MINUTES
OF THE COMBINED MEETING OF
RURAL COMMUNITIES COMMITTEE
AND
STAKEHOLDER COMMITTEE
Held October 27, 2025

GKGSA Rural Community Committee Chair Tantau called to order a meeting of the Combined Rural Communities and Stakeholder committees.

MEMBERS' PRESENT:

RURAL COMMUNITIES	*STAKEHOLDER*
Chris Tantau	Marty Toomey
Paul Boyer	Joe Cardoza
Rudy Mendoza	Zack Stuller
Emmanuel Llamas	Jonathan Vaughn
	Blake Mauritson
	Marty Toomey
	Soapy Mulholland
	Cornell Kasbergen
	Brian Watte
	John Gailey
	Matt Hutcheson

MEMBERS ABSENT:

RURAL COMMUNITIES	*STAKEHOLDER*
Danny Holguin	James Silva
Monroe Self	Collin Fernandes
Deidre Root	
Carol Fina	
Bobby Lentz	

1. **CALL TO ORDER**

Chair Tantau called the meeting of the Combined Rural Communities Committee and Stakeholder Committee to order at 1:30 PM.

2. **ROLL CALL**

Roll call was taken for the meeting and documented above.

3. **PUBLIC COMMENT**

Chair Tantau opened the floor for public comment on items not on the agenda. No public comments were received.

4. APPROVAL OF MINUTES

The Committee reviewed the minutes of the August 25, 2025 meeting. Corrections were noted regarding attendance, including clarification of members who were present and absent. A motion was made to approve the minutes as corrected.

Motion: Cornell Kasbergen Second: Marty Toomey Vote: Motion carried unanimously.

5. GSA ADMINISTRATION

Mark Larsen provided an administrative update. He announced that the new GKGSA website is live and encouraged committee members to report any issues or errors. He noted that while the new site is more complex to manage, it offers improved functionality and reliability compared to the prior platform.
Mr. Larsen then provided an invoicing update. He reported that the Board of Directors approved initiation of the lien process for unpaid 2023 invoices at its October 13, 2025 meeting. Staff anticipates proceeding with lien filings within approximately one week. Payments continue to be received, reducing the number of properties subject to liens. Discussion followed regarding timing of liens relative to tax bills and the slow pace of 2024 invoice collections. Staff emphasized that liens currently apply only to unpaid 2023 invoices and that continued reminders will be sent for outstanding balances.

6. GREATER RULES AND REGULATIONS

Mr. Larsen summarized recent Board actions related to amendments to the Rules and Regulations, particularly regarding groundwater transfer policies. He reported that, based on recommendations from this Committee, the Board approved allowing transfers of sustainable yield water anywhere within the GKGSA boundary without distance limitations or transfer loss reductions. These changes are now reflected in the Fourth Amendment to the Rules and Regulations.
The Board also elected to continue allowing Tier 1 and Tier 2 water transfers under existing rules, despite prior Committee discussion recommending restriction of such transfers. Staff noted that historical transfer volumes for tiered water have been limited and will be closely monitored to avoid localized impacts, including subsidence or groundwater level declines.
Clarification was provided that the revised sustainable yield transfer rules apply beginning in the 2025 water year. Carryover water from 2023 and 2024 does not qualify under the new transfer provisions.
Discussion ensued regarding transfers across GSA boundaries, particularly for landowners farming contiguous properties across agency lines. Staff noted that transfers are currently permitted only where neighboring GSAs have compatible transfer policies. Boundary adjustments and subbasin issues were discussed, with staff indicating that any changes would be evaluated on a case-by-case basis rather than through broad policy revisions.
Additional discussion addressed the five-year expiration period for transferred water credits and whether expiration resets upon transfer. Staff explained that current rules allow transferred water to retain a five-year life, and potential concerns about future “banking” or gaming of credits may be addressed through priority-of-use policies if necessary.

7. WY 2025 LAND FALLOWING PROGRAM

Staff provided an update on the 2025 Land Fallowing Program. To date, approximately 29 contracts are available, with 16 executed, representing just under 4,000 acres if fully subscribed. One participant opted out of the program. The total estimated cost is approximately $1.6 million.
Discussion focused on geographic distribution of participants, contract timelines, and challenges related to program rules. Members discussed whether limited dryland farming, cover crops, or grazing should be allowed on fallowed acres to reduce dust and weed pressure. Staff explained that monitoring non-

irrigated cropping presents enforcement challenges and that current contracts restrict activity primarily to grazing.

Committee members discussed the economic impacts of fallowing, including lost agricultural production and employment. Staff noted that while economic studies are not required under SGMA, prior analyses—including work by UC Berkeley—have documented regional impacts. Ongoing statewide economic impact studies were also referenced.

The Committee agreed that the fallowing program remains an important but costly tool and should continue to be evaluated as a pilot program.

8. LAND IQ DAILY ET MONITORING TOOL

Staff introduced Joel Kimmelshue of Land IQ, who presented a detailed overview of a proposed daily evapotranspiration (ET) monitoring tool. Mr. Kimmelshue explained the current monthly ET reporting process and the demand from growers for more frequent, near-real-time data to support irrigation management and allocation tracking.

The daily ET tool would provide field-level consumption estimates updated daily, reconciled monthly to ensure consistency with existing 30-day reports. The platform allows growers to set target thresholds, view cumulative use, compare usage against historical percentiles, and download data for their own records. A manager portal would allow GSA staff to track participation and aggregate trends.

Cost was estimated at $0.55 per managed acre per year, offered only as a basin-wide service rather than on an individual opt-in basis. Discussion focused on grower adoption, educational needs, potential benefits, and whether a pilot program or further outreach should be pursued before implementation.

Committee members expressed mixed views, acknowledging potential value for some growers—particularly those under tighter allocations—while noting that others may not utilize the tool regularly. Staff proposed continued discussion and outreach, including feedback from neighboring GSAs currently testing the platform.

9. WELL MITIGATION PROGRAM

Mr. Larsen provided an update on the Well Mitigation Program. Self-Help Enterprises has submitted five well claims, three of which have been approved for pre-drilling. Two additional claims remain under review due to site-specific complexities. Staff emphasized that each claim is unique and requires careful evaluation, including assessment of pre-existing conditions.

Updates were provided on mitigation efforts near the community of Tooleville/Pixley area, including proposed recharge basins and coordination with irrigation districts. Staff also discussed a potential consolidation opportunity involving a small community water system to address multiple at-risk wells more efficiently.

10. MITIGATION AND WATER ACQUISITION STRATEGIES

Staff discussed the Board-approved allocation of $2 million annually for mitigation-related water strategies, including water purchases. Complexities of water trades, credit purchases, and lack of delivery infrastructure were discussed. Committee members debated whether funds are best spent on acquiring wet water, purchasing and extinguishing groundwater credits, or expanding fallowing.

The Committee emphasized the importance of cost-effectiveness, long-term overdraft reduction, and coordination with neighboring GSAs. Members encouraged staff to further analyze options and develop clear recommendations for Board consideration.

11. WY 2026 ALLOCATION

Mr. Larsen reported that the Board approved the 2026 allocation framework consistent with Committee recommendations. Sustainable yield remains at 0.62 AF/acre, with Tier 1 at 0.31 AF/acre and Tier 2 at

0.23 AF/acre. Rainfall allocations were adjusted geographically across the basin to better reflect east–west gradients.

12. SUBSIDENCE MONITORING AND WELL REGISTRATION

Staff provided updates on subsidence monitoring efforts, including installation of transducers in existing wells and challenges securing landowner participation for new monitoring wells. Legal constraints related to siting wells on board member properties were discussed and will be further reviewed.
An update was also provided on the Well Registration Program. Staff emphasized the importance of registration for improving data quality and reducing uncertainty in groundwater management. Field verification using aerial imagery and on-the-ground inspections is ongoing. Registration remains voluntary but is expected to become mandatory in the future.

13. KAWEAH SUBBASIN GSP STATUS

Mr. Larsen reported that State Water Resources Control Board staff will recommend returning the GSP to DWR for oversight at the December 2, 2025 Board meeting. Staff plans to provide public comment in support of the recommendation. DWR has indicated it may take up to two years to complete reevaluation of returned plans.
Additional updates were provided on groundwater quality sampling, interconnected surface water monitoring, and coordination with partner agencies.

14. NEXT MEETING

The November meeting was canceled. The Committee agreed to reconvene in December, with agenda items to include continued discussion of the Land IQ daily ET tool and mitigation strategies related to water and credit management.

15. ADJOURNMENT

There being no further business, the meeting was adjourned.
Respectfully Submitted,

_____
Mark Larsen Secretary, Combined RCC & SC

Overview of Recent California Department of Water Resources Documents on Land Subsidence

December 19, 2025

GREATER KAWEAH GROUNDWATER SUSTAINABILITY AGENCY

Thomas Harder & Co.
Groundwater Consulting

Agenda

- Overview of Selected Sections of the California Department of Water Resources Draft Land Subsidence Best Management Practices
- Overview of Selected Graphs in Appendix I of the Department of Water Resources Public Draft of the 2025 Bulletin 118
- Observations of Bulletin 118 1D Subsidence
- Critical Head and Minimum Thresholds

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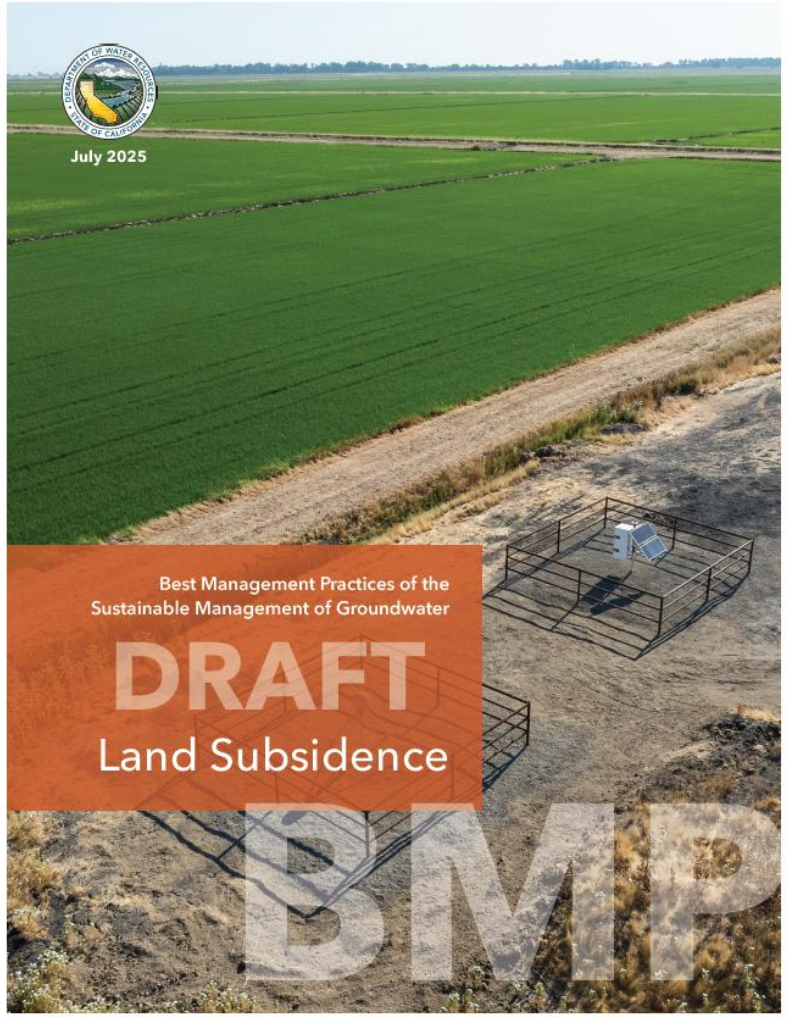
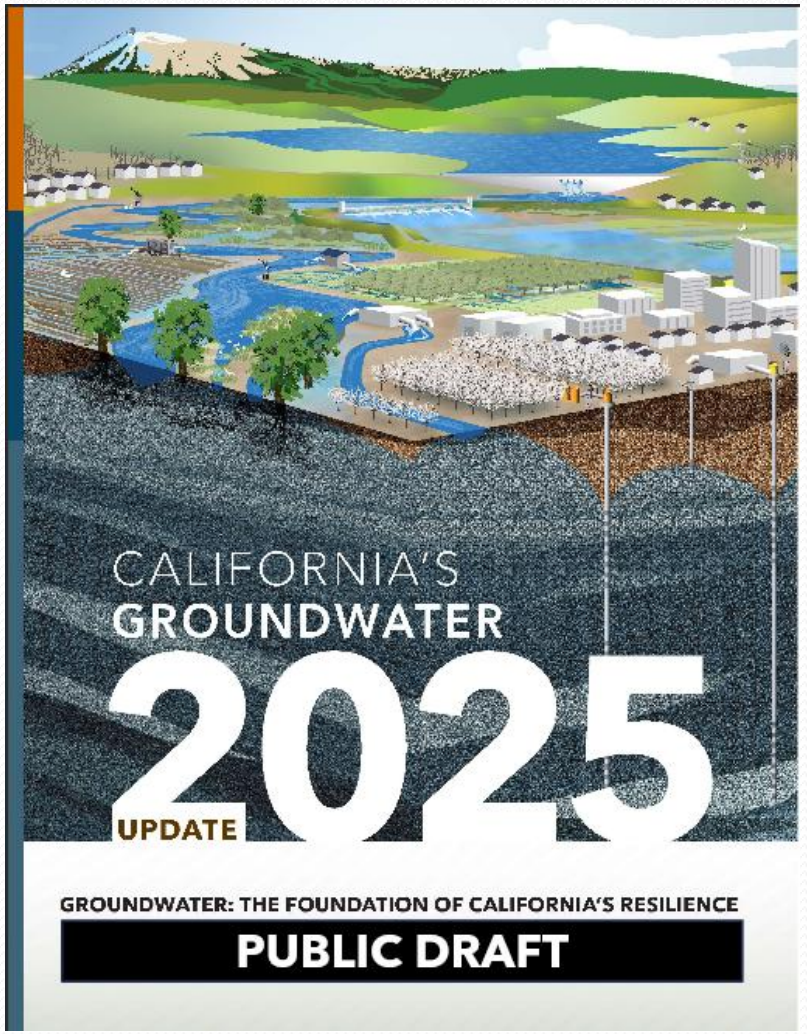
The California Department of Water Resources Has Recently Released Two Documents Relating to Land Subsidence





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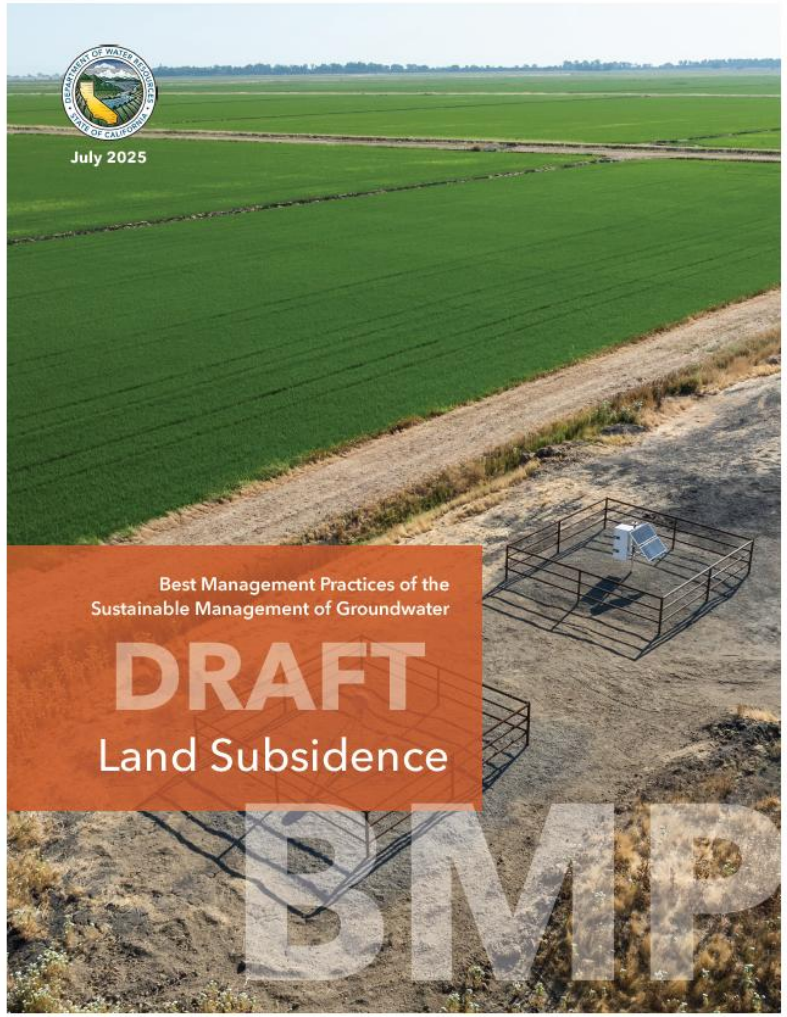
We Will Address Two Sections of the Draft BMP to Inform Discussion of the Data in Bulletin 118



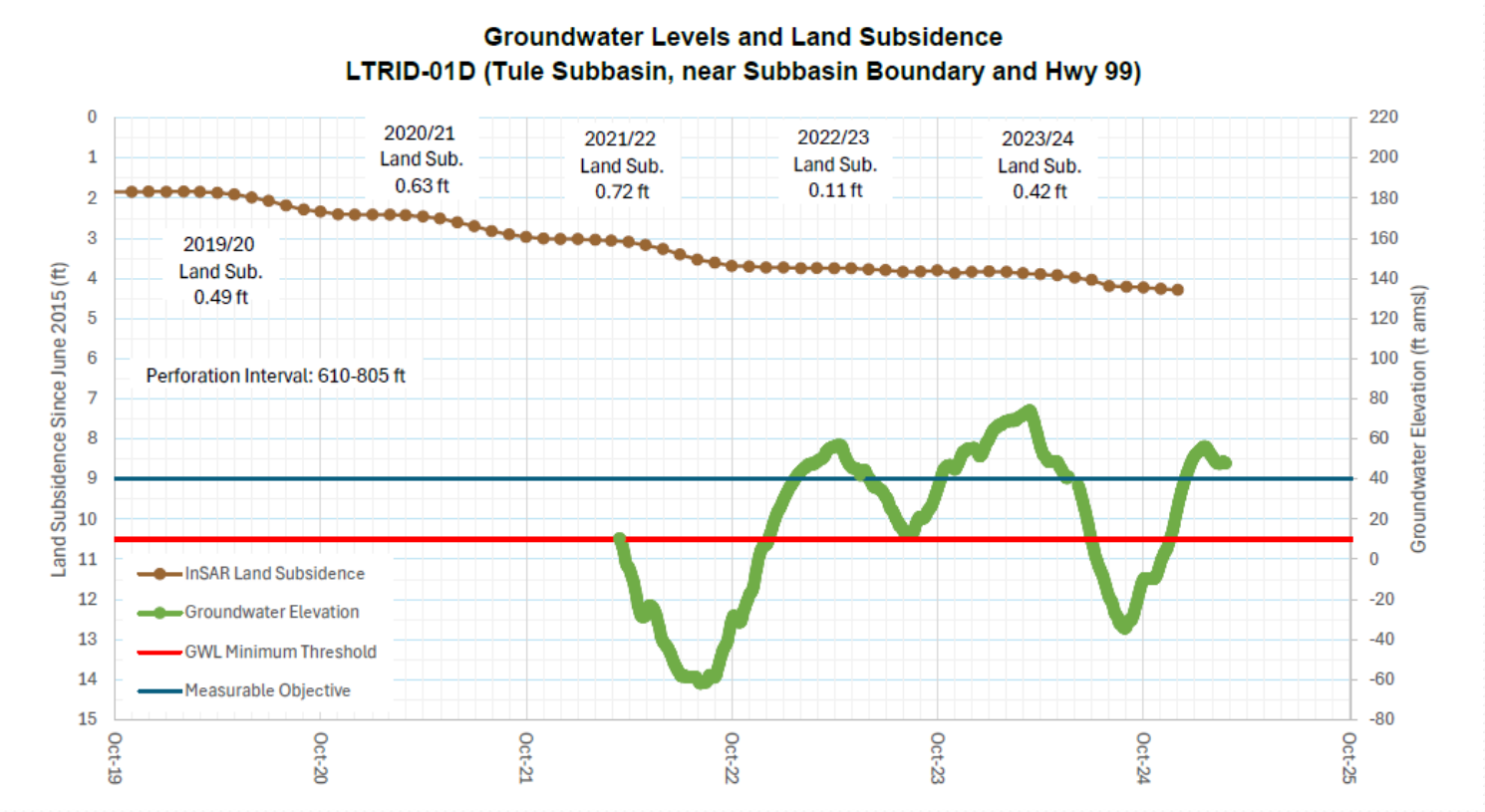
4. Land Subsidence Fundamentals
5. Technical Assistance

Contents

Section 4 Land Subsidence Fundamentals – Limiting Land Subsidence

4.3 Limiting Subsidence

"The key to minimizing ongoing subsidence and avoiding future subsidence is a recovery of groundwater levels to elevations above critical head in the fine-grained units as high and as quickly as possible."



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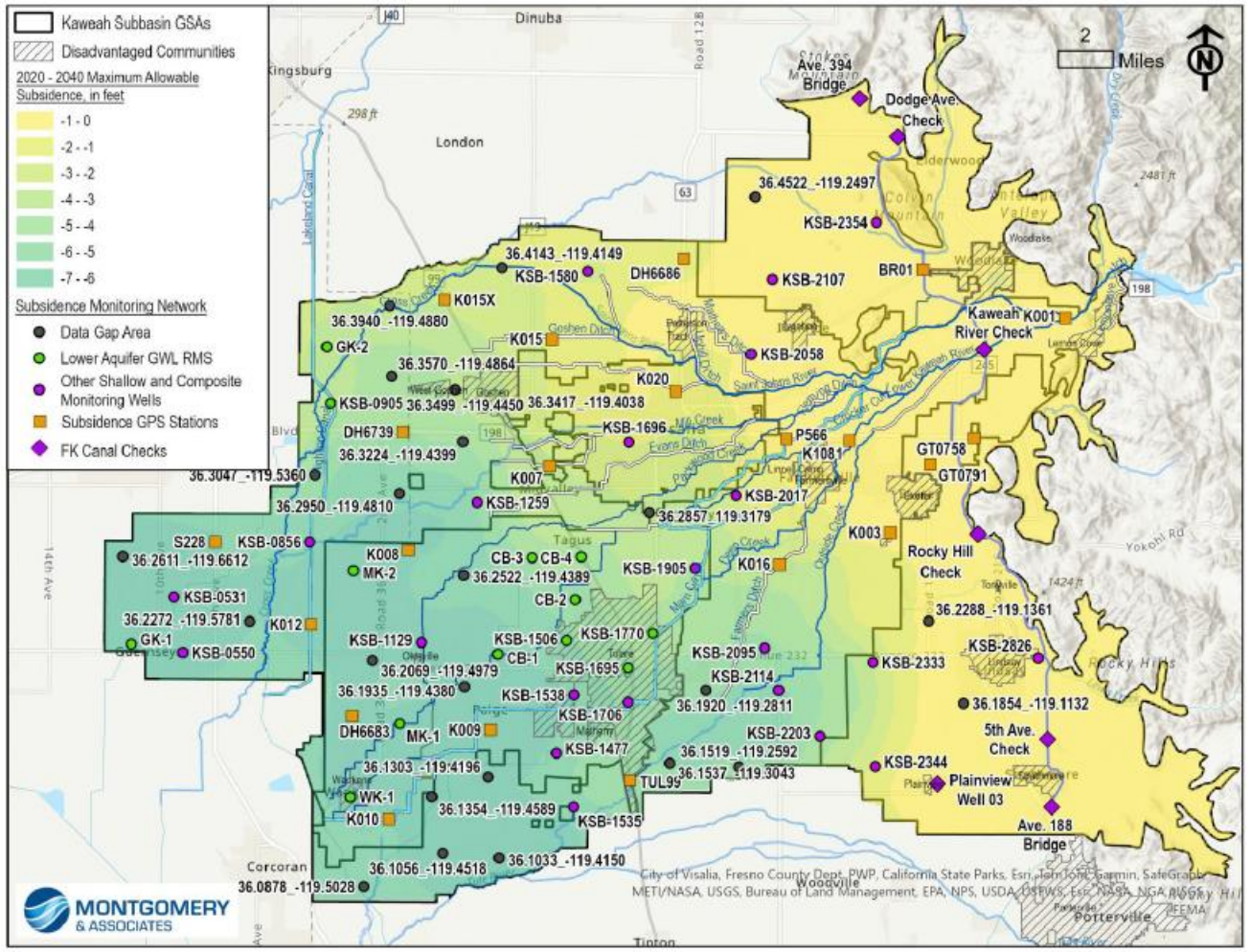
Section 5 Technical Assistance – Land Subsidence Monitoring

5.1.1 Land Surface Elevation Monitoring

1. *Benchmarks – "Spirit Level" Monitoring*
2. *GPS Stations*
3. *Extensometers*
4. *InSAR*

All these methods are employed in the Kaweah Subbasin

Data Gaps Remain



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Section 5 Technical Assistance – Land Subsidence Monitoring

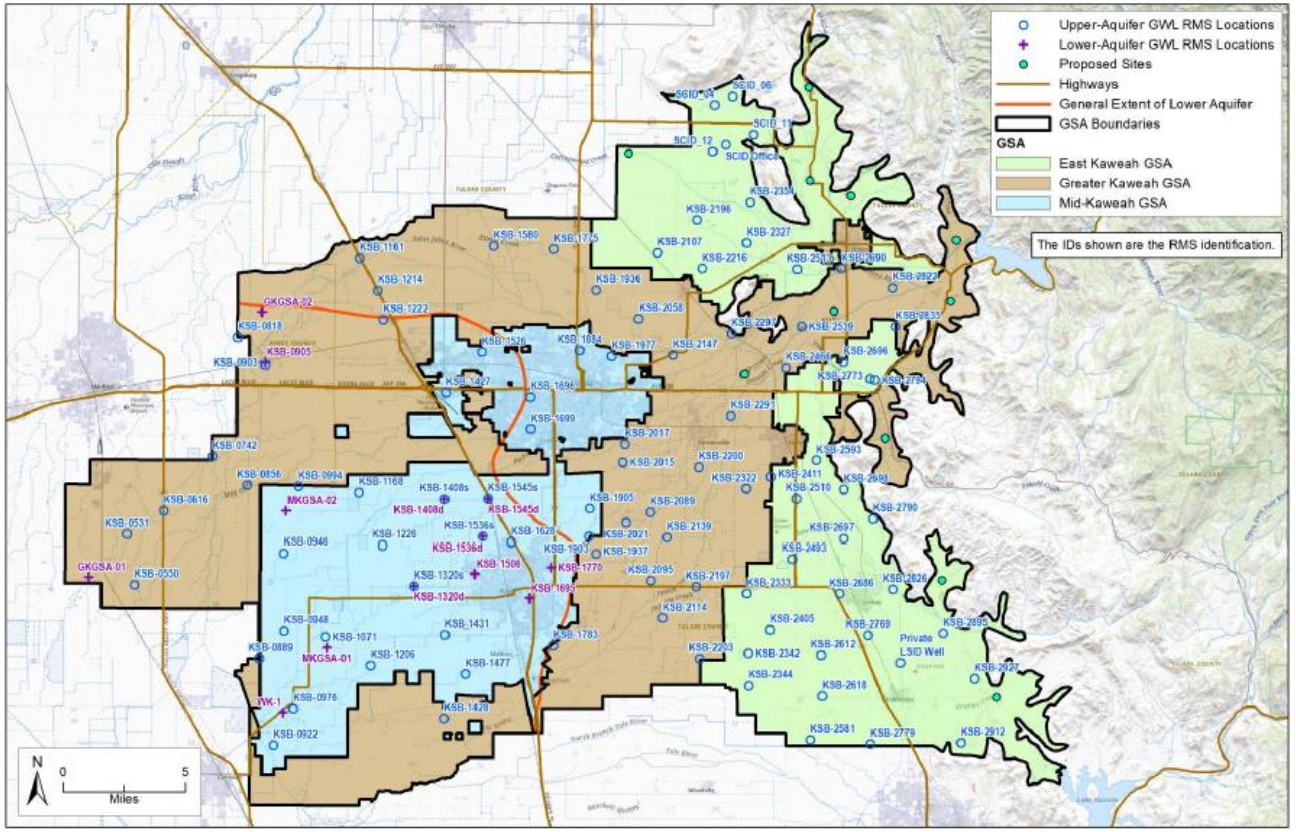
5.1.2 Groundwater Level Monitoring with Consideration of Subsidence

The BMP emphasizes frequency of monitoring – semi-annual or even quarterly is not enough.

The Kaweah Subbasin monitors multiple depth specific monitoring wells and existing wells with known completion

Dedicated monitoring wells are equipped with pressure transducers collecting data continuously

Data Gaps Remain



GREATER KAWEAH GROUNDWATER SUSTAINABILITY AGENCY

Section 5 Technical Assistance – Land Subsidence Monitoring

5.1.3 Groundwater Pumping Monitoring

In areas experiencing land subsidence near infrastructure, the best management practice is to establish pumping reporting.

The most accurate way to gain local scale understanding of pumping is to use meters. The measured pumping data can be combined with groundwater level data to help identify intervals where the compaction is originating, which allows managers to adjust practices to avoid or mitigate subsidence.

Current Groundwater Production in the Basin is Estimated from Evapotranspiration Data – Land IQ

The GKGSA is implementing a well registry and optional meter requirements

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Section 5 Technical Assistance – Identifying Infrastructure

5.2 Identifying Infrastructure

An essential part of subsidence management under SGMA is review and identification of infrastructure within a basin as well as determining the amount of subsidence that may interfere with these surface land uses.

The Kaweah Subbasin Has Completed This Task

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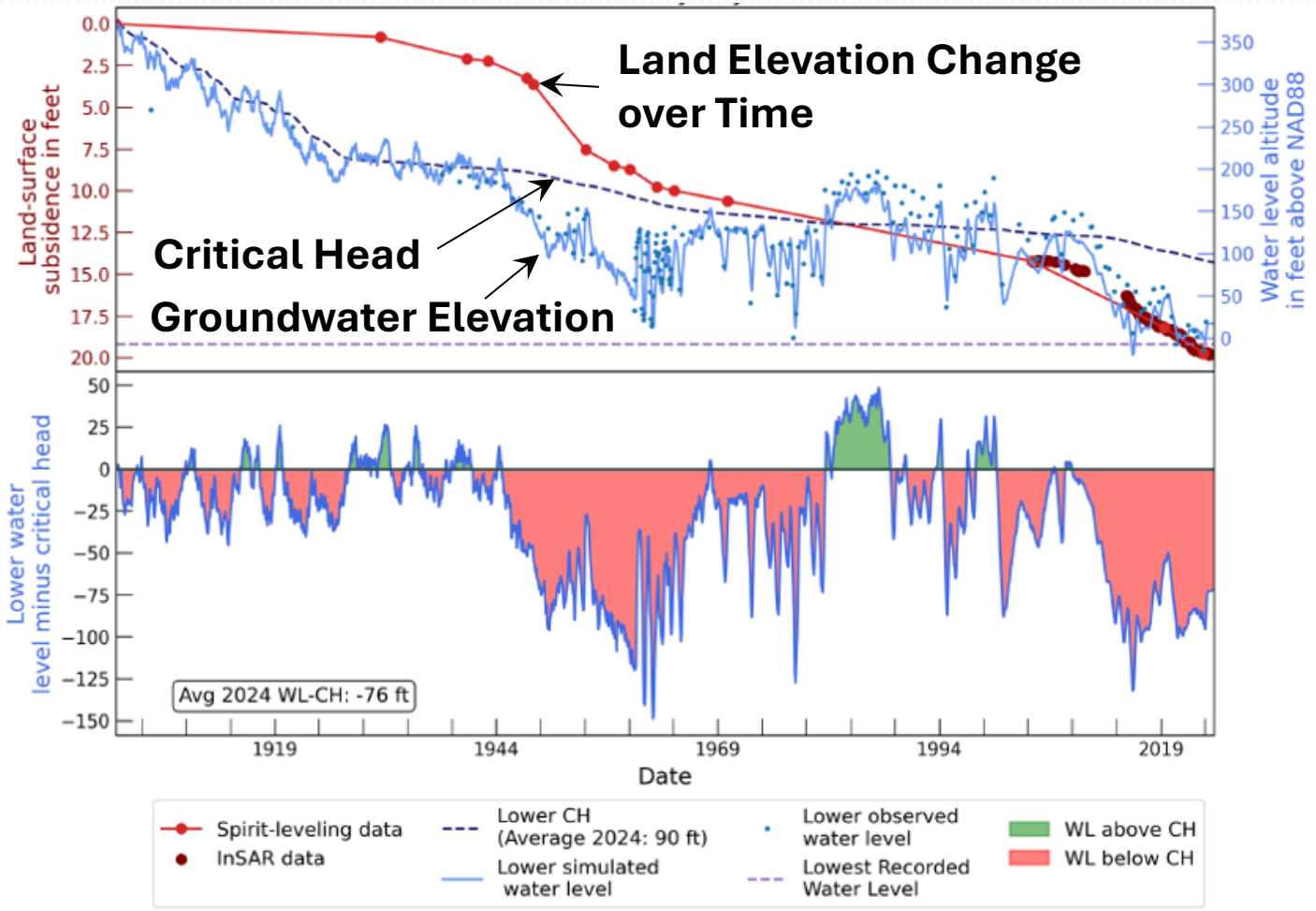
Section 5 Technical Assistance – Estimating Critical Head

5.3 Estimating Critical Head

Critical head is a quantitative value representing the specific groundwater level (pressure) in compressible sediment below which permanent compaction begins…

There Are Several Methods Identified in the BMP for Estimating Critical Head

Examples Provided in the BMP and Bulletin 118 Use a 1D Numerical Model



Source: Intera, 2025

GREATER KAWEAH GROUNDWATER SUSTAINABILITY AGENCY

Section 5 Technical Assistance – Numerical Modeling

5.4 Land Subsidence Numerical Modeling

Numerical models are decision-support tools for understanding groundwater systems and evaluating management strategies to avoid or minimize subsidence in subsidence-prone basins.

A groundwater flow model has been developed for the Kaweah Subbasin

The model is currently being updated to include capability to estimate land subsidence including residual subsidence

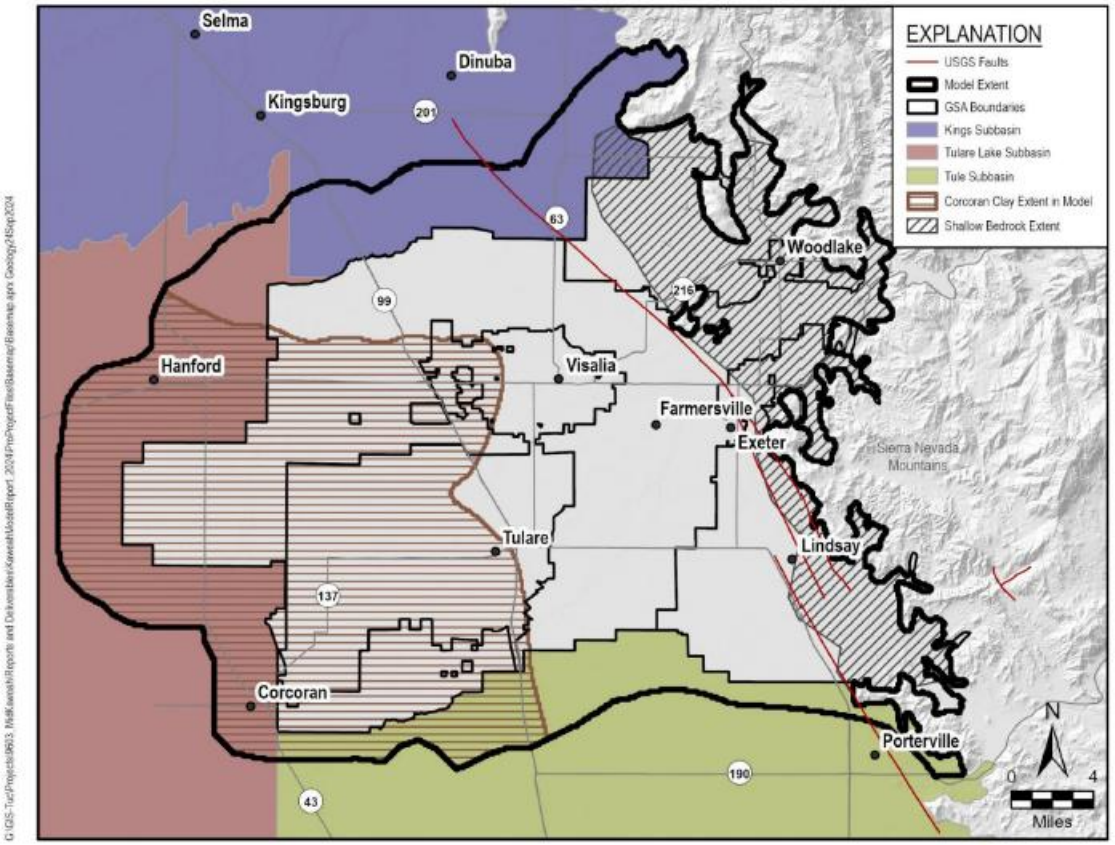


Figure 1. Model Domain, Corcoran Clay Extent from AEM, Bedrock Extent, Faults, GSAs and Surrounding Subbasins

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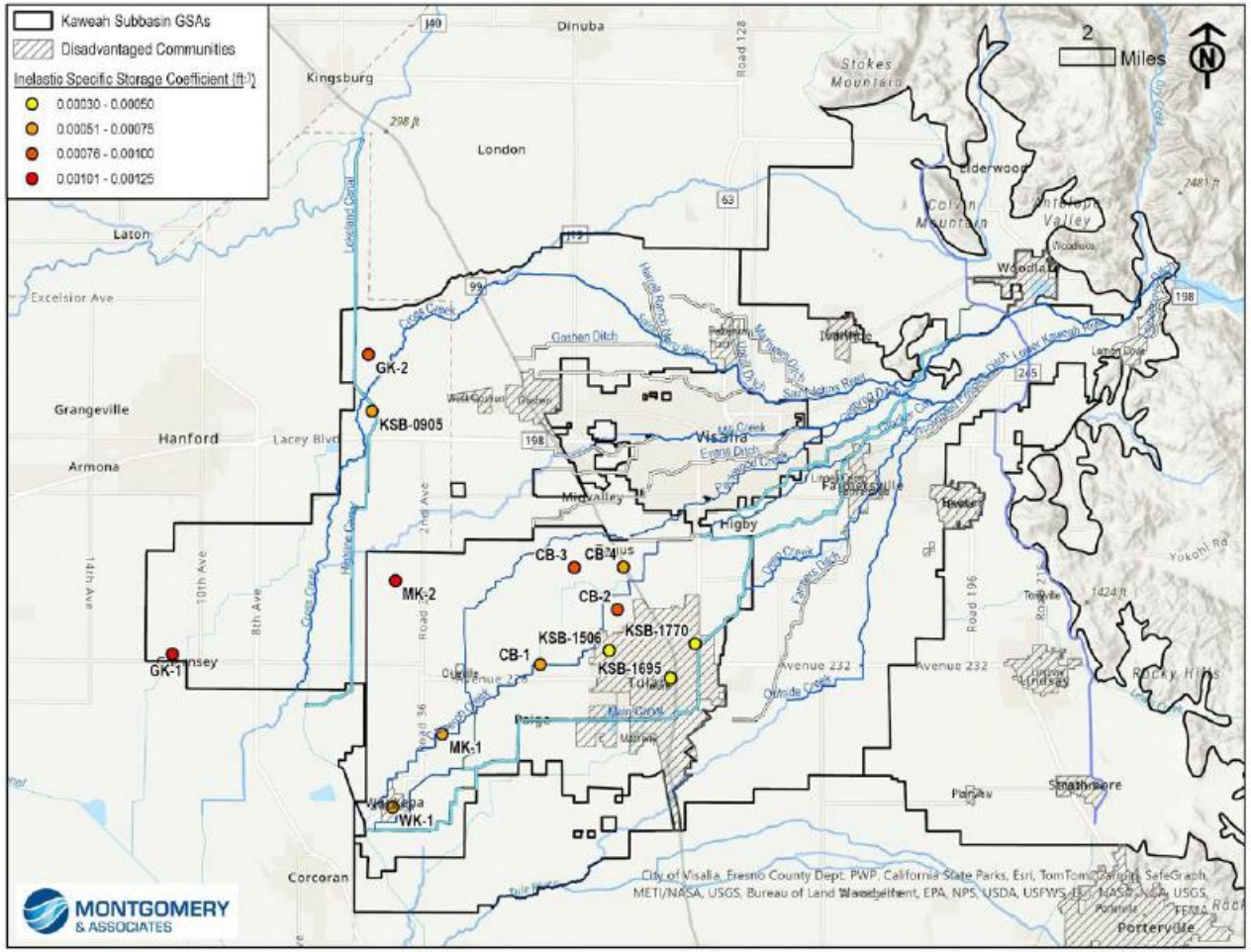
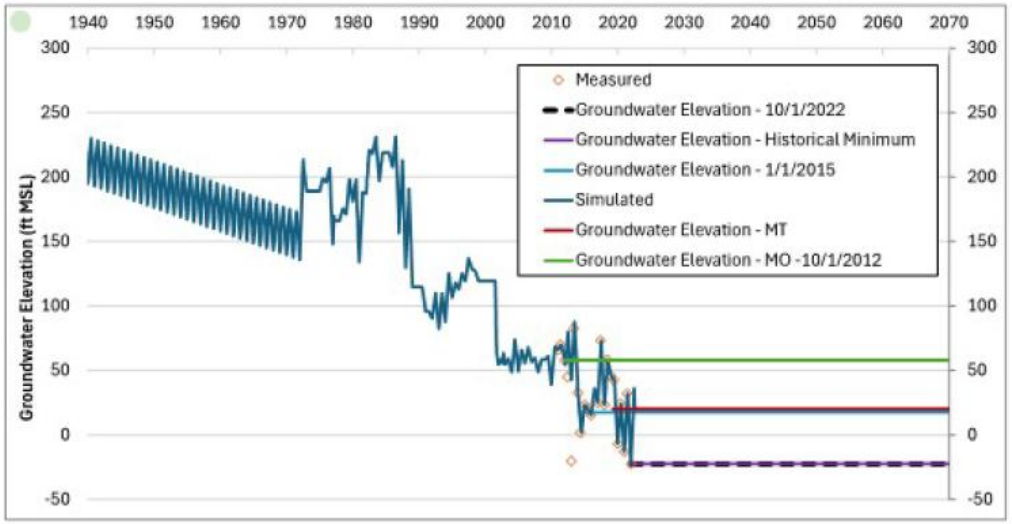
Montgomery and Associates Conducted 1D Modeling at 13 Sites for the Groundwater Sustainability Plan (GSP)



The 1D Model Work for the GSP was for the Purpose of Informing the Lower Aquifer Groundwater Level Minimum Threshold



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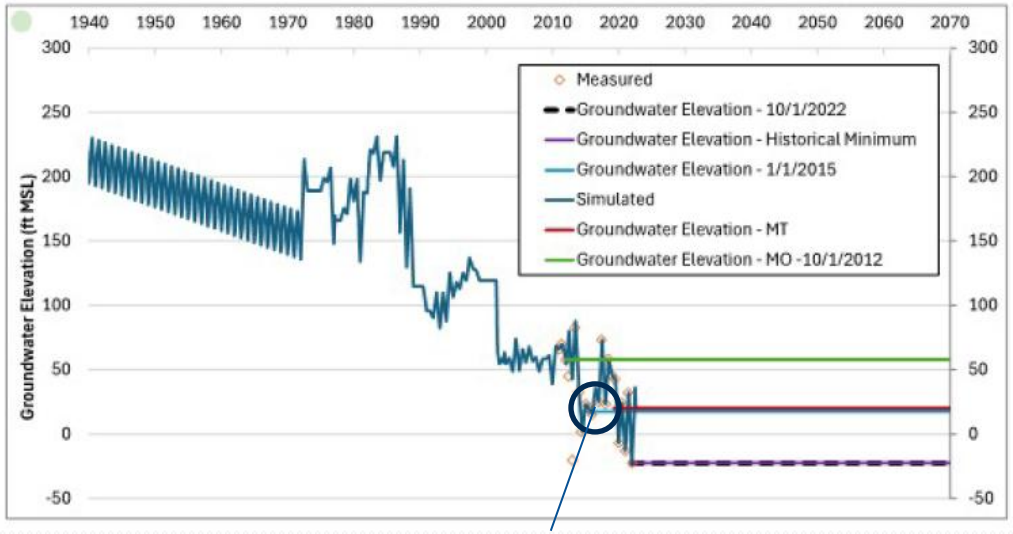
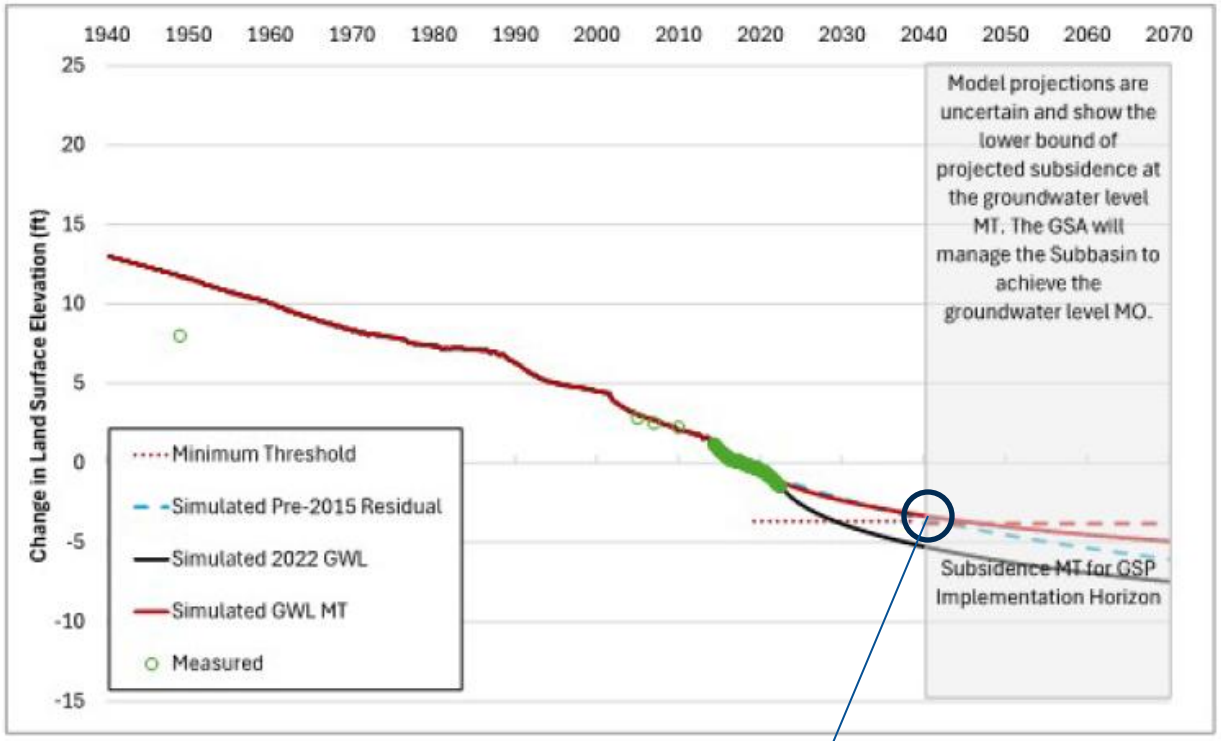
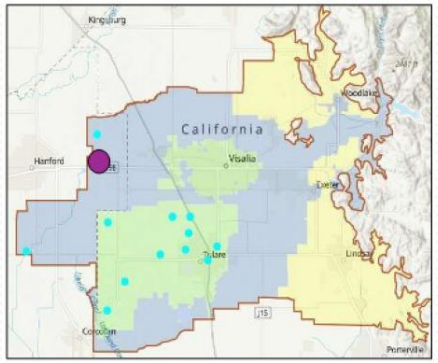
Lower Aquifer Groundwater Level Minimum Thresholds were Established to Avoid New Subsidence After 2040

The Original 1D Analysis Was Not Used to Estimate Critical Head



Land Subsidence Simulation Based on Fixed Groundwater Level at 2015 Conditions into the Future





Maintaining Lower Aquifer Groundwater Levels Above The Minimum Threshold Is Predicted to Enable us to Achieve our Land Subsidence Goals

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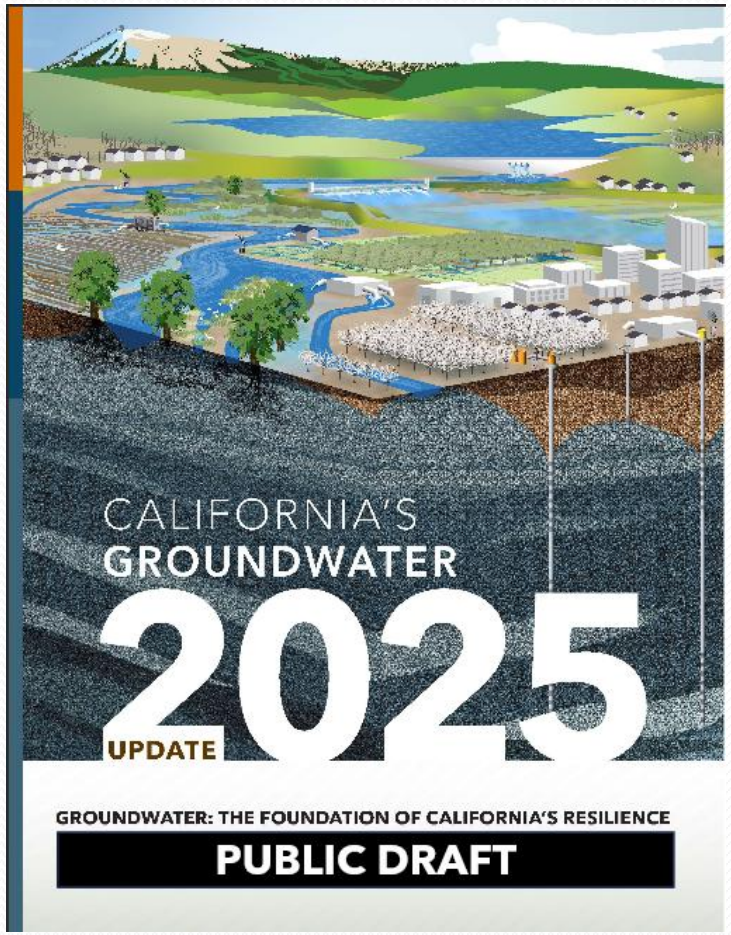
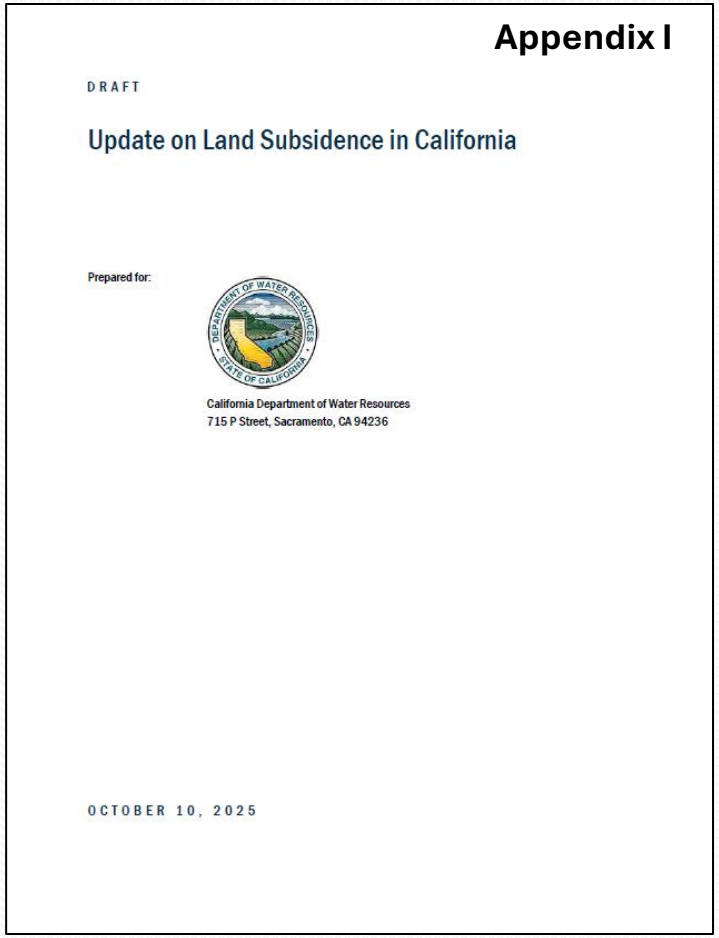
The Department of Water Resources Has Released a Public Review Draft of Bulletin 118





Appendix I

DRAFT

Update on Land Subsidence in California

Prepared for:

California Department of Water Resources
715 P Street, Sacramento, CA 94236

OCTOBER 10, 2025

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Bulletin 118 Appendix I Includes 1D Model Analyses at Six Locations in the Kaweah Subbasin

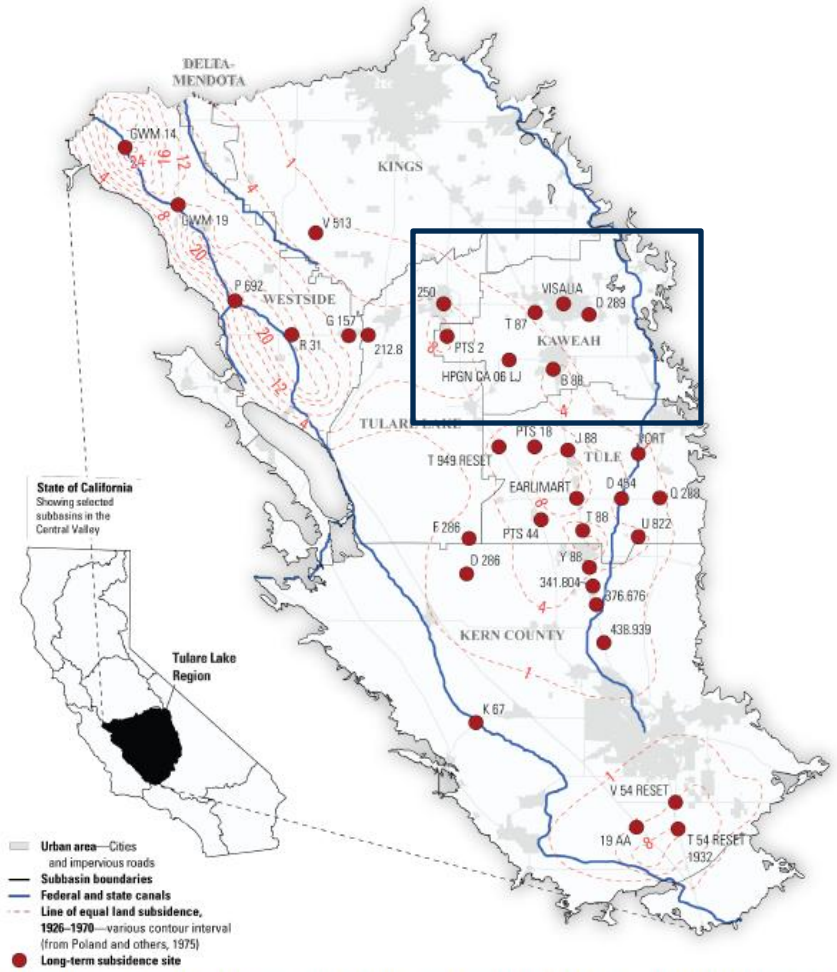
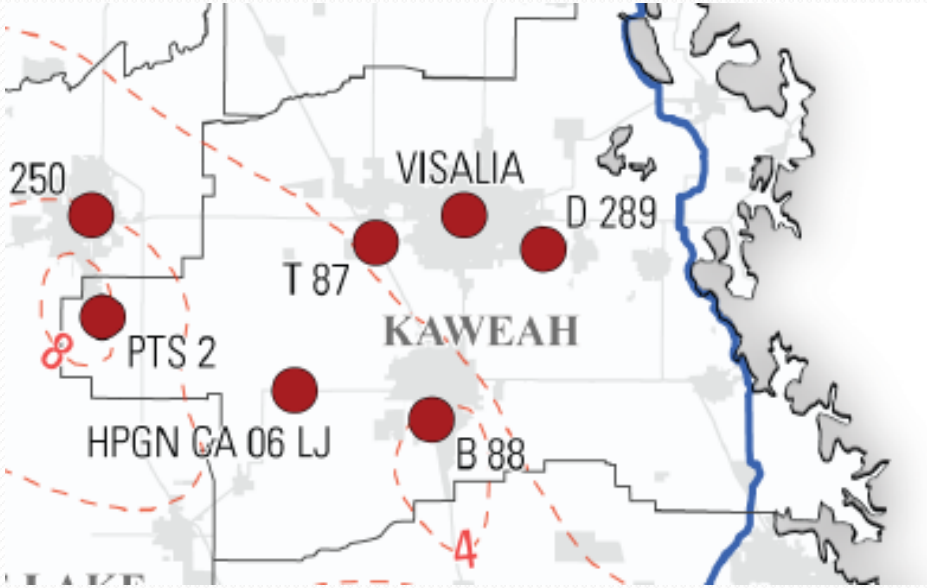


Figure 3-25. Long-term subsidence sites. Subsidence at benchmark PTS 18 in the Tule Subbasin is shown in Figure 3-5.

The 1D Analyses Were Conducted, in Part, to Estimate the Critical Head at these Locations



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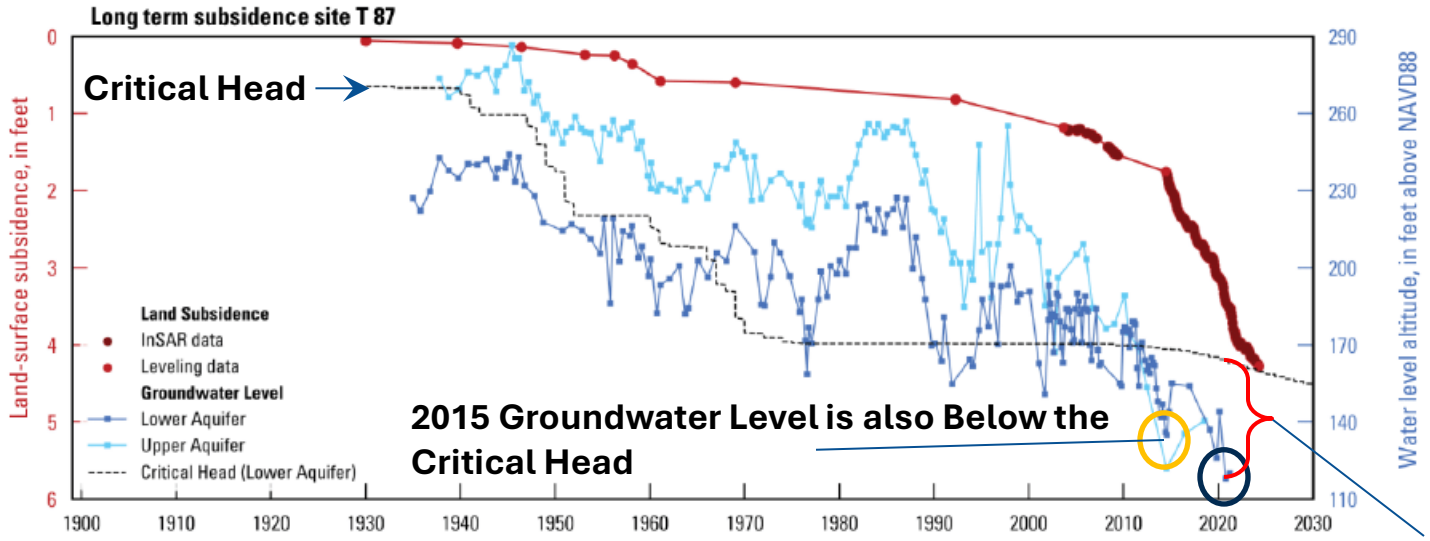
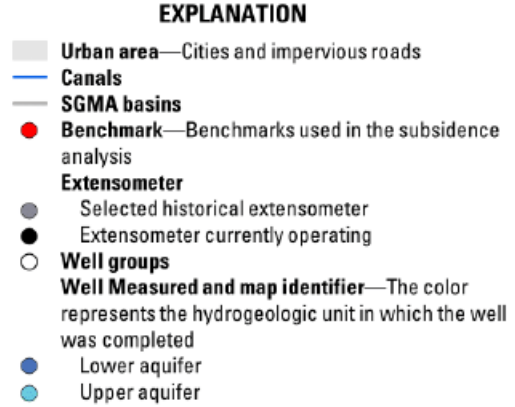
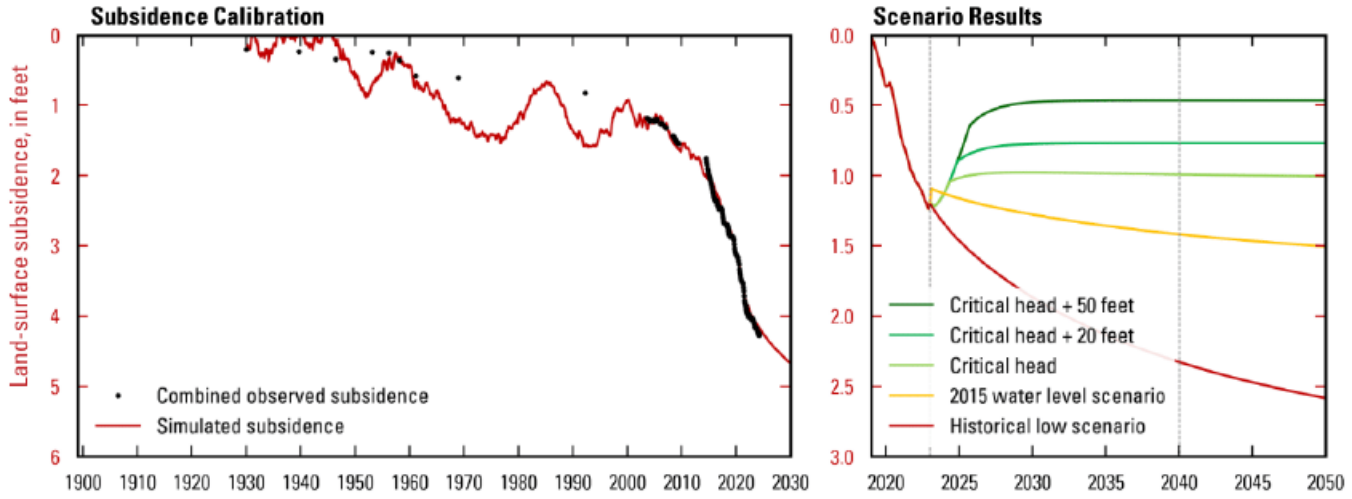
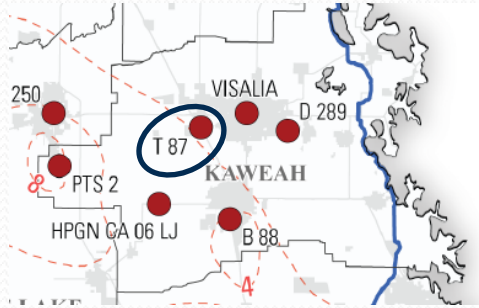
Critical Head Estimate for Western Visalia





Most Recent Groundwater Level is ~ 30 ft Below the Critical Head





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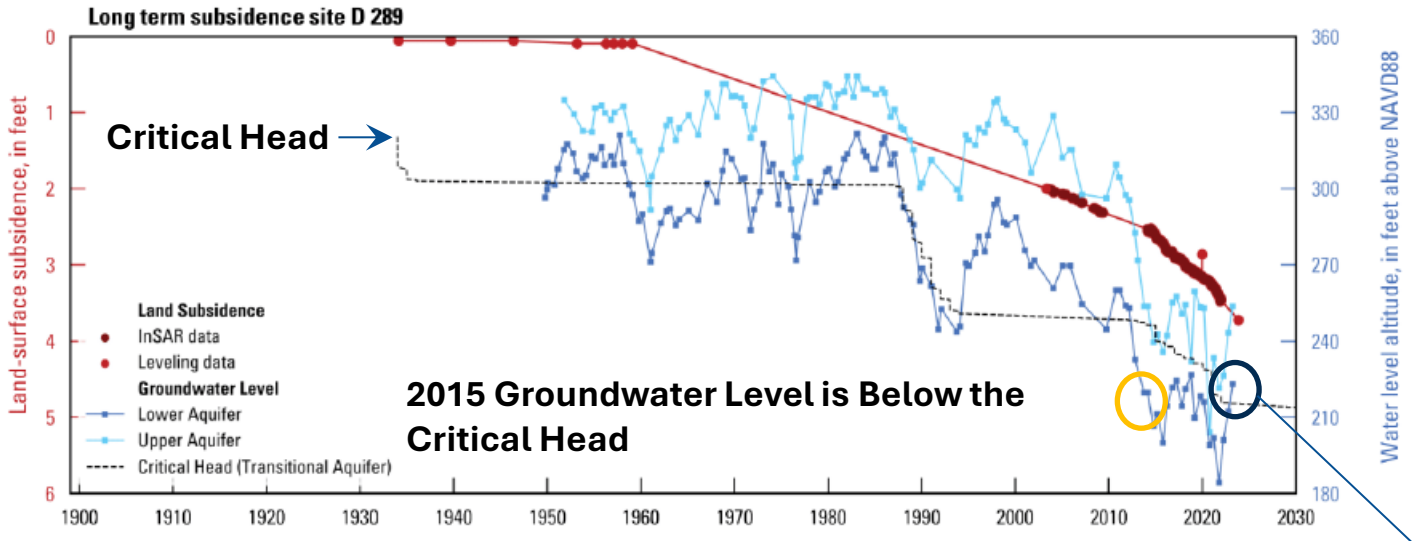
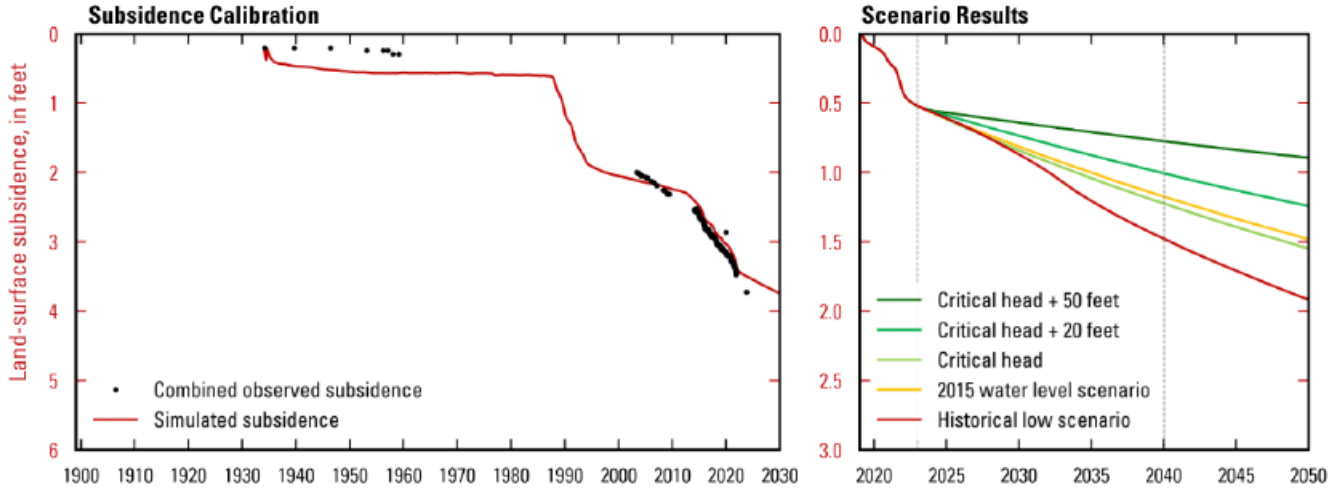
Critical Head Estimate for Eastern Visalia

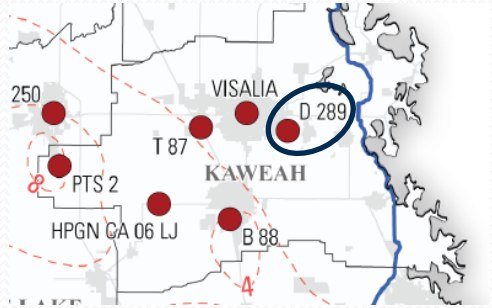


EXPLANATION

- **Urban area**—Cities and impervious roads
- **Canals**
- **SGMA basins**
- **Benchmark**—Benchmarks used in the subsidence analysis
- **Extensometer**
  - Selected historical extensometer
  - Extensometer currently operating
- **Well groups**
- **Well Measured and map identifier**—The color represents the hydrogeologic unit in which the well was completed
  - Lower aquifer
  - Upper aquifer

Most Recent Groundwater Level is Above the Critical Head





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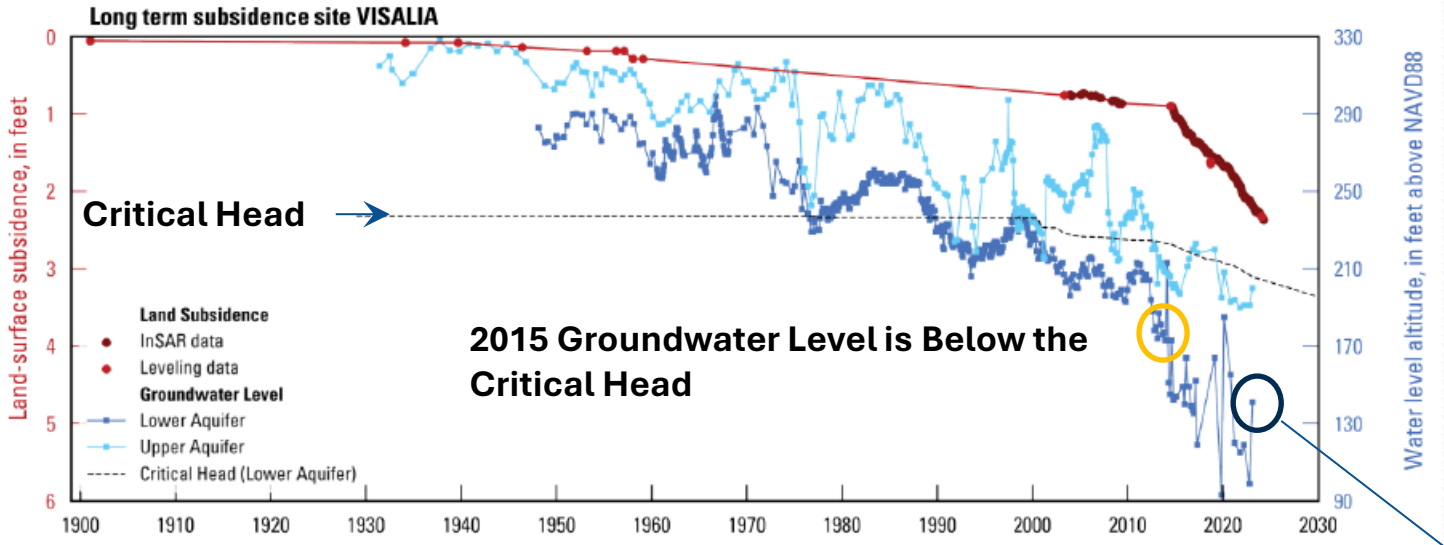
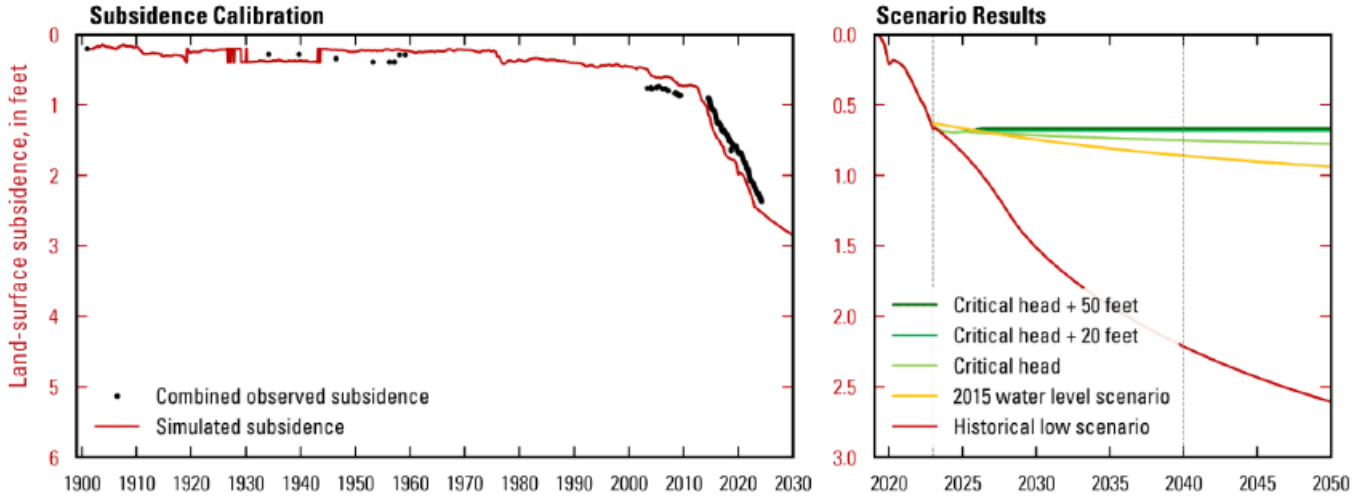
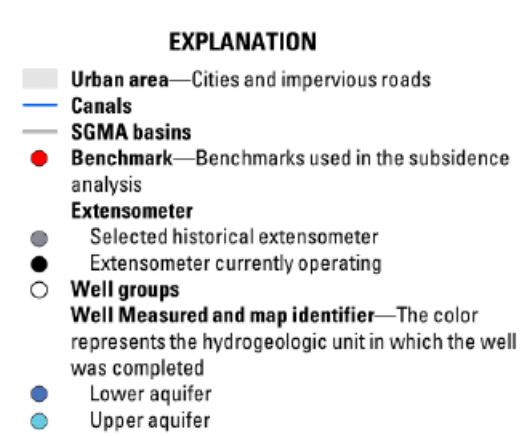
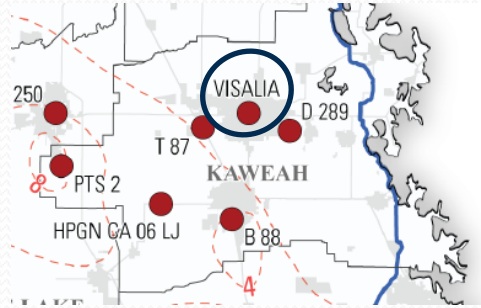
Critical Head Estimate for Central Visalia







Most Recent Groundwater Level is ~ 60 ft Below the Critical Head



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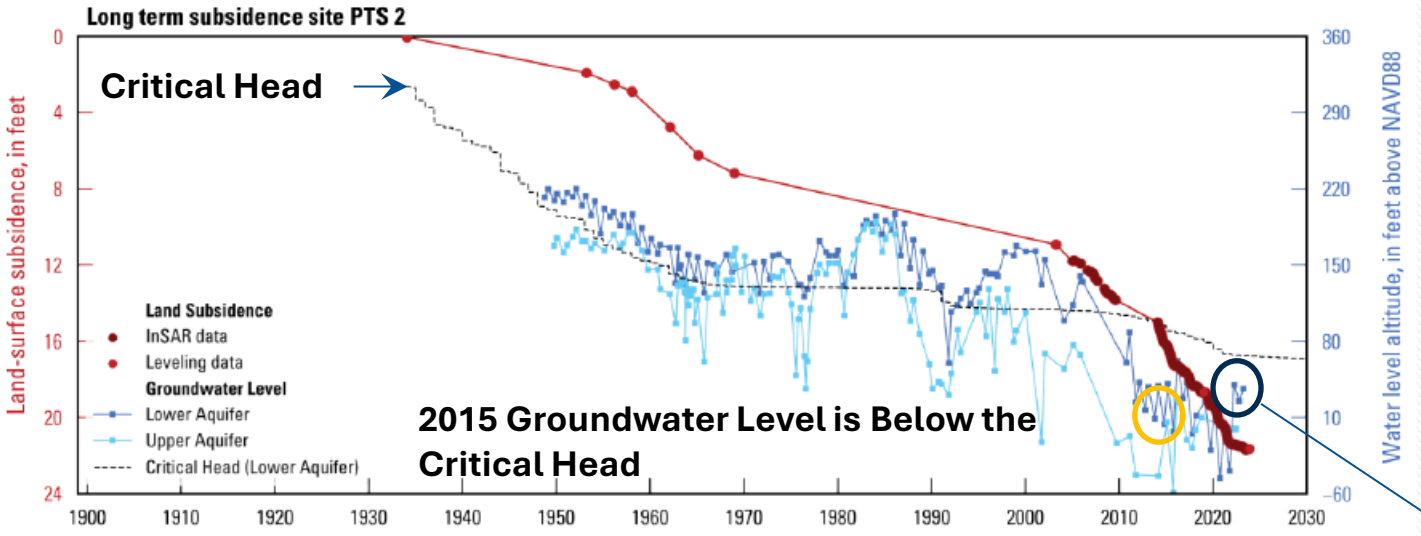
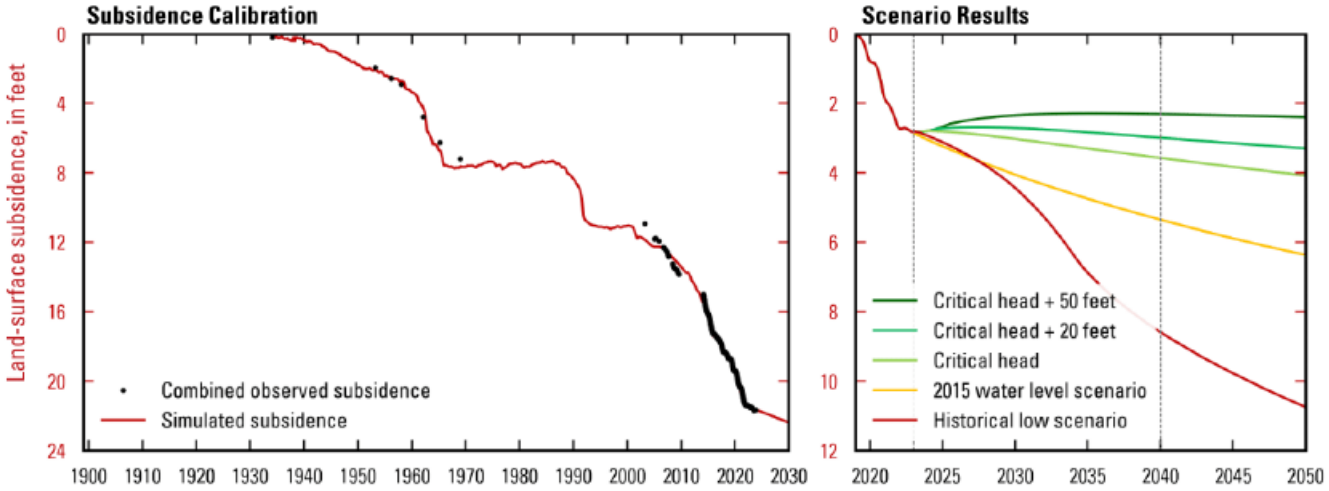
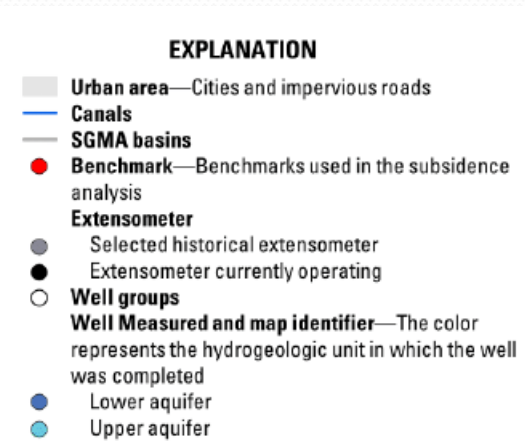
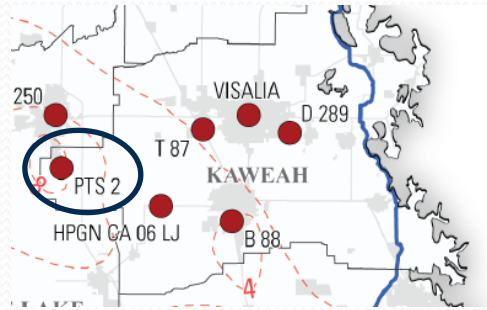
Critical Head Estimate for Western GKGSA







Most Recent Groundwater Level is ~ 10 to 20 ft Below the Critical Head



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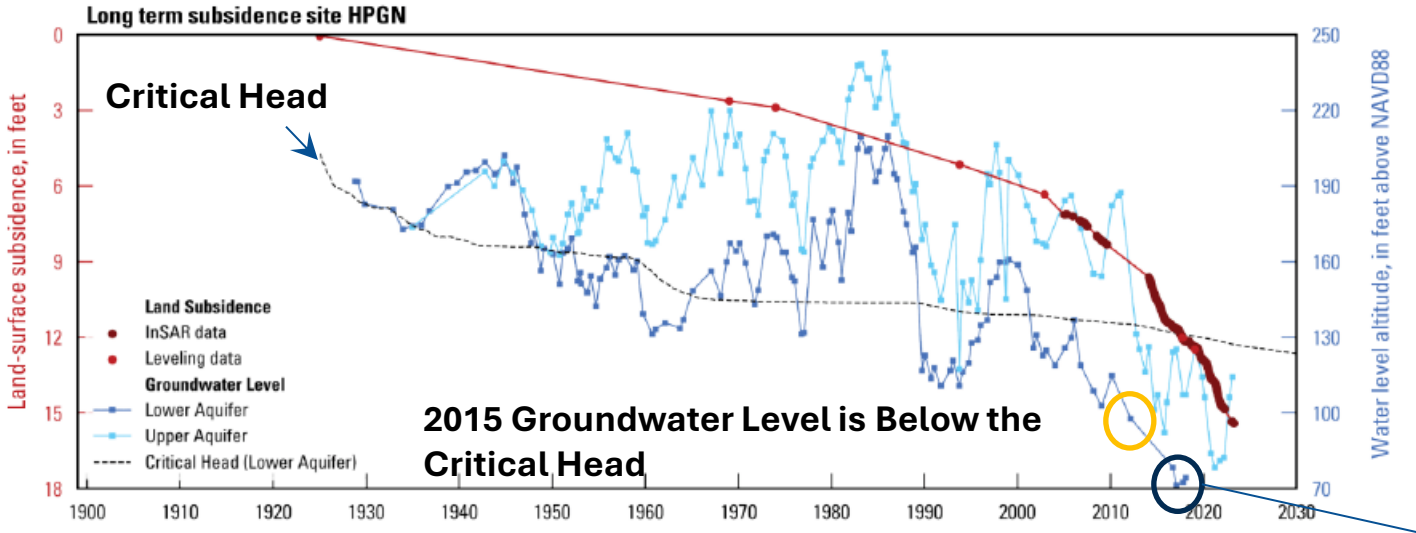
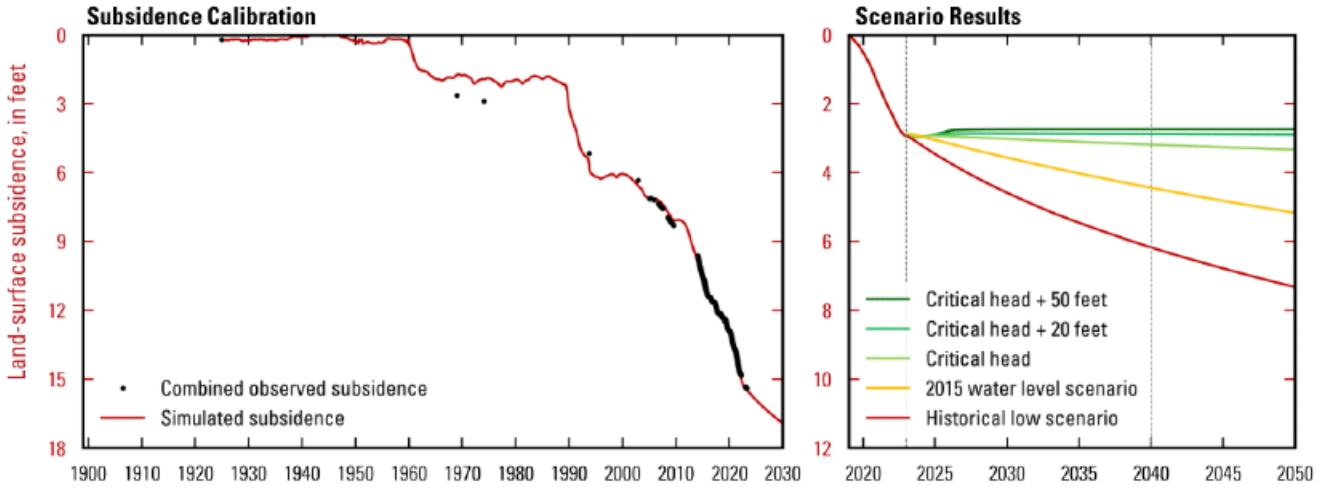
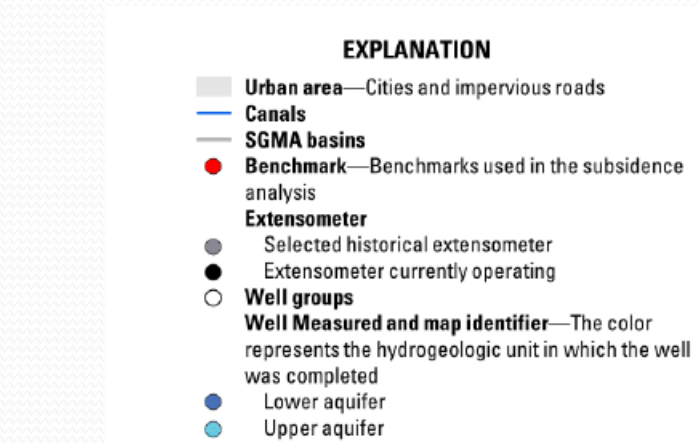
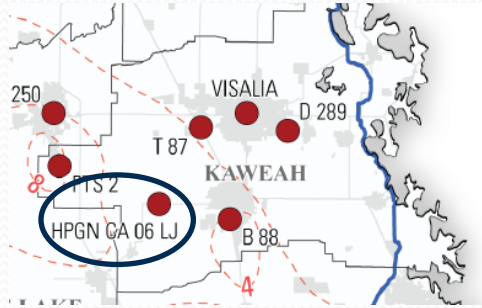
Critical Head Estimate for West Central Visalia







Most Recent Groundwater Level for Lower Aquifer Unavailable



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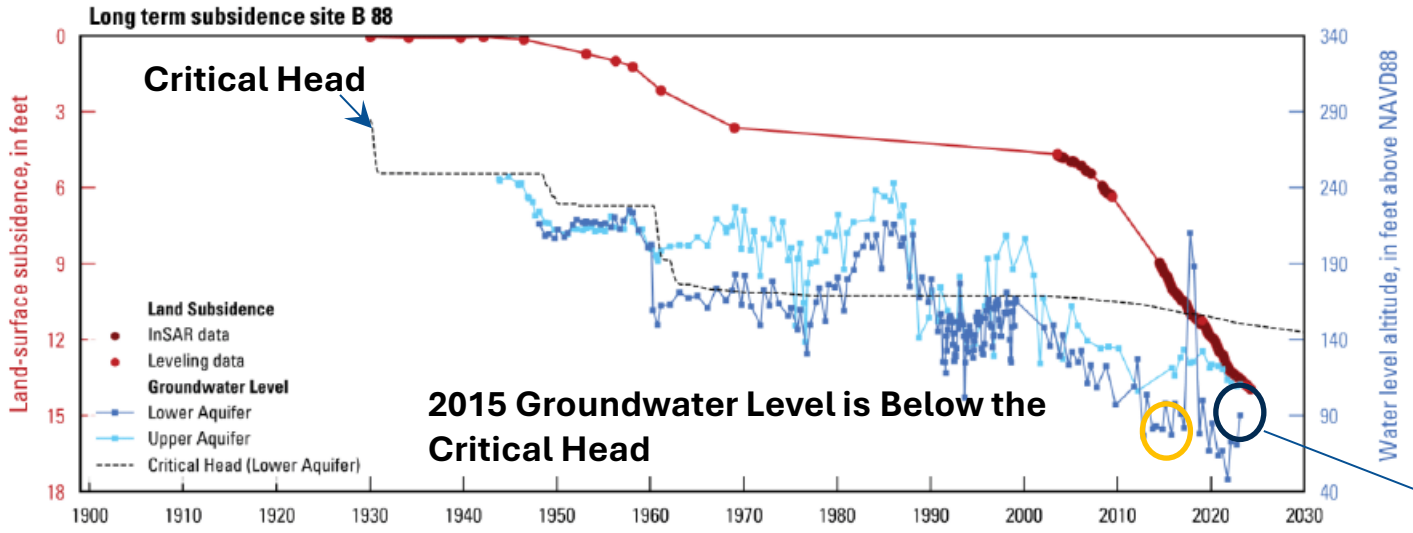
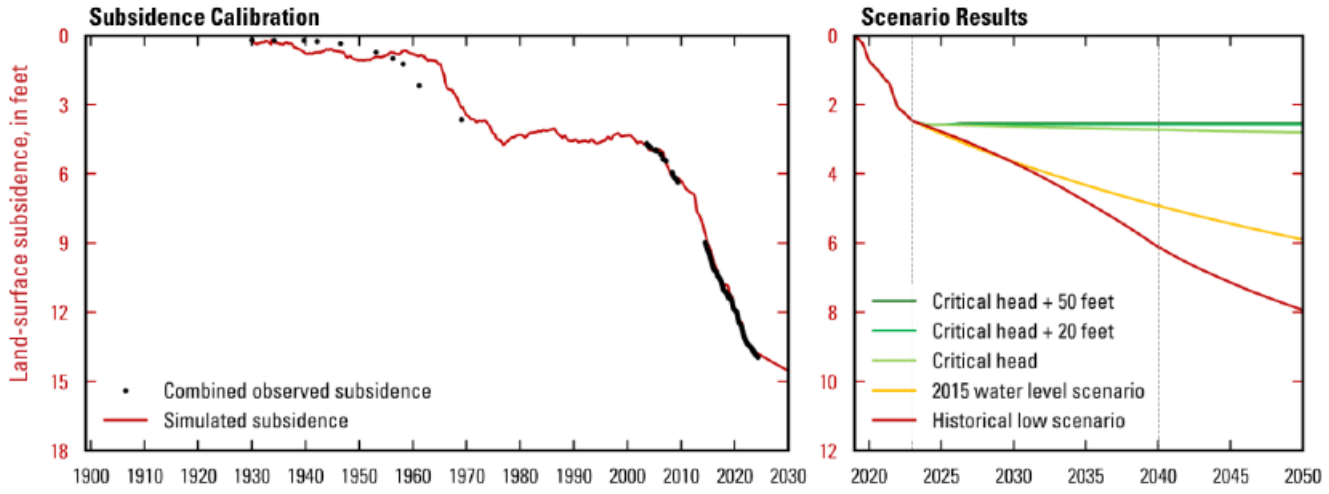
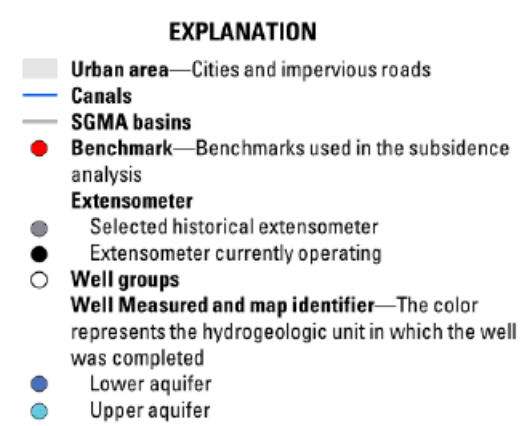
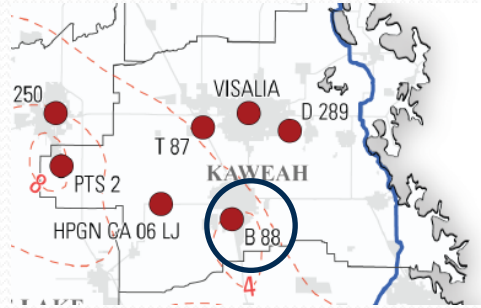
Critical Head Estimate for West Central Visalia







Most Recent Groundwater Level is ~ 50 ft Below the Critical Head



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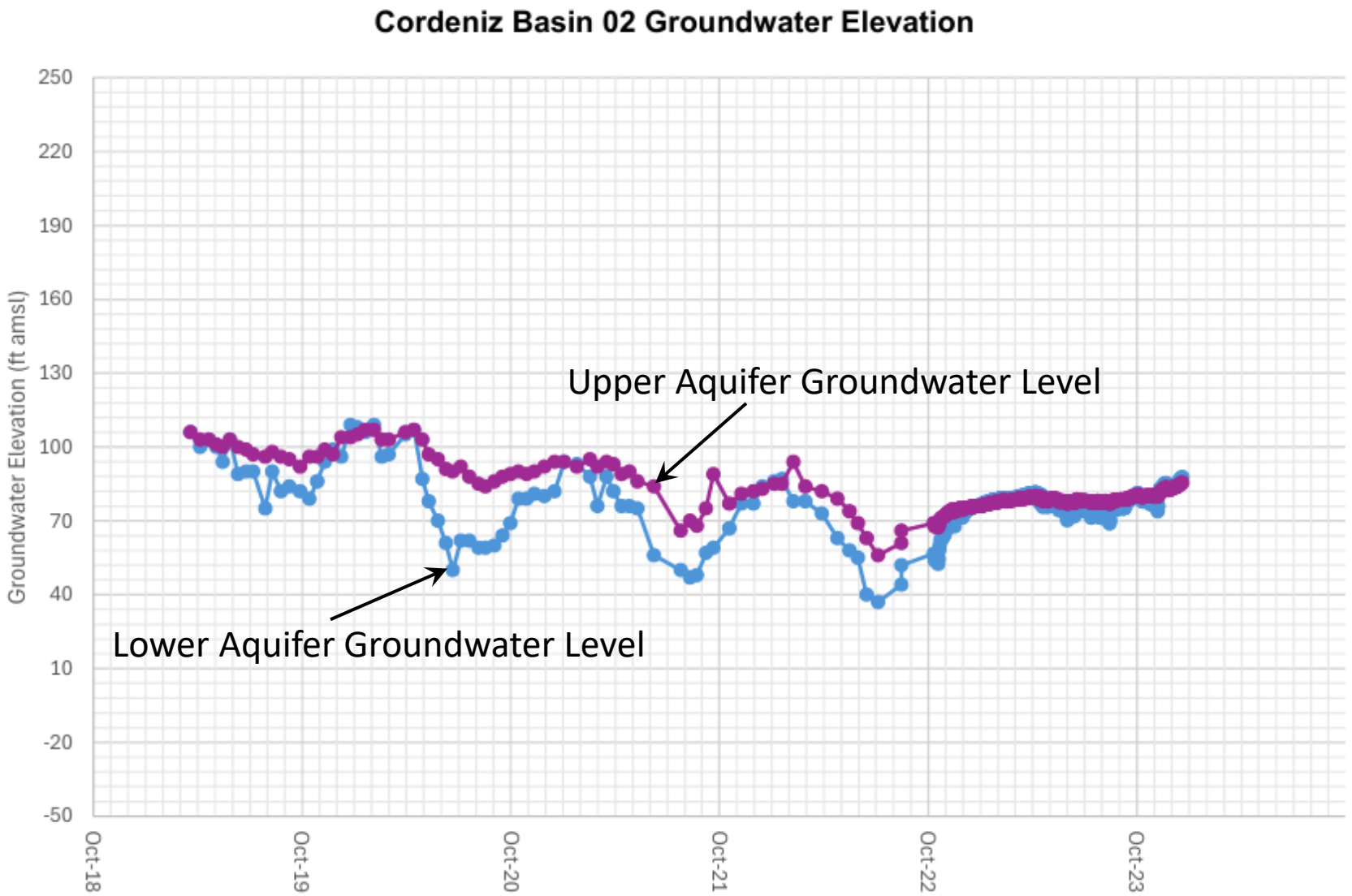
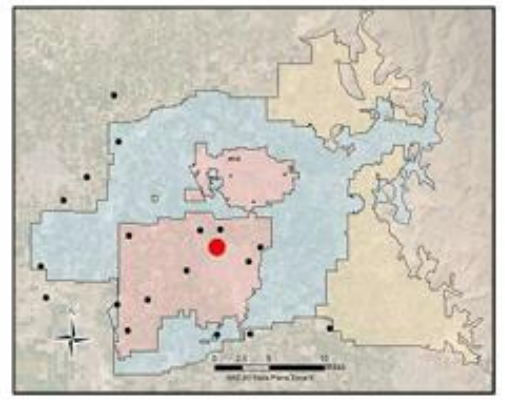
Observations of Bulletin 118 1D Critical Head Analyses

- The Sources of the Hydrographs Are Not Cited
  - There are No Lower Aquifer Wells in the Kaweah Subbasin Database in the Visalia Area
  - The Kaweah Database Does Not have Groundwater Level Records As Far Back As Shown in Bulletin 118
  - The Groundwater Levels in the Visalia Area for the "Lower Aquifer" are Similar to that Observed for Upper Aquifer Wells in the Database
  - Some of the "Lower Aquifer" Wells Have Elevations Higher than the "Upper Aquifer" Wells at Times – this is Contrary to the Known Vertical Head Distribution in the Area
- The 1D Analyses Fix the Groundwater Level after the Historical Period and Do Not Account for Seasonal Fluctuations

Groundwater Levels Are Typically Different Between the Upper and Lower Aquifers





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Critical Head and Minimum Thresholds

"In areas experiencing land subsidence, groundwater levels may currently be below critical head levels, and inelastic subsidence is likely to be increased if groundwater levels decline further. In this situation, GSAs should revise the groundwater level sustainable management criteria to be set at or above the critical head level."

DWR Draft Subsidence BMP, July 2025

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Critical Head and Minimum Thresholds

- What is the Relationship Between the Critical Head and the Lower Aquifer Groundwater Level Minimum Threshold (MT)?
  - Is the Critical Head the MT?
  - If Not, How Far Above the Critical Head Should it Be?
    - Note: Some Simulations Predict Ongoing Land Subsidence into the Future with Groundwater Levels 50 ft Above the Critical Head
  - Which Critical Head Should We Reference? The One in 2015? 2020? 2025?
  - Are We Responsible for pre-2015 Groundwater Levels Below the Critical Head that would Cause Ongoing Residual Land Subsidence?

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Questions/Discussion

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MEMORANDUM

FROM: Mark Larsen

DATE: December 08, 2025

SUBJECT: Board Summary

CC:

Meeting Overview
The Board of Directors of the Greater Kaweah Groundwater Sustainability Agency (GKGSA) met on December 8, 2025. Chairman Chris Tantau called the meeting to order at approximately 1:00 p.m. No formal action was taken in closed session, as the Board did not adjourn to closed session.

Public Comment
Public comment was received at various points throughout the meeting on agenda items, including water operations, mitigation activities, and land fallowing. Comments were provided by members of the public including Geoff Vanden Heuvel, Andrew Hart, and Tami McVay.

Kaweah Subbasin Groundwater Sustainability Plans (GSPs)
General Manager Larsen reported that on December 2, 2025, the State Water Resources Control Board approved returning the Kaweah Subbasin to the Department of Water Resources (DWR) for oversight based on the revised GSPs. DWR has already initiated follow-up coordination with Subbasin GSAs.
Core team activities continue to progress, including: - Completion of a second round of groundwater quality sampling; - Continued updates to monitoring sites; and - Ongoing coordination among Subbasin partners.
The Board expressed appreciation to staff for the outcome of the State Board action.

Administration, Workshops, and Committee Updates
Staff provided an update on December 4, 2025, workshop focused on native sustainable yield, noting strong attendance and engagement.
Committee updates included: - Technical Advisory Committee: November meeting canceled; next meeting scheduled for December 18, 2025. - Combined Rural Communities & Stakeholder Committees: November meeting canceled; next meeting scheduled for December 22, 2025.
Grant program updates were also provided, including the status of MLRP applications.

Water Conditions Report
Kaweah Delta Water Conservation District provided a water operations report. Ending storage in Terminus Reservoir was approximately 28,000 acre-feet last month and approximately 30,000 acre-feet as of the meeting date. Coordination continues with the U.S. Army Corps of Engineers to manage storage without initiating flood releases.

Dashboard Groundwater Invoicing
Program Coordinator Ruiz provided updates on groundwater invoicing and enforcement:

- WY 2023: All Tier 1 and Tier 2 penalty liens have been recorded.

- WY 2024: Invoices have been issued, with approximately $25 million in delinquent accounts. Enforcement actions are anticipated to begin in 2026.
- WY 2025: Invoicing preparation will begin in early 2026.

Land IQ – Daily ET Monitoring
Staff reported on the availability of a new Land IQ option to provide daily evapotranspiration (ET) data. The Stakeholder Committee reviewed the tool and recommended proceeding.
The Board unanimously approved a one-year agreement with Land IQ for daily ET services under the Client Services Agreement and Product License Agreement.

Well Mitigation Program
General Manager Larsen and 4Creeks staff provided updates on the Well Mitigation Program, including: - Continued coordination with Self-Help Enterprises; - Review of haul water supply and access site designs; - Consideration of current pilot dry well mitigation claims.
Staff was directed to review well mitigation policies and return with recommendations at a future meeting.

Land Fallowing Program
Program Manager Ruiz reported on the status of the 2025 Land Fallowing Program: - Approximately $1 million in payments sent; -2026 water year report provided by Program Coordinator Rodriguez Twenty-five contracts executed; - A total of 3,358 acres enrolled.

Water Importation Efforts
General Manager Larsen reported ongoing coordination with Kaweah Delta Water Conservation District to secure surface water supplies in December. Staff was directed to continue negotiations related to CVP water importation, including contractor terms, pricing, and available acre-feet.

Monitoring Well Network
Tom Harder (Thomas Harder & Company) provided an update on priority monitoring well locations and network development. Discussion focused on sitting challenges and continued refinement of the monitoring strategy.

The next regular meeting of the GKGSA Board of Directors is scheduled for January 12, 2026, at 1:00 p.m.

Respectfully Submitted,

Mark Larsen Secretary