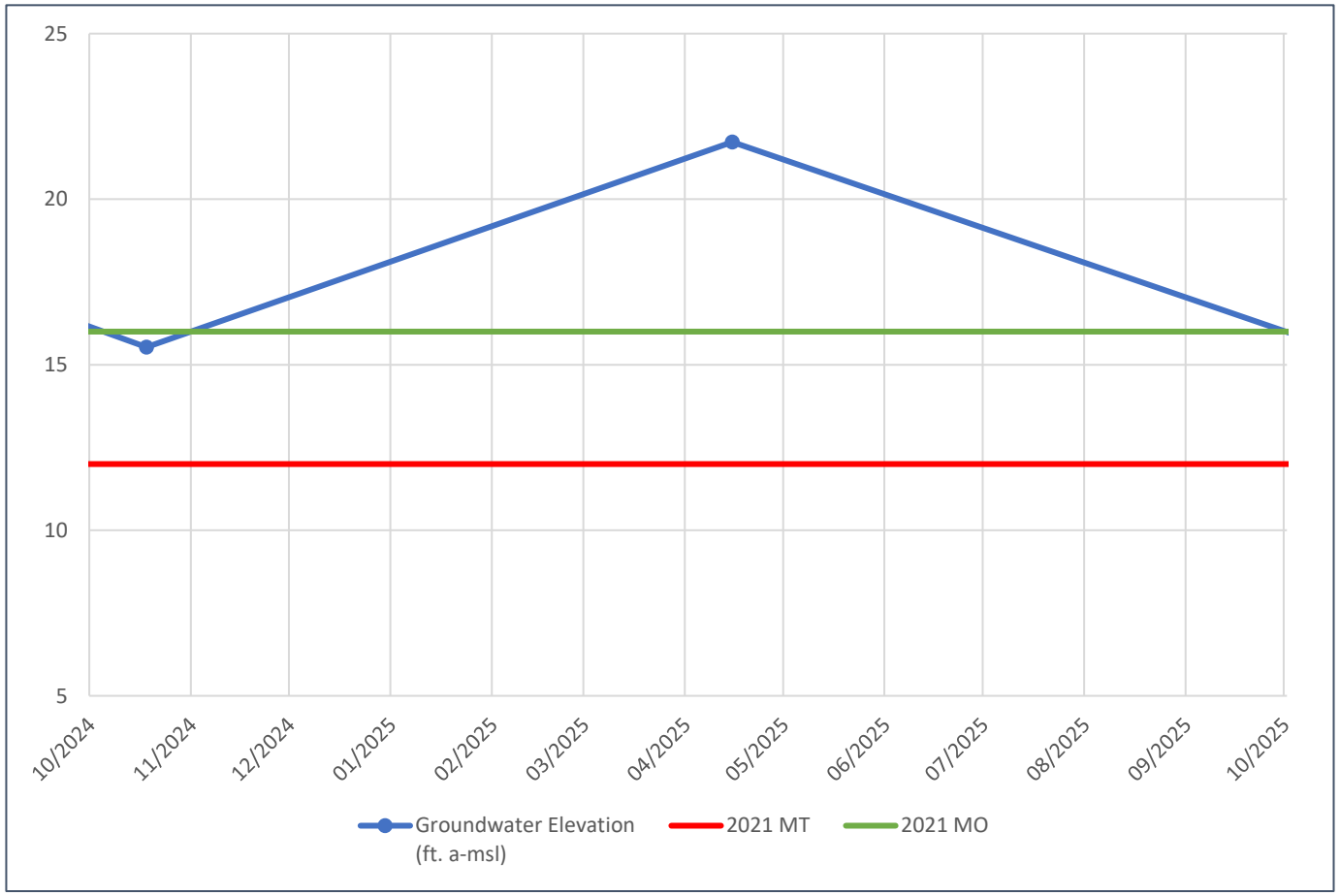
Degraded Water Quality

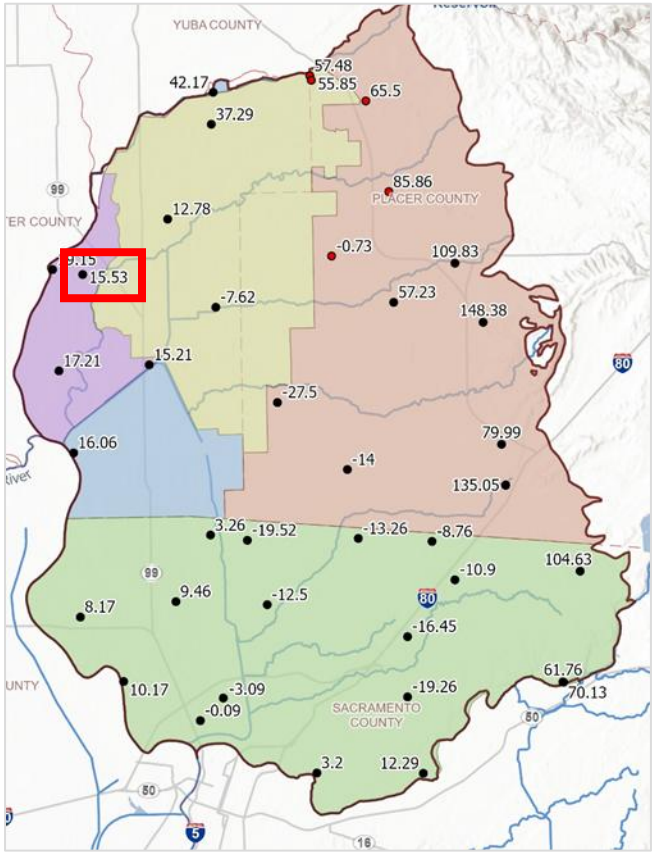
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

RDMW-102
Water Year 2025 Groundwater Levels





Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

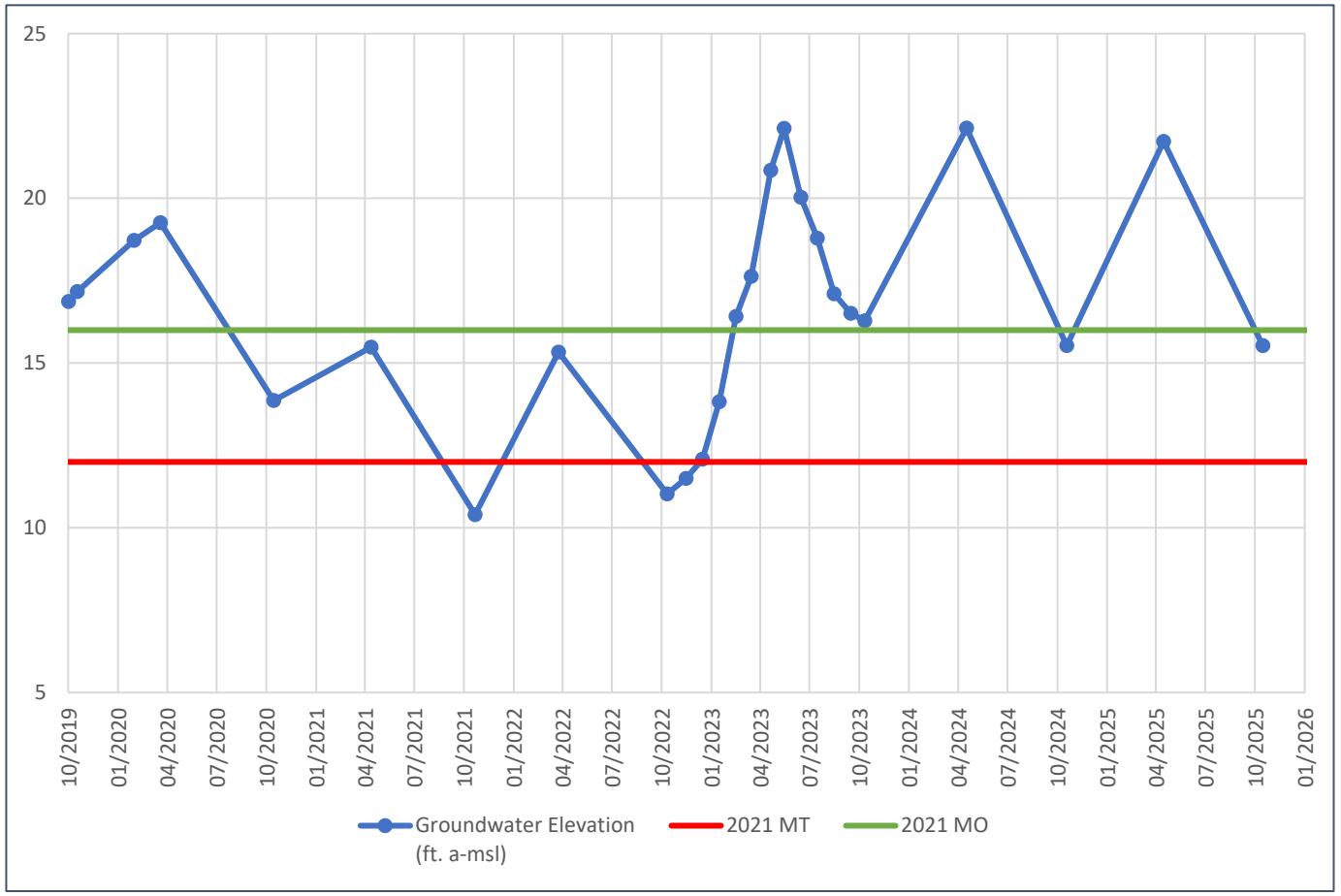
Degraded Water Quality

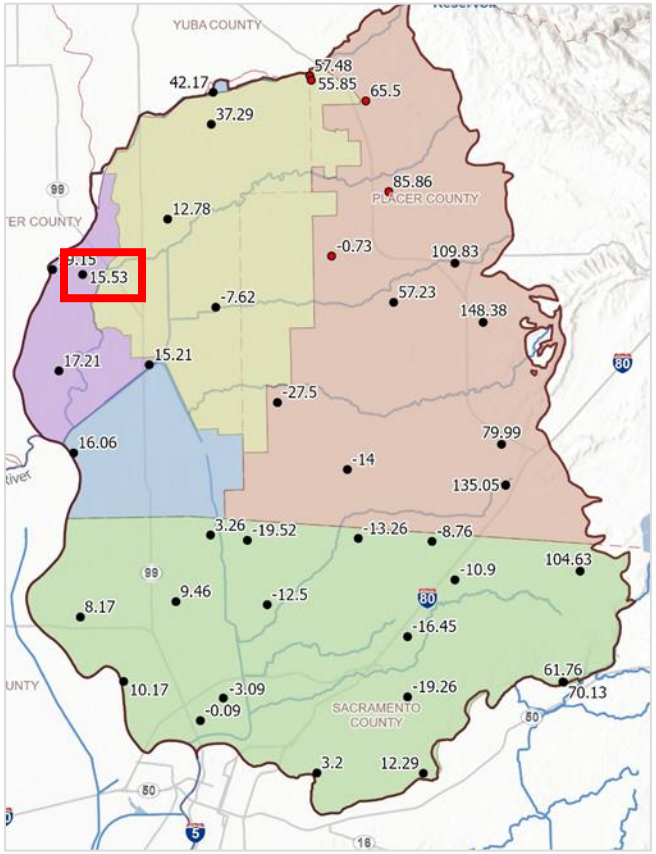
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

RDMW-102
Historic Groundwater Levels (2019-Present)





Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

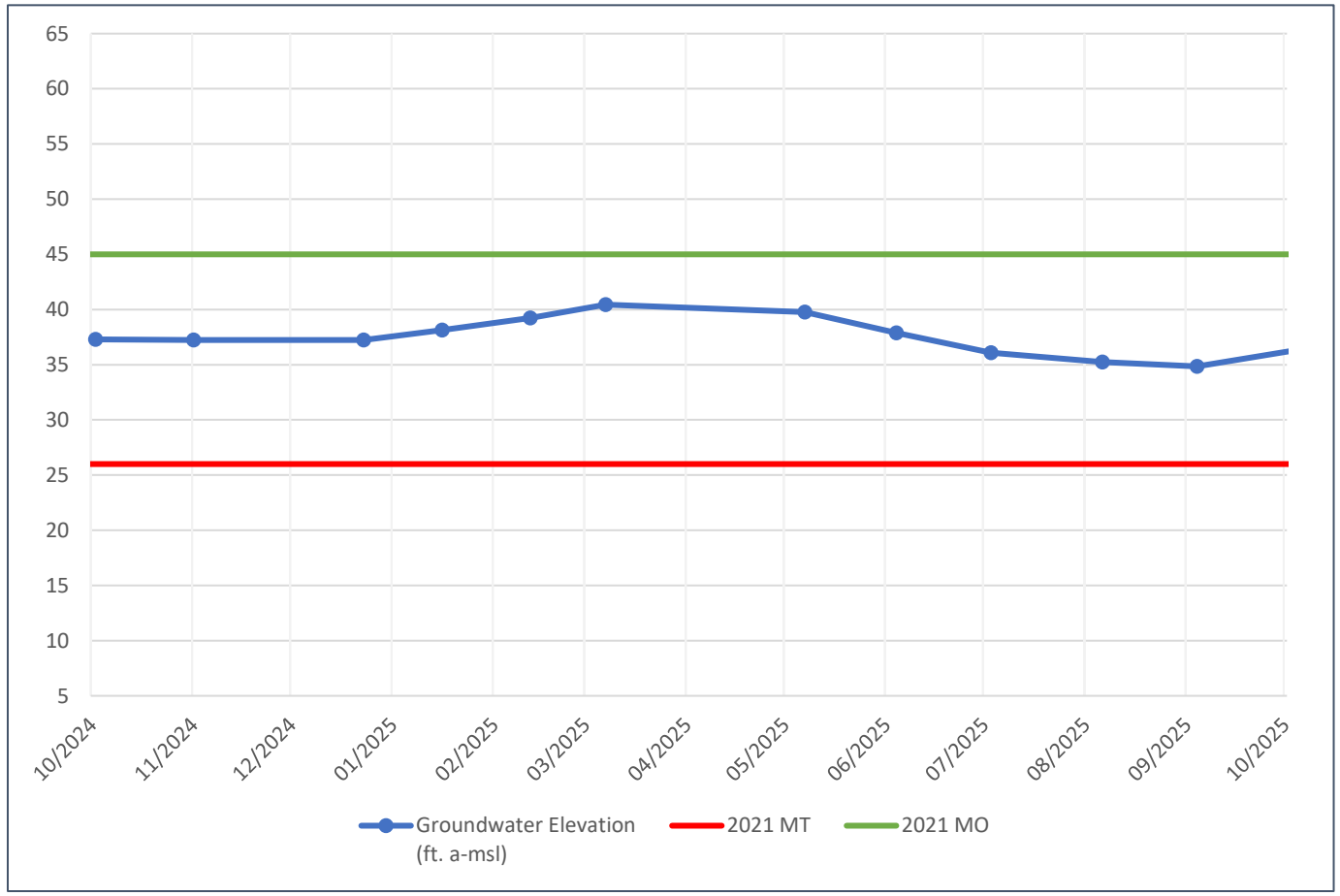
Degraded Water Quality

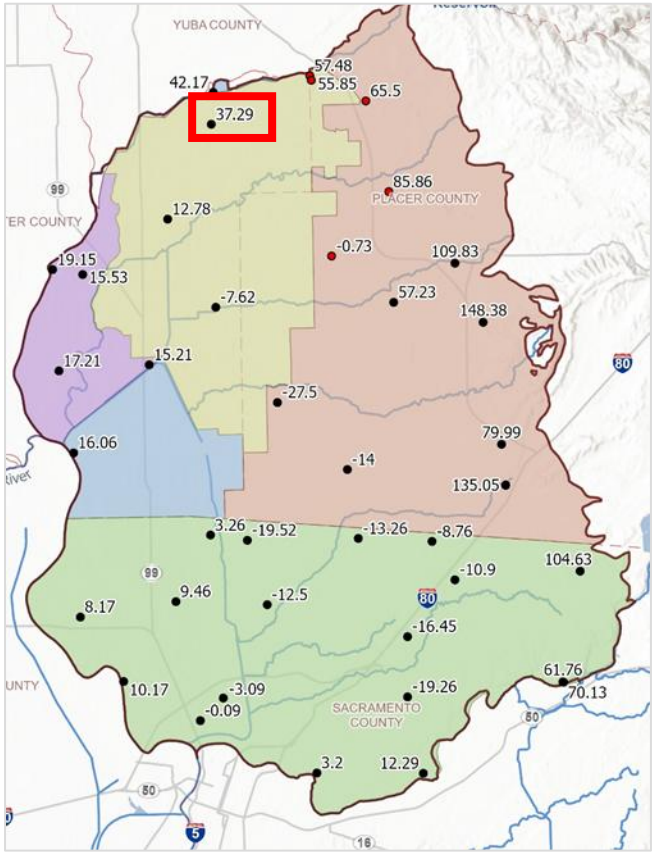
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

13N04E23A002M
Water Year 2025 Groundwater Levels





Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

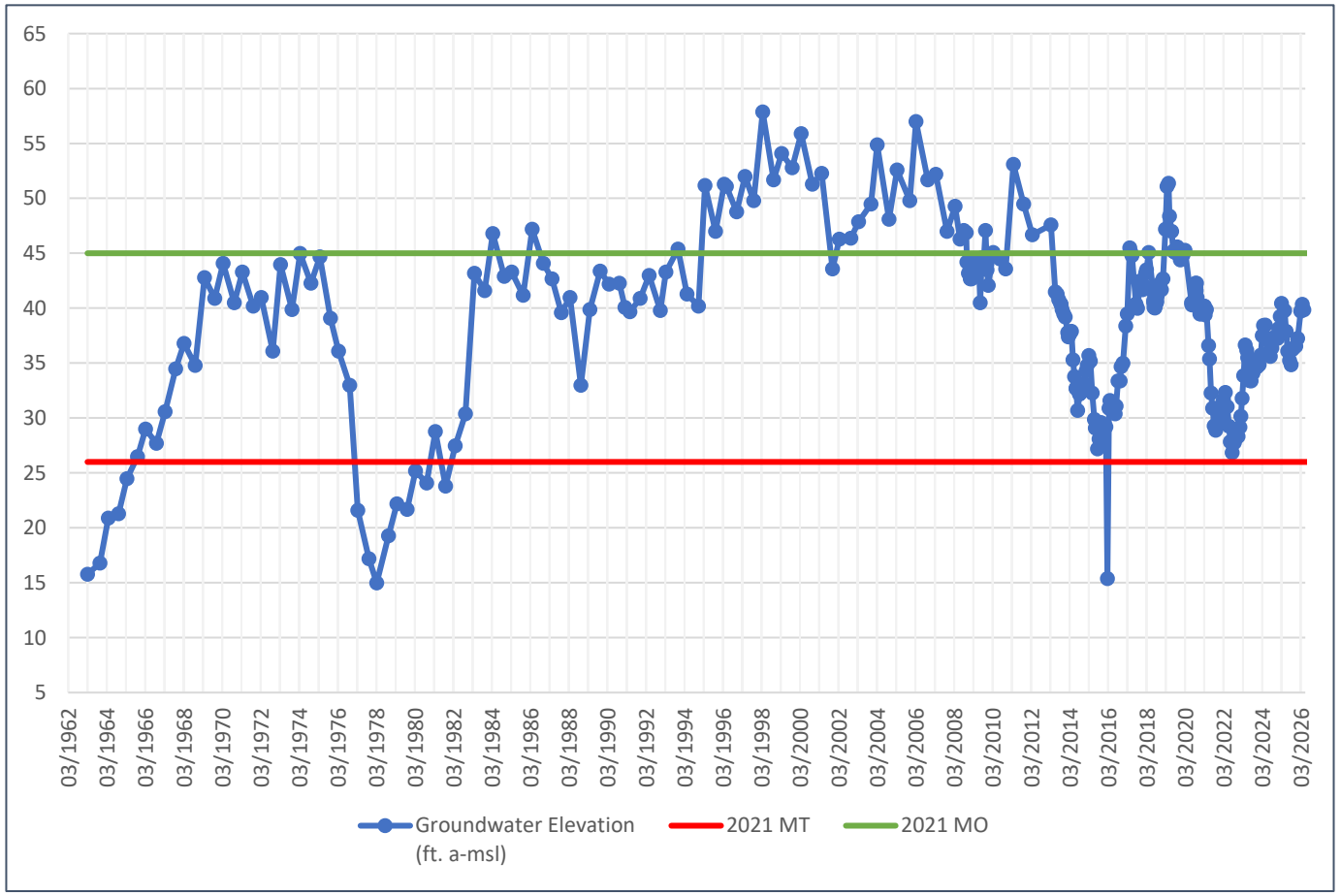
Degraded Water Quality

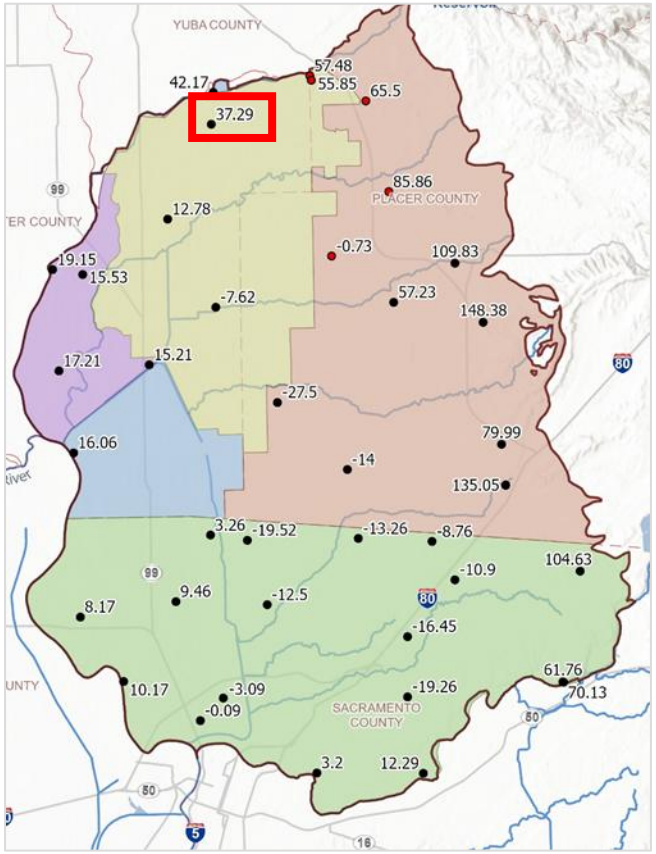
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

13N04E23A002M
Historic Groundwater Levels (1963-Present)





Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

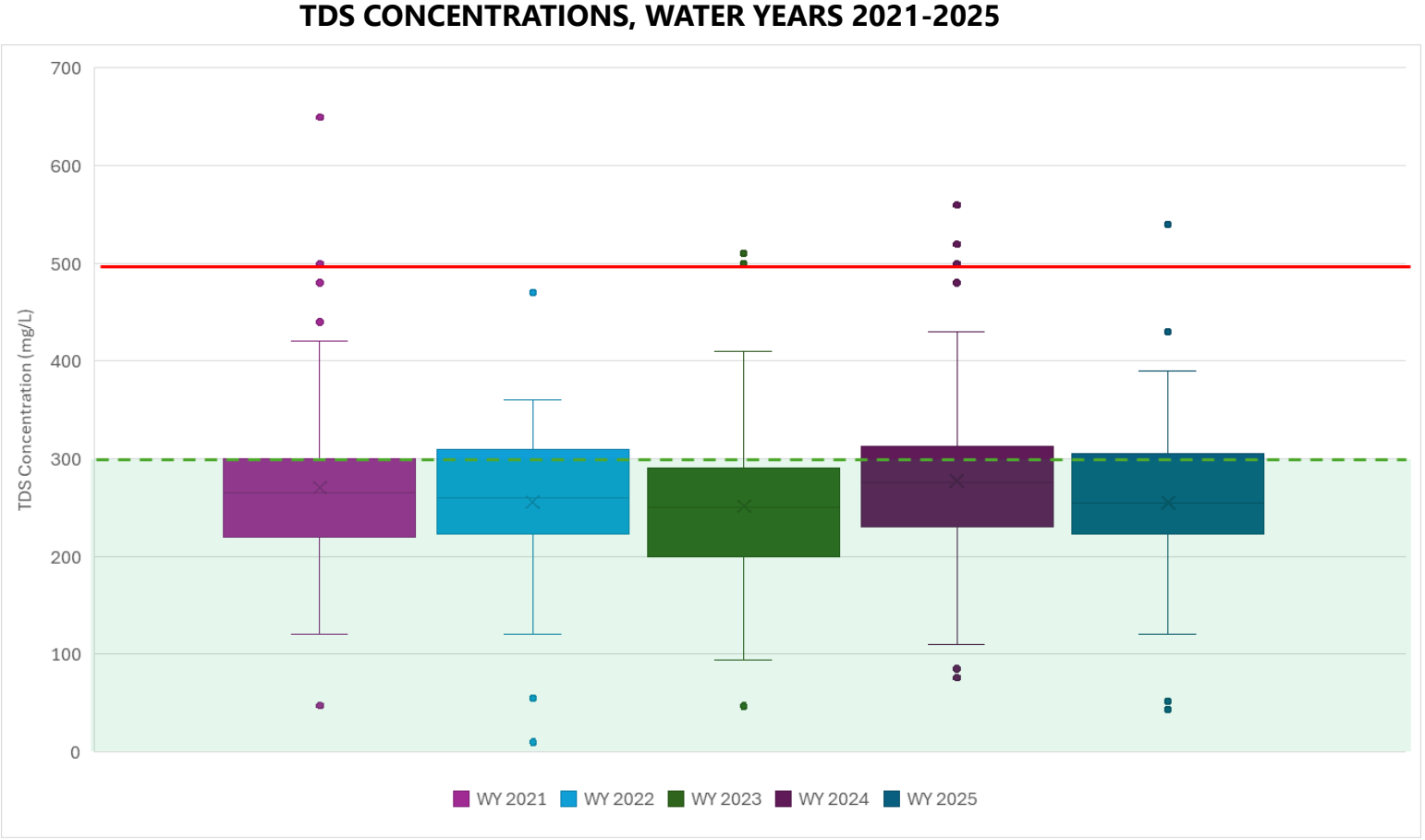
Degraded Water Quality

Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

Degraded Water Quality – PWS – Total Dissolved Solids (TDS)



- 47 wells analyzed in WY 2025
  - MT: 500 mg/L
  - MO: 300 mg/L
  - Average: 255 mg/L
  - Minimum: 43 mg/L
  - Maximum: 540 mg/L
- One public water supply wells exceeded the Minimum Threshold for TDS
- An undesirable result is **not** occurring

Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

Degraded Water Quality

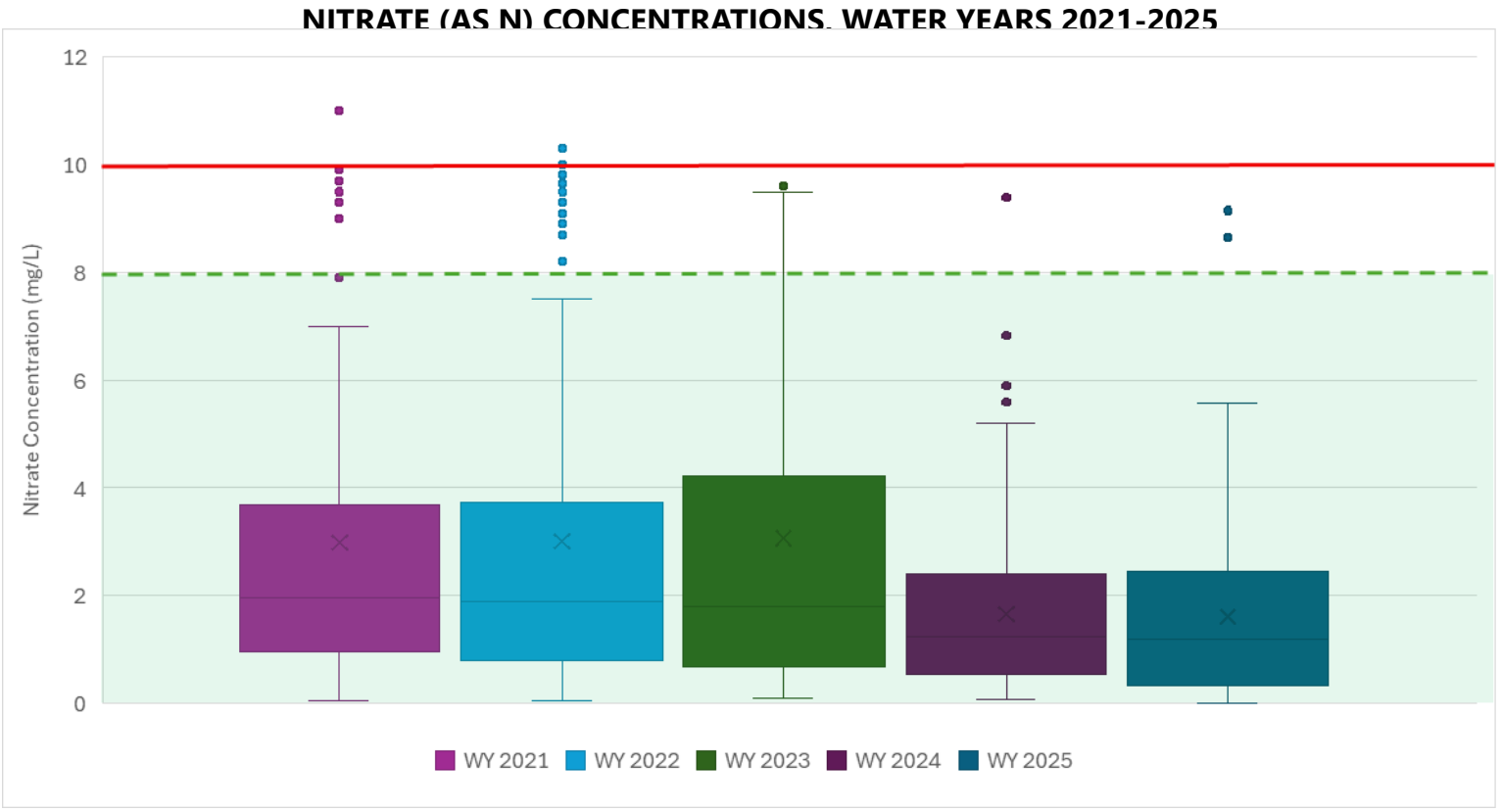
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

Note: An undesirable result occurs if the basin wide average TDS concentrations for all PWS wells exceeds 400 mg/L.

Degraded Water Quality – PWS – Nitrate (as N)



- 200 wells analyzed in WY 2025
  - MT: 10 mg/L
  - MO: 8 mg/L
  - Average: 1.67 mg/L
  - Minimum: <0.1 mg/L
  - Maximum: 9.40 mg/L
- 0 public water supply wells exceeded the Minimum Threshold for Nitrate (as N)
- An undesirable result is **not** occurring

Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

Degraded Water Quality

Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

Note: An undesirable result occurs if the basin wide average Nitrate (as N) concentrations for all PWS wells exceeds 8 mg/L.

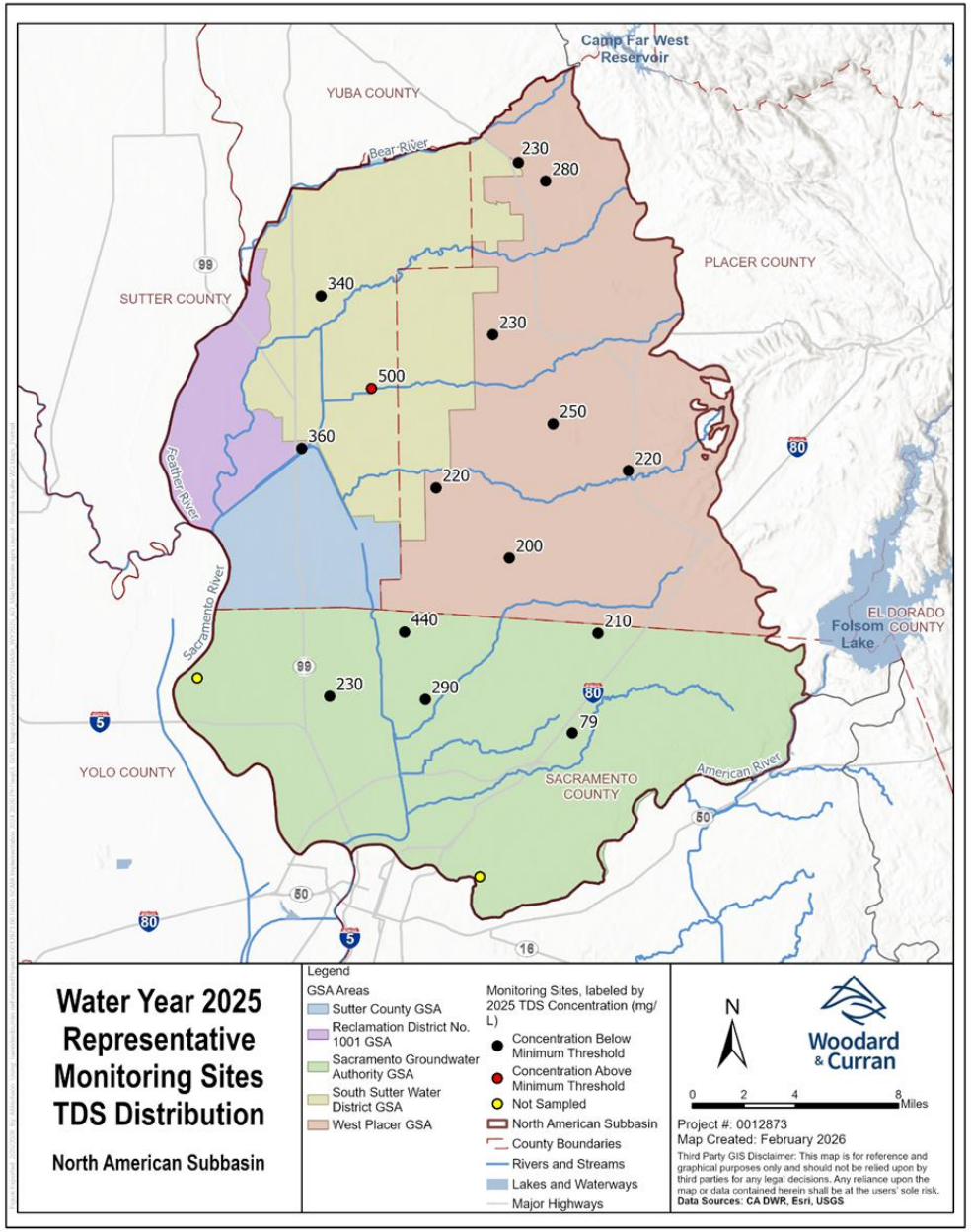
Degraded Water Quality – Shallow Aquifer – Total Dissolved Solids (TDS)

- 15 wells analyzed in WY 2025
  - MT: 500 mg/L
  - MO: Varies based on well
  - Minimum: 79 mg/L
  - Maximum: 500 mg/L

- One shallow aquifer well exceeded the Minimum Threshold for TDS

- An undesirable result is **not** occurring

Note: An undesirable result occurs if TDS concentrations exceed MTs in 25% of the representative monitoring network



NORTH AMERICAN Subbasin

Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

Degraded Water Quality

Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

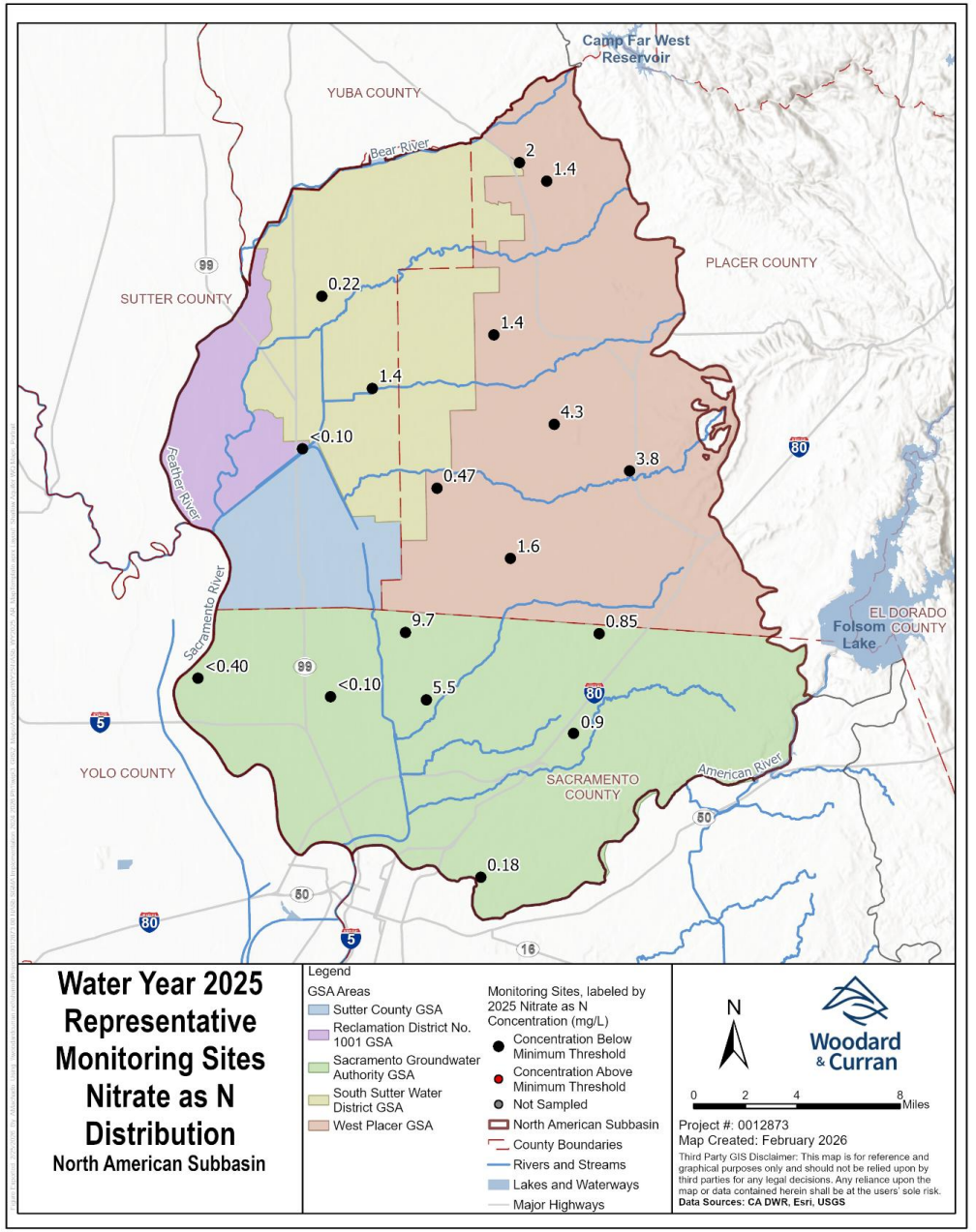
Degraded Water Quality – Shallow Aquifer – Nitrate (as N)

- 17 wells analyzed in WY 2025
  - MT: 10 mg/L
  - MO: Varies based on well
  - Minimum: <0.10 mg/L
  - Maximum: 9.7 mg/L

- No shallow aquifer wells exceeded the Minimum Threshold for Nitrate (as N)

- An undesirable result is **not** occurring

Note: An undesirable result occurs if Nitrate (as N) concentrations exceed MTs in 25% of the representative monitoring network



Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

Degraded Water Quality

Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

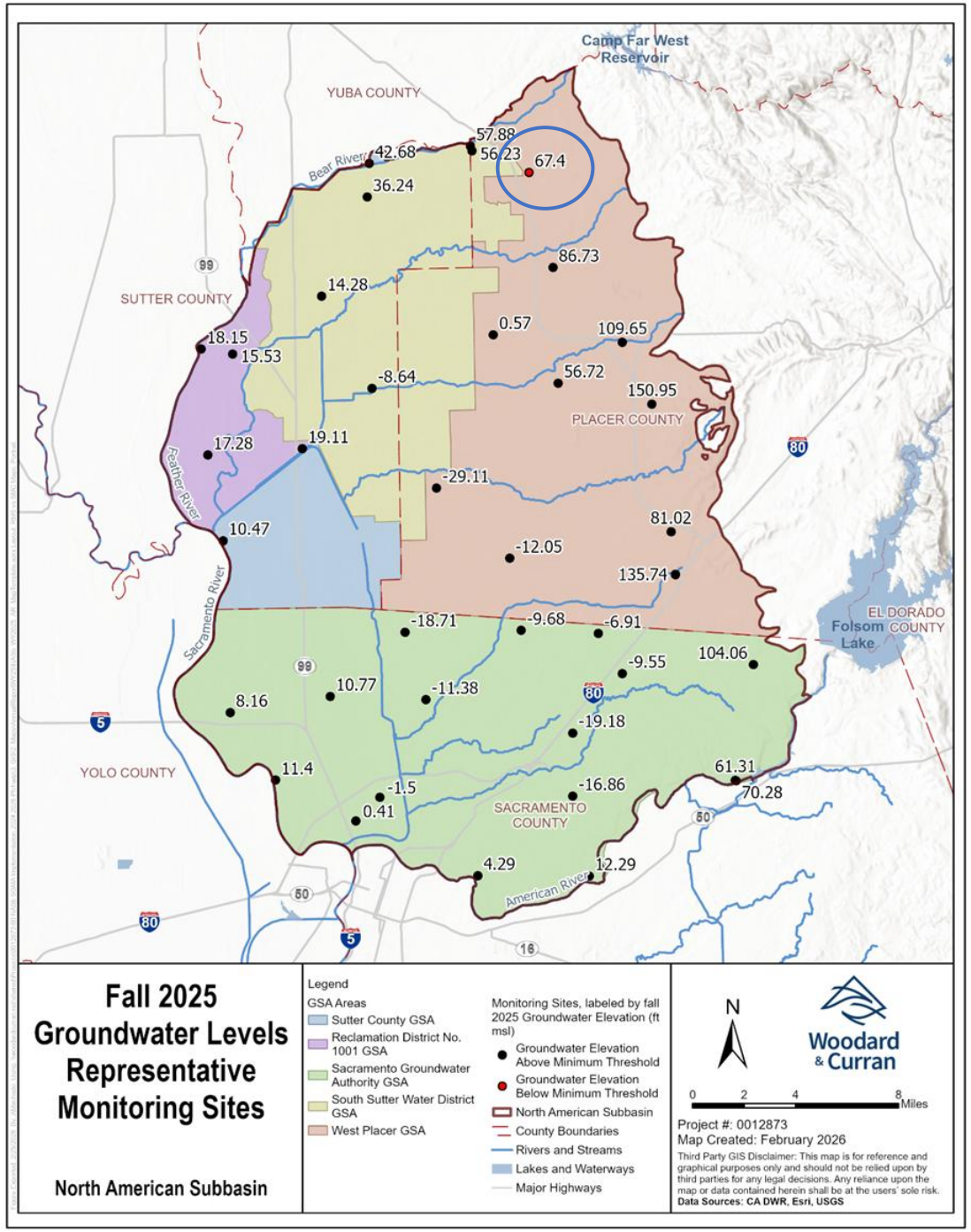
Inelastic Land Subsidence

- 40 wells analyzed in WY 2025
  - MT: Varies based on well
  - MO: Varies based on well
  - Minimum: -29.11 ft. a-msl
  - Maximum: 150.95 ft. a-msl

- One representative monitoring well exceeded the Minimum Threshold for inelastic land subsidence

- An undesirable result is **not** occurring

Note:
- An undesirable result occurs if the rate of inelastic subsidence exceeds 0.5 feet over a 5-year period over an area covering approximately 5 or more square miles.
- Where the proxy water level MT is exceeded does not equate to any actual land subsidence but is an indicator where historic water levels lows exist which could lead to land subsidence.



Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

Degraded Water Quality

Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

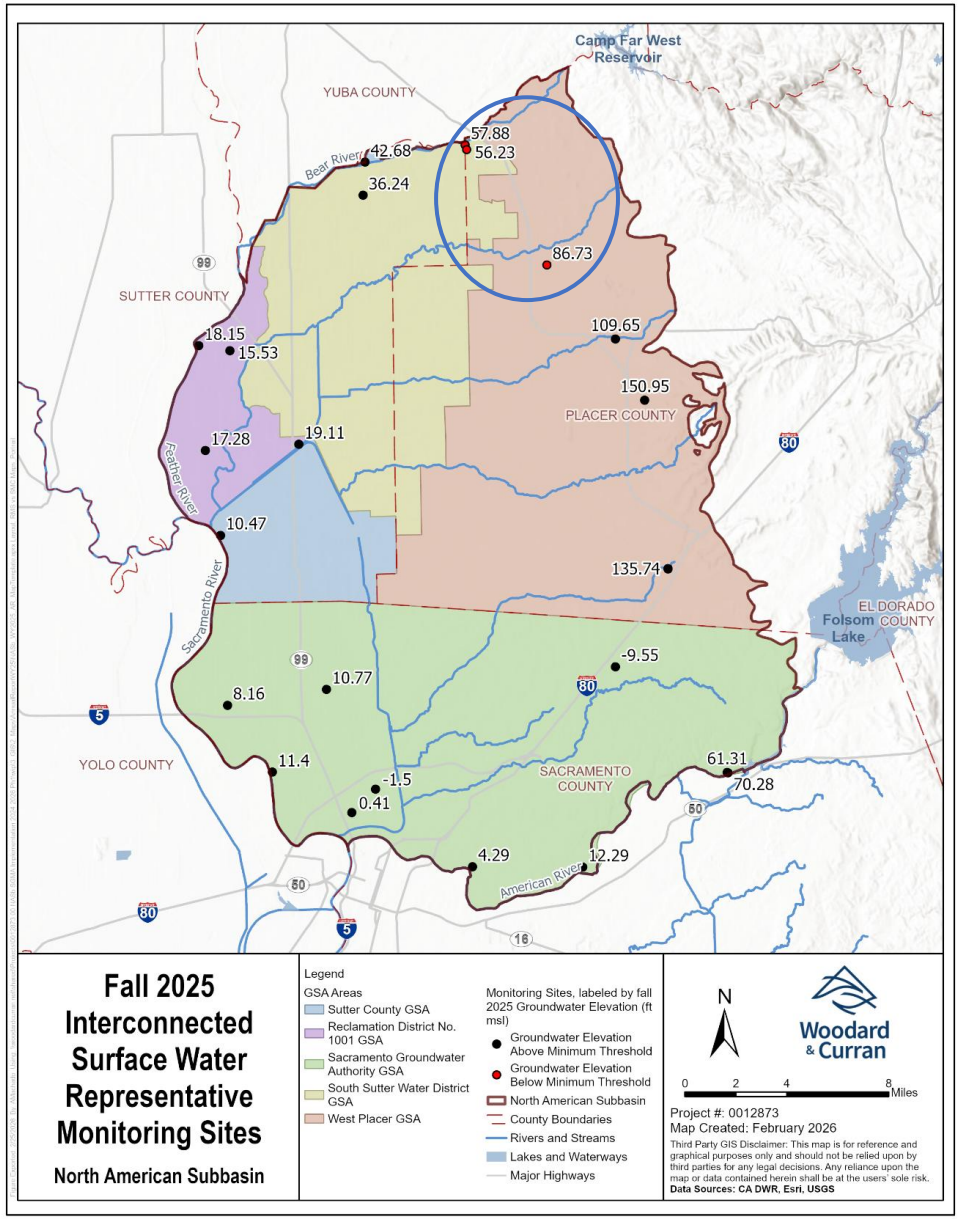
Depletions of Interconnected Surface Waters

- 24 wells analyzed in WY 2025
  - MT: Varies based on well
  - MO: Varies based on well
  - Minimum: -9.55 ft. a-msl
  - Maximum: 150.95 ft. a-msl

- Three representative monitoring wells exceeded the Minimum Threshold for depletion of interconnected surface waters

- An undesirable result is **not** occurring

Note: An undesirable result occurs if 20% or more of the interconnected surface water representative monitoring sites have minimum threshold exceedances for two consecutive fall measurements



Chronic Lowering of Groundwater Levels

Reduction of Groundwater In Storage

Degraded Water Quality

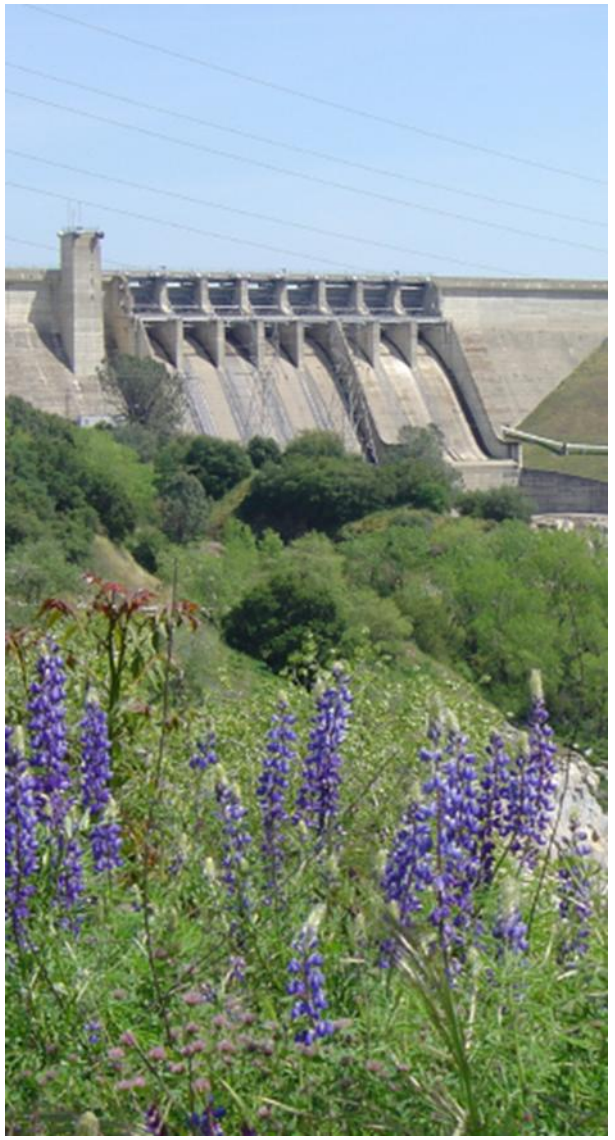
Inelastic Land Subsidence

Depletions of Interconnected Surface Waters

NORTH AMERICAN Subbasin

A Break for Questions/ Discussion

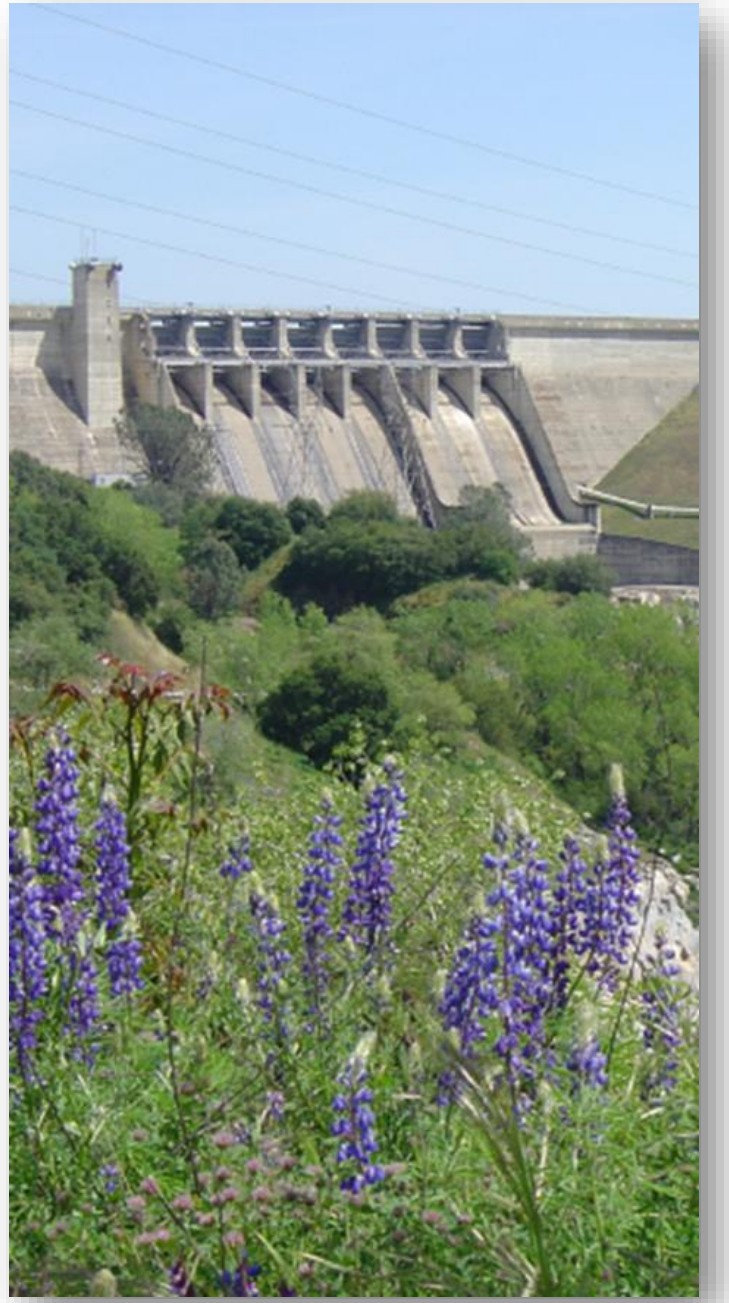
- **On Zoom**:
  - “Raise hand” function to speak or
  - Type question in comment box
- **Via telephone**:
  - *9 to “Raise Hand”
  - *6 to unmute when called on



NORTH AMERICAN Subbasin

Agenda

- Welcome and Meeting Purpose
- NASb Introduction/SGMA Overview
- 2025 Annual Report Overview
- GSP Amendment/Evaluation Workshop #3 (Interconnected Surface Water Sustainable Management Criteria)
- Questions/Comments



NORTH AMERICAN Subbasin

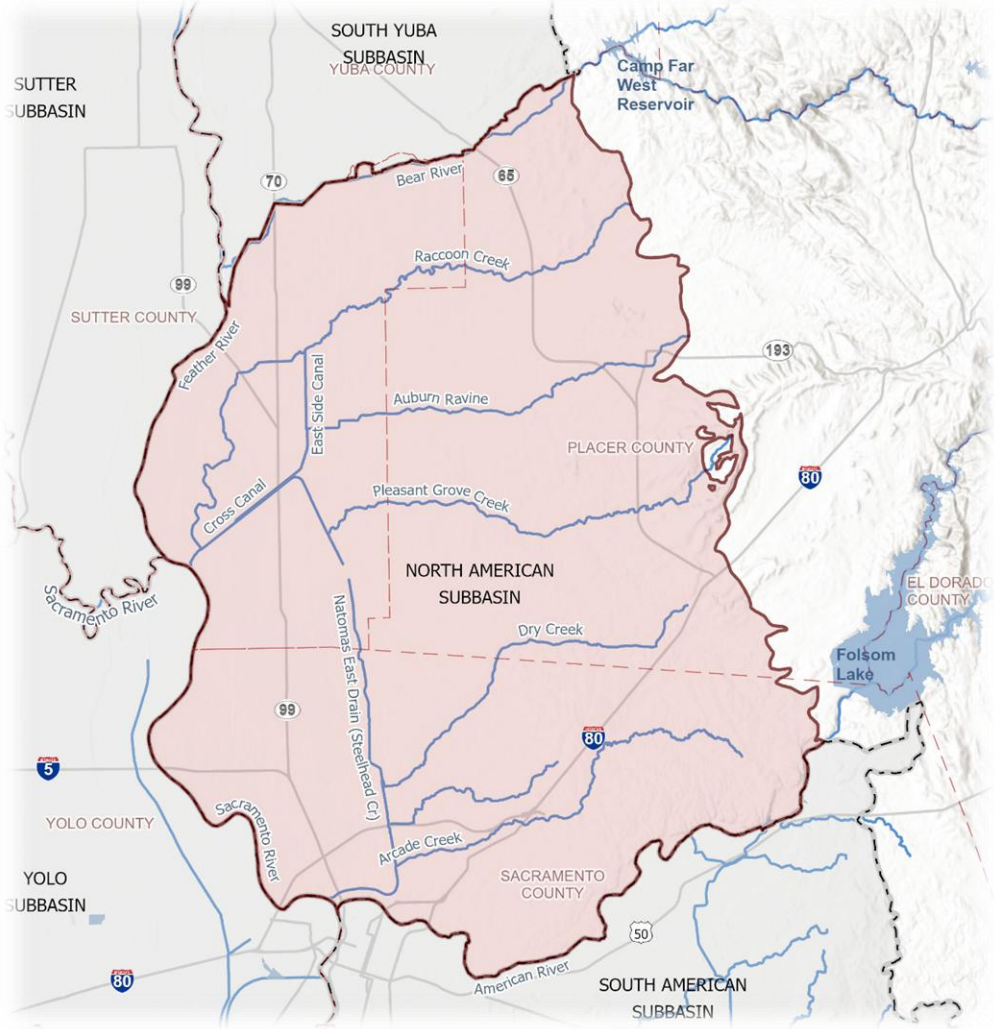
Groundwater Sustainability Plan Evaluation/Amendment Workshop #3

Depletion of Interconnected Surface Water Sustainable Management Criteria

DRAFT

Interconnected Surface Water Background

- Surface water in the Subbasin includes:
  - Major rivers, including the Sacramento, Feather, and American
  - Canals and drains, including the Natomas Cross Canal and Natomas East Main Drain (Steelhead Creek)
  - Smaller agricultural and urban creeks
- These systems function differently:
  - Large rivers are managed through reservoir operations
  - Smaller creeks and canals can be strongly influenced by local runoff and treated wastewater discharge



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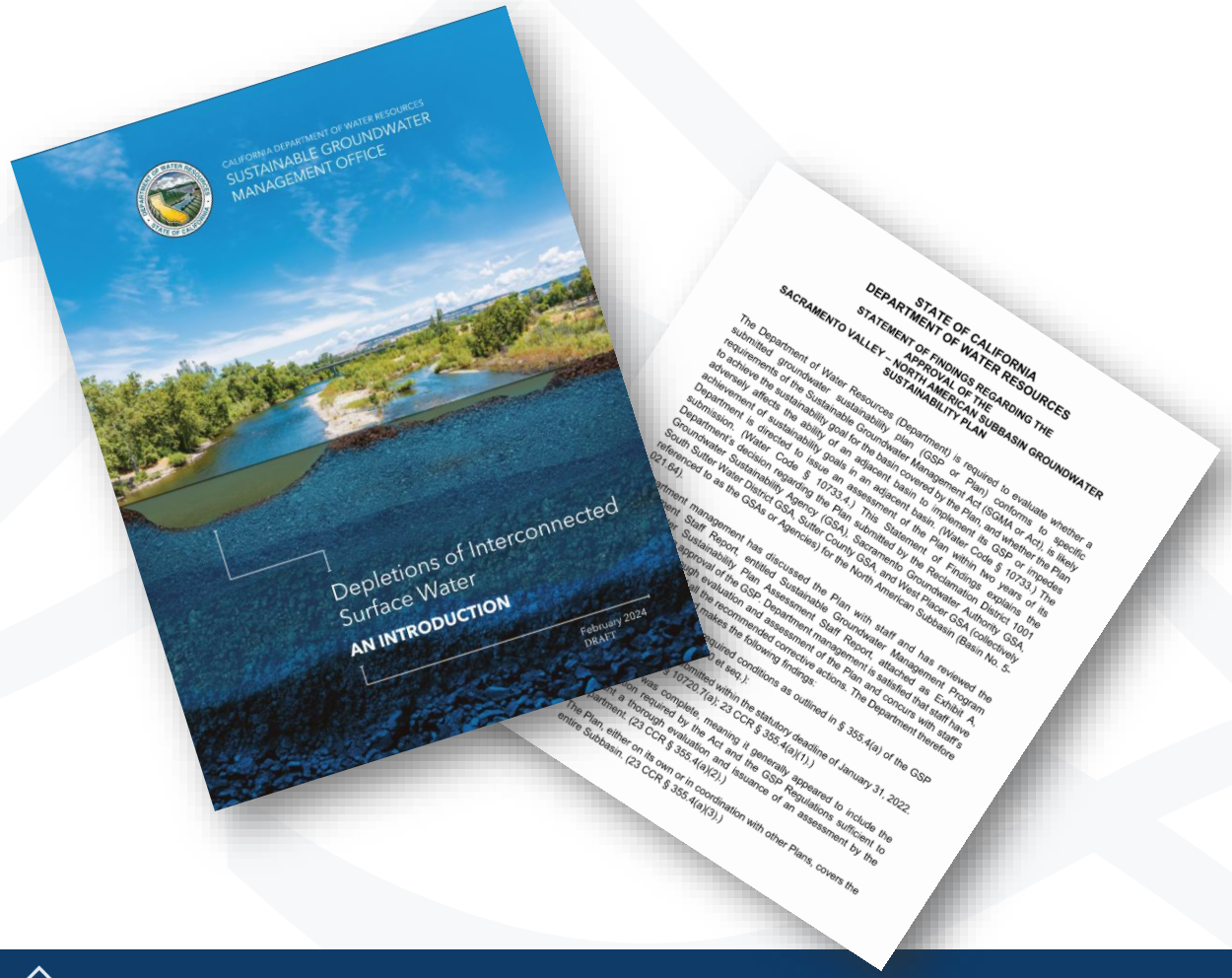
Interconnected Surface Water Beneficial Uses and Users

- **Surface water in the Subbasin supports people, farms, cities, and the environment**
  - Water supply for agriculture and urban areas
  - Aquatic habitat and fisheries, including sensitive species such as the Central Valley Steelhead and Chinook Salmon

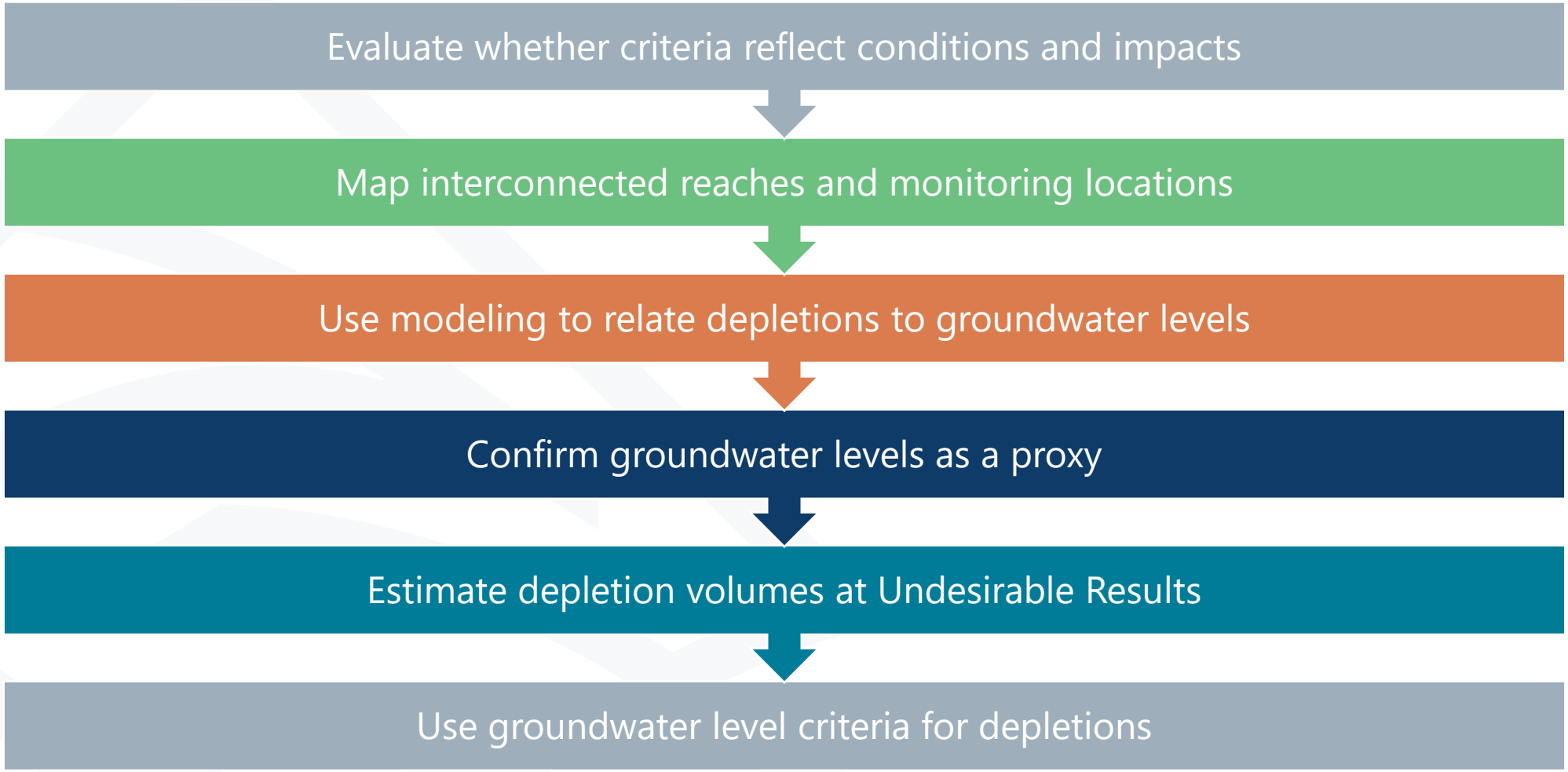
- **Groundwater management impacts depend on surface water system characteristics and management (e.g., reservoir operations, return flows)**

Why Update Interconnected Surface Water Criteria?



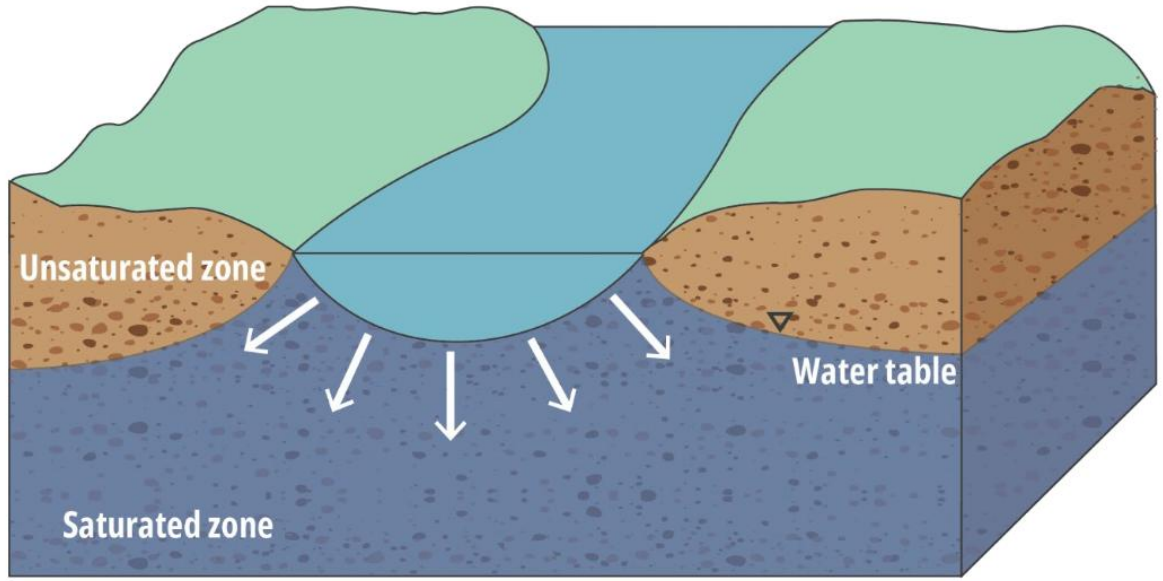
- → **New data and information** on groundwater conditions and impacts to users
- → **Knowledge gained** in implementation
- → **Additional time** to refine best approaches
- → **Recommended Corrective Actions**

Approach to Updating Interconnected Surface Water Criteria



Groundwater Levels as a Proxy for Interconnected Surface Water

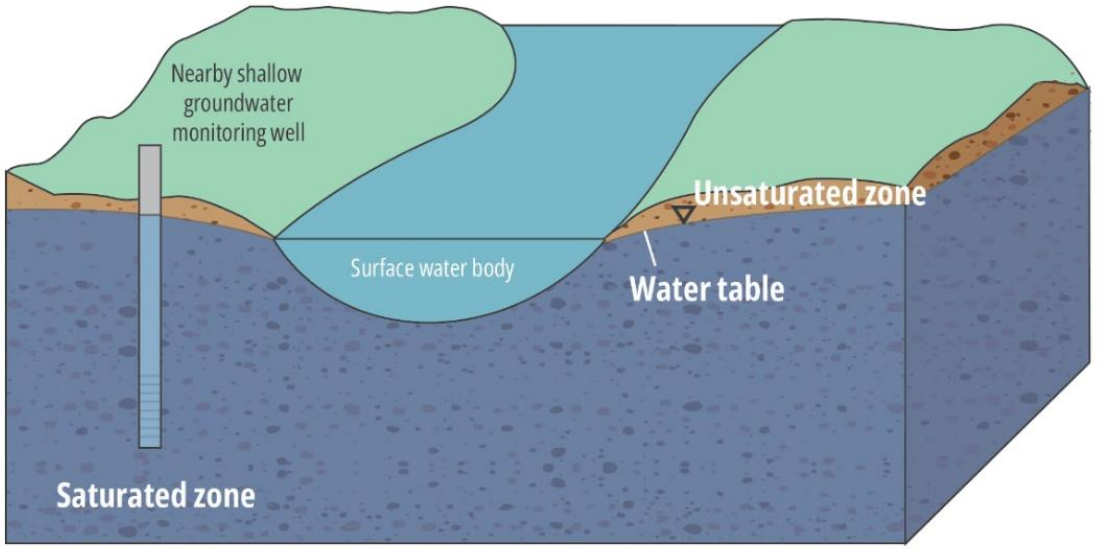
- Groundwater and surface water can be connected where the water table is near streams, rivers, or canals.
- With pumping, groundwater levels decline and more water can move from surface water into the groundwater system.
- Because groundwater levels are related to this process, they can be used as an indicator, or "proxy," for surface water depletion.



Depletions of Interconnected Surface Water, An Introduction
DWR, 2024

Groundwater Levels as a Proxy for Interconnected Surface Water in NASb

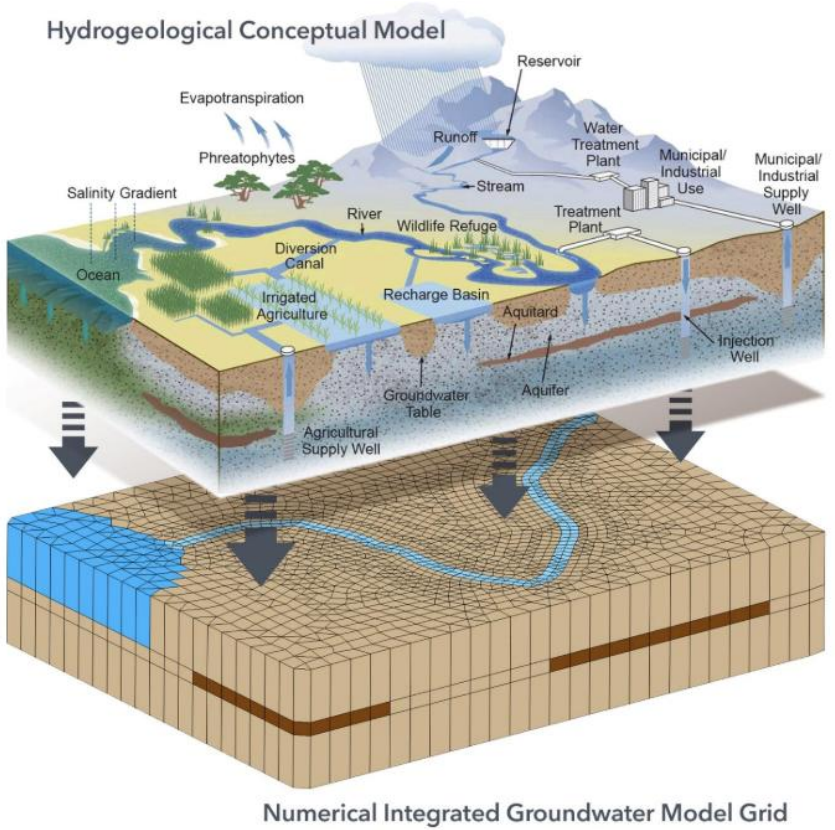
- Surface water and groundwater are connected in some areas of the NASb, but not everywhere.
- The GSP proposes using all groundwater level monitoring sites to evaluate depletions.
- Subbasin-wide groundwater conditions helps identify long-term declines that could increase surface water depletion.



Depletions of Interconnected Surface Water, An Introduction
DWR, 2024

Estimating Groundwater Effects on Surface Water

- The groundwater model helps estimate how groundwater pumping may affect interconnected surface water.
- The model compares current conditions to a hypothetical "No-Pumping Scenario."
- The estimates surface water depletion due to groundwater pumping and justifies the proxy.



Techniques for Estimating Interconnected Surface Water Depletion Caused by Groundwater Use DWR, 2024

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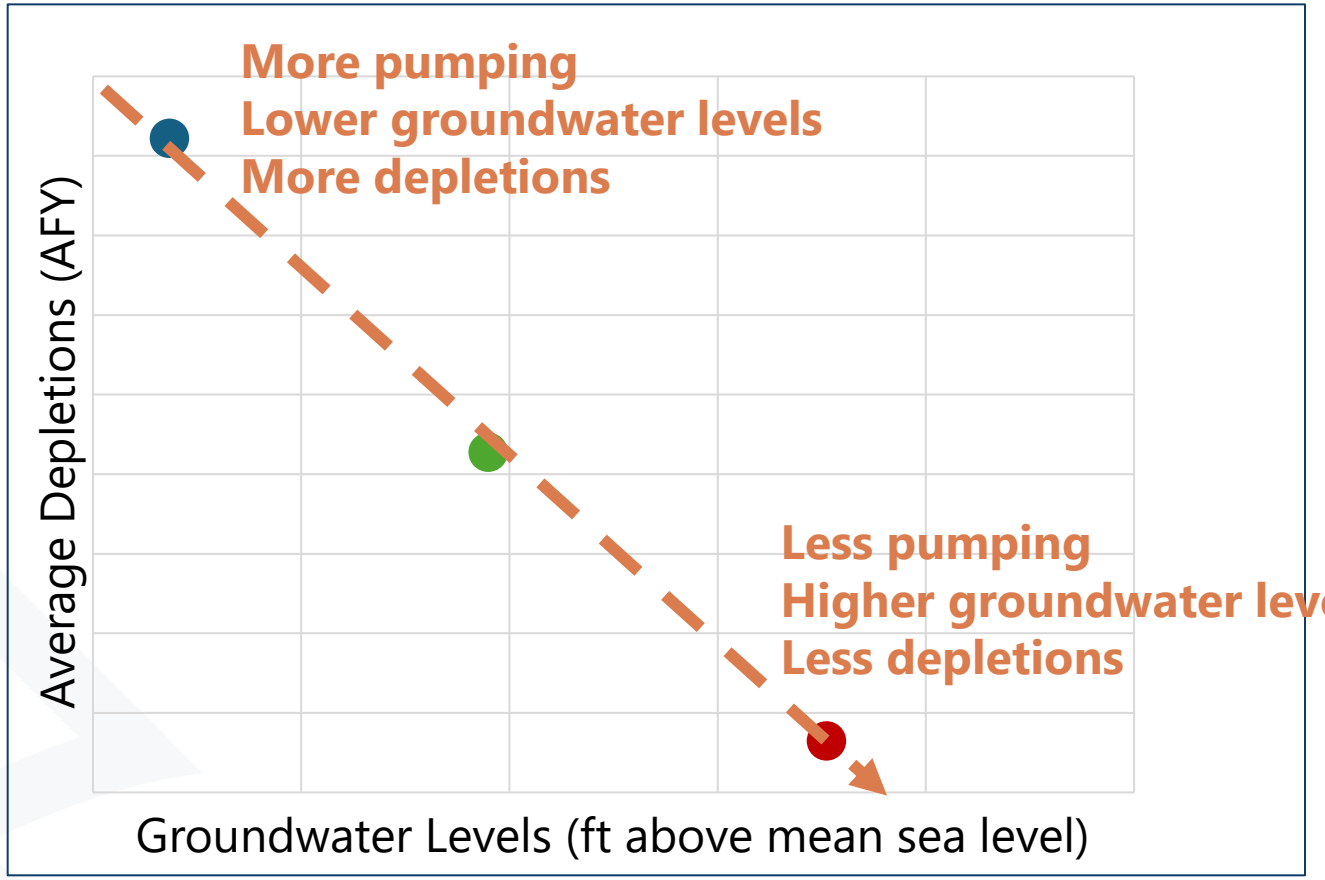
Model-Based Correlation Used to Justify Groundwater Levels as a Proxy for Depletions

- The CoSANA model evaluated the relationship between depletions and groundwater levels
- Results showed a clear relationship: **lower groundwater levels correspond to higher modeled surface water depletions.**
- Based on this relationship, groundwater levels can be used as a proxy for depletions of interconnected surface water.

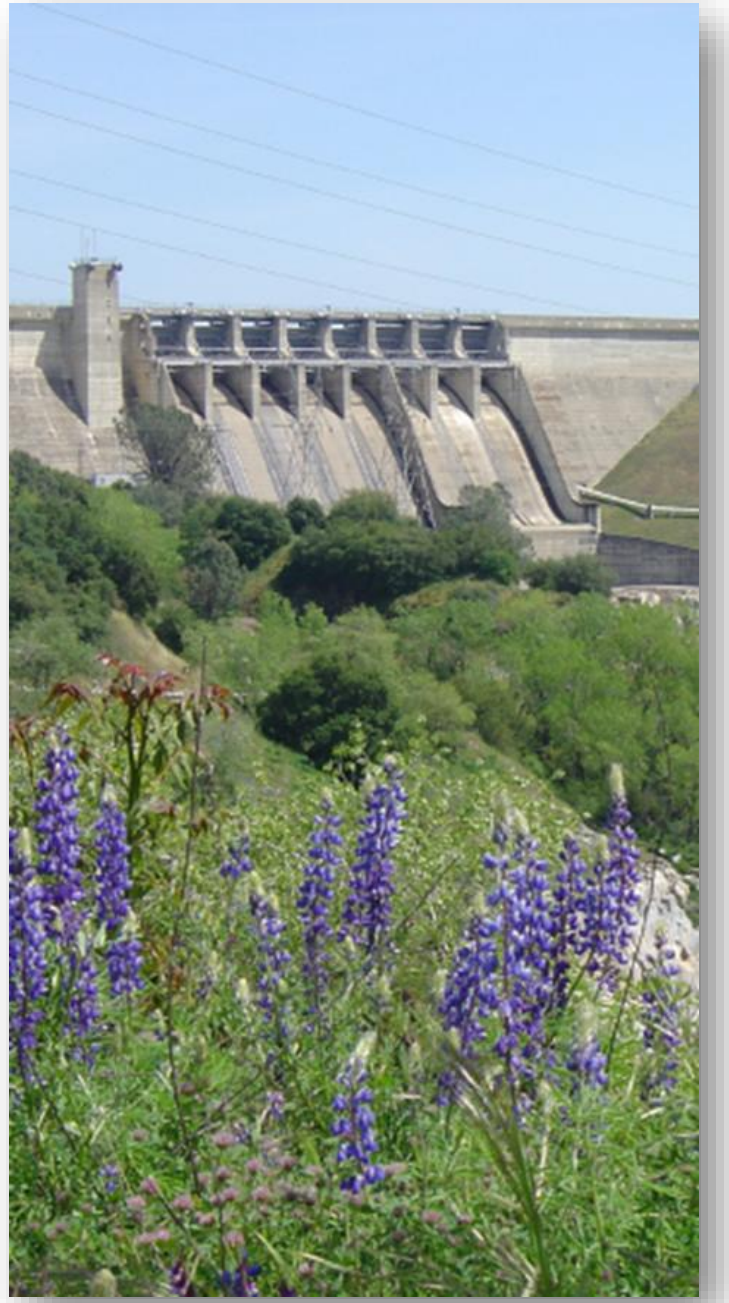


Conclusions

- Model results show a strong correlation between groundwater levels and depletions, justifying use of groundwater levels as a proxy.
- Estimated depletion when minimum thresholds are met: ~**288,000 AFY**
- A ~29,000 AFY increase from current conditions.
  Not considered significant and unreasonable based on:
  - Comparison to Sacramento River flows (~16,000,000 AFY at I Street)
  - Lack of identified historical impacts to beneficial users.
- Groundwater level criteria are protective because they limits depletions to ~288,000 AFY; therefore, groundwater levels are used as a proxy.

Agenda

- Welcome and Meeting Purpose
- NASb Introduction/SGMA Overview
- 2025 Annual Report Overview
- GSP Amendment/Evaluation Workshop #3 (Interconnected Surface Water Sustainable Management Criteria)
- Questions/Comments



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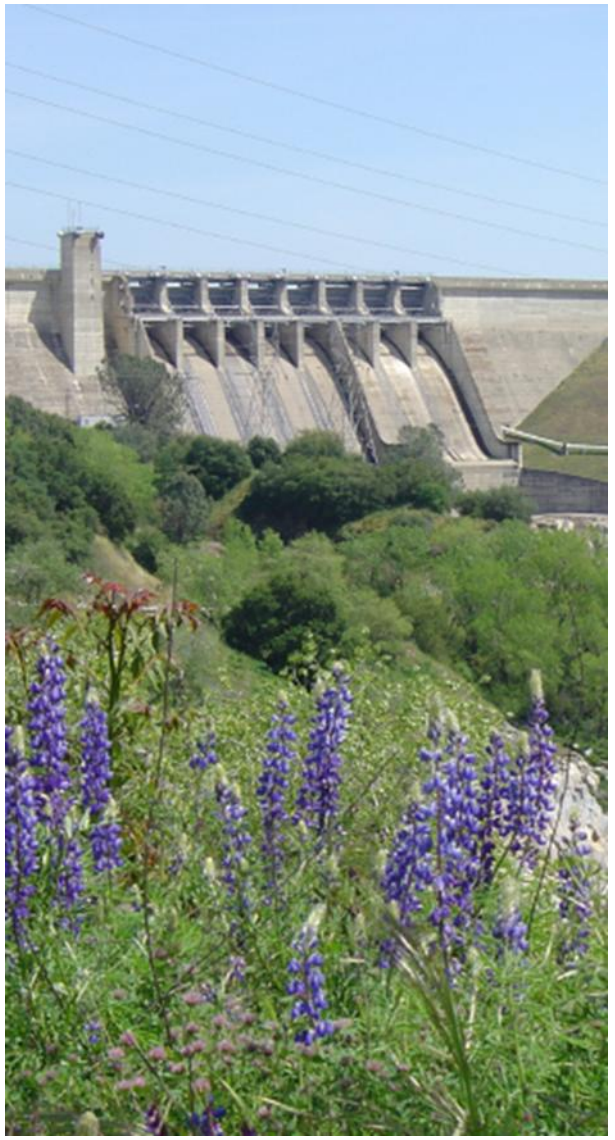
Final Questions/Comments

- **On Zoom**:
  - “Raise hand” function to speak or
  - Type question in comment box
- **Via telephone**:
  - *9 to “Raise Hand”
  - *6 to unmute when called on



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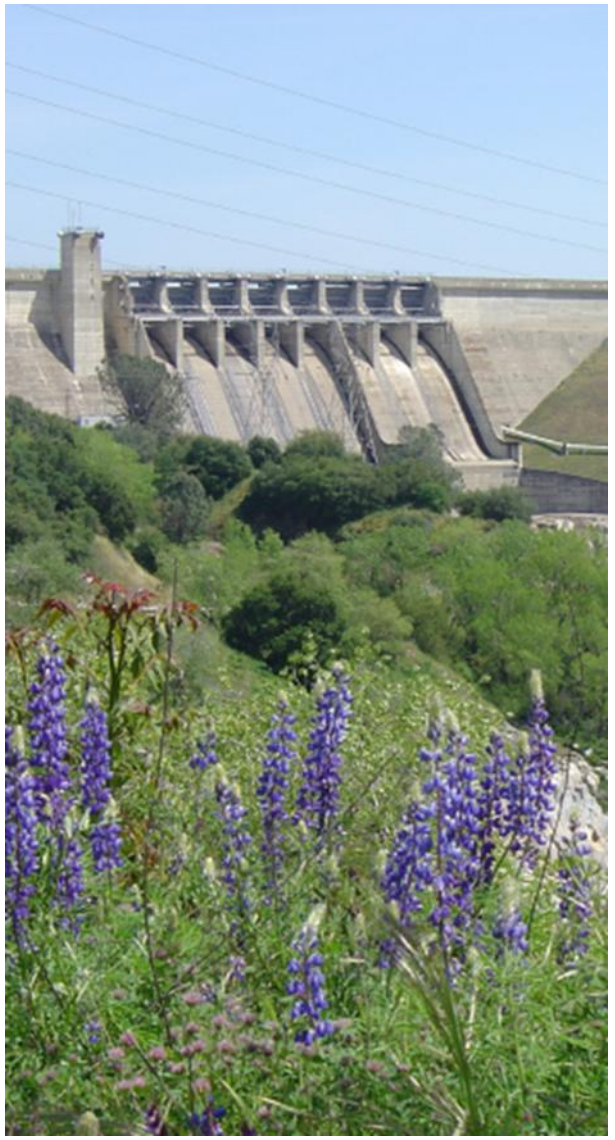
Thank you!



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