PROBATIONARY HEARING CONTINUANCE
PANEL PRESENTATION

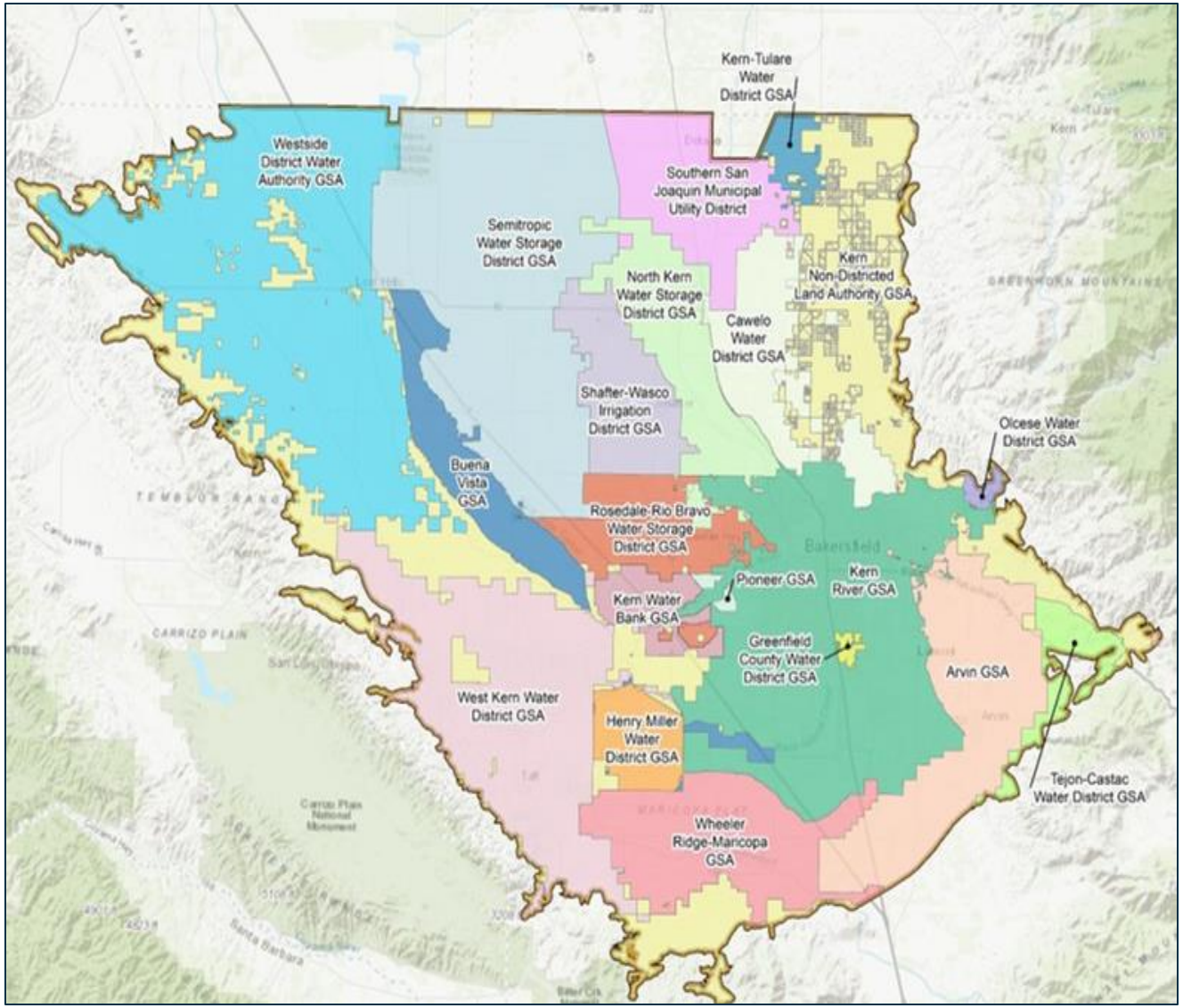
Kern County Subbasin
Groundwater Sustainability Agencies

SEPTEMBER 17, 2025

PRESENTATION OVERVIEW

- Overview & Background
- SWRCB Collaborative Process
- 2025 Plan Revisions
- Progress on Implementation
- Summary & Conclusions

KERN SUBBASIN OVERVIEW



- 1.782 million acres – **the largest Subbasin in the State**
- Over 35 water agencies represented across 20 GSAs
- Highly varied and complex hydrogeology and groundwater conditions
- Long history of successful conjunctive use and banking

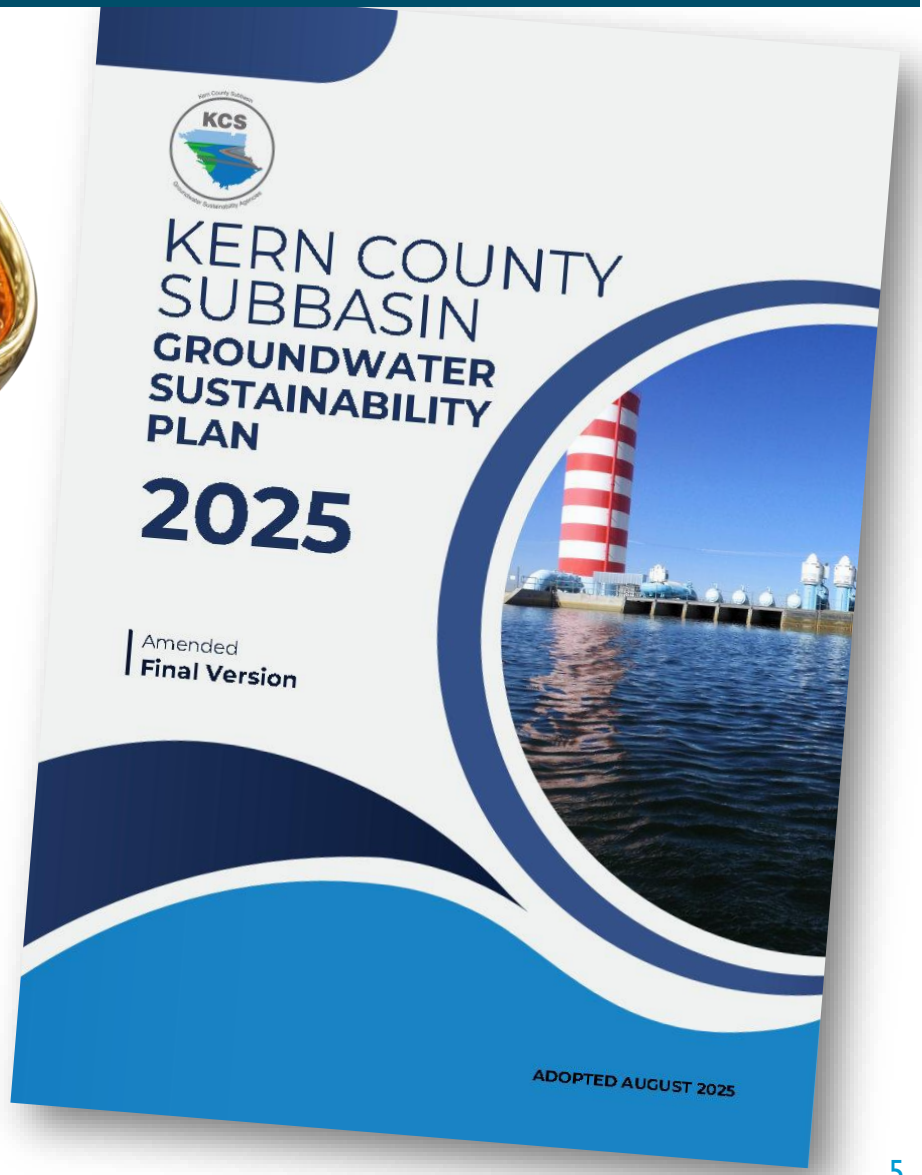
THE 2025 PLAN SUPPORTS OUR SUSTAINABILITY GOAL

The sustainability goal for the Kern Subbasin is to implement the 2025 Plan to achieve sustainable groundwater management within the 20-year implementation schedule. Achieving the sustainability goal will be demonstrated by **eliminating chronic lowering of groundwater levels caused by overdraft conditions and avoiding Undesirable Results for groundwater levels, groundwater storage, land subsidence, and groundwater quality**. This goal will be accomplished through the following objectives:

- Implement the **Stakeholder Communication and Engagement Plan**
- Eliminate long-term groundwater overdraft and attain sustainability through **conjunctive use, water banking, and demand management programs**
- Continuously **monitor** and evaluate groundwater conditions to avoid undesirable results
- **Maintain** long-term sustainability of **water resources** available to the Subbasin
- Maintain a comprehensive database of **beneficial uses and users** to inform on the efficacy of groundwater management policies and programs

THE 2025 PLAN MAINTAINS STRONG COORDINATION

- **One Plan with 7 GSPs**
  - One Foundational Subbasin GSP
  - 6 GSPs with Blue Pages containing GSA-specific Info
    - All GSAs reviewed and coordinated blue-pages
- **Coordination Agreement**
  - Revised to ensure consistency with 2025 Plan
- **Revised KNDLA JPA executed in August**
  - Removed termination after 2 years to have the JPA continue without a set term
  - Addresses SWRCB Staff Remaining Issue #3



THE 2025 PLAN ENHANCES IMPLEMENTATION

- ✓ Further refines SMCs and URs to be even more (locally) protective
- ✓ Expands the Kern Subbasin's monitoring networks to cover up to 99% of production wells identified in our inventory
- ✓ Improves understanding of beneficial users through Subbasin-wide Well Inventory
- ✓ Defines notification protocols to inform well owners of groundwater conditions that may apply to their water supply
- ✓ Develops protocols for investigating, documenting, and communicating MT Exceedances and Action Plan guidance for corrective actions
- ✓ Defines Mitigation Programs in the event that the Kern Subbasin's management actions are not sufficiently protective of beneficial users
- ✓ Expands the Stakeholder Communication and Engagement Plan, with increased focus on community awareness and engagement

IMPLEMENTATION IS AHEAD OF SCHEDULE

Kern Subbasin has made significant progress towards correcting overdraft conditions

Implemented 47% of Projects and Management Actions

All P/MAs are accruing benefits towards the Kern Subbasin's sustainability goal.

WY 2024 exceeded the target deficit reduction

GSAs reported results are 439,947 AF in WY2024 of demand reduction and supply augmentation

Added 2.2 million acre-feet to the aquifer in WY 2023

"In 2023 alone, 4.1 million acre-feet of water was added to underground aquifers through managed efforts." - DWR

DWR report shows that

KERN SUBBASIN HAD THE GREATEST INCREASE IN GROUNDWATER STORAGE IN WY 2024

among all groundwater basins

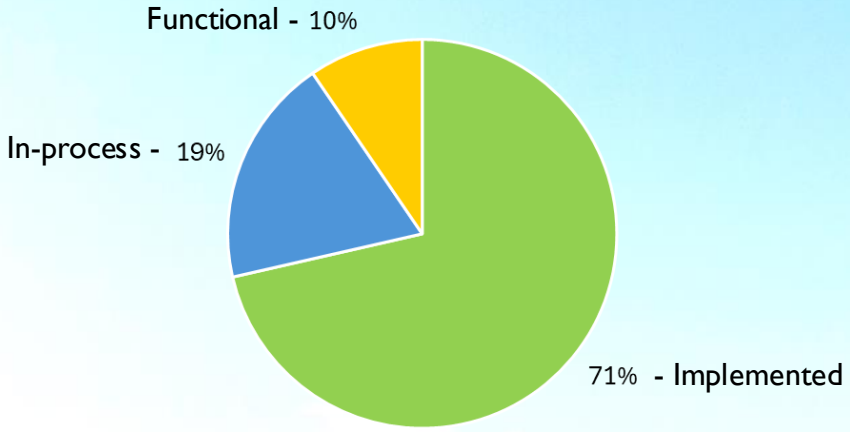
With 2023 and 2024 being above normal water years, the groundwater in storage increased by 2.75 million acre-feet

Source: Todd Groundwater, Kern County Subbasin Sixth Annual Report, Water Year 2024, ES-6 and Table 13
Source: https://data.cnra.ca.gov/dataset/ae160cf2-51d8-450d-82cc-2708e63ccd95/resource/fe2f982a-cc34-4b11-a6e7-6aef5e5cb8d6/download/may_2025_semi_annual_groundwater_conditions_report_v2.pdf
Source: News Release, DWR Marks 10 Years of the Sustainable Groundwater Management Act and Progress Made to Protect Water Supplies. https://water.ca.gov/News/News-Releases/2024/Sep-24/SGMA-10-Year-Anniversary

WHAT WE HAVE ACCOMPLISHED SO FAR…

The Kern Subbasin is prioritizing Demand Management

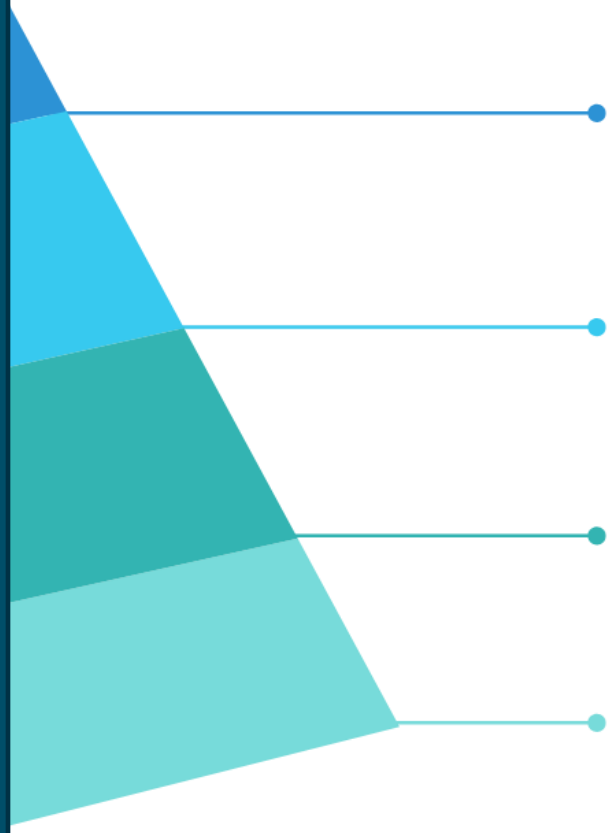
Completed Implementation of 71% of Planned Demand Reduction PMAs



Achieved 31% of the Planned Demand Reduction Goal by WY 2024

Category	Cumulative Benefit Through WY 2024	
	Acre-feet	Acres
WY 2024 Demand Reduction		
Land Retirement	29,630	16,780
Demand Reduction	80,880	n/a
Ag to Urban Conversion	2,770	1,030
Water Conservation Efficiency	230	n/a
Subtotal:	**113,510**	**17,810**

2025 Plan implementation includes **multiple layers of protection** for beneficial users



Protective Sustainable Management Criteria

Based on impact analyses and protection of most vulnerable users

Projects & Management Actions

Policies and projects to drive water management actions in the direction of the sustainability goal

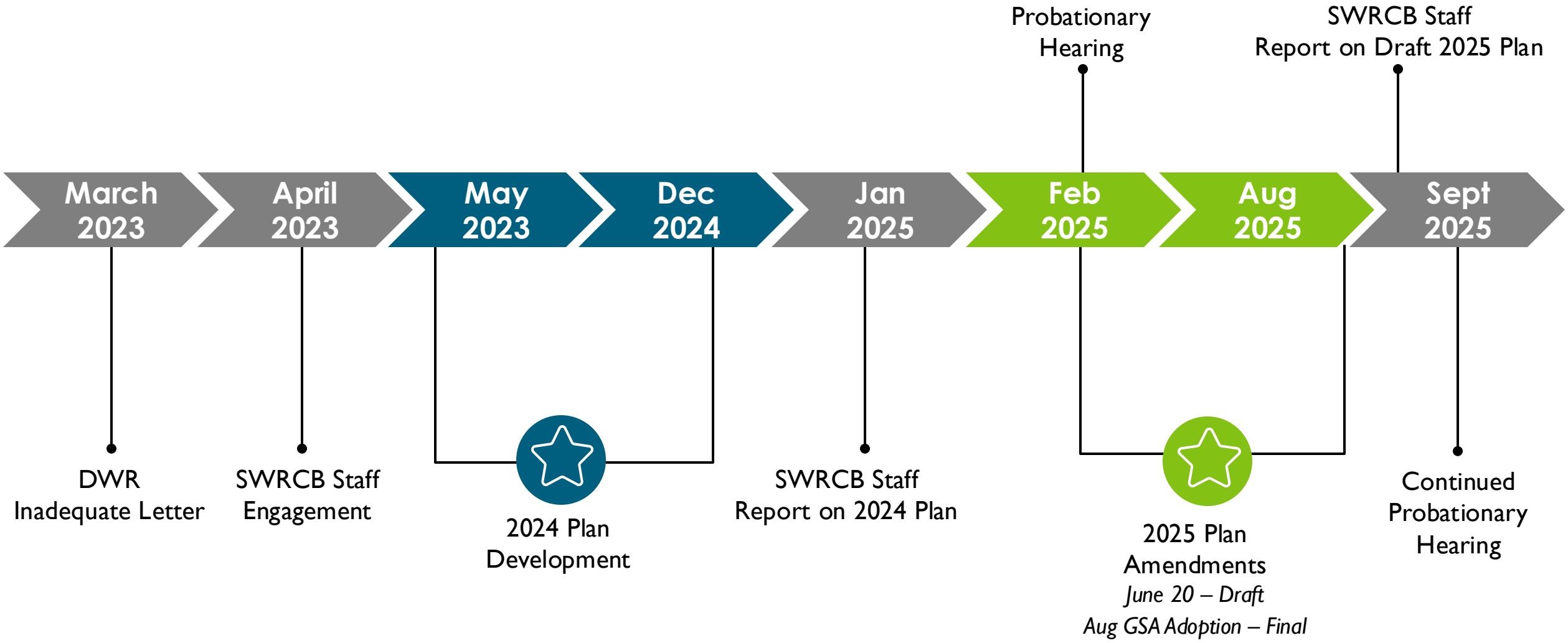
Exceedance Policies

Actions to respond when minimum thresholds are exceeded to proactively avoid an undesirable result

Well Mitigation Program

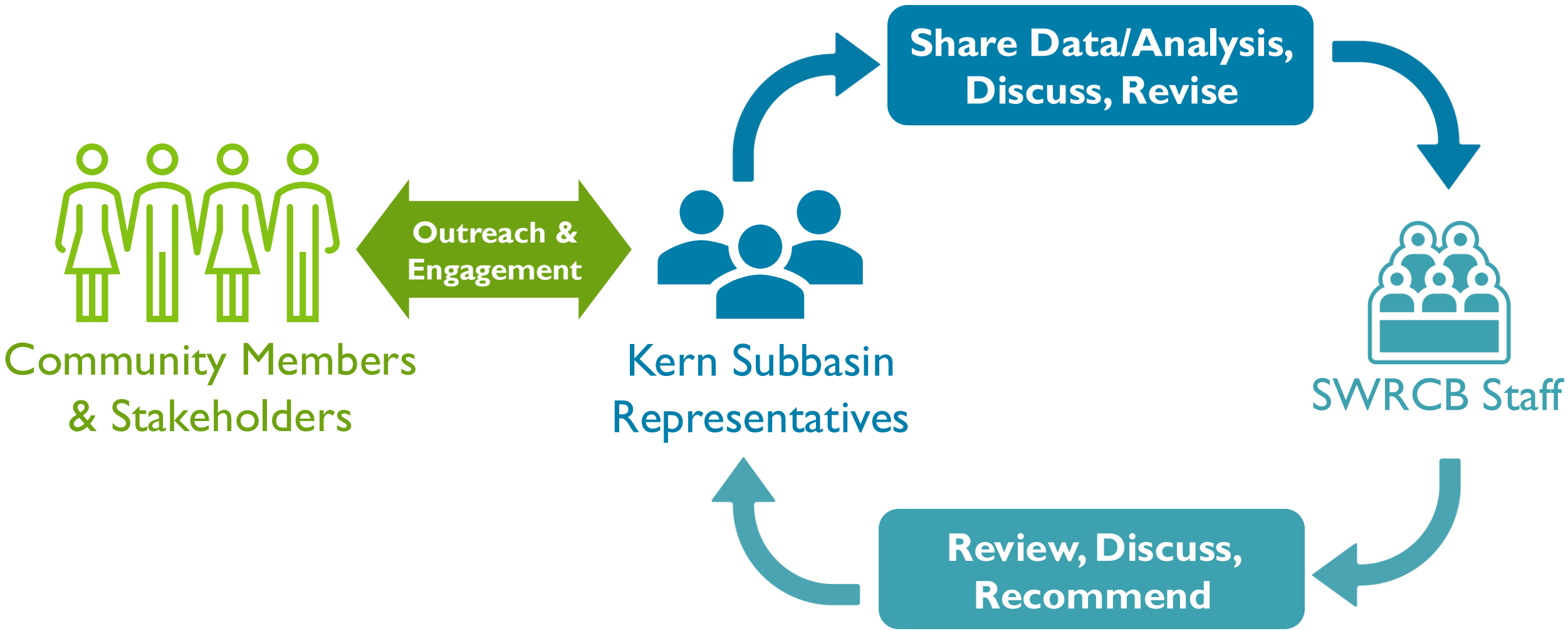
Safety net to address individual impacts that may occur on the path to sustainability

SWRCB CONSULTATION TIMELINE



14 *SWRCB Staff Technical Meetings +* ***30*** *Weekly Policy Check-Ins*

SWRCB STAFF COLLABORATIVE PROCESS



Subbasin Coordination & Consistency

2025 PLAN REVISIONS

Commitments	Outcomes
Improve and expand the Representative Monitoring Networks	✓ **Expanded** Groundwater Level Monitoring Well Network ✓ **Expanded** Groundwater Quality Monitoring Well Network
Enhance the Water Level SMCs	✓ **Revised** Groundwater Level Minimum Thresholds
Revisit Water Quality SMCs & Undesirable Results definition	✓ **Revised** Groundwater Quality Undesirable Results Definition ✓ **Revised** Groundwater Quality Minimum Thresholds ✓ **Expanded** Groundwater Quality Mitigation Program
Clarify Water Quality Exceedance Implementation	✓ **Developed** Groundwater Quality Implementation Provisions
Address remaining comments on Subsidence	✓ **Improved** Subsidence Action Plan

2025 PLAN REVISIONS ADDRESS SWRCB ISSUES

- **Sept 2025 Staff Report acknowledges that Draft 2025 Plan Revisions have made substantial improvements to 2024 Plan**
  - Most previous SWRCB Staff concerns have been addressed
  - Three remaining issues that need to be addressed before Kern returns to DWR
  - Additional recommendations from SWRCB Staff will be considered during Plan implementation and future revisions
- **Final 2025 Plan addresses three remaining issues identified by Staff:**
  1. 1-2-3 TCP is one of six COCs with protective SMCs and included in the Exceedance Policy and Mitigation Program
  2. GSAs are developing a Funding Assistance Mitigation Track for State Small Systems
  3. KNDLA JPA has been revised with no term limits

ROBUST DATA GAPS ANALYSIS & EXPANDED MONITORING

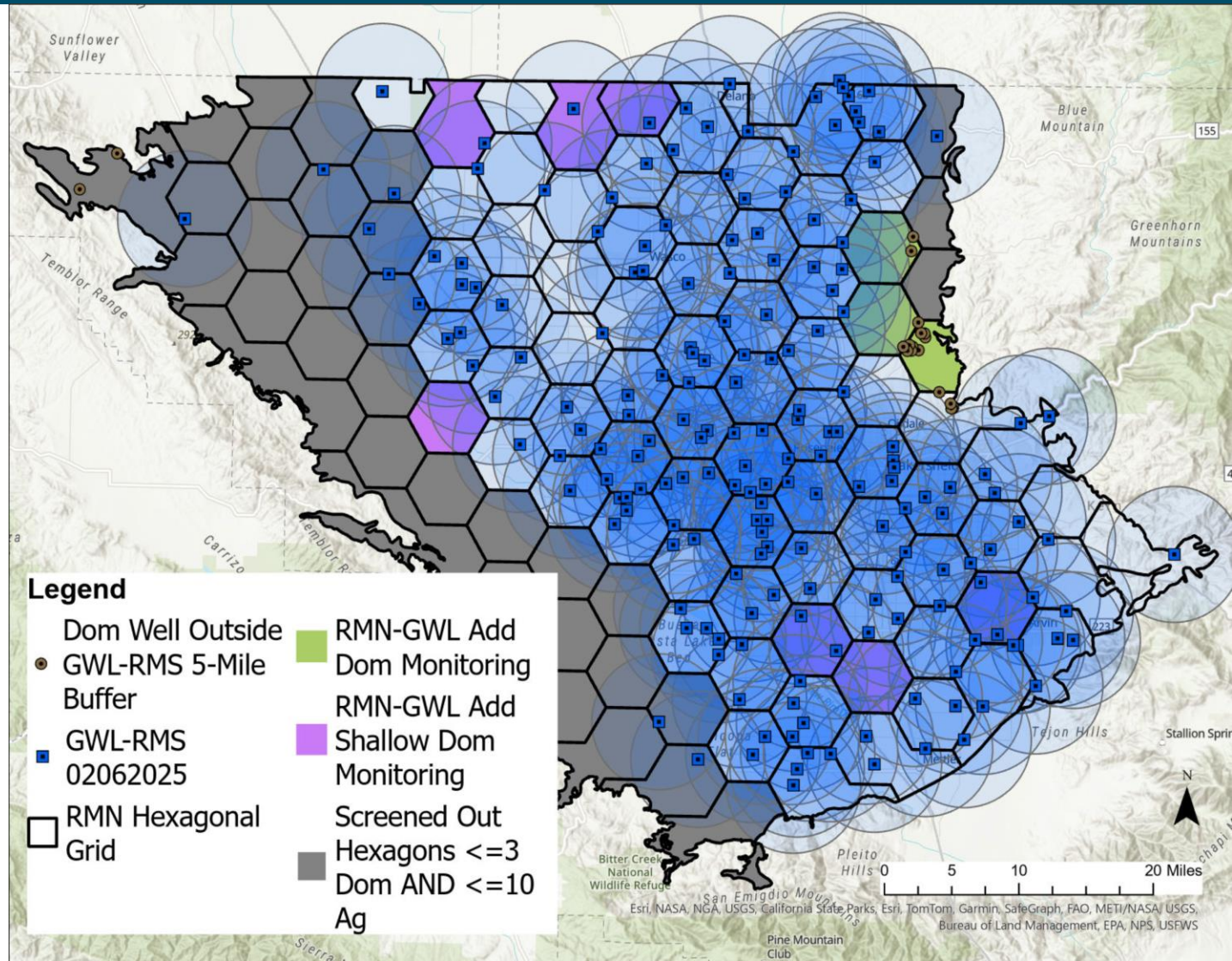
Commitment	2025 Plan Revision
Improve and expand the Representative Monitoring Networks to be more protective of groundwater beneficial use/users	✓ Adding up to 10 additional monitoring wells including 7 shallow wells for a total of up to **197 GWL monitoring wells** ✓ Adding up to 30 additional monitoring wells for a total of up to **82 GWQ monitoring wells**

EXPANDED GROUNDWATER LEVEL MONITORING NETWORK

- ✓ ***2025 Plan Revision:*** Adding up to 10 additional monitoring wells including 7 shallow wells for a total of up to **197 GWL monitoring wells**

- ✓ **99%** of domestic wells represented by the monitoring network

2024 Plan had 187 GWL Representative Monitoring Wells



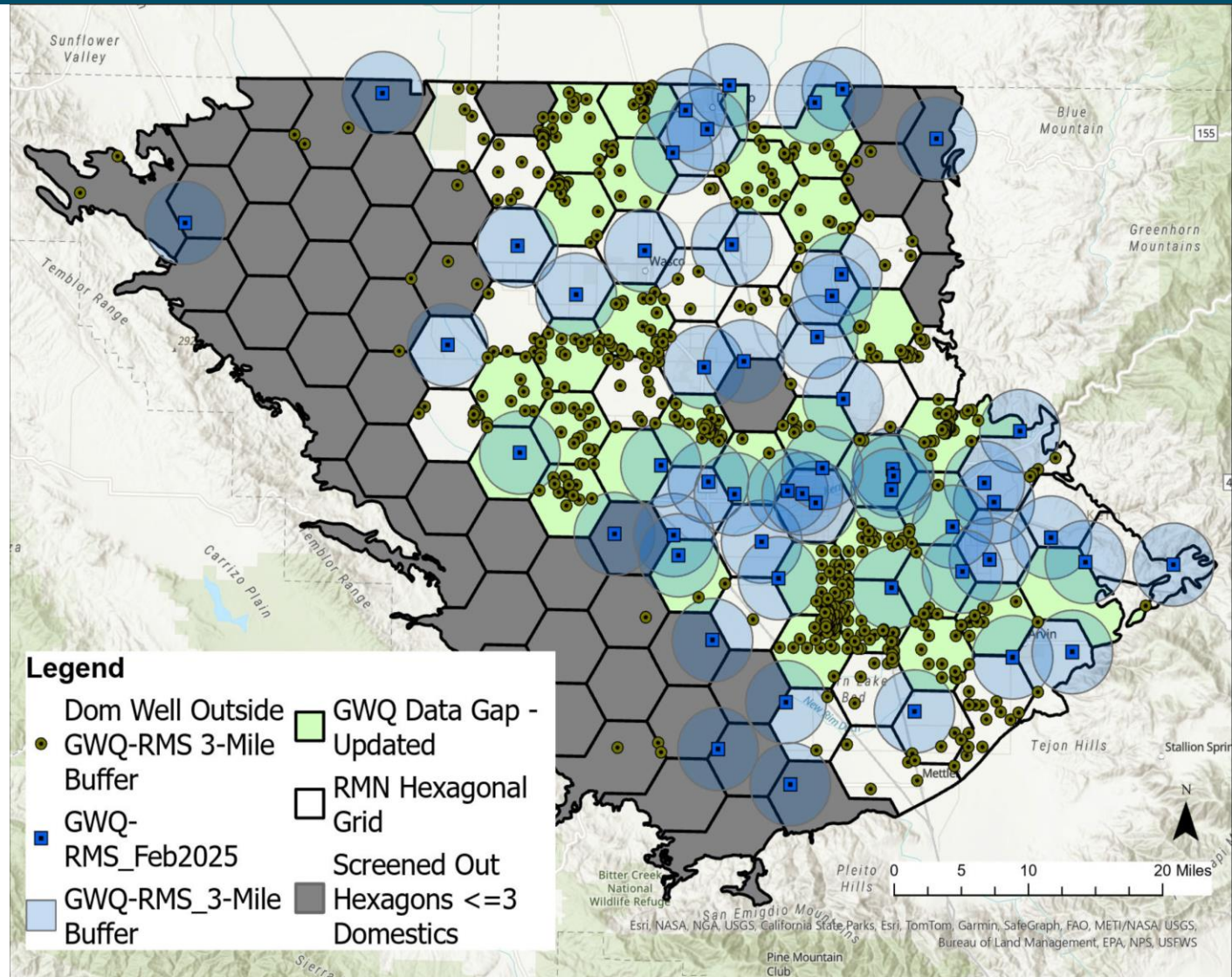
GWL: Groundwater Level(s)

EXPANDED GROUNDWATER QUALITY MONITORING NETWORK

- ✓ ***2025 Plan Revision:*** Adding up to 30 additional monitoring wells for a total of up to **82 GWQ monitoring wells**

- ✓ **95%** of domestic wells represented by the monitoring network

2024 Plan had 52 GWQ Representative Monitoring Wells



GWQ: Groundwater Quality

PROGRESS ON EXPANDING MONITORING NETWORK

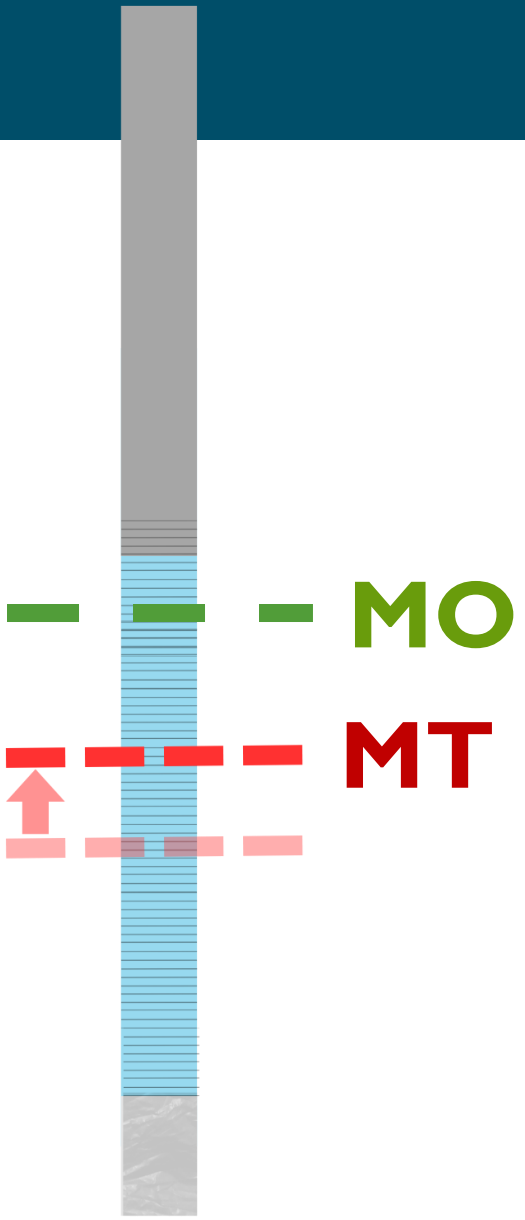
GROUNDWATER LEVELS

Commitment	2025 Plan Revision
Enhance the Water Level SMCs to be more protective of local impacts and beneficial use/users	✓ Raised MTs at 35 representative monitoring wells ✓ Assessed potential impacts ✓ Expanded definition of Undesirable Results

REVISED GROUNDWATER LEVEL MINIMUM THRESHOLDS

Raised MTs at **35** representative monitoring wells:

- ✓ **13 to 112 feet higher** at 4 RMWs after adjustments for data anomalies ➡ *locally more protective*
- ✓ **10 to 61 feet higher** at 6 RMWs in consideration of regional clay layer ➡ *minimizes future land subsidence and degraded water quality*
- ✓ **5 to 30 feet higher** at 25 RMWs based on SWRCB feedback ➡ *locally more protective*



Not drawn to scale

LAND SUBSIDENCE

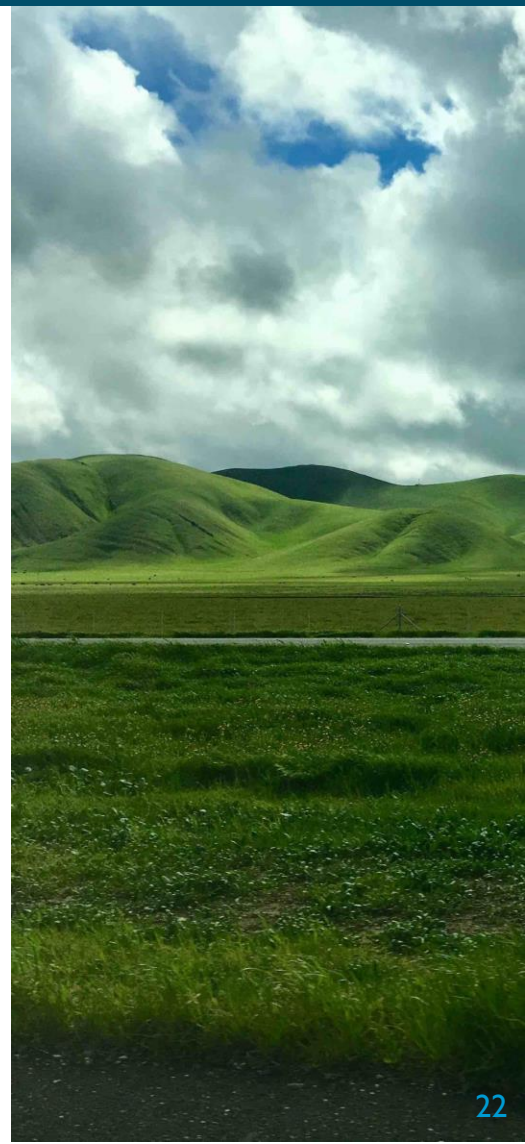
Commitments	2025 Plan Revision
Clarify Action Plan for Land Subsidence	✓ Clarified actions to take when an interim milestone or MT exceedance occurs
Add subsidence mitigation details	✓ GSAs to fund Friant-Kern Canal liner raise needed due to post-2020 Subsidence ✓ Committed to studies to identify all root-causes of subsidence along CA Aqueduct, and support future mitigation approach determination
Evaluate Potential Impacts by Oil & Gas Source Water Wells	✓ Reported volumes are low (<0.02% of Kern Subbasin pumping), typically utilized for oilfield activities overseen by CalGEM

IMPROVED SUBSIDENCE ACTION PLAN

- Kern Subbasin Subsidence Action Plan is data driven
- Outlines the **five-step process** to be implemented when a **single** IM or MT exceedance occurs for Subsidence over two consecutive quarters of monitoring
- Extended Subsidence Action Plan to:
  - Identify specific standardized criteria for protocols, actionable timelines, and proposed Project and Management Action (P/MA) responses will incorporate applicable final DWR subsidence best management practices expected late 2025
  - Will update P/MAs (including Mitigation Alternatives, as needed) once California Aqueduct Subsidence Program (CASP) finalizes Long-Term Rehabilitation Program
  - Assess and report changes in subsidence trends to proactively identify and address IM/MT exceedances

ACTIVE GROUNDWATER MANAGEMENT TO MINIMIZE SUBSIDENCE

- Raised groundwater level MTs in several areas to minimize future subsidence
- Stabilizing groundwater levels by 2030 to minimize subsidence by 2040
- Implementing P/MAs to avoid or minimize subsidence, for example:
  - WDWA GSA Water **Pumping Moratorium** adjacent to California Aqueduct
  - Wheeler Ridge-Maricopa GSA implemented significant **Pumping Surcharges**
  - Semitropic GSA **Demand Management**
- Extensive data collection and monitoring of groundwater levels and subsidence
- On-going Basin Study to better model/characterize groundwater level and subsidence relationship



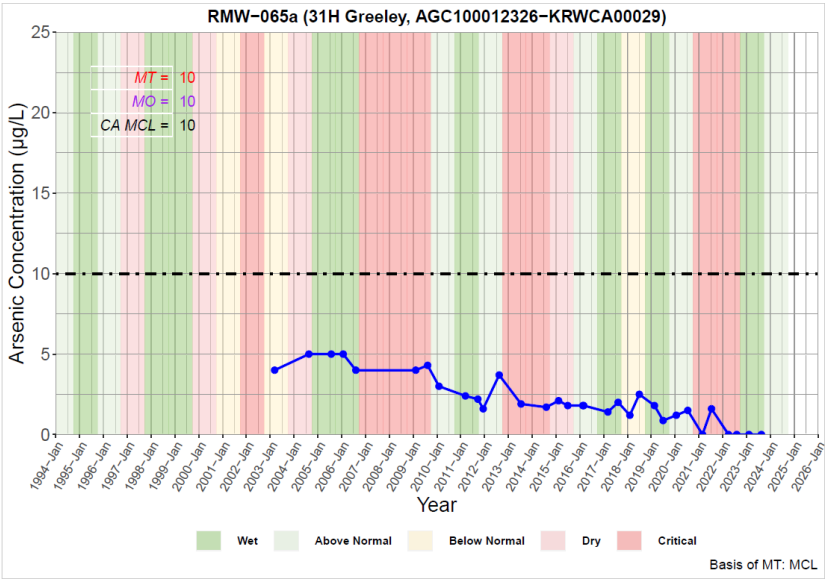
WDWA: Westside Districts Water Authority Groundwater Sustainability Agency

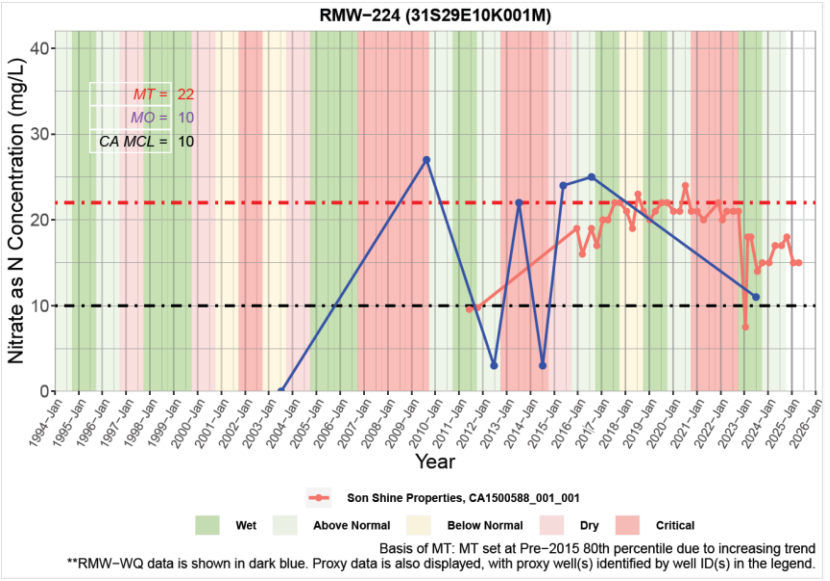
GROUNDWATER QUALITY

Commitment	2025 Plan Revision
Revise Minimum Thresholds to be even more protective of beneficial use/users	✓ 93% of GWQ MTs set at the Water Quality Objective
	✓ Updated MTs Exceedance Policy and Action Plan for Degraded Water Quality
Revise/expand definition of Undesirable Result	✓ Revised UR definition to be more conservative and protective of domestic wells, including mitigation backstop
Expand Mitigation Program	✓ New Mitigation Program Track for Degraded Water Quality
Clarify Groundwater Quality Exceedance/Implementation details	✓ Notification Process for exceedances of Primary Maximum Contaminant Levels at Monitoring Network Groundwater Quality Wells
	✓ New Degraded Water Quality Implementation Provisions

REVISED GROUNDWATER QUALITY MTs

- 6 Constituents of Concern (COCs)
  - Arsenic
  - Nitrate and Nitrite
  - Total Dissolved Solids
  - 1, 2, 3-Trichloropropane
  - Uranium
- MTs are set as close to the Water Quality Objective as practical and were adjusted in consideration of baseline concentrations based on best available data, including additional nearby wells
- **93%** of GWQ MTs set at the Water Quality Objective





GWQ: Groundwater Quality
MT: Minimum Threshold

REVISED GROUNDWATER QUALITY UNDESIRABLE RESULTS DEFINITION

An undesirable result occurs when..

1. Subbasin-wide, 15% of RMW-WQ exceed the MT for COCs per water year based on confirmed sample and MT Exceedance investigation results ; ***or***

2. Annually, 5 percent of domestic wells have an assumed MT Exceedance based on radius of influence analysis around the RMW-WQ that exceeds the MT,

   Cumulative maximum of 15 percent of domestic wells through 2040; ***or***

3. GSA is unable to meet well mitigation needs.

EXPANDED DEGRADED WQ ACTION PLAN

- Triggered if sample results from the twice annual monitoring exceed water quality objective (WQO) and/or Minimum Threshold (MT) for any COC at the RMW-WQ.
- The Kern Subbasin data management system notifies all GSAs of the exceedance, including location and date.
- Once notified of WQO or MT exceedance, the relevant GSA(s) will take the following steps:

Step 1: Confirm Result

- Review results
- Re-sample RMW-WQ
- Document well condition

If confirmed result exceeds Nitrate WQO

If confirmed result exceeds MT

Step 2: Notification for Nitrate

- Identify well owners within approx. 3-mile radius
- Send direct mail notice within 30-days re: RMW-WQ exceedance, potential health impacts
- Notice re: Kern Water Collaborative program for testing and alternative drinking water

Step 3: Exceedance Investigation of MT

- Independent, qualified professional
- Considerations: location of wells, land use, local geology, GSA operating conditions, well construction, hydrographs, chemographs, constituent source and actions due to others, historical water quality, GSAs operations, statistically significant correlations, recharge operations, source water, driving mechanisms, outside contributing factors
- Document investigation and conclusions
- Identify if MT exceedance is due to GSA groundwater management activities

Step 4: Notification for Non-Nitrate COCs

- Identify well owners within approx.. 3-mile radius
- Send direct mail notice 1 if MT exceedance is due to groundwater management activities
  - Notice of exceedance
  - Assumed well impacted
  - Potential public health impacts
  - Information re: process for submittal of an Application for Mitigation
- Send direct mail notice 2 if MT is not due to groundwater management activities
  - All of the above, except general information re: resources for well-testing rather than Application for Mitigation

Step 5: Evaluate and Initiate Projects or Management Actions

- Initiate P/MAs as appropriate

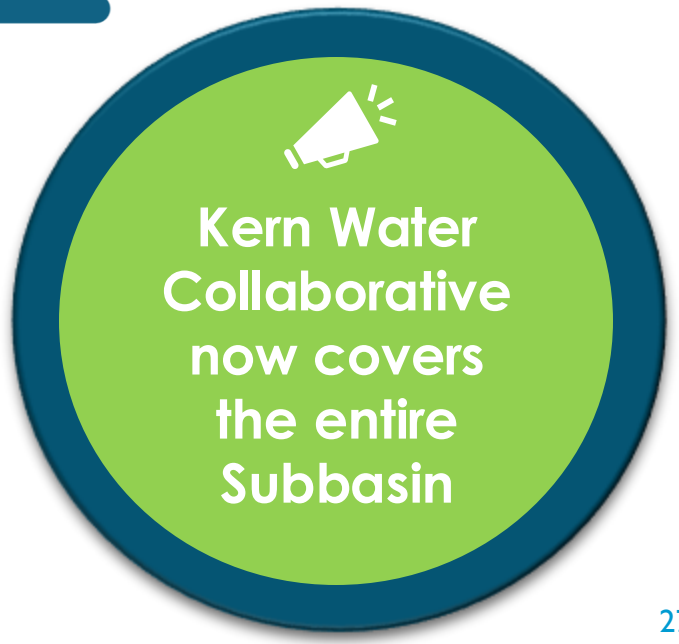
Step 6: Report to Coordination Committee

- Submit Exceedance Report from Step 3 within 60 days of sample confirmation
- Document notifications mailed & Findings of Investigation Report
- Include recommendations for P/MAs as appropriate

NEW DOMESTIC WELL OWNER NOTIFICATIONS

- New policy to notify nearby (~3-mile radius) domestic well owners of Water Quality Objective/MT Exceedance(s)

- Provide information regarding: Well Testing and Mitigation Programs *(Kern Water Collaborative, Self- Help Enterprises, Well Mitigation Program)*
  - GSA-funded testing when groundwater management activity identified as potential cause of MT exceedance

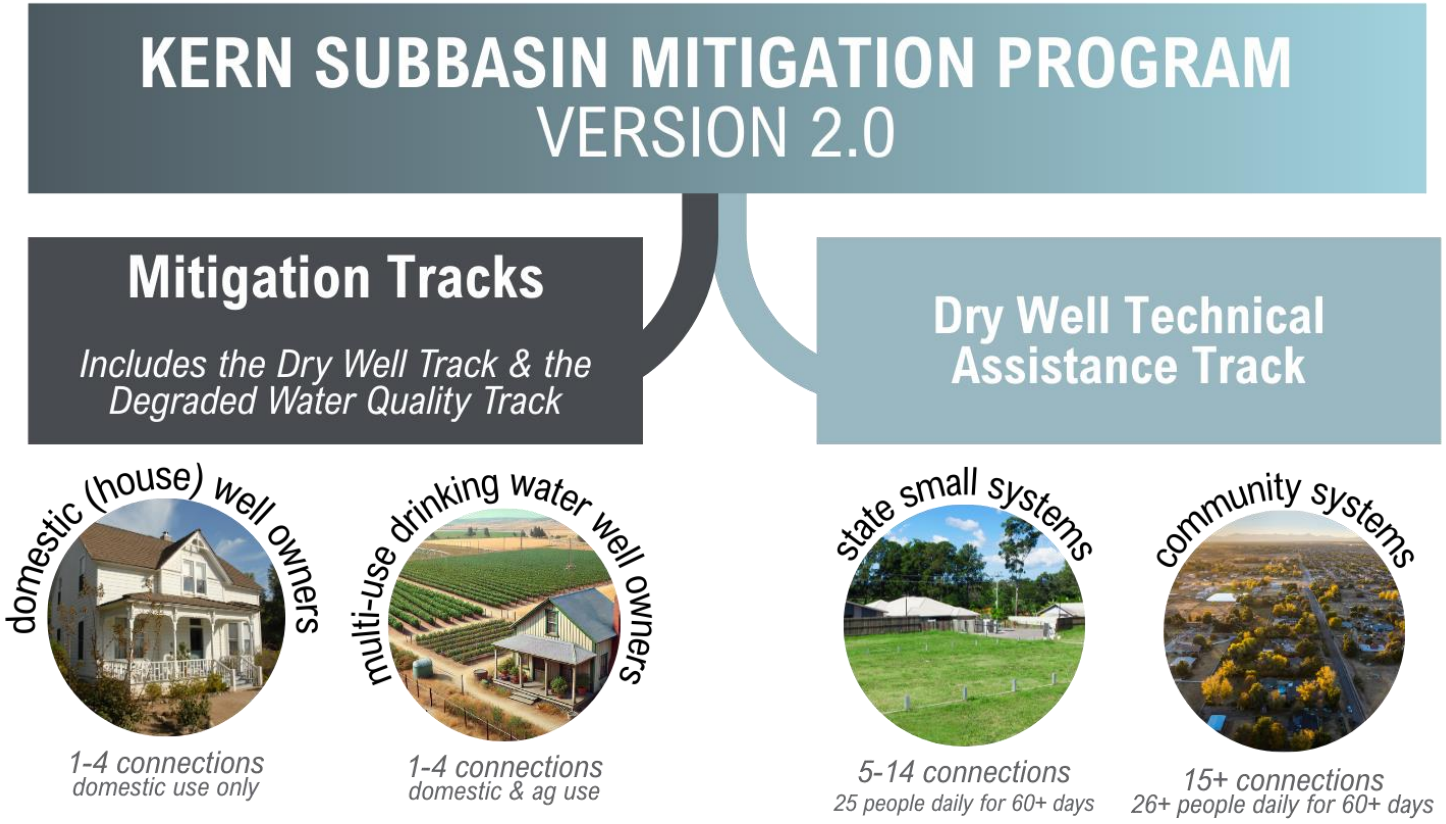


WELL MITIGATION PROGRAM

Commitment	2025 Plan Revision
Expanded elements of groundwater quality mitigation	✓ New Degraded Water Quality track for domestic wells
	✓ Clarifies how notification and exceedance policy integrate into the Well Mitigation Program
Clarification added in response to SWRCB Staff and community member feedback	✓ Revised clarity on well type definitions and program applicability
	✓ Development of new Funding Assistance Track for State Small Water Systems

WELL MITIGATION PROGRAM, VERSION 2.0

- Revised terms and references to the types of systems that are eligible for consistency with Health and Safety Code definitions
  - Clarified Dry Well Mitigation Track for domestic wells and multi-use used for drinking water
  - Clarified Dry Well Technical Assistance Track for Community Water Systems and State Small Water Systems
- Added specific Degraded Water Quality Mitigation Track for domestic wells and multi-use wells used for drinking water



- Exceedance Action Plan & Mitigation addresses SWRCB Remaining Issue #1

STATE SMALL WATER SYSTEMS

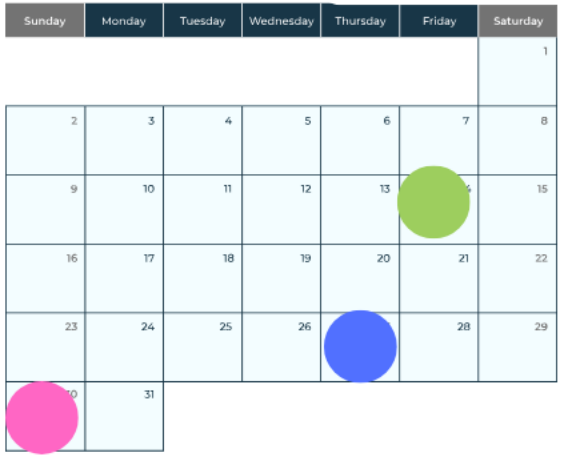
DEVELOPING A FINANCIAL ASSISTANCE FRAMEWORK FOR DRY WELLS

- Key Elements of Financial Assistance Track
  - Assistance up to $ 100,000
  - Provision of Emergency Drinking Water Supplies
  - Implementation of Financial Assistance: Case-by-Case Determination
    - Examples:
      - Third Party Contractor (e.g., Self-Help Enterprises)
      - Technical Assistance Provider assisting State Small Water System (e.g., supplement SAFER grant funding as determined appropriate to assist in delivery of long-term solution)
      - Independent contractor engaged by GSA(s)
  - Addresses SWRCB Staff Remaining Issue #2

COMMUNITY OUTREACH & ENGAGEMENT

Commitment	Progress
Improve community outreach engagement	✓ 21 engagement activities since March ✓ Added and enhanced existing outreach tactics
Engage local water focused organizations	✓ Monthly Community Partner Meetings
Enhance accessibility	✓ Expanded Spanish and Punjabi accessibility ✓ Event scheduling considerate of community availability
Prioritize outreach to drinking water system customers	✓ Engaged community members at in-person at events, online via social media, and virtually via Focus Groups

MARCH



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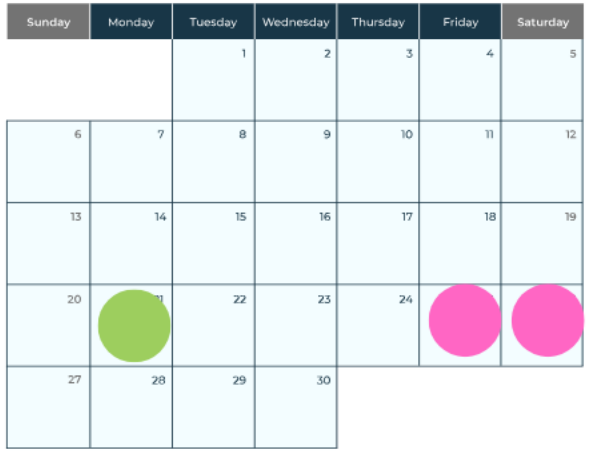

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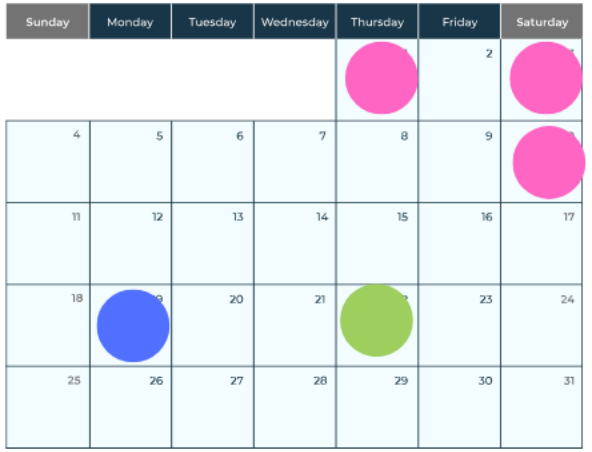

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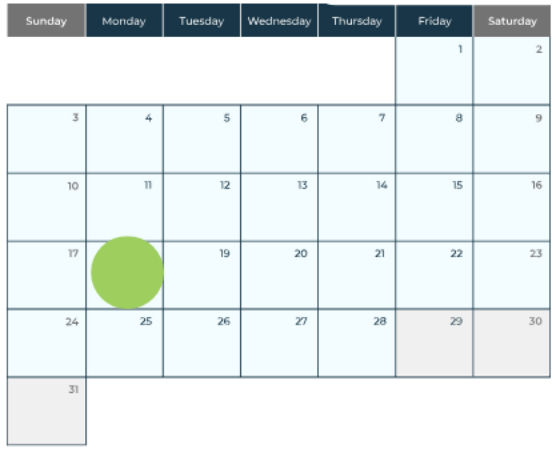
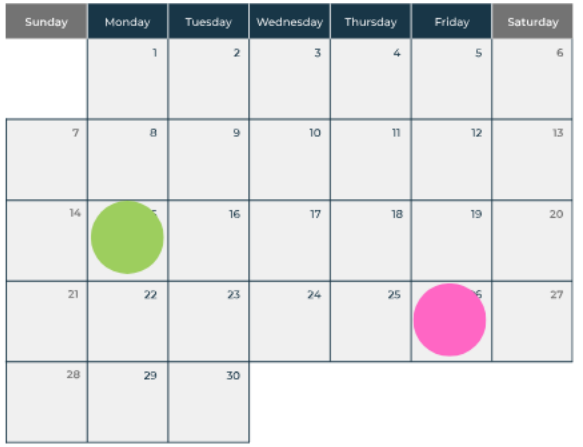
JULY

AUGUST



SEPTEMBER



7 Community Partner Meetings

4 Focus Groups

7 Community Pop-Up Events

3 GSP Workshops

GSP Edits/Development
Public Comment Period
GSP Adoption/Implementation

FOCUSED OUTREACH ACTIVITIES

- New Facebook & Instagram accounts
- Event and informational flyers
- Interviews with local news and press releases to notify of upcoming Public Workshops and resources
- KernGSP.com updates
  - More comprehensive homepage
  - Updated 'Frequency Asked Questions' webpage
  - 'Community Resources Hub' webpage
  - 'Stay Engaged' webpage with 2025 meeting and event calendar
  - New 'Find your GSA' webpage
- & more! *See the Engagement Toolkit, Appendix F-3*

Follow the Kern Subbasin
@KernCountySubbasin

KERNCOUNTYSUBBASIN

COMMUNITY FEEDBACK INFORMED GSP & APPROACH

2025 Plan Changes

- Raised minimum thresholds for groundwater levels
- Domestic well groundwater quality notification
- Increased density of groundwater level and quality monitoring network
- Clarification on well type definitions and their application in the 2025 Plan
- Updates to the Stakeholder Communication & Engagement Plan

CO&E Approach Changes

- Increased count of Community Pop-Ups
- More connection points with interested individual NGO groups
- Engaged with CWA/CCEJN to connect with community groups (instead of directly)
- Partnered with SHE to canvass in advance of Lamont's Community Pop-Up Event
- Incorporated more info in outreach approach:
  - Groundwater Quality
  - Different roles of public water suppliers vs. GSAs
  - How to find GSA
  - *& more! See Appendix 3-F*

COE: Community Outreach & Engagement
CWA: Clean Water Action
CCEJN: Central California Environmental Justice Network
SHE: Self-Help Enterprises

COMPLIANCE WITH RESOLUTION NO. 2025-0007

Enhance engagement & ensure drinking water system users are informed of the Plan effect on their system

- ✓ 21 engagement activities since March
- ✓ 3 Public Workshops with information of GSP effect on drinking water systems
- ✓ Social Media posts on GSP effect on groundwater users (including drinking water systems)
- ✓ Flyers distributed to public water systems and local NGOs on GSP effect on groundwater users (including drinking water systems)
- ✓ Focus group and following meetings specific to Lost Hills
- ✓ Invitation for additional community Focus Groups released in April 2025

Work with community groups to create/ implement engagement & Plan revisions

Monthly Meetings with Community Partners with focuses on:

- ✓ March: Draft COE Approach
- ✓ April: Final COE Approach
- ✓ May: Technical Draft Plan Changes
- ✓ June: Outreach & Engagement Progress Update
- ✓ July: How community feedback was incorporated into the Final GSP
- ✓ August: Changes from Draft Plan to Final Plan

Submit to SWRCB: Outreach plan by March 20, 2025 Progress update by June 20, 2025

- ✓ Submitted 2025 CO&E Plan on 3/20
- ✓ Submitted CO&E Strategy Report on 6/20
- ✓ Included in Appendix F of the 2025 Plan

CONTINUED ENGAGEMENT COMMITMENTS

- GSAs and several GSA member agencies hold regular public Board meetings
  - Monthly GSA Board meetings
  - GSA-specific and Subbasin-wide updates
- Future workshops and outreach events, working with existing partners
  - Community Events
  - Well Mitigation Program Workshop
  - Annual Report Workshop


Kern County Subbasin 2025 GSA Meeting & Event Schedule

Schedule as of April 13, 2025. All meetings and events are subject to change, including cancelation, rescheduling, location, and attendance options. Special Board Meetings can be scheduled if needed with a 24 hour notice to the public. Please visit the link in the "More Info" column for the most up-to-date information. Requests for accessibility-related modification or accommodation, including auxiliary aids or services, to attend or participate in this meeting should be made to the point of contact in advance of the meeting to ensure availability of the requested service or accommodation.

Community Event | GSA Board Meeting | Stakeholder Committee Meeting

Date	Start Time	Attendance	Location	Activity	More Info	Contact
Tuesday, September 23, 2025	5:30 PM	In-Person	West Kern Water District Office (800 Kern Street, Taft, CA)	West Kern Water District GSA	https://wkwd.org/about/board-meeting-agendas/	Greg Hammett ghammett@wkwd.org
Thursday, September 25, 2025	1:00 PM	Hybrid	Stuart T. Pyle Water Resources Center (3200 Rio Mirada Drive, Bakersfield, CA 93308)	Pioneer GSA	https://www.kcwa.com/	Michelle Anderson manderson@kcwa.com
Thursday, October 2, 2025	10:00 AM	In-Person	City of Bakersfield Water Resources Department (1000 Buena Vista Drive, Bakersfield, CA 93311)	Kern River GSA	http://www.kernrivergsa.org/	Daniel Maldonado dmaldonado@bakersfieldcity.us
Wednesday, October 8, 2025	2:00 PM	Hybrid	Southern San Joaquin Municipal Utility District Office (11281 Garzoli Ave, Delano, CA 93216)	Utility District GSA		
Wednesday, October 8, 2025	9:30 AM	Hybrid	Wheeler Ridge-Maricopa Water Storage District Office (12109 Highway 166, Bakersfield, CA 93313)	Kern County Water Agency GSA		
Wednesday, October 8, 2025	12:30 PM	In-Person	Semitropic Water Storage District Office (1101 Central Avenue in Wasco)	Semitropic Water Storage District		
Wednesday, October 8, 2025	9:00 AM	In-Person	Shafter Wasco Irrigation District Office (16294 Central Valley Hwy, Wasco, CA 93280)	Shafter-Wasco Irrigation District GSA		

2025 GSA Meeting & Event Schedule available in Spanish, Punjabi and English at **KernGSP.com/stay-engaged/**

70+ *public GSA and GSA member agency meetings*

held during 2025 Plan Development (April – July 2025)

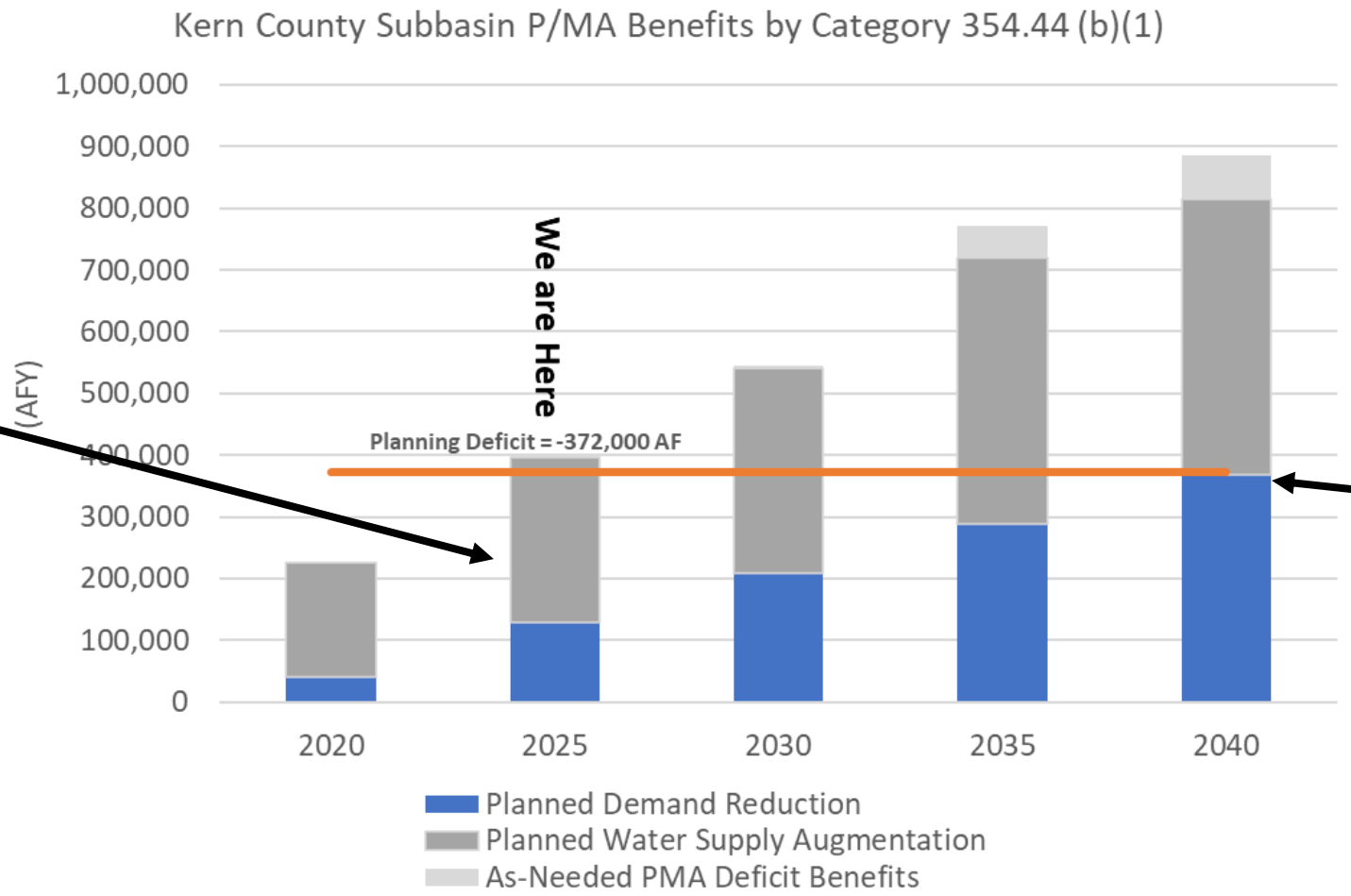
Thank you to all engaged Community Partners and community members

CONTINUED PROGRESS ON PROJECTS & MANAGEMENT ACTIONS

Commitment	Progress
Continue implementation of P/MAs while prioritizing demand management to achieve and maintain sustainability	✓ 99% of the overdraft will be corrected by **demand reduction** ✓ GSAs will be in balance if **half** the expected benefits are realized

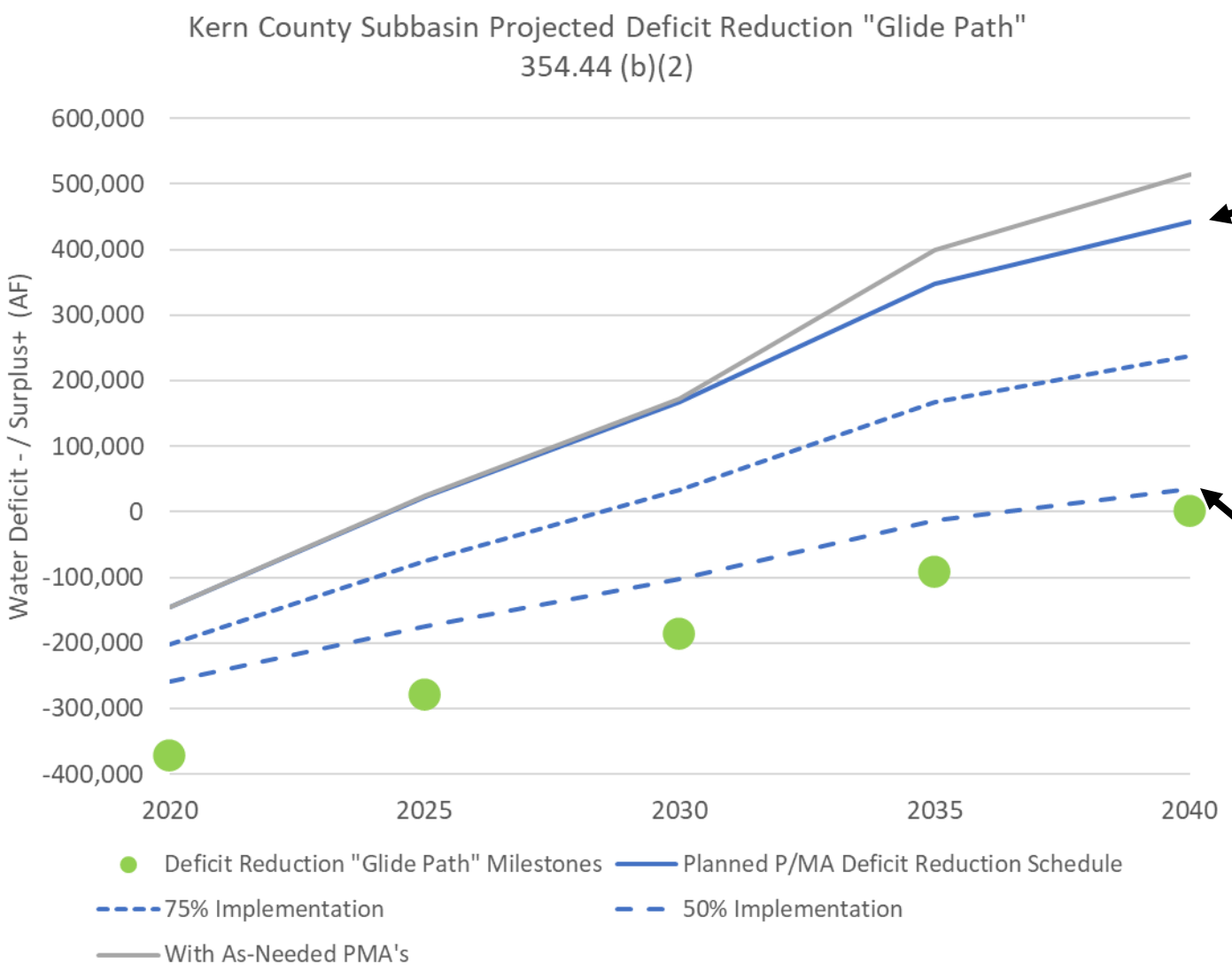
REALISTIC P/MAS TO ACHIEVE THE SUSTAINABILITY GOAL

Projects: recharge basins, surface water delivery service area expansions, etc. have already been initiated



99% of the overdraft can be corrected by **demand reduction**: land conversion, water budgets, groundwater charges, pumping restrictions, etc.

P/MA ACTIONS MAP: A CLEAR PATH TO SUSTAINABILITY



Surplus of 441,000 AFY if all expected benefits are realized

Safety factor to ensure Subbasin stays on track

GSAs will be in balance if half the expected benefits are realized

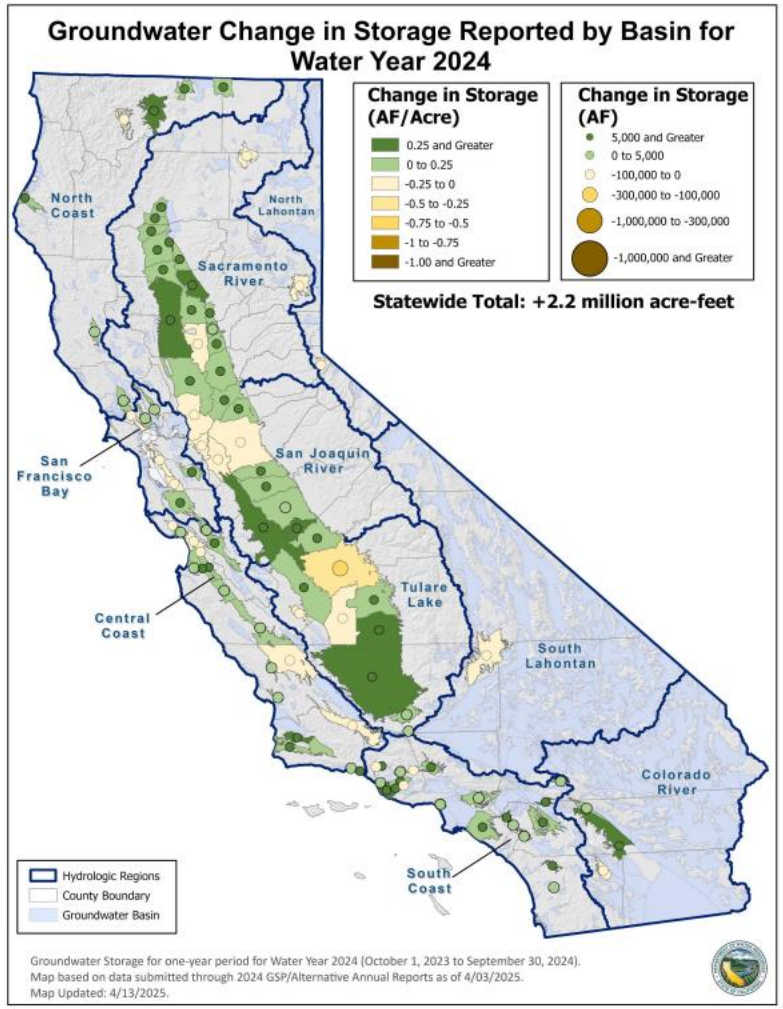
INCREASING GROUNDWATER IN STORAGE

DWR report shows the ***Kern Subbasin had the greatest increase in groundwater storage in WY 2024 among all groundwater basins***

Table 11: WY 2024 Change in Storage by Basin. Top 10 basins as a volume (as shown in **Figure 12**). Change in storage values based on data reported through 2024 GSP/Alternative annual reports as of 4/3/2025.

Basin (Top 10 ranked by total change in storage)	Basin Number	**Total Change in Storage (AF)**	Change in Storage Rates (AF/Acre)	Basin Area (Acres)
San Joaquin Valley - Kern County	5-022.14	**469,052**	0.26	1,782,318
San Joaquin Valley - Delta-Mendota	5-022.07	**320,000**	0.42	764,964
San Joaquin Valley - Tule	5-022.13	**270,660**	0.57	477,590
San Joaquin Valley - Kings	5-022.08	**-270,000**	-0.28	981,323
Sacramento Valley - Colusa	5-021.52	**187,820**	0.26	722,785
Coachella Valley - Indio	7-021.01	**184,670**	0.62	297,156
San Joaquin Valley - Westside	5-022.09	**134,000**	0.22	622,208
San Joaquin Valley - Chowchilla	5-022.05	**120,878**	0.83	145,574
Sacramento Valley - Vina	5-021.57	**104,510**	0.57	184,917
San Joaquin Valley - Kaweah	5-022.11	**95,000**	0.22	441,048

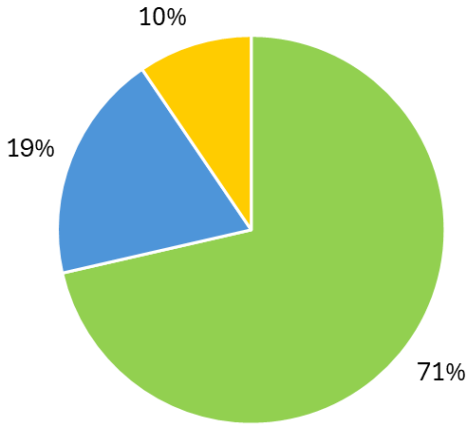
Figure 12: Groundwater Change in Storage Reported by Basin for Water Year 2024. See **Table 11** and **Table 12** for specific groundwater storage statistics. Map and charts based on available data from GSP/Alternative annual reports as of 04/03/2025.



Source: https://data.cnra.ca.gov/dataset/ae160cf2-51d8-450d-82cc-2708e63ccd95/resource/fe2f982a-cc34-4b11-a6e7-6aef5e5cb8d6/download/may_2025_semi_annual_groundwater_conditions_report_v2.pdf

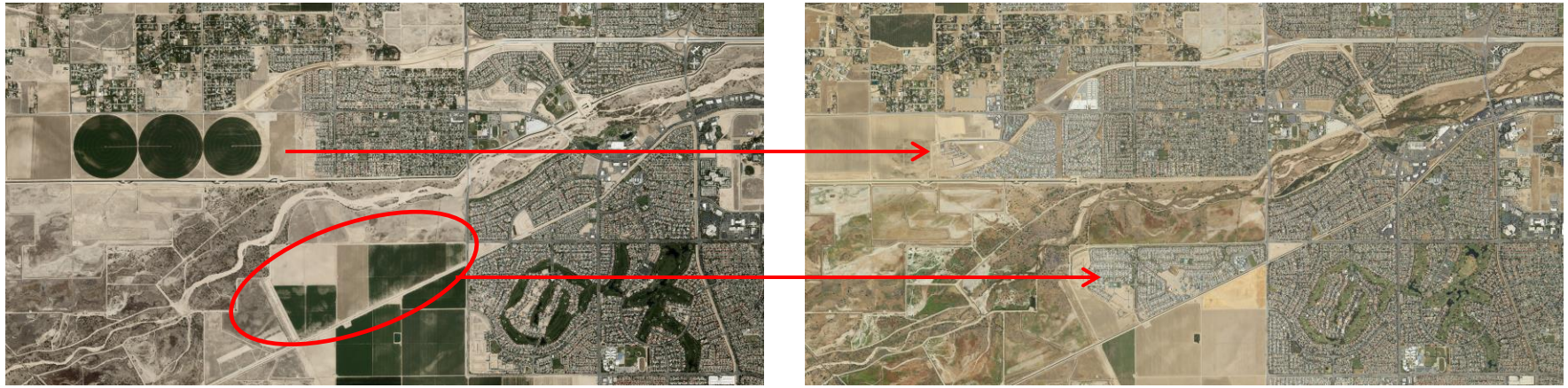
IMPLEMENTATION MEANS LAND USE CHANGES

Achieved 31% of the Planned Demand Reduction Goal by WY 2024

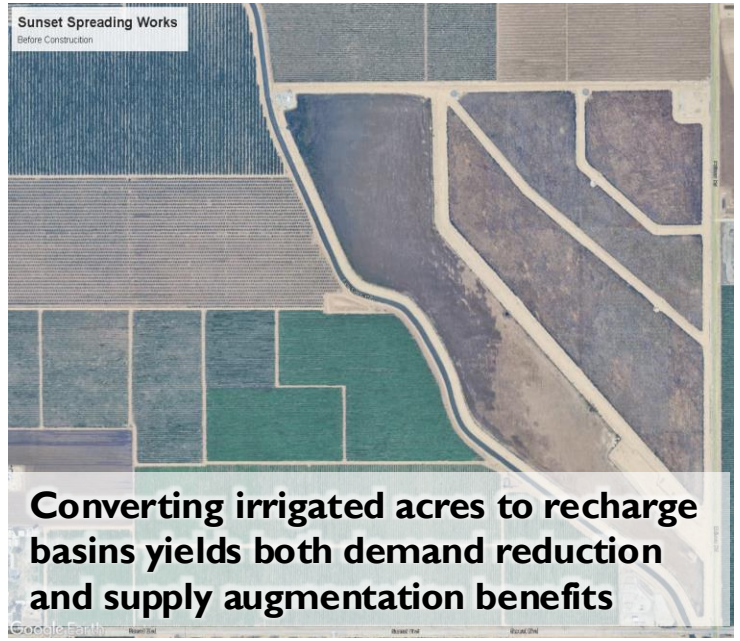


Completed Implementation of 71% of Planned Demand Reduction PMAs

Ag to Urban conversion reduces demand from ~3 AF/ac to 1.72 AF/ac



Land fallowing yields demand reduction benefits



Converting irrigated acres to recharge basins yields both demand reduction and supply augmentation benefits

COORDINATING P/MAS TO ELIMINATE DEFICIT

- GSAs tracking local water budgets/Accounts
  - Annual Reports – Both GSA water budgets and P/MA implementation benefits will be quantified and reported annually.
- GSAs tracking local demand reduction/allocations
  - KSB-8 Subbasin-Wide Consumptive-Use Study (ITRC Metric/LandIQ) will estimate water use by parcel within each GSA's and summarized and reported annually.
- GSAs coordinating and sharing data on P/MAs and Water Budgets to ensure local and regional sustainability

WELL INVENTORY PROGRESS

- Identifying Groundwater Beneficial Users
- GSAs actively field-verifying existing wells as well as destroyed/replacement wells
- Gathered records from Online System of Well Completion Reports (OSWCR), Kern County Public Health, and Division of Drinking Water, including for State Small Water Systems
- Reconciling records and ground truthing to develop a comprehensive well inventory
- Well inventory enables the Kern Subbasin to implement notification procedures to well-owners
- GSAs evaluating existing wells to fill data-gaps based on updated well inventory

SUMMARY & CONCLUSIONS

- We have worked diligently, proactively, and collaboratively with the SWRCB Staff to ***address their remaining issues and meet our commitments***
- We are ***closely coordinated*** in terms of SMCs and implementation
- We have a ***very robust portfolio of P/MAs*** - including aggressive demand management, firm surface water supplies, and protective mitigation
- We respectfully ***request the SWRCB to return the Kern Subbasin back to DWR*** so we can prioritize implementation and reach our goal of groundwater sustainability


QUESTIONS

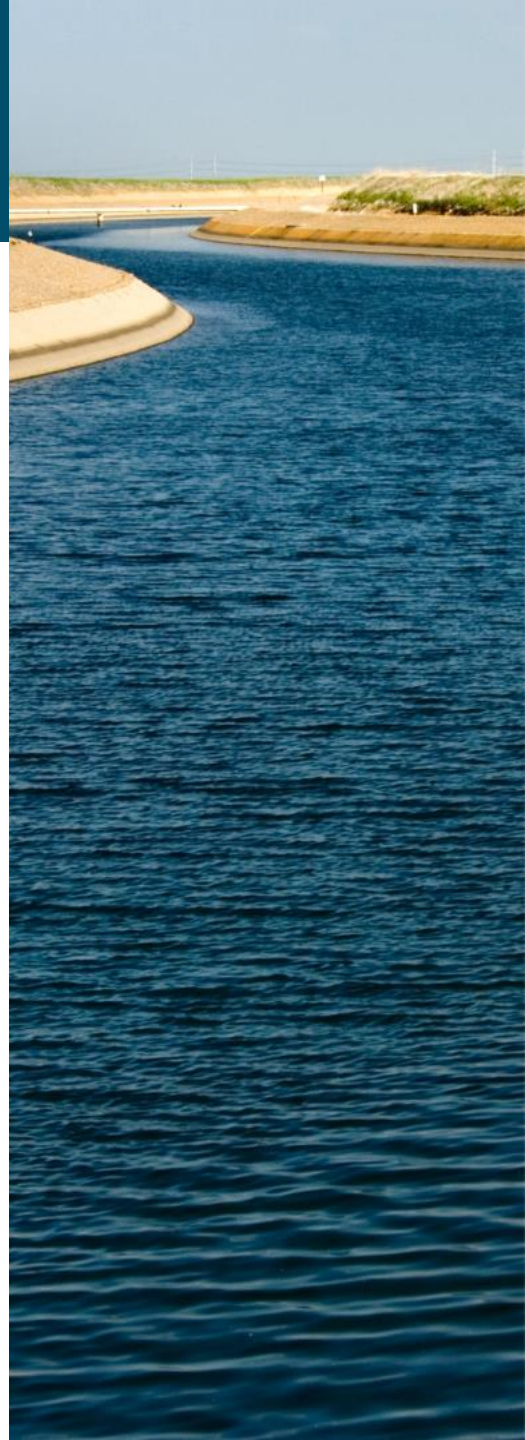
ADDITIONAL SLIDES

SWRCB STAFF REPORT ON 2024 PLAN

- Staff acknowledged that several prior (DWR and Draft SWRCB) deficiencies and additional actions were addressed in the 2024 Plan
- Final Staff Report identified additional concerns through preliminary review of the 2024 Plan
- Subsequent communications with SWRCB Staff prioritized focus areas for further refinements
  - Data gaps and missing information in GWL and GWQ RMS network
  - Variability in groundwater conditions may lead to localized and disproportionate impacts
  - GWQ UR may not be sufficiently protective
  - Exceedance evaluation needs to consider all GWQ driving mechanisms
  - Evaluate O&G source water pumping impacts on subsidence and include additional subsidence mitigation details

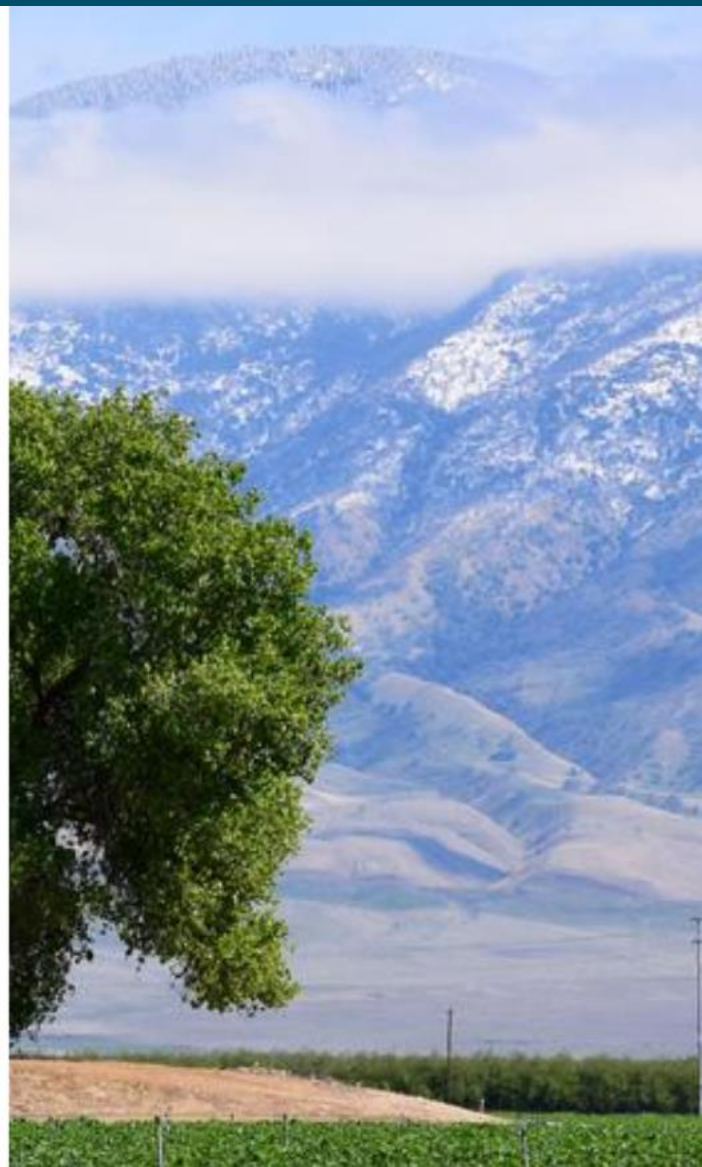
KERN SUBBASIN COMMITMENT LETTER 1/20/2025

- Improve and expand the Representative Monitoring Networks (RMN) and share additional pertinent well construction and water level data for wells in the RMN to address local variations
- Enhance the Water Level Sustainable Management Criteria (SMCs)
  - Address remaining anomalous data issues that may be locally influencing SMCs
  - Refine Undesirable Results definition for additional protections
  - Raise Minimum Thresholds, as applicable, to address potential local impacts/risks to beneficial uses/users
  - Increase the Mitigation Program funding amount
- Revisit Water Quality SMCs Undesirable Results definition to be even more protective of beneficial uses/users
- Address remaining comments provided by SWRCB Staff on Subsidence



SWRCB BOARD MEMBER DIRECTION AT HEARING

- Hearing Continued to September 17, 2025, giving additional time for:
  - Kern Subbasin to rectify remaining deficiencies and submit revised Plan to SWRCB Staff by June 20, 2025
  - SWRCB Board Members and Staff to evaluate and consider revised draft Plan in advance of the continued hearing
- GSAs to enhance community outreach and engagement by working with local community groups for additional outreach in making and adopting revisions to the Plans, prioritizing outreach to customers of drinking water systems



SWRCB STAFF COMMENTS DURING ONGOING PLAN REVIEW

- Kern Subbasin continued to meet with and collaborate with SWRCB on their review of the Plan
- Kern Subbasin worked diligently with Staff to **meet all prior commitments and address additional** requests by Staff
- Additional requests by Staff included:
  - Local groundwater level adjustments within GSAs
  - Groundwater quality MT data/methodology
  - Groundwater quality implementation/exceedance/mitigation details
  - Storage calculation refinements
  - Subsidence exceedance/implementation details
  - Mitigation of State Small Water Systems

SWRCB STAFF COLLABORATIVE PROCESS OUTCOMES

- ✓ Consensus on GWL/GWQ Data Gaps
- ✓ Consensus on GWL MTs Methodology
- ✓ Consensus on GWQ MTs/URs
- ✓ Mutual understanding of GWQ Implementation and Mitigation
- ✓ Resolved pending Subsidence Concerns
- ✓ Extensive Stakeholder and Community Outreach and Engagement

DEFICIENCY: INTERCONNECTED SURFACE WATERS

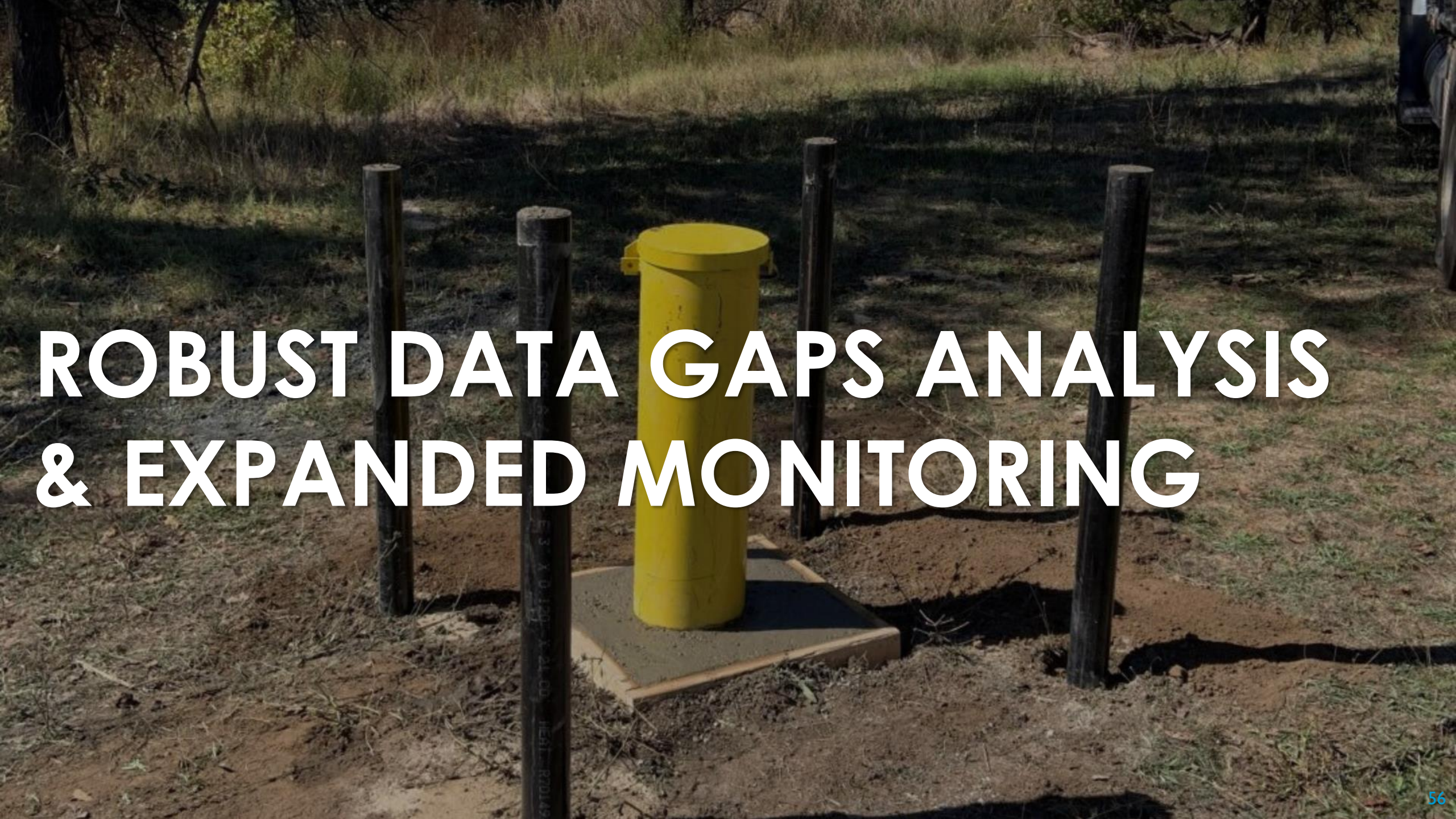
- ✓ SWRCB Staff acknowledged that all deficiencies addressed in Final 2025 Plan
- ✓ **2024 Plan provides a coordinated, robust technical method and justification**
- ✓ **Deficiency has been fully resolved**

PUBLIC COMMENTS TO WETLANDS AND ISW

- ISW is defined as "hydraulically connected at any point by a continuous saturated zone to the underlying aquifer"
- Most managed wetlands is the Kern Subbasin rely on pumped groundwater
  - Not included in DWR's NCCAG tool
  - Not defined as ISW
  - Continue to work with individual GSAs for future water supply needs
- Some riparian vegetation is dependent on perched water
  - Demonstrated to not be connected to the saturated zone to the underlying aquifer where data is available
- Continue to monitor and review ISW as conditions change (climate change, increased water levels, water management operations)

CONTINUED COMMITMENT TO ISW

- Coordination with managed wetlands
- Water level monitoring throughout the Kern Subbasin to confirm findings
- Management actions to support additional monitoring
  - New shallow monitoring well drilled along the Kern River
  - Additional studies on perched areas
- ISWs will be reevaluated for future periodic evaluations
- ISW Guidance from DWR is forthcoming and will be incorporated



ROBUST DATA GAPS ANALYSIS & EXPANDED MONITORING

REVISIONS…

Add new monitoring sites for groundwater level and quality

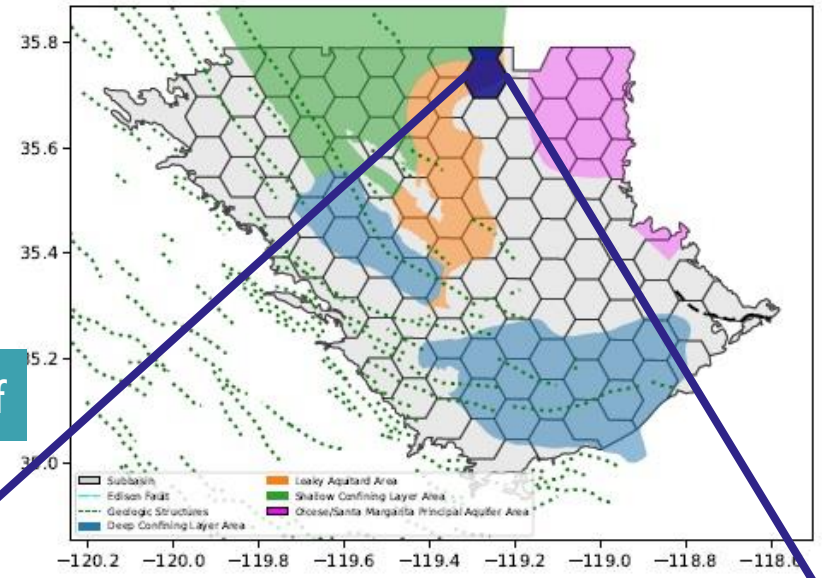
Expand notification protocols to notify domestic well owners of nearby notable changes in groundwater quality

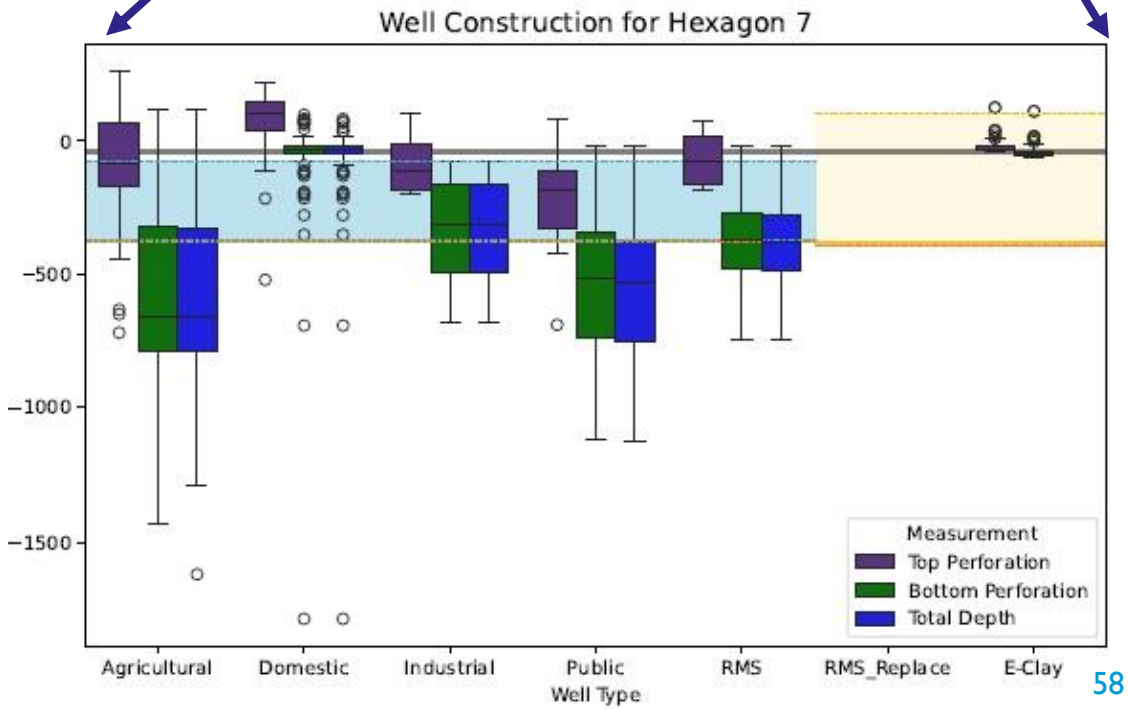
Fill data gaps to improve future analyses and decision-making

ROBUST DATA GAPS ANALYSIS

- Spatial and Vertical Analysis
- Vertical statistical analysis compared monitoring well screen intervals to domestic and agricultural wells within 25-mi^2 hexagons
- Exceeds typical GSP methodology – supports confidence in monitoring network representativeness
- Comprehensive coverage achieved

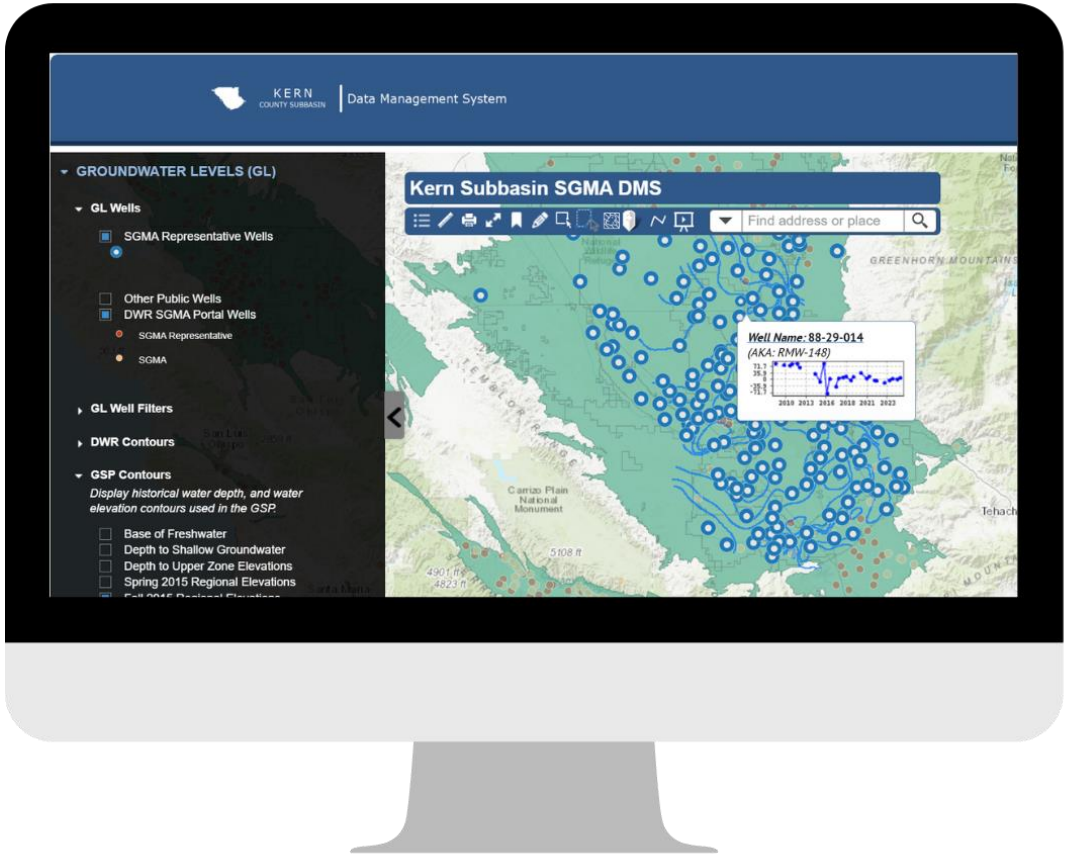
SWRCB Staff





DATA MANAGEMENT SYSTEM (DMS) PROGRESS

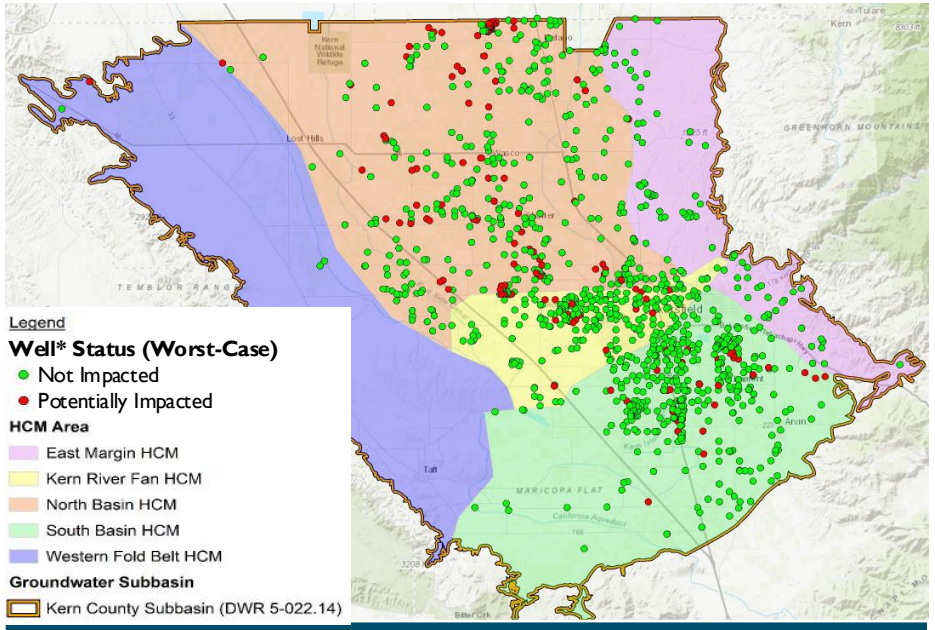
- Available to all GSAs, stakeholders, and public
- Email notifications to all GSA managers when an MT Exceedance occurs
- Map viewers enable stakeholders and public to see groundwater levels and water quality data across the Kern Subbasin
- Used to communicate MT Exceedances to all designated GSA Managers and stakeholders
- Future improvements are planned to host the well inventory and track well-owner communications




GROUNDWATER LEVELS

2025 PLAN IS EVEN MORE PROTECTIVE OF DRINKING WATER WELLS

- Analysis shows that approximately 40-50 drinking water wells* may be potentially impacted under an average GWL scenario with 25% MT exceedances
  - Some of the potentially impacted wells are already undergoing consolidation
  - GSAs committed to mitigating post-SGMA dry wells due to groundwater management activities
  - Subbasin-wide "Undesirable Results" would be declared if more than 15 domestic wells reported dry in any given year



Count of Potentially Impacted Drinking Water Wells*

Worst-Case	High-End Bracket	Average Stochastic
All RMWs	25% RMWs	25% RMWs
184	165	42 to 47

**Classified as domestic, small community, or municipal in the Subbasin's February 2025 Well Inventory*

RMW: Representative Monitoring Well

EXPANDED GROUNDWATER LEVELS UNDESIRABLE RESULTS DEFINITION

An undesirable result occurs when..

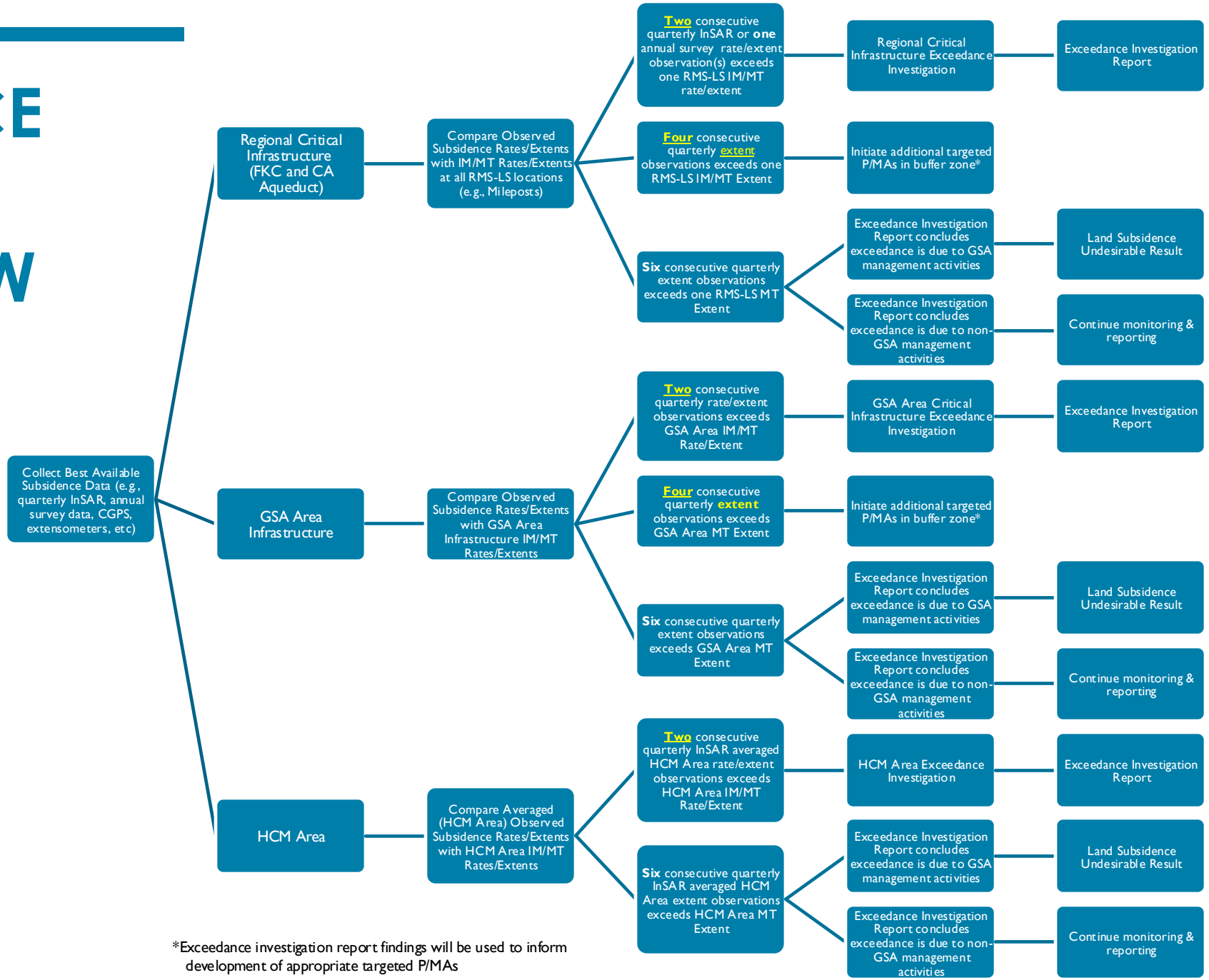
1. At least 25% of GWL Representative Monitoring Wells exceed MTs over a single year (i.e. two consecutive seasonal measurements); **or**

2. More than 15 domestic wells are reported as dry in a single water year
   More than 255 cumulative domestic wells are reported dry by 2040; **or**

3. GSA is unable to meet well mitigation needs.


LAND SUBSIDENCE

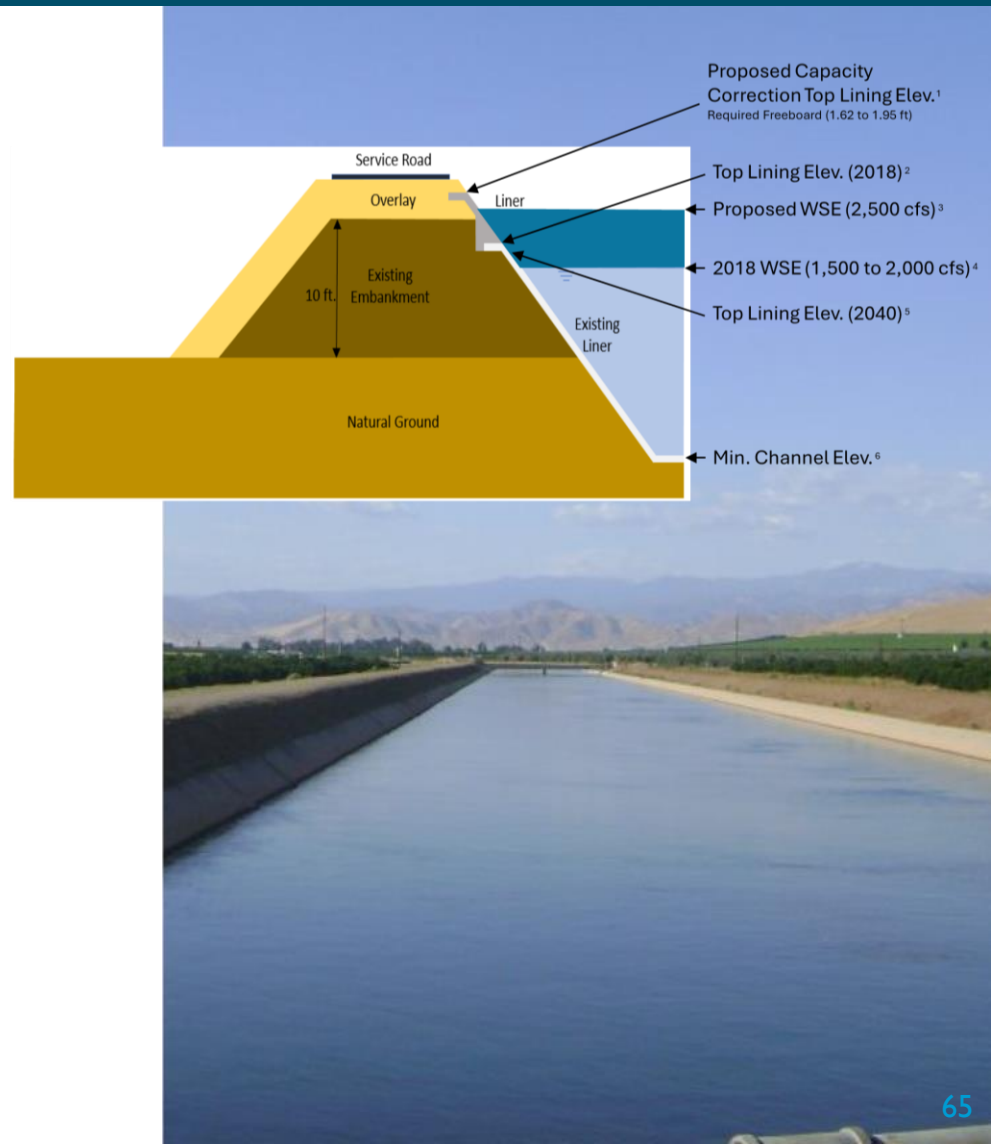
SUBSIDENCE ACTION PLAN FLOW CHART



*Exceedance investigation report findings will be used to inform development of appropriate targeted P/MAs

CLARIFIED FKC SUBSIDENCE MITIGATION DETAILS

- Stand-alone Subsidence Mitigation Program for the Friant Kern Canal (FKC)
  - GSAs Responsible for Liner Raise to Address Post-2020 Subsidence due to GSA Activities
  - Preliminary cost estimates (~$40M) being developed in coordination with Friant Water Authority (FWA)
  - Close Coordination and Data Sharing with FWA



FKC: Friant-Kern Canal
FWA: Friant Water Authority

EXPANDED SUBSIDENCE APPROACH ALONG CA AQUEDUCT

- Will revise the 2025 Plan to incorporate final DWR Subsidence Best Management Practices (BMPs)
- Further studies to identify root causes of Aqueduct subsidence in collaboration with CASP/DWR and other stakeholders
- Continued close coordination/data sharing with CASP - Quarterly check-ins to review land subsidence trends against SMCs
- Future Aqueduct mitigation to be coordinated with CASP once long-term rehabilitation strategy is finalized

EVALUATED POTENTIAL IMPACTS BY OIL & GAS SOURCE WATER WELLS

- 3 active source water wells in non-EPA-exempt areas within the Kern Subbasin (7 in EPA-exempt)
  - Oil & Gas source water pumping typically occurs on as needed basis (not continuous)
  - Volumes are typically low with significant drops in recent years (~250 AFY from 2020-2025, <0.02% of Kern Subbasin pumping)
  - Typically utilized for oil field activities overseen by CalGEM
  - Poor Water Quality – typically entrained with oil/high TDS etc.

GROUNDWATER QUALITY

ADDED DEGRADED WATER QUALITY IMPLEMENTATION PROVISIONS

- Compilation, summary and explanation of all 2025 Plan provisions related to Degraded Water Quality
- Four Parts:
  1. Summary of Degraded Water Quality SMCs and COCs
  2. Stakeholder Roles, Responsibilities and Coordination
  3. Implementation of SMCs for Degraded Water Quality
  4. Public Notification and Mitigation for Degraded Water Quality

Groundwater Quality Monitoring Wells Notification and Investigation Process

If confirmation sample results are **below the Water Quality Objective** based on Maximum Contaminant Level

- No Action

If confirmation sample results **exceed nitrate Water Quality Objective** based on MCL

- Identify domestic well owner(s) within 3-mile radius
  - Send notification of Groundwater Quality Monitoring Well exceedance and explain potential health impacts
  - With notification, provide resources with respect to Kern Water Collaborative groundwater quality well testing program

If confirmation sample results **exceed** the Water Quality Objective for **a COC other than nitrate,** based on **MCL** or **Minimum Threshold**

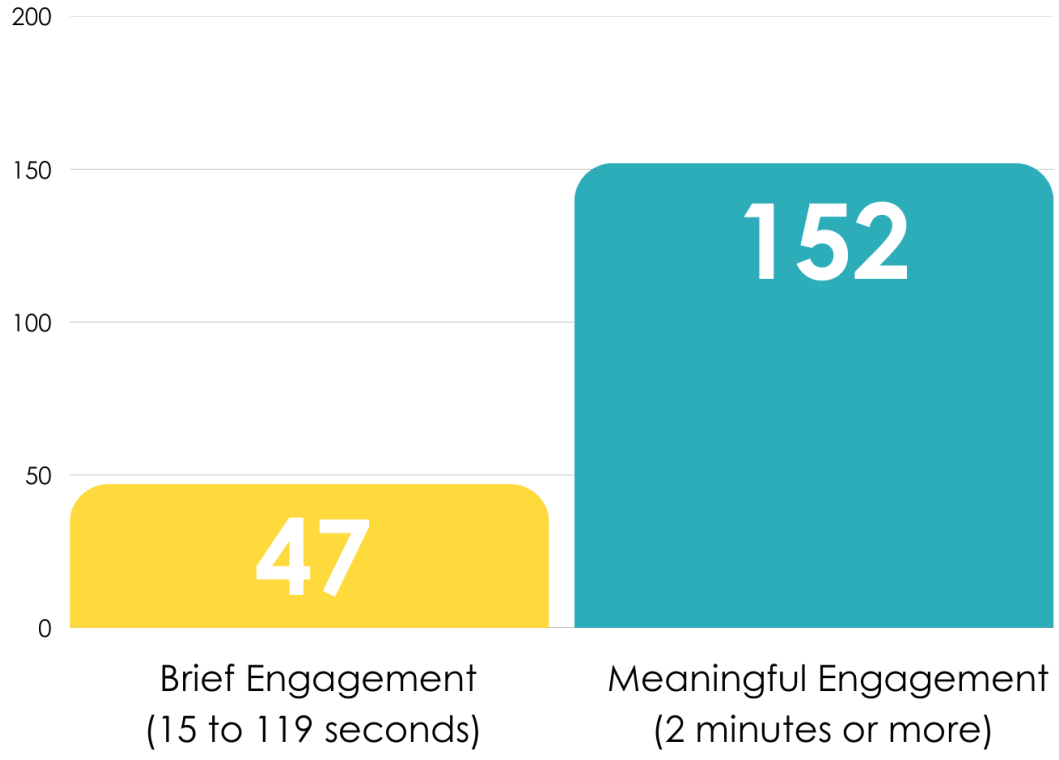
- Evaluate results to determine if caused by groundwater management activities
  - Identify domestic well owner(s) within 3-mile radius
    - **If caused by groundwater management activities**, notify domestic well owner(s) of exceedance at a nearby representative well, including health effects language with referral to the mitigation program.
    - If **not caused** by groundwater management activities, notify domestic well owner(s) of exceedance at a nearby representative well, including health effects language with resources for laboratories and sampling

Kern Water Collaborative now covers the entire Subbasin

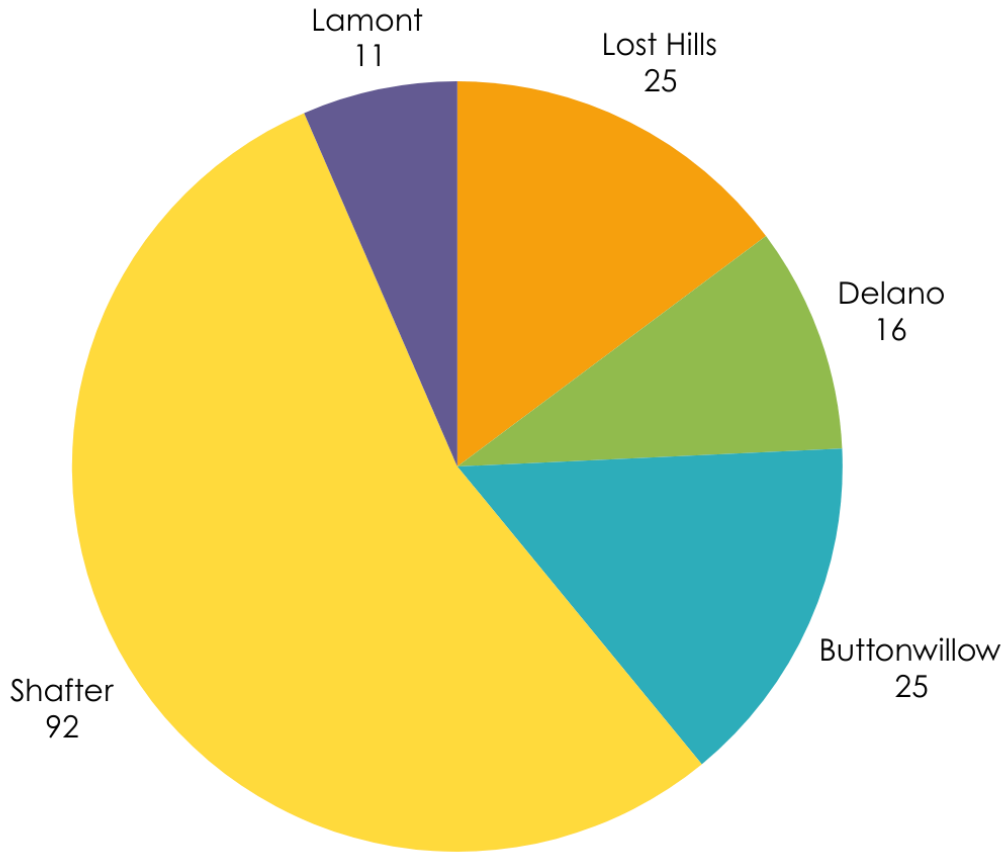
NEW NOTIFICATION PROCESS FOR GWQ MONITORING NETWORK

COMMUNITY OUTREACH & ENGAGEMENT

Engagement at April - May 2025 Community Pop-Up Events

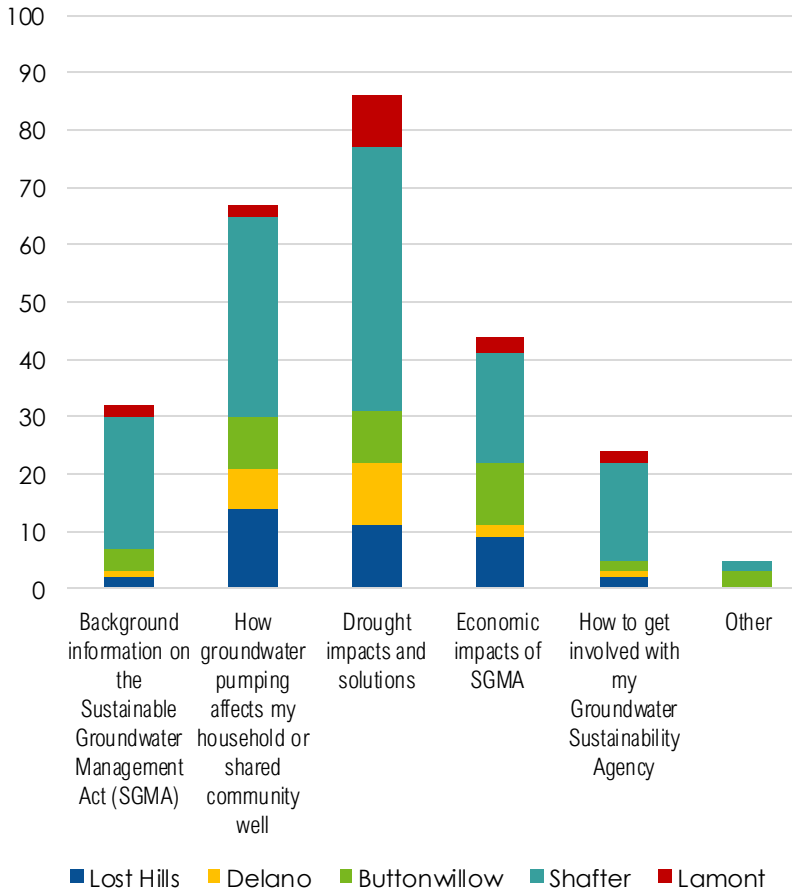


Count of Survey Responses by Community Pop-Up Event

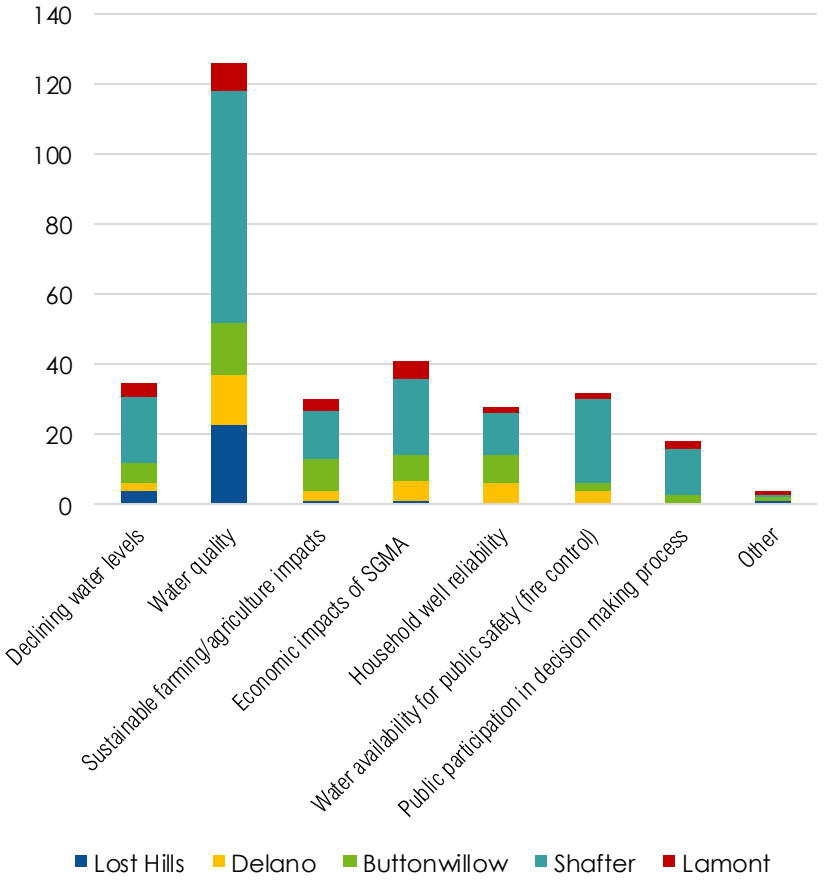


INFORMED OUTREACH & ENGAGEMENT

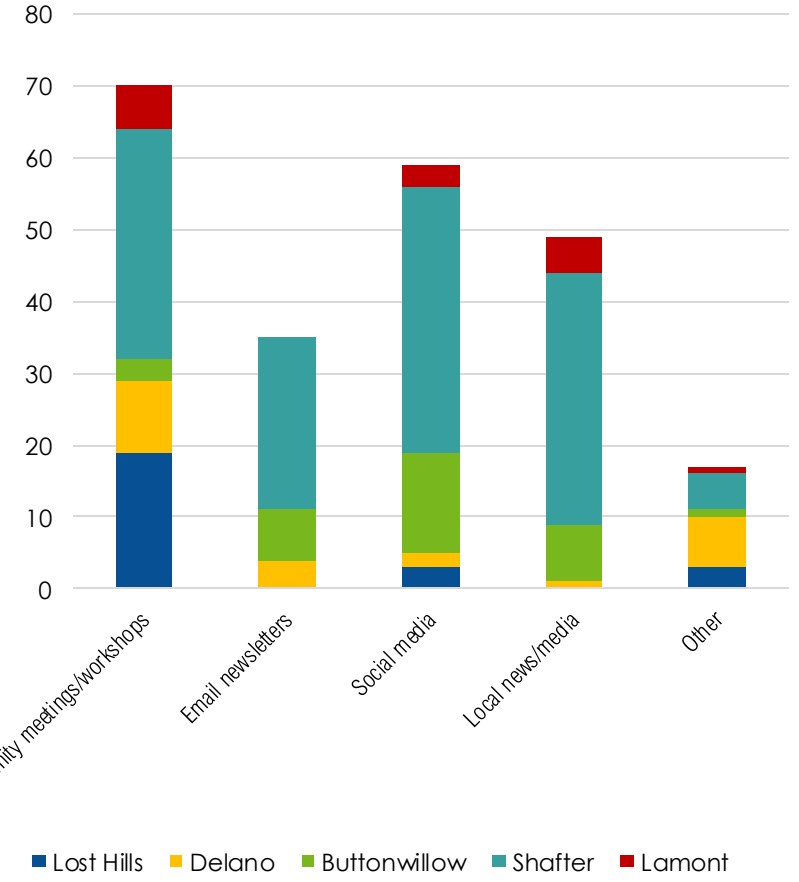
What groundwater-related topics would you like to learn more about?
(multiple selections allowed)



What are your biggest concerns about groundwater management in Kern County? (multiple Selections Allowed)



How would you prefer to receive updates about groundwater issues? (multiple Selections Allowed)



ACCESSIBILITY CONSIDERATIONS

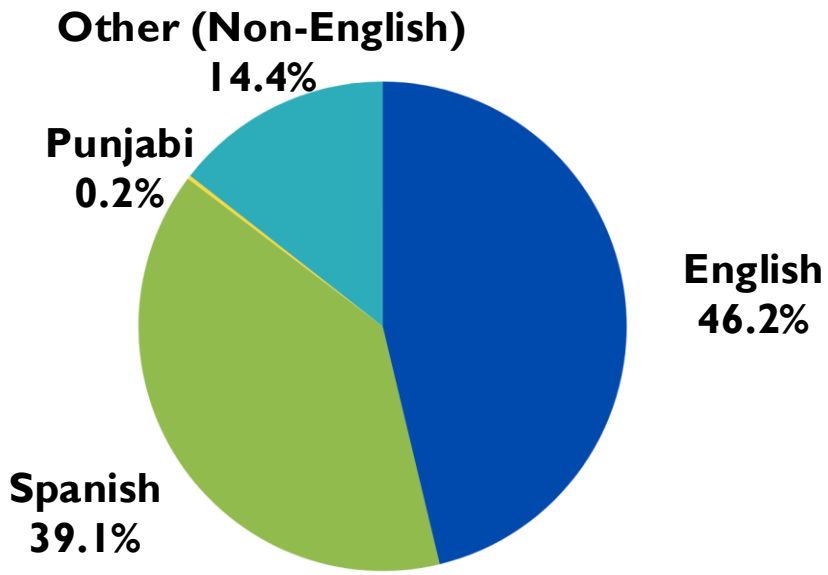
Engagement Activities

- ✓ Punjabi/Spanish interpretation available at Workshops
- ✓ Spanish interpretation available at Community Pop-Ups (based on demographic analysis)
- ✓ Community Events scheduled during existing high-traffic events
- ✓ Public Workshops scheduled on different days, evenings, with two virtual meeting options and one centrally located in-person option
- ✓ Community Pop-Up Events spread across Subbasin at different disadvantaged communities

Outreach Materials

- ✓ All event materials available in English, Spanish, Punjabi
- ✓ Website updated to include content in Spanish & Punjabi

LANGUAGES SPOKEN IN KERN SUBBASIN



SUMMARY & CONCLUSIONS

Met ***all*** prior commitments and ***proactively*** addressed additional issues requested by SWRCB Staff

- ✓ State-of-the-art data gap analysis
- ✓ Kern Subbasin leading the charge on well inventory and data compilation/management
- ✓ Significant expansion of GWL and GWQ monitoring networks
- ✓ Revised GWL MTs to be even more protective of local impacts
- ✓ Revised GWQ UR, revised GWQ MTs, added significant details to GWQ implementation, highlighted GWQ mitigation track, added public notification process
- ✓ Additional details on Subsidence exceedance/mitigation – close coordination with CASP
- ✓ Updated CO&E Strategy/Stakeholder Engagement and Communication Plan, and conducted extensive community outreach

SUMMARY & CONCLUSIONS

- Extensive work completed to improve the 2025 Plan
- Active coordination and collaboration with SWRCB Staff
- Maintained consistency and coordination across the Kern Subbasin
- Continued progress on P/MA implementation

SUMMARY OF 2025 PLAN REVISIONS: DRAFT TO FINAL

- **ES & Sections 1 – 4: Introduction; Sustainability Goal; Agency Information; GSP Organization**
  - Minor Editorial Changes
- **Section 5: Description of the Plan Area**
  - Section 5.6: Beneficial Use
    - Clarified well planned use/user type definitions and made consistent across GSP and Appendices
  - Section 5.10: Notice and Communication
    - Updates throughout this section regarding 2025 Plan public noticing and outreach to describe engagement activities for consistency with updated Stakeholder Communication and Engagement Plan and Community Outreach and Engagement Strategy
- **Sections 6 – 10: Basin Setting; Hydrogeologic Conceptual Model; Groundwater Conditions; Water Budget; Management Areas**
  - Minor editorial changes

SUMMARY OF 2025 PLAN REVISIONS: DRAFT TO FINAL

- **Sections 11 – 13: Sustainable Management Criteria**
  - **Section 13.1: Chronic Lowering of Groundwater Levels**
    - All figures/tables and appendices updated to reflect latest MTs and MOs
    - Revised well impact analysis with latest MTs (with nominal changes)
    - Appendix I-3: Added well consolidation information
  - **Section 13.2: Groundwater Storage**
    - Revised storage change analysis using latest MT surface
    - Clarified storage estimates provided are contextual only and UR criteria use groundwater levels as proxy
  - **Section 13.3: Groundwater Quality**
    - Minor editorial changes (clarifying well nomenclature)
  - **Section 13.5: Subsidence**
    - Removed hierarchy for monitoring
    - Appendix K-1 (Subsidence Action Plan): Clarified IM/MT triggers and timelines and added flow chart based on input from CASP

SUMMARY OF 2025 PLAN REVISIONS: DRAFT TO FINAL

- **Section 14: Projects and Management Actions**
  - Updated Subbasin Figures based on minor GSA P/MA refinements
  - Updated Appendix J (GSA P/MAs) reflecting implementation progress and minor refinements
  - Clarified well user type in all relevant appendices (Appendices G and K)
- **Section 15: Monitoring Network**
  - Clarified subsidence monitoring network data sets and associated figures

SUMMARY OF REVISIONS: DRAFT TO FINAL

- **Appendix F-1: Stakeholder Communications and Engagement Plan**
  - Updated references as appropriate to 2025 Plan
  - Revised introduction to reflect 2025 Plan process and incorporation of CO&ES
    - From CO&ES: Added description of gap analysis, Community Partner meetings, 2025 Community Workshops, Focus Groups and Pop-Ups, and Digital Outreach
  - Removed timeline (outdated) and combined evaluation and reporting sections
- **Appendix F-3: Community Outreach and Engagement Strategy**
  - Added a new section outlining 2025 Plan revisions in response to community feedback on water quality and mitigation concerns in coordination with SWRCB staff, e.g., expansion of monitoring network, addition of degraded water quality mitigation program track, clarification on well user types

SUMMARY OF REVISIONS: DRAFT TO FINAL

- **Appendix G-1: Well Mitigation Program, Version 2.0**
  - Revised terms and references to the types of systems that are eligible for technical assistance for consistency with Health and Safety Code definitions
  - Clarified Dry Well Mitigation Track and Groundwater Quality Mitigation track for domestic wells and multi-use used for drinking water
  - Clarified Well Technical Assistance Track for Community Water Systems and State Small Water Systems
  - Identified potential future revisions to provide funding assistance to State Small Water systems – up to $100,000

2025 PLAN SCHEDULE

- **June 20: Draft Plan submittal to SWRCB**
- **June 20 – July 21: Kern Subbasin Public Comment Period**
  - 6 Comment Letters Received
    - Responses to Comments Addressed (Appendix N-2)
- **August:**
  - Adoption by all Kern Subbasin GSAs
  - Coordination with SWRCB Board Members
  - SWRCB Probationary Hearing Panel Presentations:
    - Notice for Panel Presentations (08/15/2025) & Panel Presentations Due (08/27/2025)
- **Early September**:
  - Transmittal of Final 2025 Plan to SWRCB Staff
  - Transmittal of Community Outreach and Engagement Summary to SWRCB Board Members
  - SWRCB Final Staff Report *(~10 days prior to hearing)*
- **September 17: Continued Probationary Hearing**