



TECHNICAL ADVISORY COMMITTEE MEETING May 15, 2025 MEETING MINUTES

At approximately 1:30 p.m. on May 15, 2025, at the office of the Kaweah Delta Water Conservation District ("District"), Dennis Mills, Chair of the Technical Advisory Committee, called to order a meeting of the Committee Members.

Members	Dennis Mills -	Larry Dotson
Present:	<i>Chair</i>	Dennis Keller
	Scott Wagner	Mark Larsen
	David DeGroot	

Absent: Aaron Bock

Staff and Agency consultants presented an agenda packet that followed the agenda. Attached hereto and incorporated by reference is the packet.

PUBLIC COMMENT:

Following calling the meeting to order, Chairman Dennis Mills conducted Committee member roll call (documented above) and then opened the meeting for public comment.

No public comment was received.

CORRESPONDENCE AND ANNOUNCEMENTS:

General Manager, Larsen discussed the well registration system, which has been fully designed and is expected to go live around June 3, 2025. It will collect data on well locations, depths, and usage to better understand lower aquifer conditions.

State Water Source Control Board Hearing: Larsen noted an upcoming June 3 hearing on the Chowchilla Subbasin. The outcome could be precedent setting for other subbasement management situations.

General Manager Larsen reported ongoing issues with Sundale School's drinking water well. The school is seeking GSA support to address pump and electrical issues. Self Help Enterprises and other stakeholders are collaborating to find a solution.

The committee discussed efforts to secure state funding and partner with other subbasins to install extensometers for monitoring land movement and subsidence.

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MINUTES:

Minutes from January 23, 2025, meeting were reviewed and approved by Member Keller and seconded by Member Dotson with minor edits.

MITIGATION PLAN:

General Manager Larsen provided an update on collaboration with Self Help Enterprises to drill wells in over drafted communities. One well has been completed; another is underway. Interim solutions such as land fallowing and recharge projects are being explored, along with long-term community water systems.

HYPERICUM WELL INVENTORY:

Ben presented a detailed analysis of recharge potential in the Hypericum area, using modeling tools developed by Montgomery & Associates to evaluate how different recharge volumes could influence groundwater levels and reduce the risk of wells going dry.

Study Design and Methodology:

- The study utilized a calibrated groundwater flow model to simulate various recharge scenarios at a proposed recharge basin site adjacent to Hypericum.
- Three recharge volumes were modeled to reflect low, moderate, and high recharge inputs.
- The analysis accounted for local hydrogeology, historical groundwater levels, and the spatial distribution of domestic wells in the area.

Key Findings:

- **Groundwater Level Response:** The model demonstrated that even modest recharge volumes could positively impact groundwater levels in nearby domestic wells. The highest recharge volume scenario showed a significant water level rise.
- **Risk Reduction:** Areas with previously high risk of well failure—especially wells between 140 and 160 feet deep—showed substantial reductions in risk under increased recharge scenarios.
- **Residual Mounding Effect:** One important outcome was the observation that recharge benefits persisted beyond the active recharge period. This "residual mounding" helped sustain groundwater levels during dry months.
- **Community Resilience:** By improving water availability in shallow aquifer zones, the recharge project could enhance drought resilience and support long-term groundwater sustainability goals in Hypericum.

Next Steps and Recommendations:

- Refine and expand the modeled scenarios to evaluate alternative recharge locations and volumes.
- Consider land acquisition or agreements for constructing recharge basins.
- Collaborate with stakeholders to identify implementation pathways, secure funding, and integrate the recharge strategy into broader mitigation efforts.

Greater Kaweah GSA TAC Meeting

Ben concluded by emphasizing the importance of integrating recharge planning with domestic well risk assessments and GSA's overall mitigation strategy.

- **Recommendation 1:**
Evaluate feasibility of **recharge basin projects** adjacent to Hypericum to support subsidence mitigation and groundwater recovery
- **Recommendation 2:**
Consider installing dedicated **monitoring well** in the Hypericum area for more accurate tracking of groundwater levels and subsidence

FARMERSVILLE WATER DISCHARGE IMPACT:

The cessation of water discharge from the City of Farmersville into Deep Creek may have contributed to declining groundwater levels in Hypericum post-2011. This historical practice had previously helped stabilize the water table.

SUBSIDENCE MONITORING AND MANAGEMENT:

Jim presented an in-depth proposal for establishing Management Zones to address ongoing land subsidence issues within the Greater Kaweah GSA. His presentation was grounded in recent subsidence and groundwater elevation data and included practical recommendations for improved monitoring and management.

Management Zone Concept:

Jim introduced the idea of delineating specific Management Zones based on observed rates of subsidence since 2020.

These zones would enable targeted interventions, allowing the GSA to prioritize areas experiencing the greatest land surface loss for additional monitoring, regulation, and potential project investment.

Zones were mapped using InSAR satellite data and correlated with well density, groundwater decline, and land use.

Use of Groundwater Elevation as a Management Metric:

Jim emphasized the strong correlation between declining groundwater elevations and increased subsidence rates.

He presented historical data from 2015 to 2024 showing that when groundwater levels dropped below certain thresholds, subsidence accelerated; conversely, when water levels recovered, subsidence slowed or stabilized.

He recommended that groundwater elevation thresholds be used as an early-warning indicator or trigger point for management actions within each zone.

Greater Kaweah GSA TAC Meeting

Data and Monitoring Needs:

Jim stressed the need for high-resolution, continuous groundwater monitoring, ideally through dedicated monitoring wells and meter installations within critical areas.

He recommended expanding metering and registration requirements specifically in the highest-subsidence Management Zones.

Comments from the Committee:

Committee members expressed support for the zone-based approach and the use of groundwater elevation as a practical, data-driven metric.

Concerns were raised about the accuracy and availability of well data in high-risk areas and the need for additional outreach to landowners.

One member highlighted the importance of integrating these management zones into ongoing GSP (Groundwater Sustainability Plan) implementation efforts and project prioritization.

Another member emphasized the opportunity to align this approach with future state funding requests by demonstrating proactive, science-based groundwater management.

Public Comments:

No formal public comments were recorded specific to this agenda item during the meeting, but the broader context of subsidence management had been discussed earlier in the meeting with members of the public.

Recommendations:

1. Develop and Adopt Subsidence Management Zones:
2. Create defined geographic zones based on subsidence severity for targeted management.

Use Groundwater Elevation Thresholds as Triggers:

3. Establish zone-specific groundwater level thresholds that, when crossed, would trigger mitigation actions.

Expand Registration and Metering Requirements:

4. Require all wells in high-subsidence zones to be registered and metered to ensure accurate groundwater use data.

Install Monitoring Infrastructure:

5. Consider installing new dedicated monitoring wells in subsidence-prone areas to support real-time data collection and trend analysis.

Greater Kaweah GSA TAC Meeting

Stakeholder Engagement and Outreach:

Host grower meetings and conduct direct outreach to explain the purpose of Management Zones and encourage voluntary compliance with metering and data reporting.

Jim's presentation was well received by the Committee, and several of his recommendations were noted for follow-up action and future agenda development.

FUTURE AGENDA ITEMS AND MEETING DATES:

The next meeting was scheduled for June 19, 2025, at 1:30 p.m.

ADJOURNMENT:

There being no further business to discuss, the meeting was adjourned.

Respectfully Submitted,

Dennis Mills, Committee Chair



EKGSA Staff & Consultant Team
GKGSA Staff & Consultant Team
MKGSA Staff & Consultant Team



New Core Teams

Update on Addressing Land Subsidence in the Greater Kaweah GSA

June 19, 2025



Thomas Harder & Co.
Groundwater Consulting



Agenda

- Discussion of Data Gaps Related to Managing Land Subsidence
- Approach to Addressing Data Gaps
- Implementation Schedule

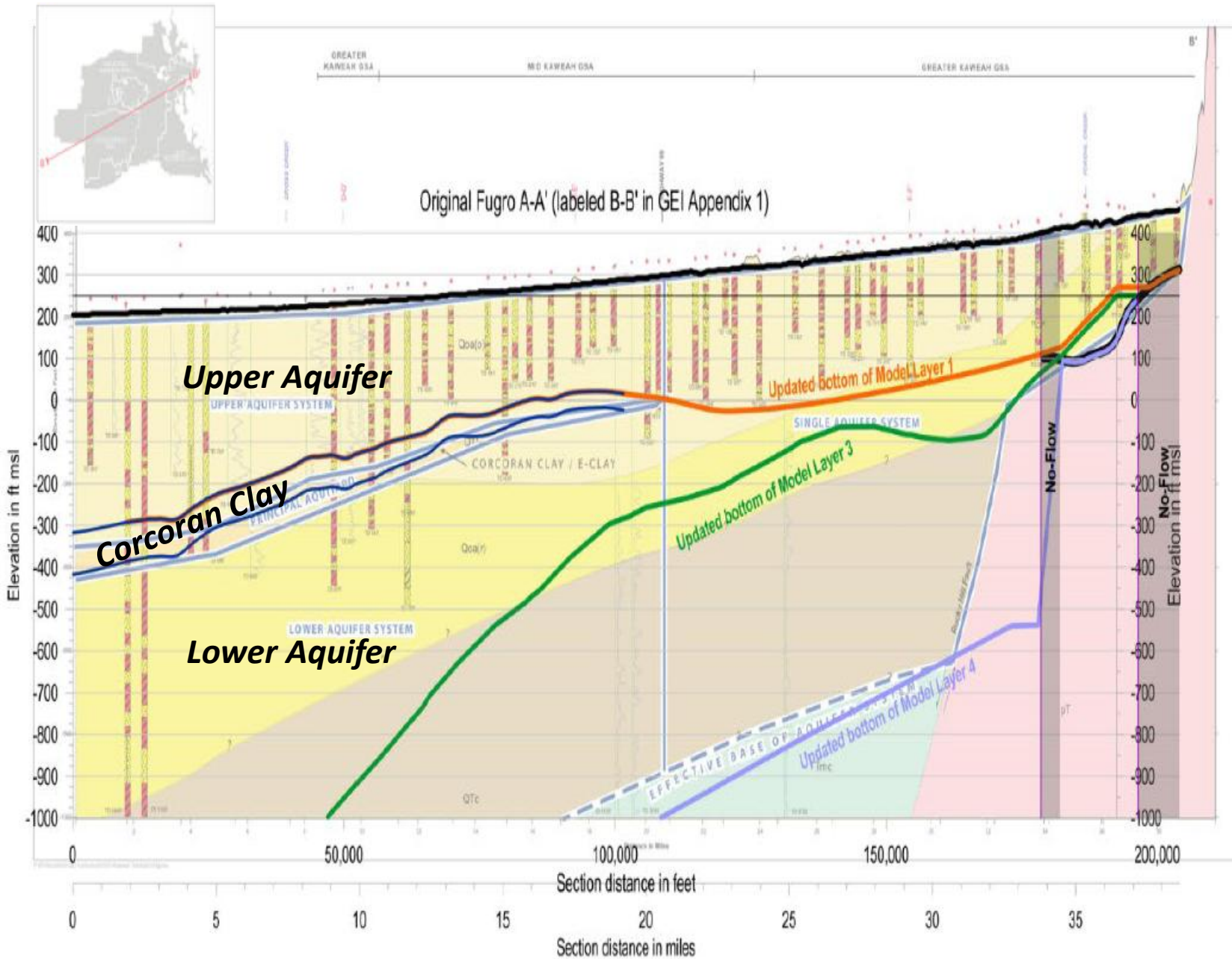


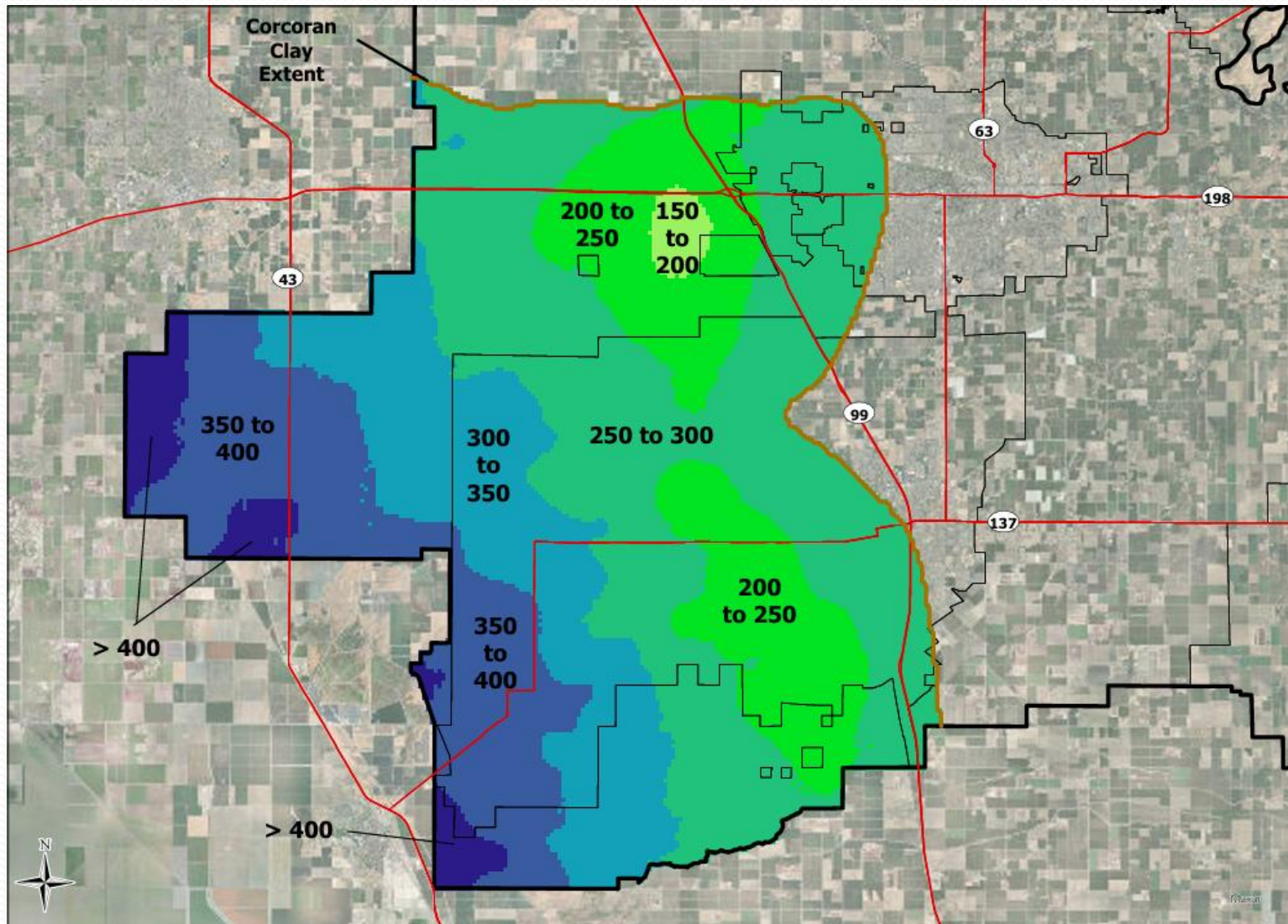
Figure 2. Cross Section from Fugro Report with Updated Model Layers

The Guiding Premise of the LASTMAP is that Groundwater Pumping from the Lower Aquifer Causes the Majority of the Subsidence in the Subbasin and that Reduction of Pumping in that Aquifer is Necessary to Meet Subsidence Goals



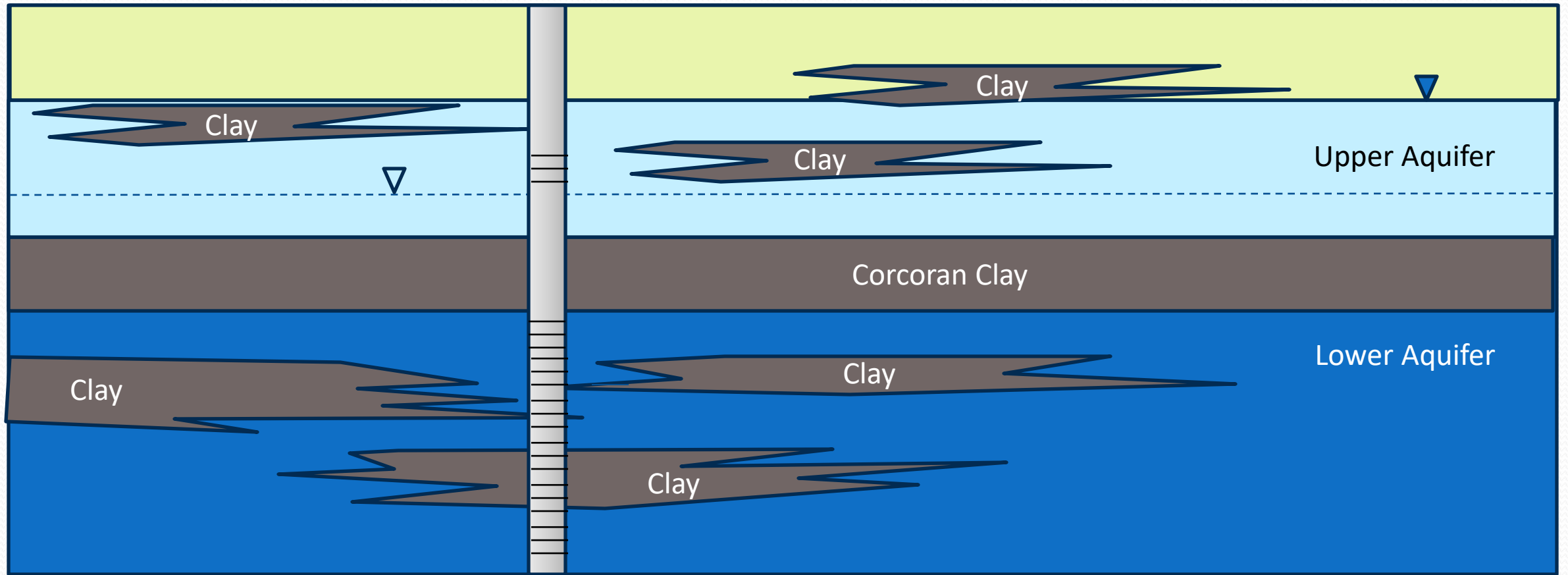
The Corcoran Clay Separates the Upper from Lower Aquifers, Where it Exists

Depth of Corcoran Clay in Feet Below Land Surface



Knowledge of the Depth of Wells and Groundwater Level Changes from Pumping Those Wells are Key Data Gaps to be Addressed

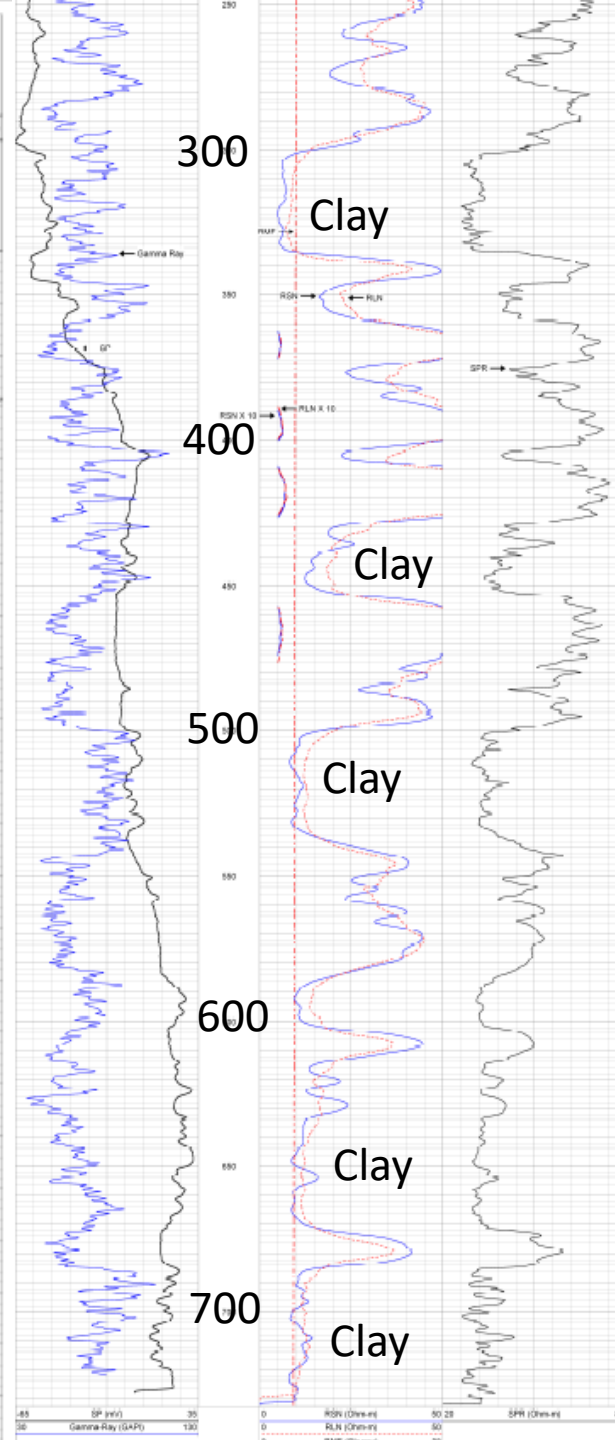
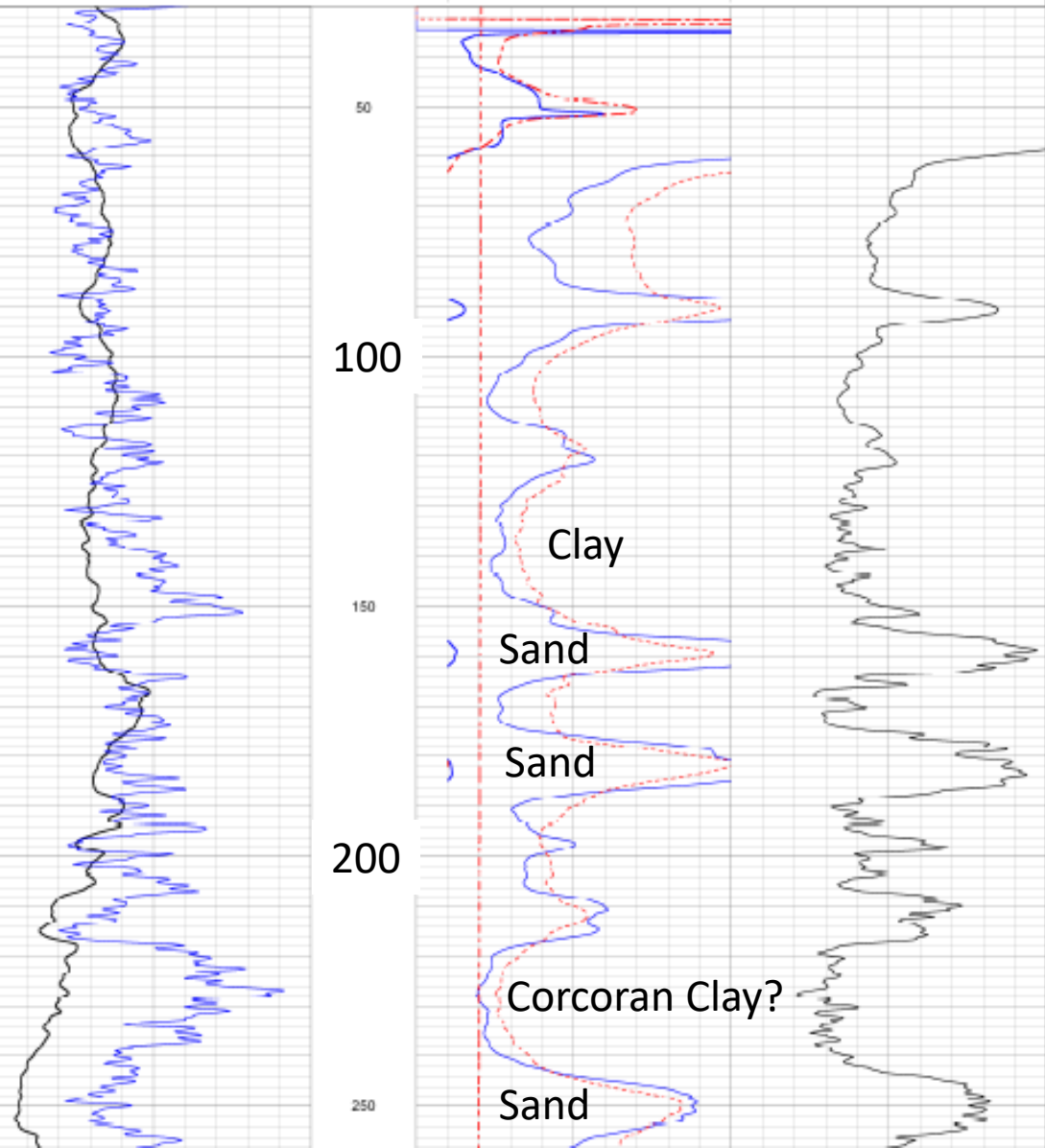
Many Wells Are Perforated (and Therefore Pumping from) Both the Upper and Lower Aquifers



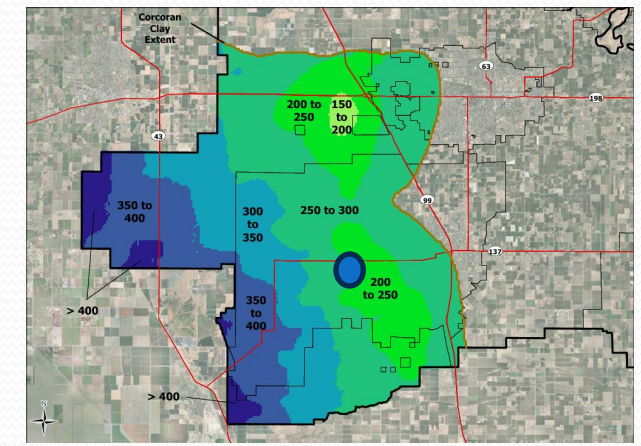
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 Presentation Format elog_cw8
 Dataset Creation True Port 04 18 15 19 2022
 Charted by Depth in Feet scaled 1:240

-85	SP (mV)	35
30	Gamma-Ray (GAPI)	130

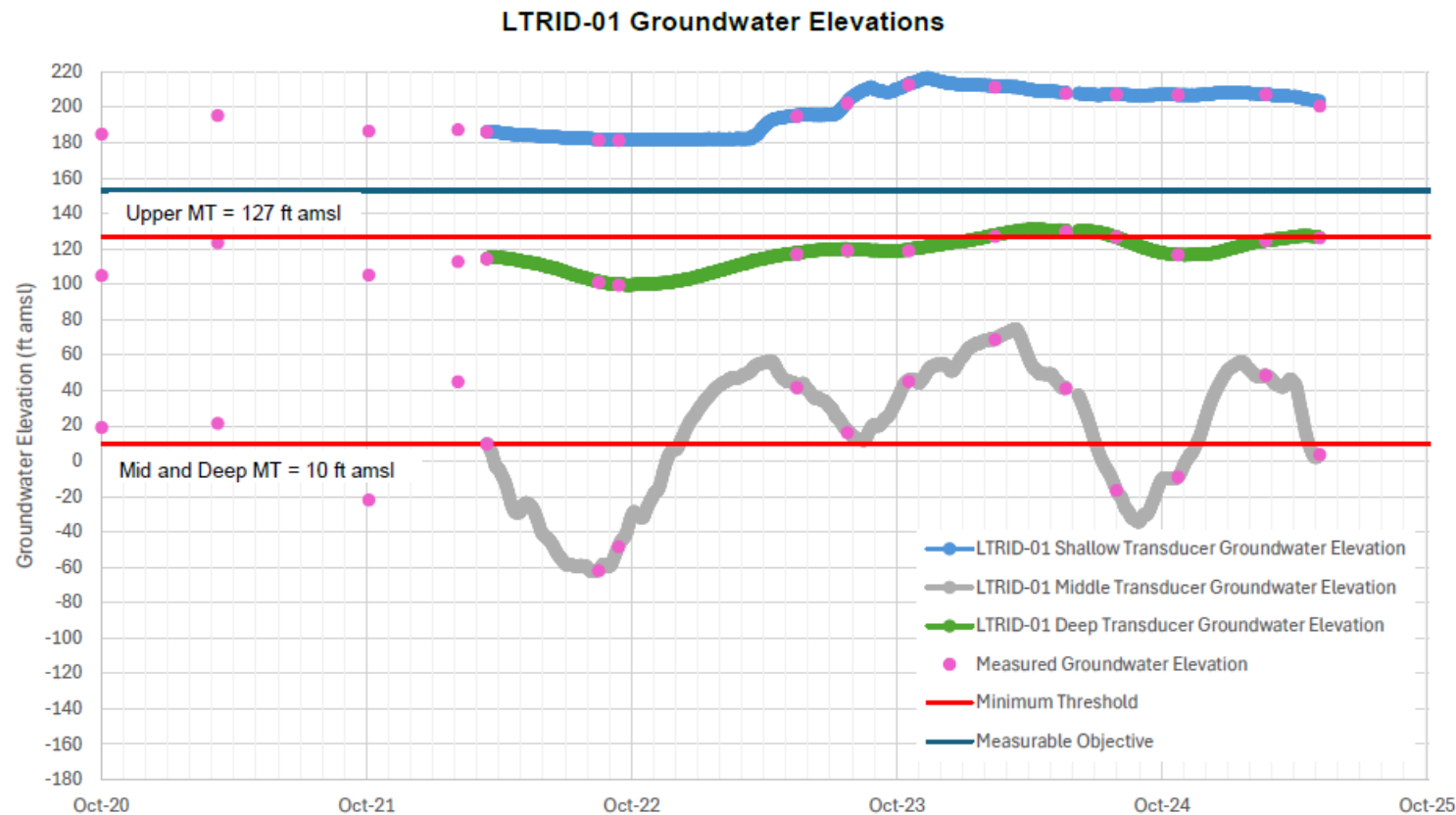
0	RSN (Ohm-m)	50 20	SPR (Ohm-m)	80
0	RLN (Ohm-m)	50		
0	RMF (Ohm-m)	50		
50	RSN X 10 (Ohm-m)	500		
50	RLN X 10 (Ohm-m)	500		



Geophysical Log Showing Stratigraphy in Western Kaweah Subbasin

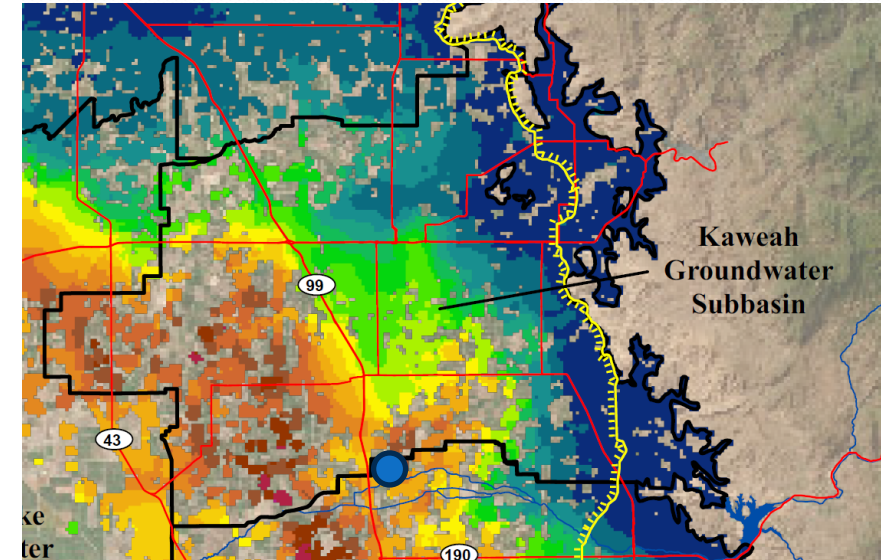


Seasonal Groundwater Level Declines In Areas with Subsurface Clay Causes Land Subsidence



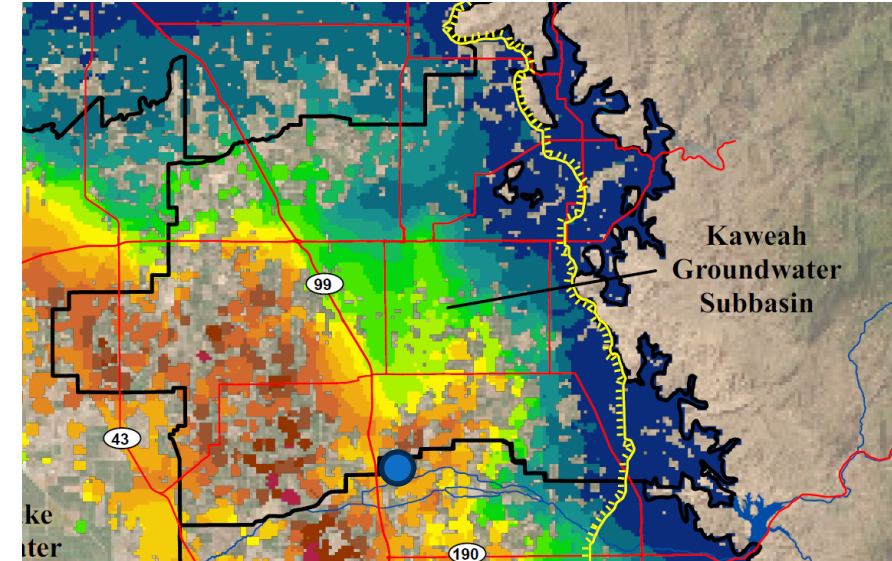
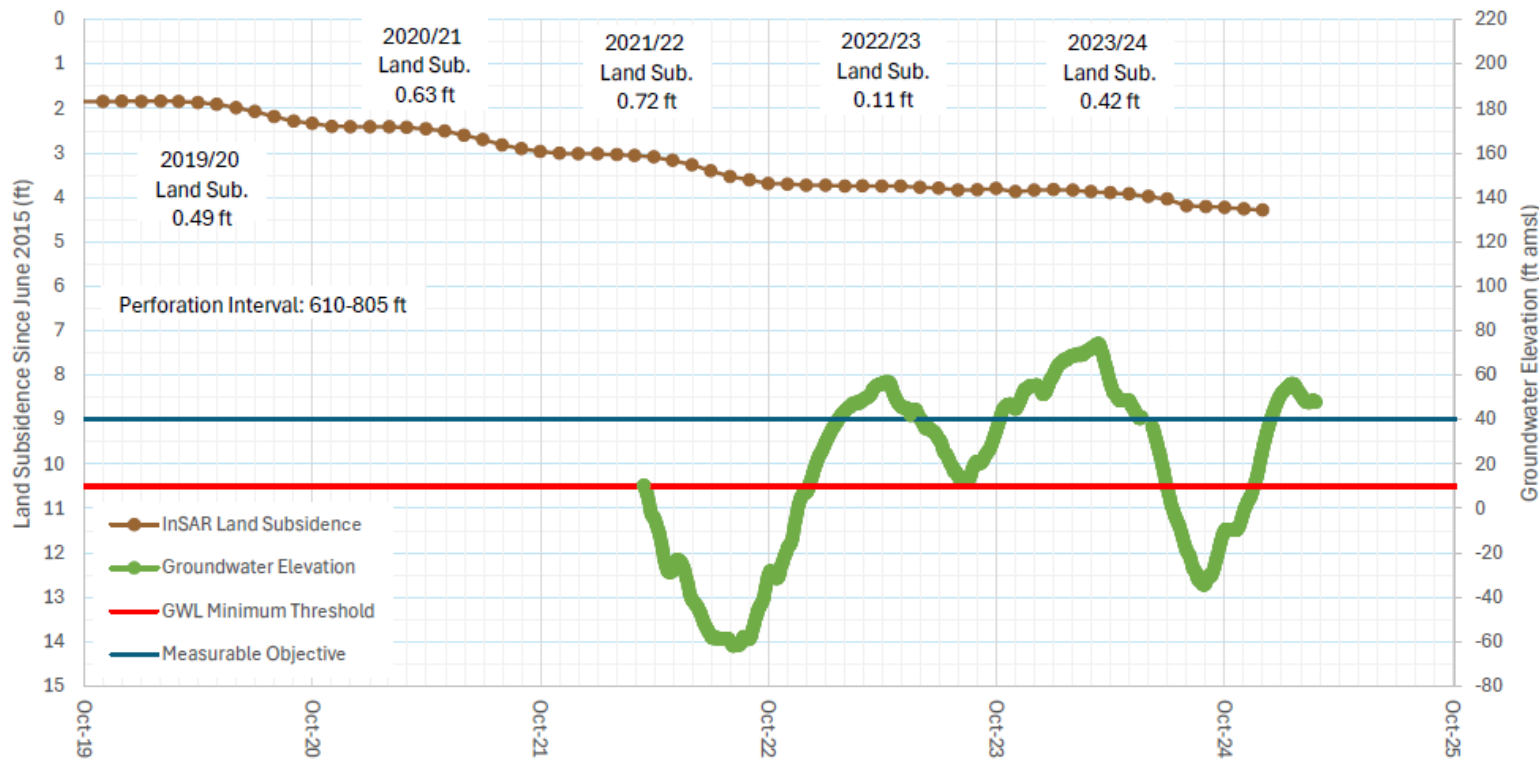
Notes:

ft amsl = feet above mean sea level
Reference point elevation = 264 ft amsl



Seasonal Groundwater Level Declines In Areas with Subsurface Clay Causes Land Subsidence

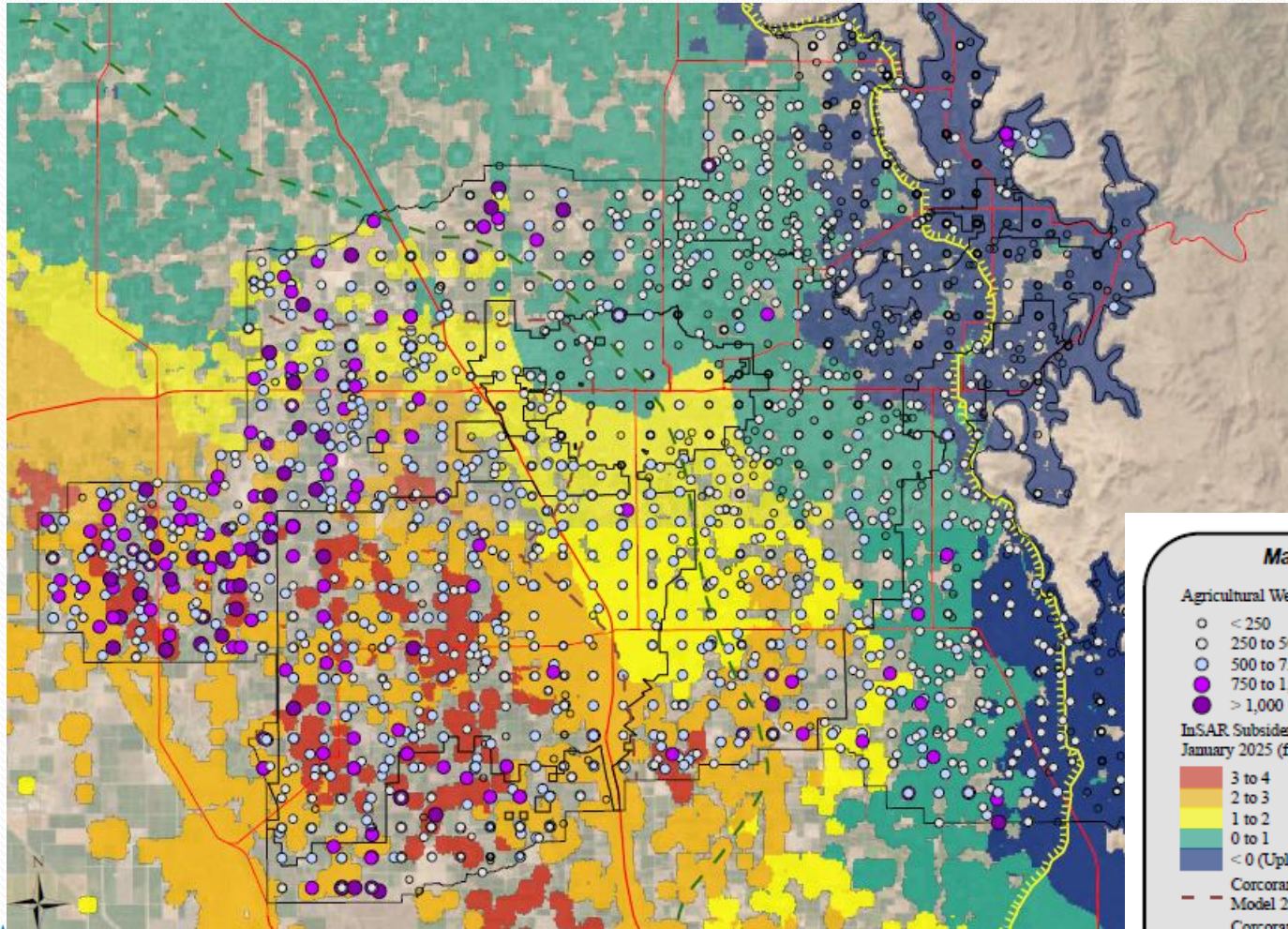
Groundwater Levels and Land Subsidence
LTRID-01D (Tule Subbasin, near Subbasin Boundary and Hwy 99)



If We Are Going to Manage Groundwater Pumping to Minimize Land Subsidence, We Need to Know:

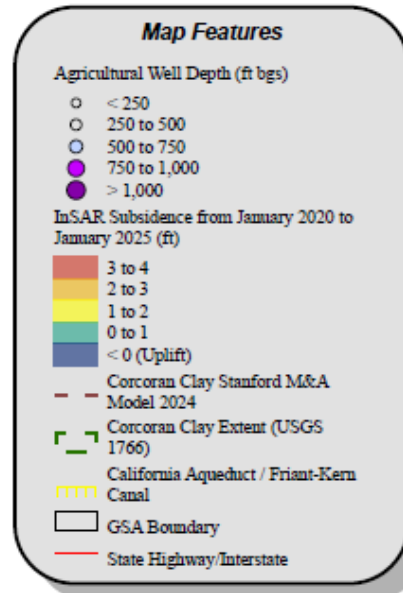
- The Exact Location of the Pumping Wells
- The Depth of the Pumping Wells
- The Perforated Interval of the Pumping Wells
- Groundwater Levels Specific to the Upper and Lower Aquifer
- How Much is Being Pumped from Individual Wells

Information We Have – DWR Driller's Logs



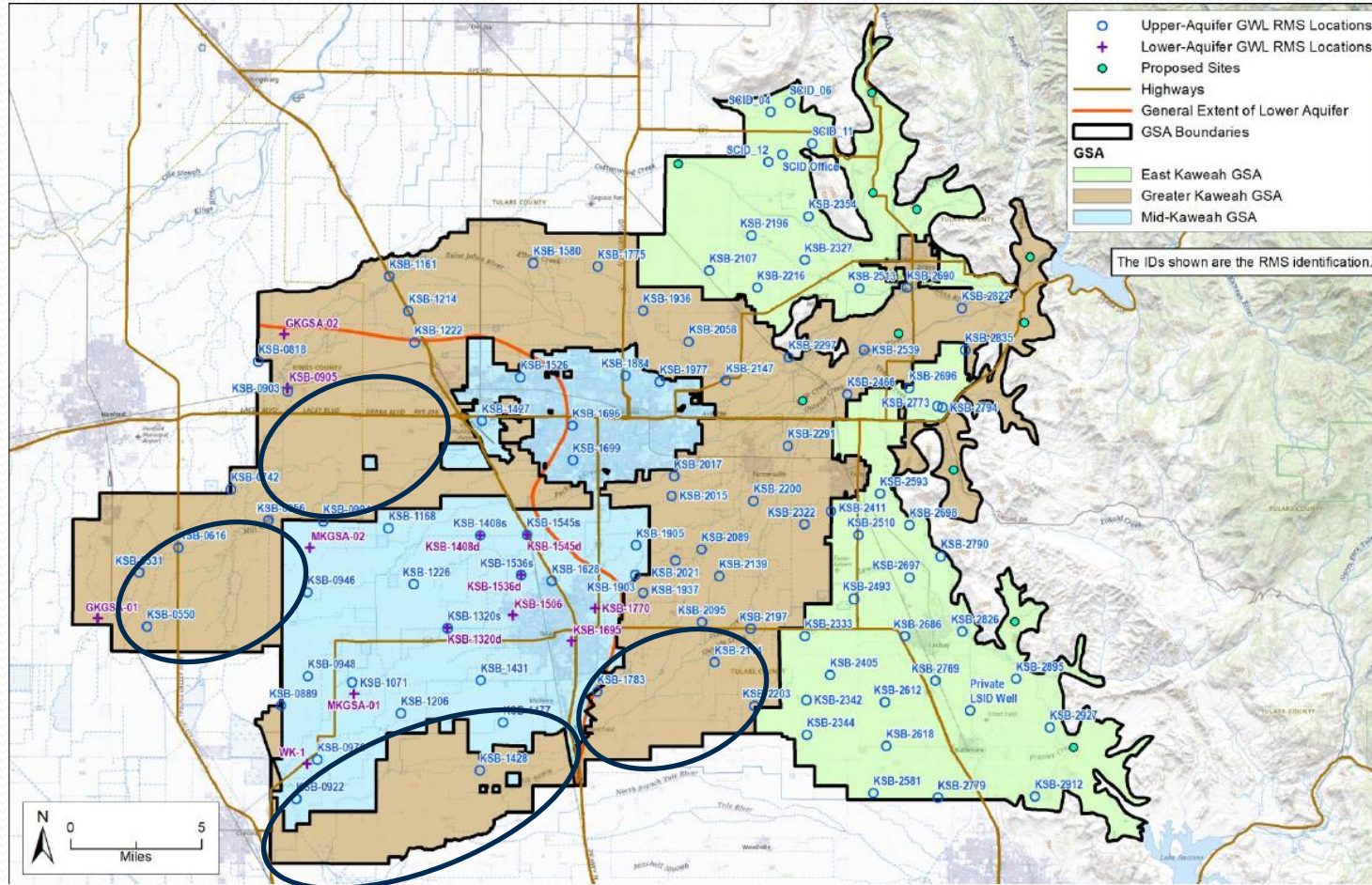
Limitations of Data:

- Usually Accurate to within ¼-Mile
- Perforated Intervals Not Reported on All Logs
- Status of Wells Unknown (i.e. Currently Pumping?)



Information We Have – Groundwater Levels

Groundwater Levels Representative Monitoring Network

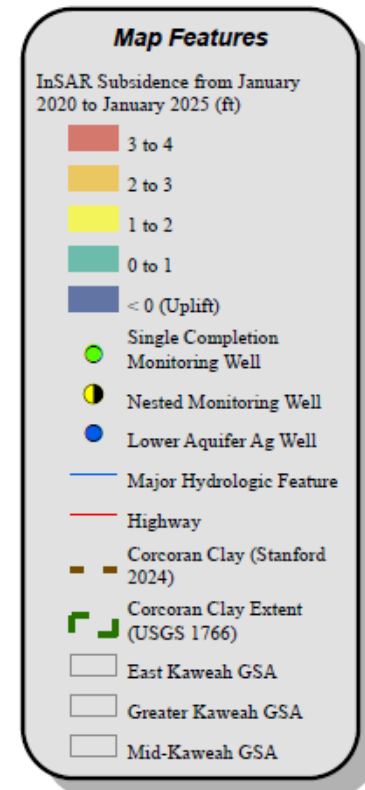
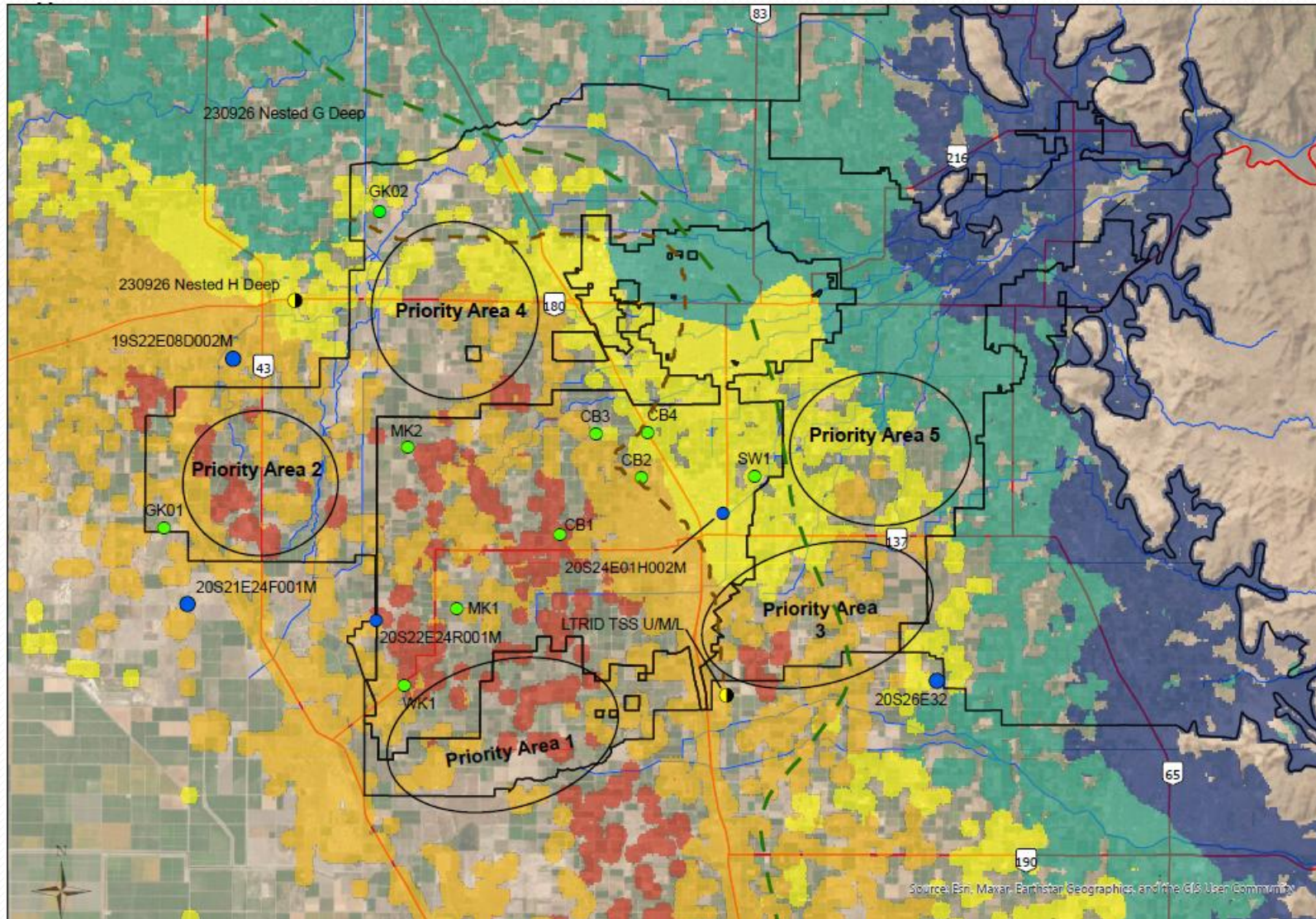


Significant Data Gaps in Areas Where Land Subsidence Rates are Highest

Most Notably – Lack of Lower Aquifer Groundwater Level Monitoring

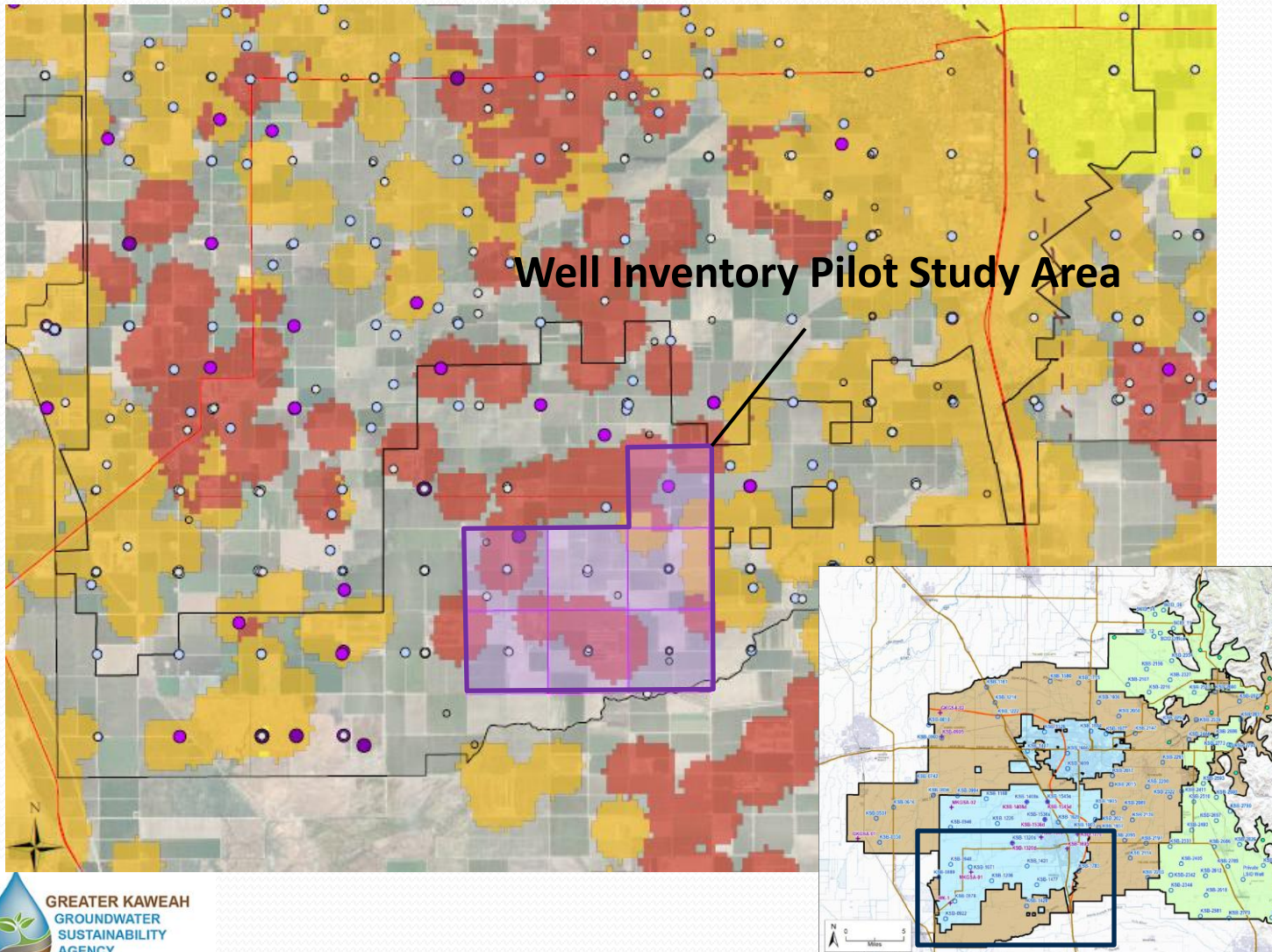
Approach to Addressing Data Gaps

Prioritize Areas for Additional Data Collection/Enhanced Monitoring



Approach to Addressing Data Gaps

Conduct a Well Inventory *Priority Area 1*



Approach to Addressing Data Gaps – Identify Existing Wells for Groundwater Level Monitoring

- Priority for Wells to Be Monitored
 - Known Depth
 - Non-Pumping
 - Known Perforation Interval
 - Available Access for Monitoring Equipment
 - Provide Spatial Coverage
- Wells to Be Equipped with Pressure Transducers
- Start with Existing Data Sources
- Will Need Owner Permission



Approach to Addressing Data Gaps – Install Dedicated Nested Monitoring Well

- Work to Identify a Site is Ongoing
- The Well Will Be Constructed as a Dual-Completion (i.e. “Nested”) Well with One Set of Perforations in the Upper Aquifer and One in the Lower Aquifer
- Located in Area of Highest Priority and Where No Data Currently Exists



Well Registration Program is Underway

- Requests Well Information from Growers Via an Online Registration
- Currently Voluntary
- Types of Information to be Requested Include:
 - Well Owner
 - Well Location
 - Well Use
 - Well Construction
 - Pump Information
- Scheduled Launch – Summer 2025

Schedule

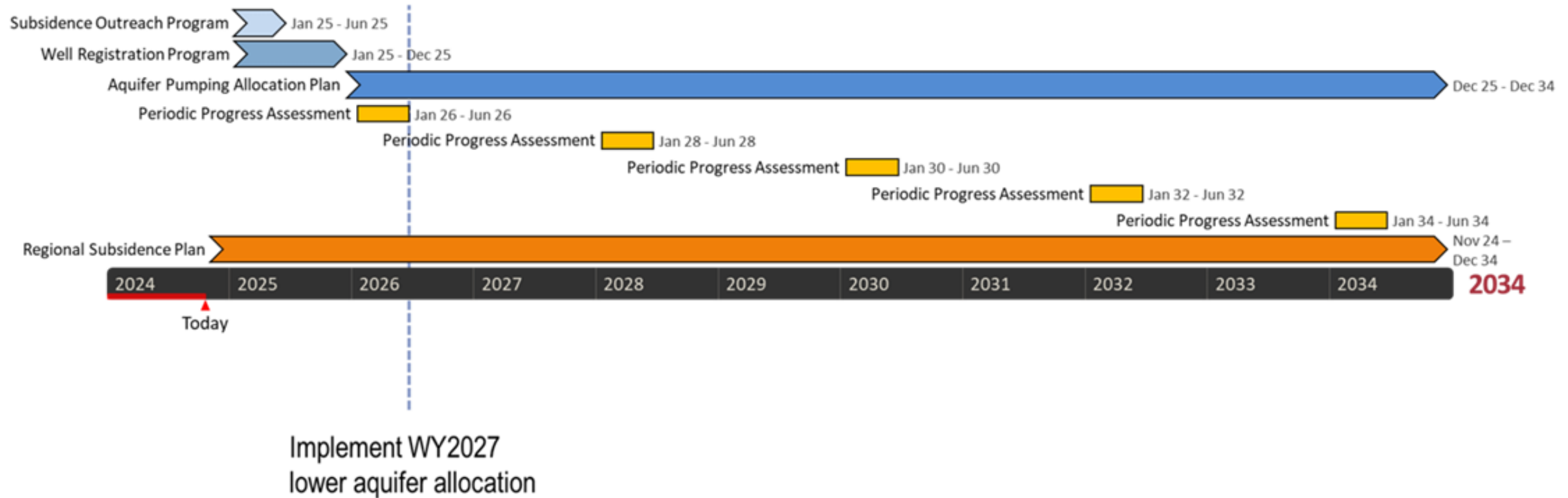
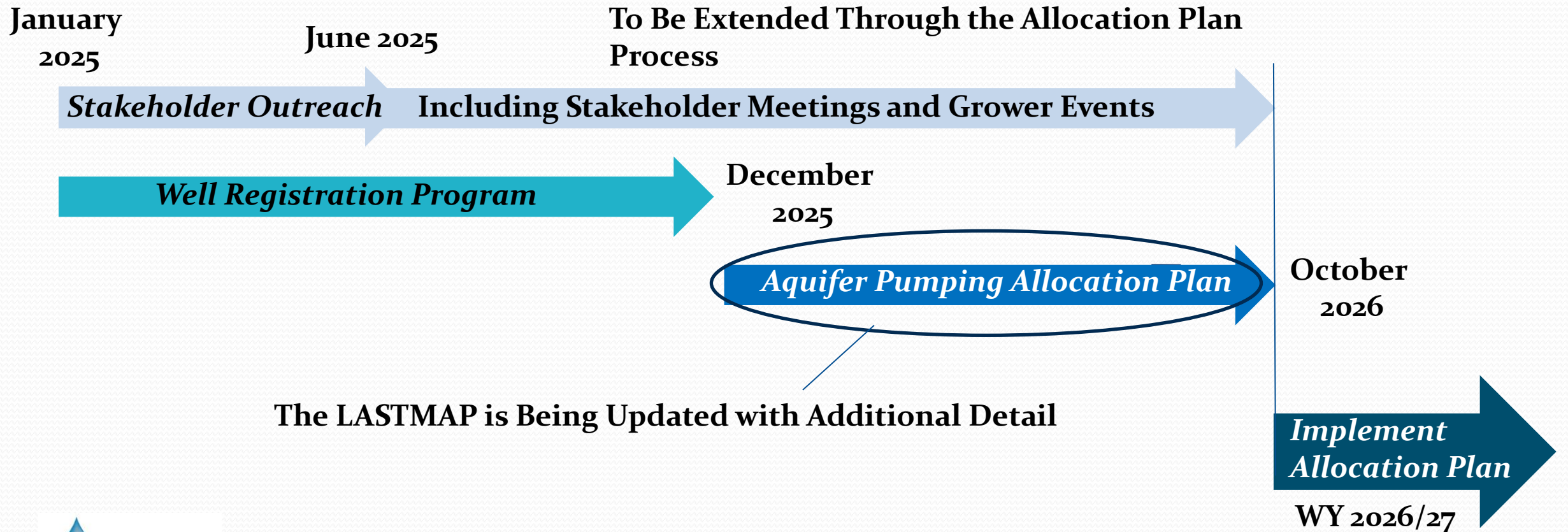


Figure 6-8: LASTMAP Planned Implementation Timeline

Expanded Near-Term Schedule



Questions

