



# YSGA BOARD OF DIRECTORS MEETING

January 13, 2025

# Agenda

- 1. Call to Order and Determination of Quorum**
2. Adding Items to the Posted Agenda
3. Public Forum
4. CONSIDERATION: Consent Items
5. Report of the Chair and Executive Officer
6. Update: Land Subsidence
7. Update: SGMA Implementation Grant Projects
8. Members' Reports and Future Agenda Items
9. Next Meeting - March 17, 2025
10. Adjournment

# Agenda

1. Call to Order and Determination of Quorum
- 2. Adding Items to the Posted Agenda**
3. Public Forum
4. CONSIDERATION: Consent Items
5. Report of the Chair and Executive Officer
6. Update: Land Subsidence
7. Update: SGMA Implementation Grant Projects
8. Members' Reports and Future Agenda Items
9. Next Meeting - March 17, 2025
10. Adjournment

# Agenda

1. Call to Order and Determination of Quorum
2. Adding Items to the Posted Agenda
- 3. Public Forum**
4. CONSIDERATION: Consent Items
5. Report of the Chair and Executive Officer
6. Update: Land Subsidence
7. Update: SGMA Implementation Grant Projects
8. Members' Reports and Future Agenda Items
9. Next Meeting - March 17, 2025
10. Adjournment

# Agenda

1. Call to Order and Determination of Quorum
2. Adding Items to the Posted Agenda
3. Public Forum
- 4. CONSIDERATION: Consent Items**
5. Report of the Chair and Executive Officer
6. Update: Land Subsidence
7. Update: SGMA Implementation Grant Projects
8. Members' Reports and Future Agenda Items
9. Next Meeting - March 17, 2025
10. Adjournment

# Consideration: Consent Items

- a) **Approve November 18, 2024 Board of Directors Meeting Minutes**
- b) Approve Payment of Bills in Approved Fiscal Year 2024-2025 Budget
- c) Receive Fiscal Year 24/25 Financial Statements: 11/15/24 - 1/10/25
- d) Receive Minutes of Executive Committee Meeting: 11/4

# Consideration: Consent Items

- a) Approve November 18, 2024 Board of Directors Meeting Minutes
- b) Approve Payment of Bills in Approved Fiscal Year 2024-2025 Budget**
- c) Receive Fiscal Year 24/25 Financial Statements: 11/15/24 - 1/10/25
- d) Receive Minutes of Executive Committee Meeting: 11/4



Approve  
Payment Of  
Bills In Fiscal  
Year 2024-  
2025 Budget

**PAYMENTS:**

Downey Brand Invoice #609148: November Legal Services: \$4,322.00

Leafbird SGMA Invoice #12: December Professional Services: \$1,580.00  
*(Grant Reimbursable)*

Leafbird WaterSMART Invoice #2: December Professional Services: \$1,925.00  
*(Grant Reimbursable)*

LedgerPro Invoice #3701: November Bookkeeping Services: \$825.00

LedgerPro Invoice #3709: December Bookkeeping Services: \$1000.00

Water & Land Solutions Invoice #4404: Component 5: Yolo-Zamora  
Groundwater Recharge Pilot Project Professional Services: \$11,854.68  
*(Grant Reimbursable)*

YCFC&WCD Labor and Expenses October 1-Decemehr 31, 2024: \$88,944.04  
*(\$69,749.15 Grant Reimbursable)*

YCFC&WCD Monthly Postage and Copies Expenses December 2024: \$11.69



# Consideration: Consent Items

- a) Approve November 18, 2024 Board of Directors Meeting Minutes
- b) Approve Payment of Bills in Approved Fiscal Year 2024-2025 Budget
- c) Receive Fiscal Year 24/25 Financial Statements: 11/15/24 - 1/10/25**
- d) Receive Minutes of Executive Committee Meeting: 11/4

# Consideration: Consent Items

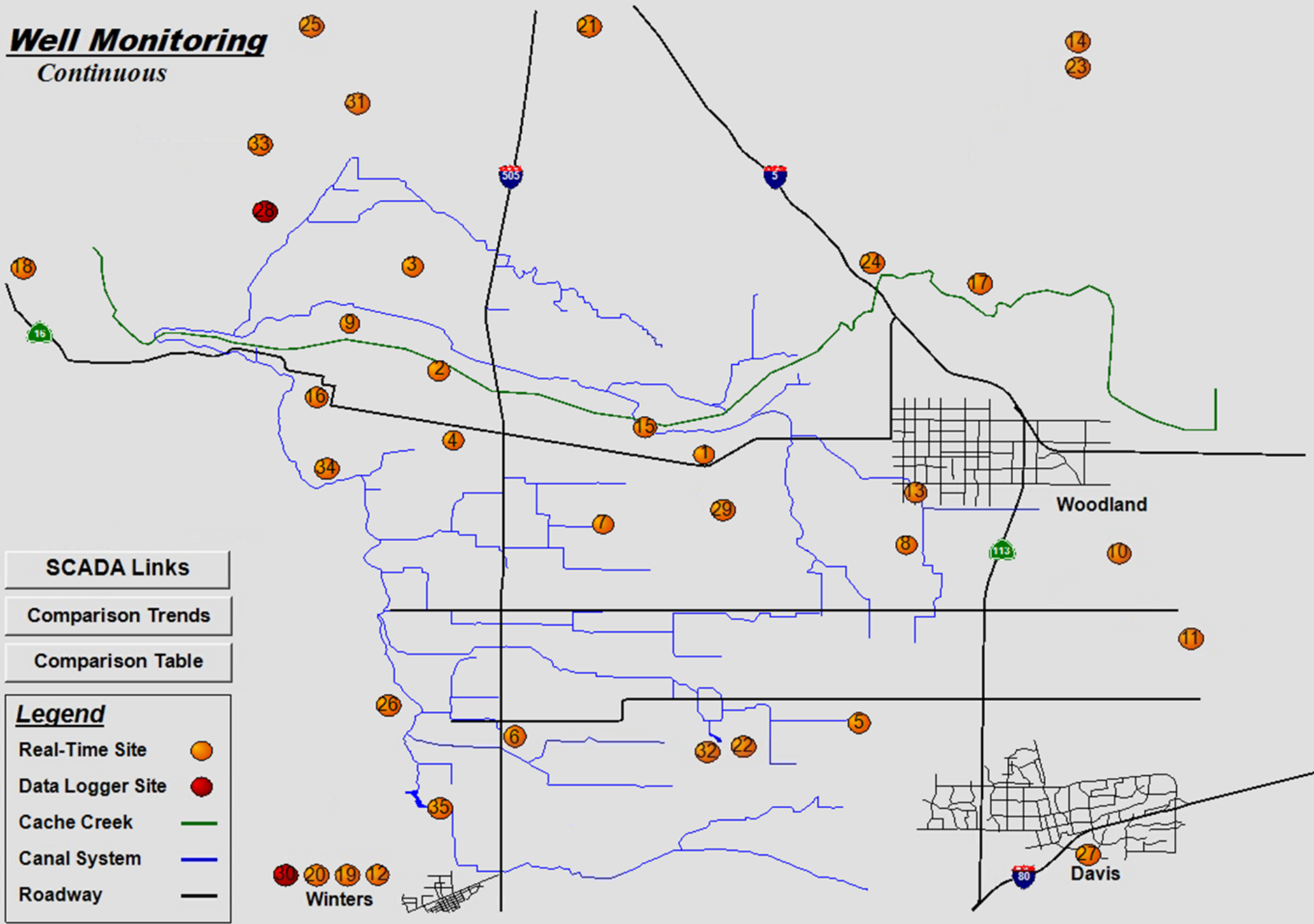
- a) Approve November 18, 2024 Board of Directors Meeting Minutes
- b) Approve Payment of Bills in Approved Fiscal Year 2024-2025 Budget
- c) Receive Fiscal Year 24/25 Financial Statements: 11/15/24 - 1/10/25
- d) **Receive Minutes of Executive Committee Meeting: 11/4**

# Agenda

1. Call to Order and Determination of Quorum
2. Adding Items to the Posted Agenda
3. Public Forum
4. CONSIDERATION: Consent Items
- 5. Report of the Chair and Executive Officer**
6. Update: Land Subsidence
7. Update: SGMA Implementation Grant Projects
8. Members' Reports and Future Agenda Items
9. Next Meeting - March 17, 2025
10. Adjournment

# ***Well Monitoring***

*Continuous*



- SCADA Links
- Comparison Trends
- Comparison Table

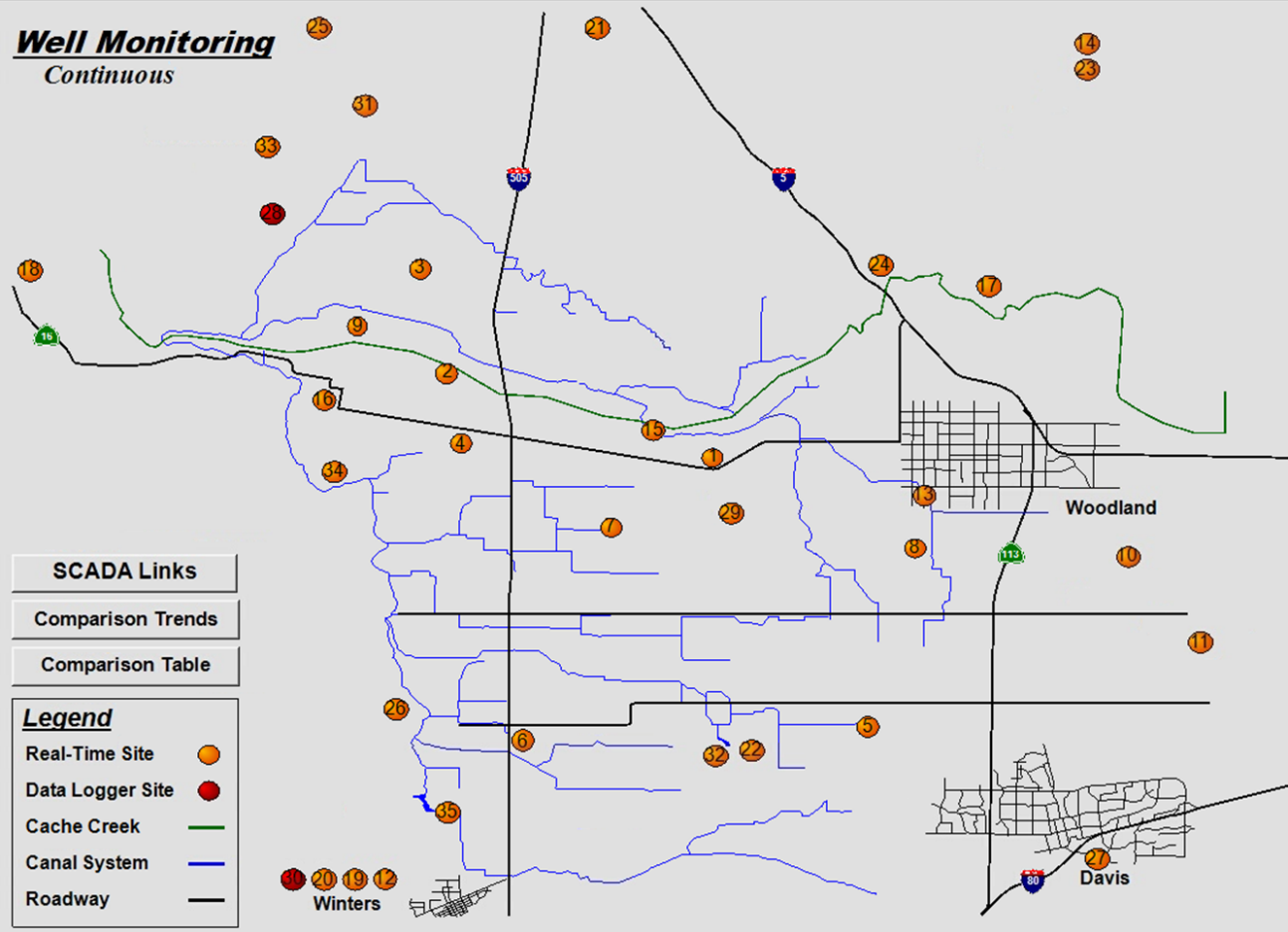
***Legend***

Real-Time Site	●
Data Logger Site	●
Cache Creek	—
Canal System	—
Roadway	—

● ● ● ● ●  
Winters

# Well Monitoring

Continuous



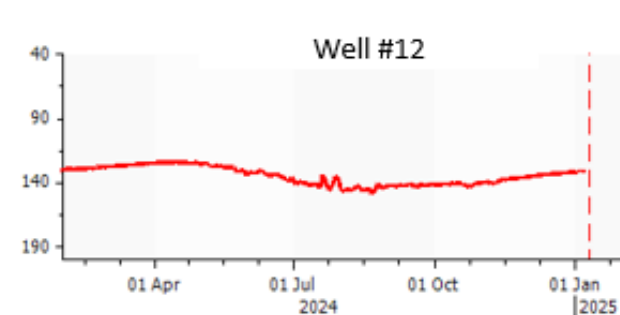
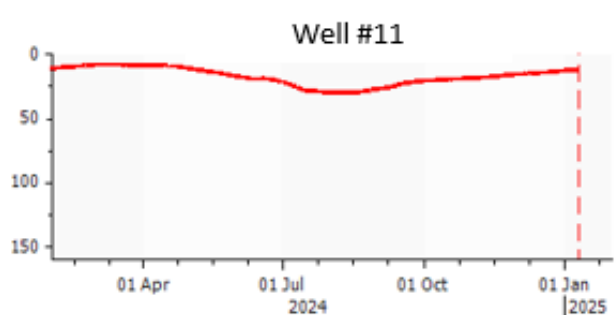
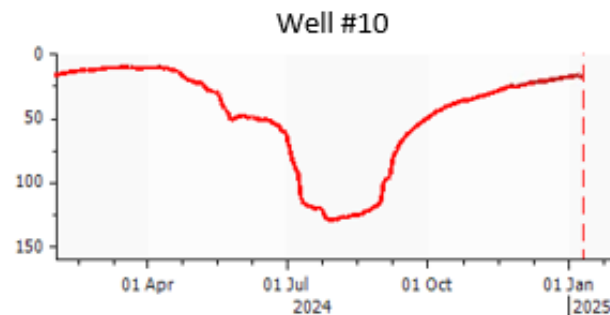
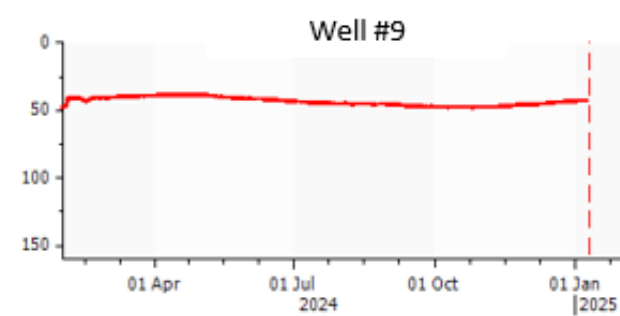
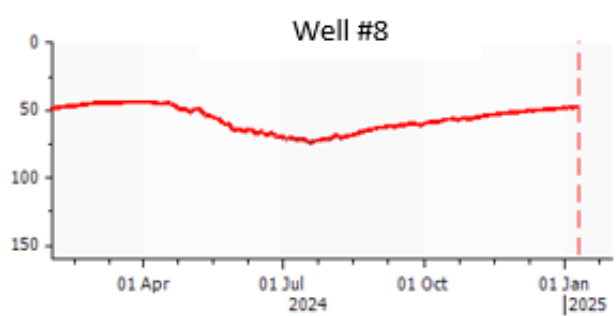
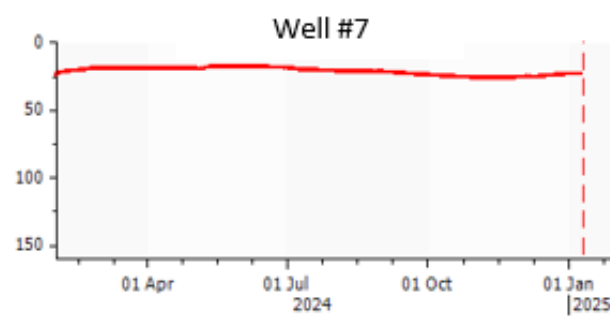
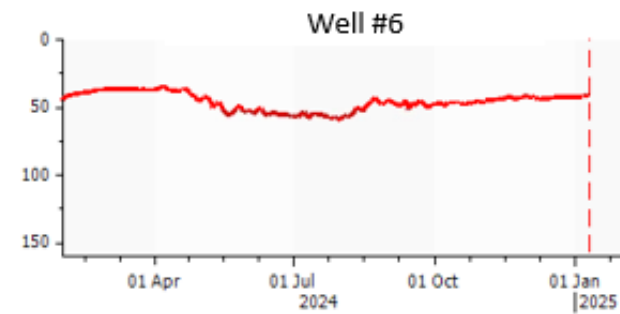
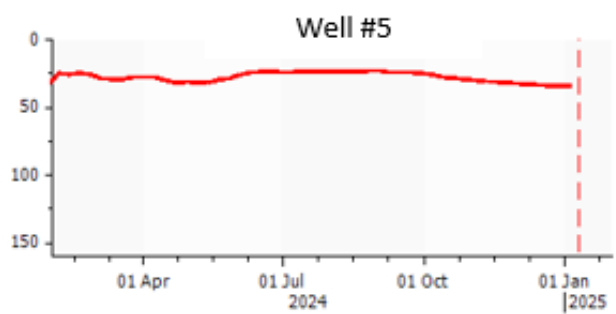
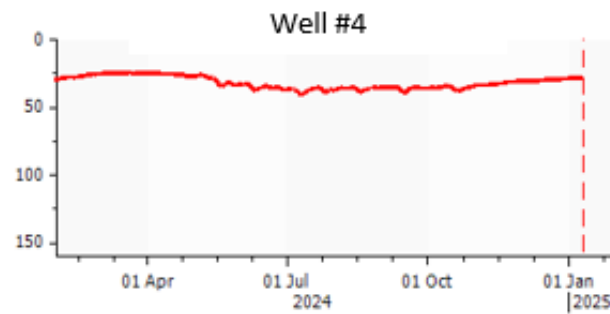
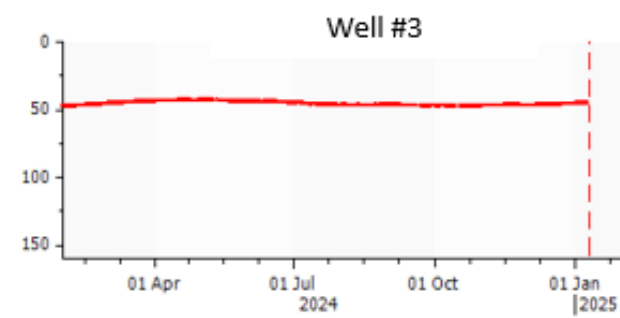
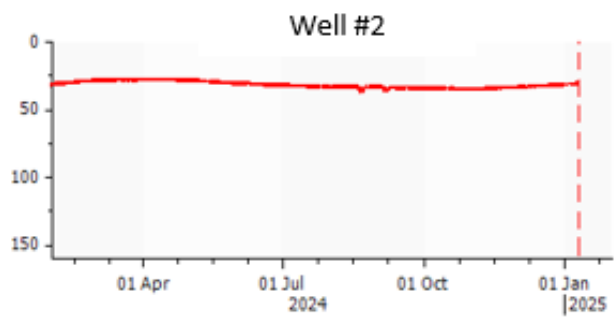
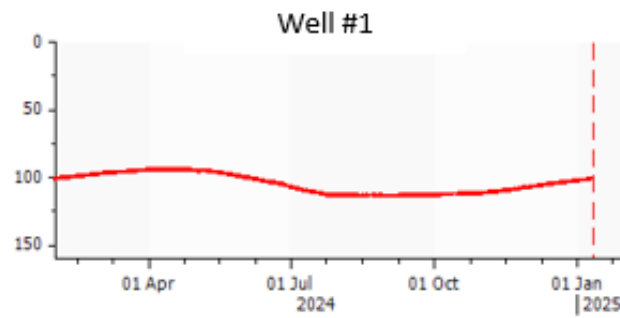
- SCADA Links
- Comparison Trends
- Comparison Table

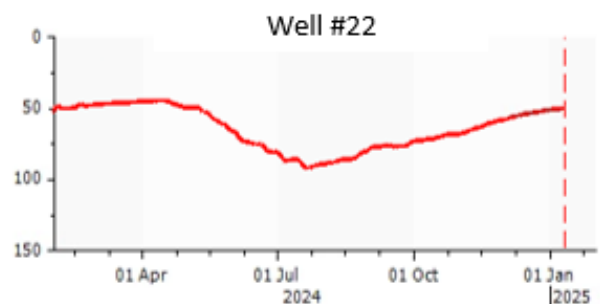
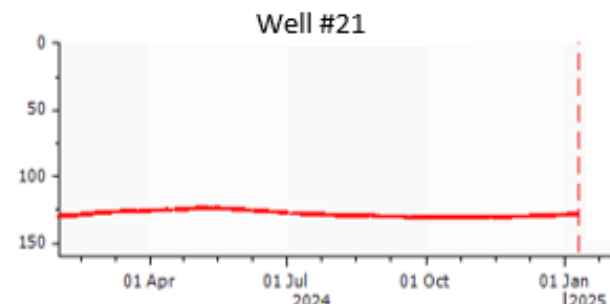
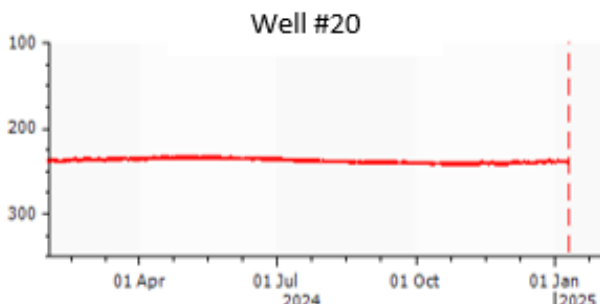
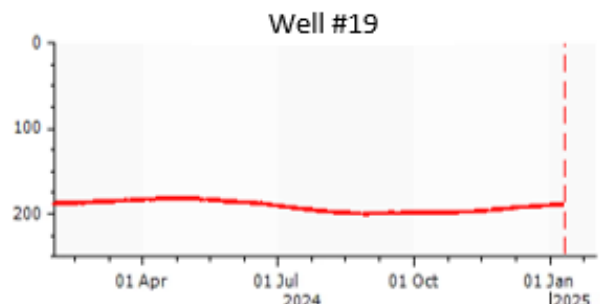
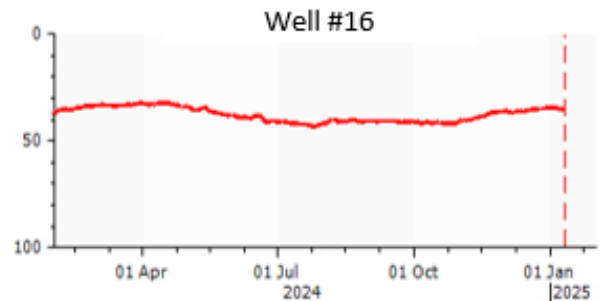
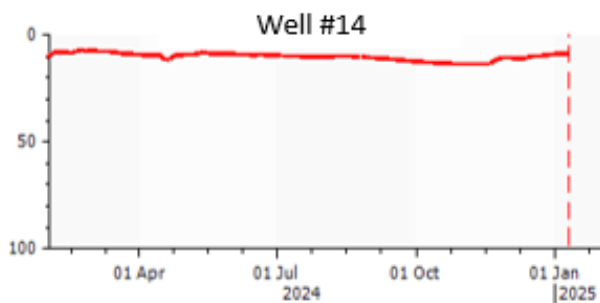
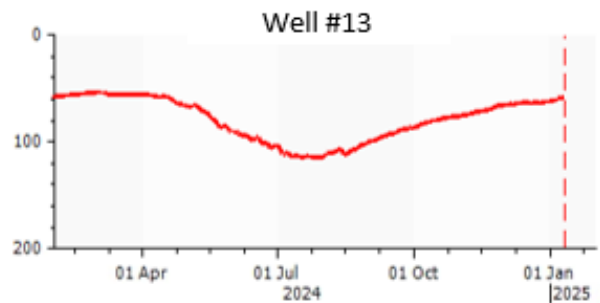
- Legend**
- Real-Time Site ●
  - Data Logger Site ●
  - Cache Creek —
  - Canal System —
  - Roadway —

# Well Monitoring

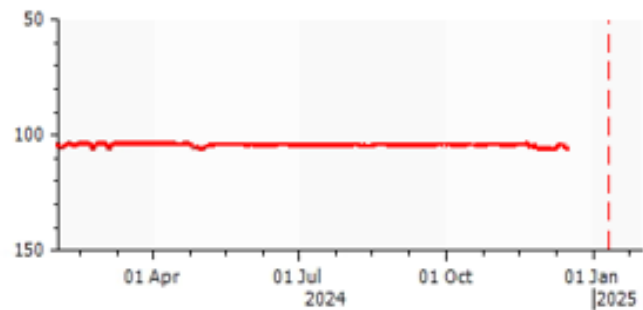
Depth to Water Historical Comparison  
(Daily Average DTW in feet)

Well	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Δ 2024 - 2025	Δ 2022 - 2025
1.	80.7	82.2	94.0	109.5	113.8	101.1	95.3	100.4	93.1	102.1	120.6	131.7	104.7	101.0	3.7	19.6
2.	30.0	28.9	37.6	43.3	47.6	33.5	30.3	31.0	29.8	32.4	39.5	50.5	32.6	30.7	1.9	8.8
3.	39.0	40.1	50.9	66.0	65.4	50.8	39.7	42.6	39.7	43.0	58.6	74.8	48.4	44.5	3.9	14.1
4.	26.1	23.2	33.5	42.1	46.4	32.4	28.8	26.9	25.4	32.4	36.3	48.3	30.4	28.0	2.4	8.3
5.	20.6	20.8	28.8	33.2	39.7	34.7	27.1	29.4	21.9	29.5	36.1	39.0	35.4	34.5	.9	1.6
6.	31.4	31.4	57.5	50.3	54.8	41.1	33.3	36.5	31.3	38.4	47.8	59.4	43.7	42.4	1.3	5.4
7.		20.2	20.2	38.0	38.0	23.7	23.5	21.5	19.2	27.0	33.5	38.8	25.4	22.7	2.7	10.8
8.		52.1	52.1	64.2	67.8	60.1	44.9	47.4	37.9	47.0	59.8	68.3	50.5	47.4	3.1	12.4
9.		52.0	52.0	65.2	67.1	49.7	40.6	42.1	40.6	44.3	59.3	75.9	44.3	42.5	1.7	16.7
10.				30.5	27.5	27.5	16.3	19.6	12.3	23.4	26.2	31.8	18.9	18.3	.6	7.8
11.				15.8	16.6	12.5	10.4	12.0	9.6	14.8	12.8	15.2	12.7	12.0	.7	.9
12.								119.7	110.4	121.0	132.0	142.5	132.1	130.7	1.3	1.3
13.							56.5	57.6	49.2	58.6	69.7	75.1	60.2	58.3	1.9	11.5
14.								11.6	10.7	12.9	11.9	8.5	11.4	8.8	2.6	2.6
15s.								40.7	37.6	46.6	46.2	47.8	39.3	40.0	-7	6.1
15d.								122.4	111.2	131.1	158.5	174.5	136.1	131.1	5.0	27.4
16.								33.3	37.6	36.9	42.6	52.7	38.8	35.2	3.5	7.3
17.								20.0	26.0	26.9	31.4	37.4	24.7	19.6	5.1	5.1
18.								33.7	40.4	38.7	38.7	38.7	32.3	31.0	1.3	1.3
19.								170.7	179.8	178.6	191.1	201.7	190.0	189.2	.8	.8
20.													239.4	238.8		
21.								119.4	127.8	127.8	136.1	141.9	130.4	128.1	2.3	2.3
22.											59.8	68.3	54.8	50.1	4.8	4.8
23.											27.8	30.5	26.6	25.8	.8	.8
24.											58.1	68.4	48.3	44.0	4.3	4.3
25.												105.4	103.6			
26.												112.6	79.7	72.9	6.9	
27.												52.0	47.0	48.2	-1.3	
28.																
29.												106.0	72.7	67.0	5.7	
30.												116.9	114.7			
31.												225.7	202.2	197.0	5.3	
32.													119.0	114.5	4.5	

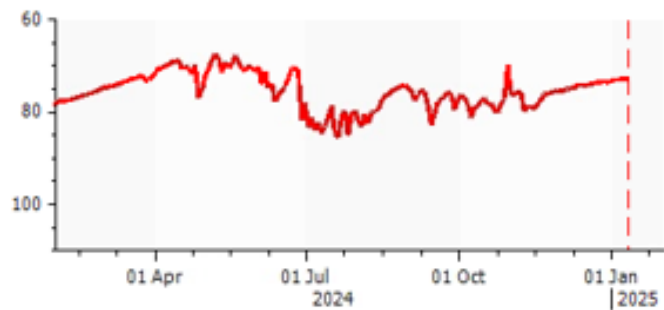




Well #25



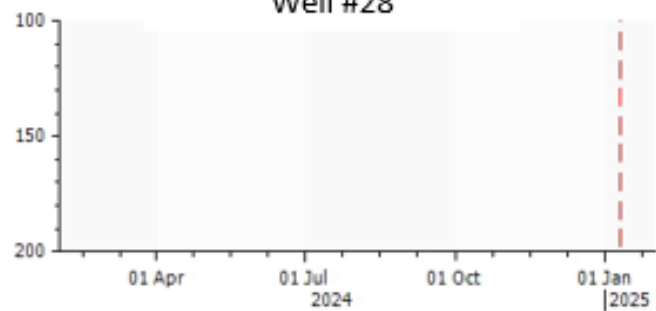
Well #26



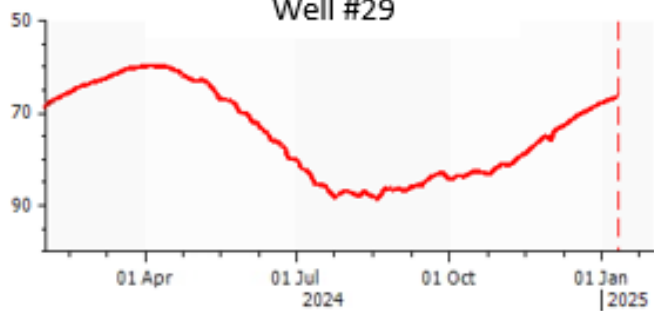
Well #27



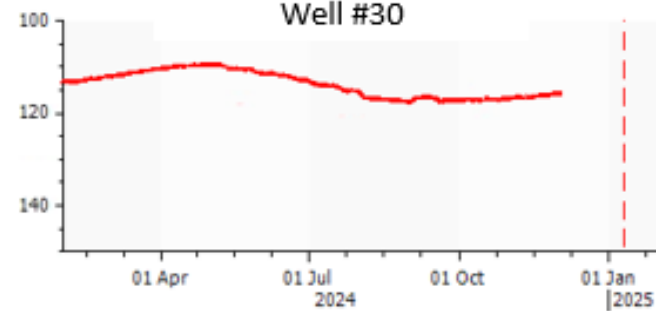
Well #28



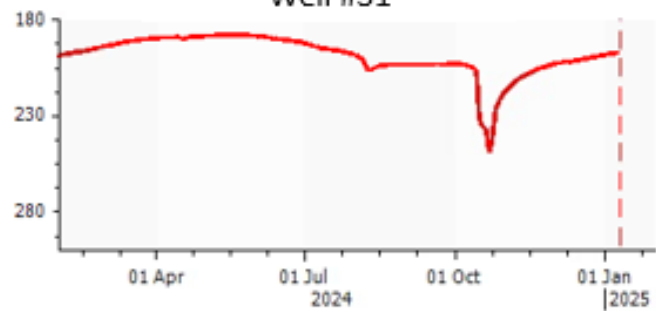
Well #29



Well #30

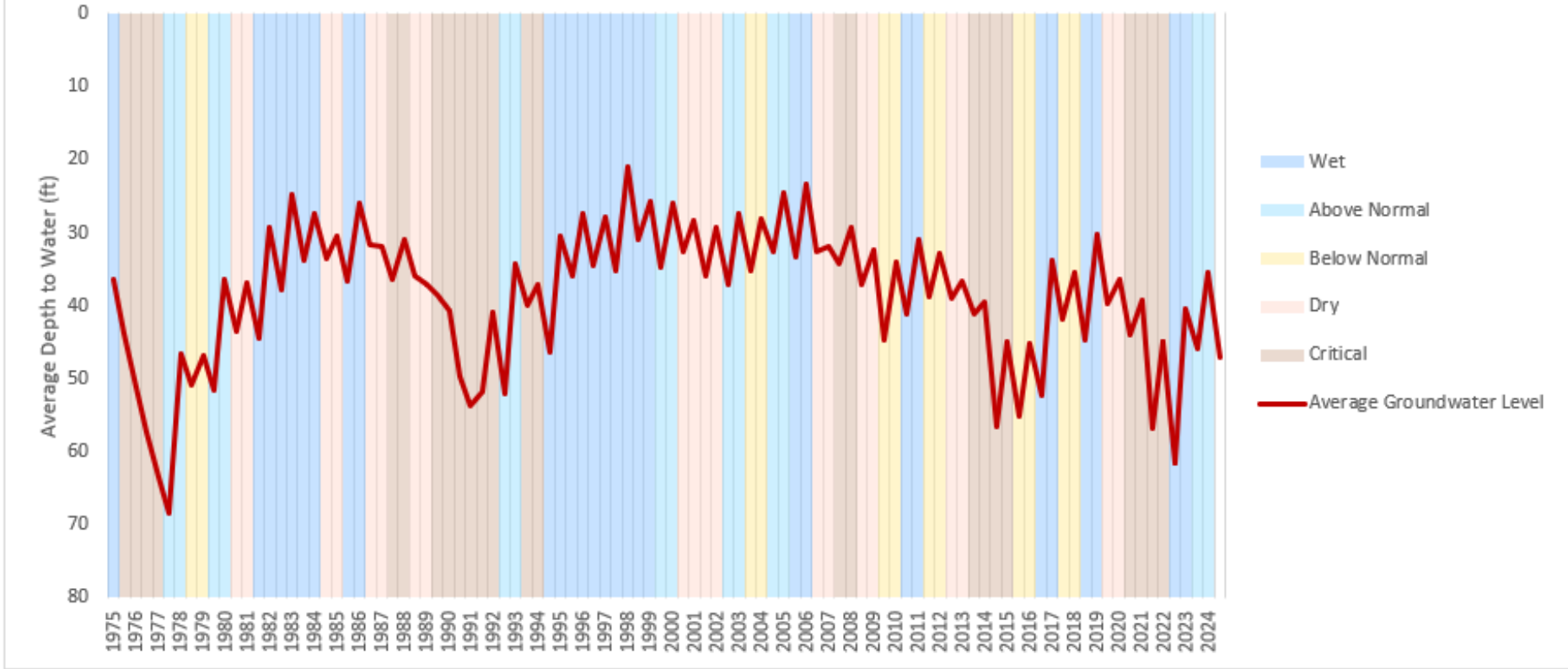


Well #31





## Yolo Subbasin Average Groundwater Representative Wells - Depth by Season (62 Wells)



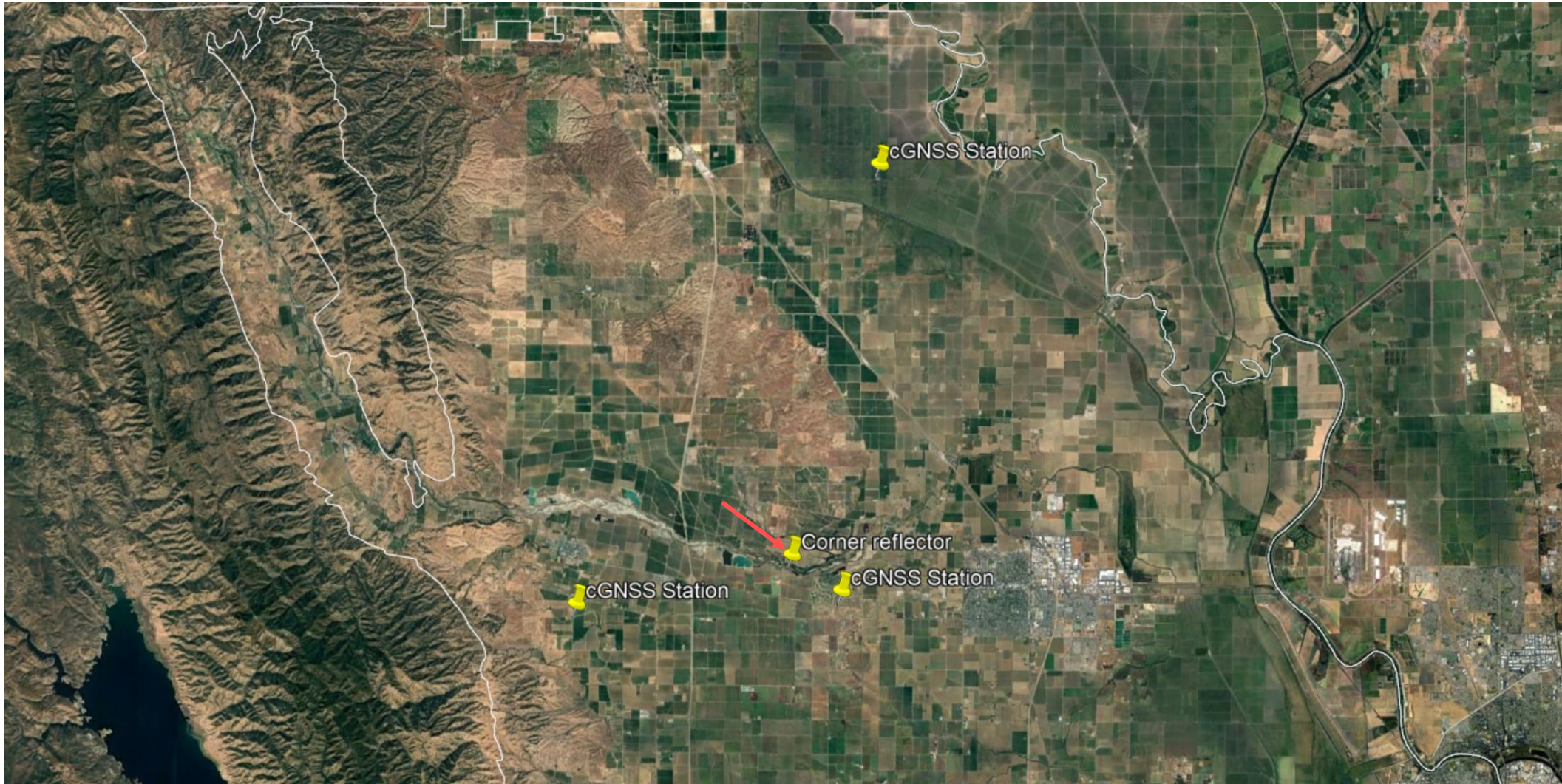
September 2023 Average Depth to Water ~ 45.9 feet

September 2024 Average Depth to Water ~ 46.9 feet

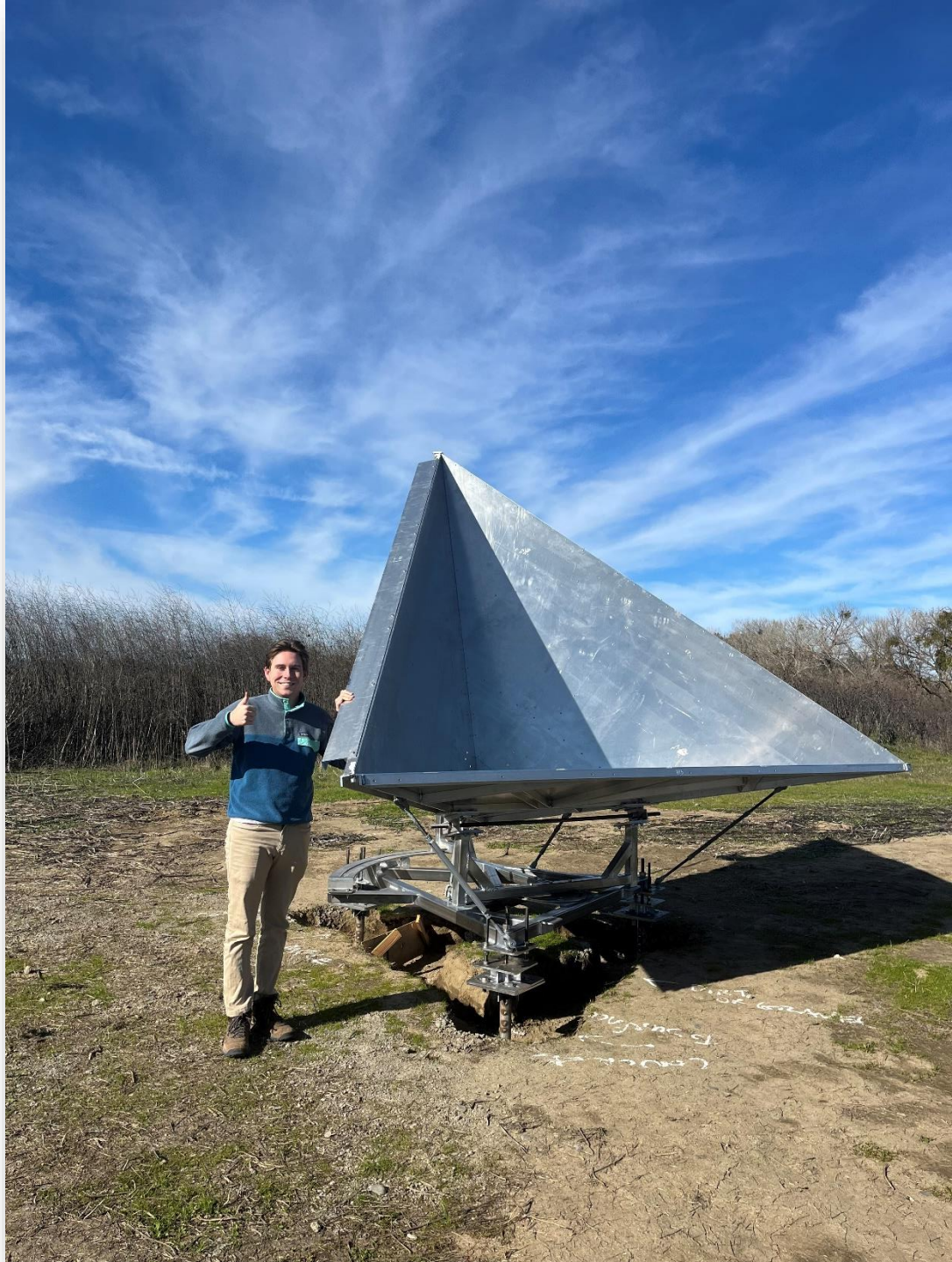
**Of Note:**

- Fall 1975 to Fall 1977 Drawdown ~ 25 feet
- 2014 Drawdown from Spring to Fall ~ 17 feet
- 2019 Drawdown from Spring to Fall ~ 9.5 ft
- 2022 Drawdown from Spring to Fall ~ 17 feet
- 2024 Drawdown from Spring to Fall ~ 11 feet

# DWR Continuous GPS Stations

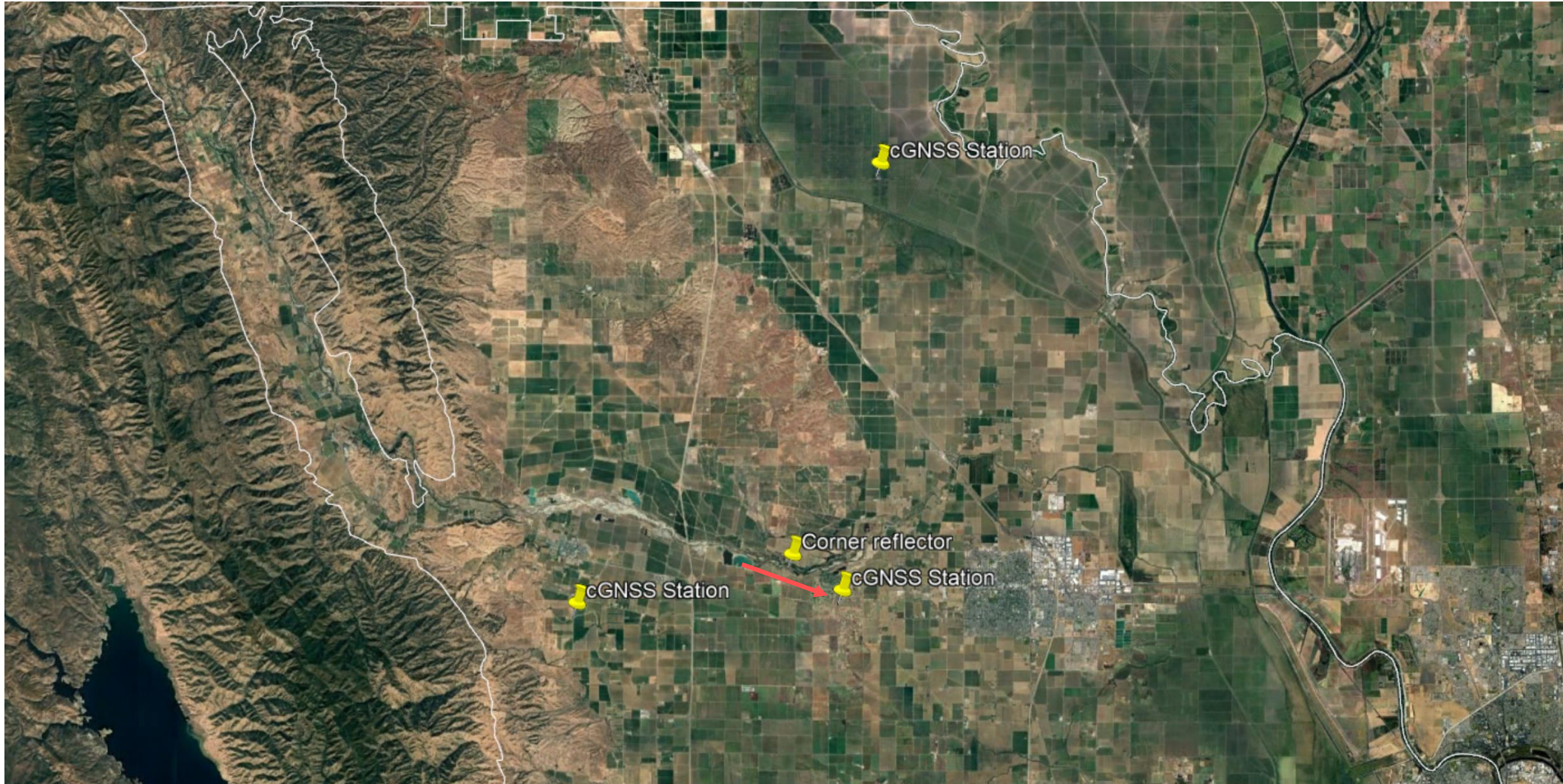








# DWR Continuous GPS Stations

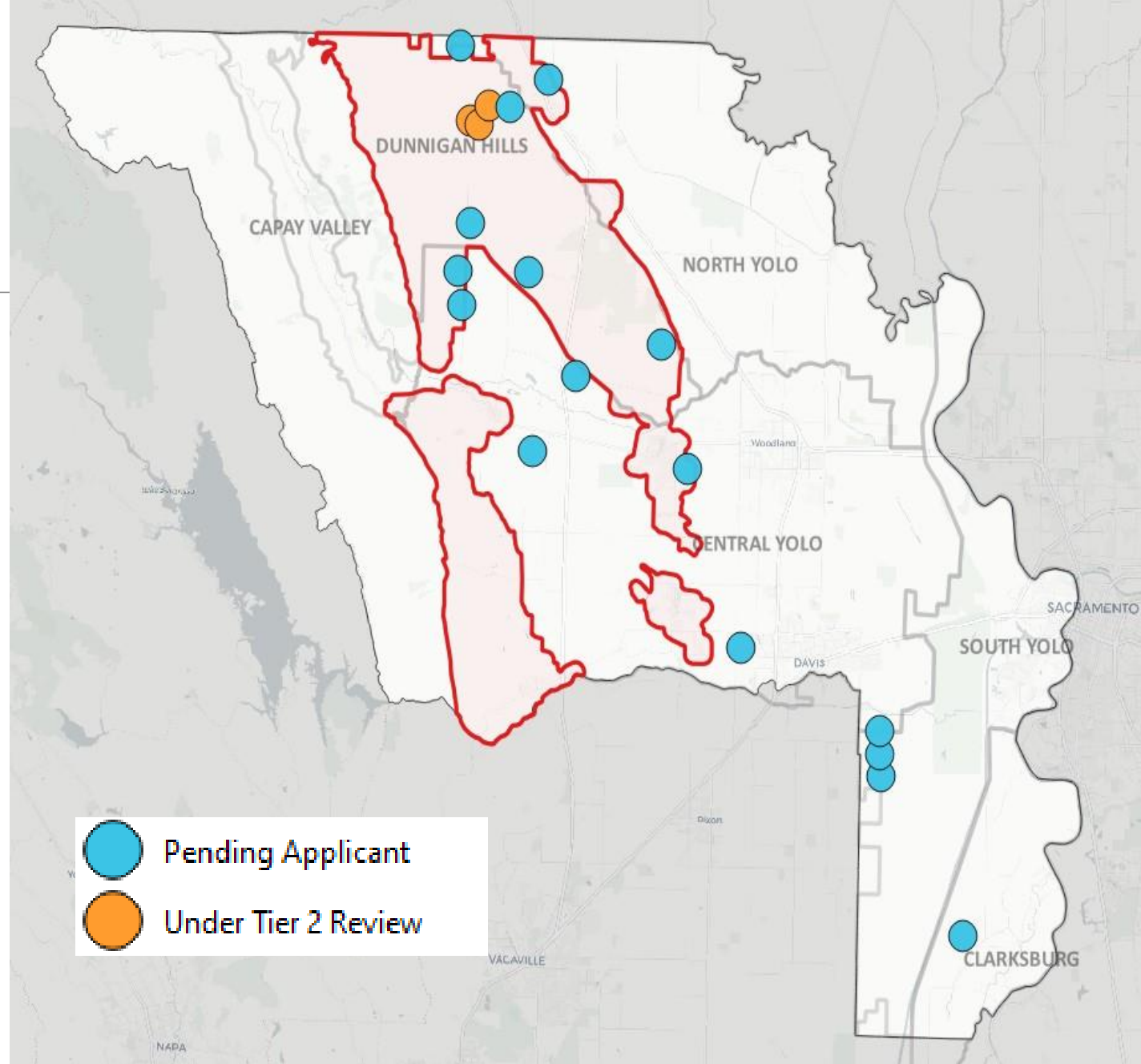






# Pending Well Permits

- 19 permits in the queue
  - ✓ 12 within the Focus Areas
    - 3 completed Tier 1 review and now require a Tier 2 analysis
    - 9 pending completed Tier 1 Form
  - ✓ 7 outside of Focus Areas
    - All pending information from applicant

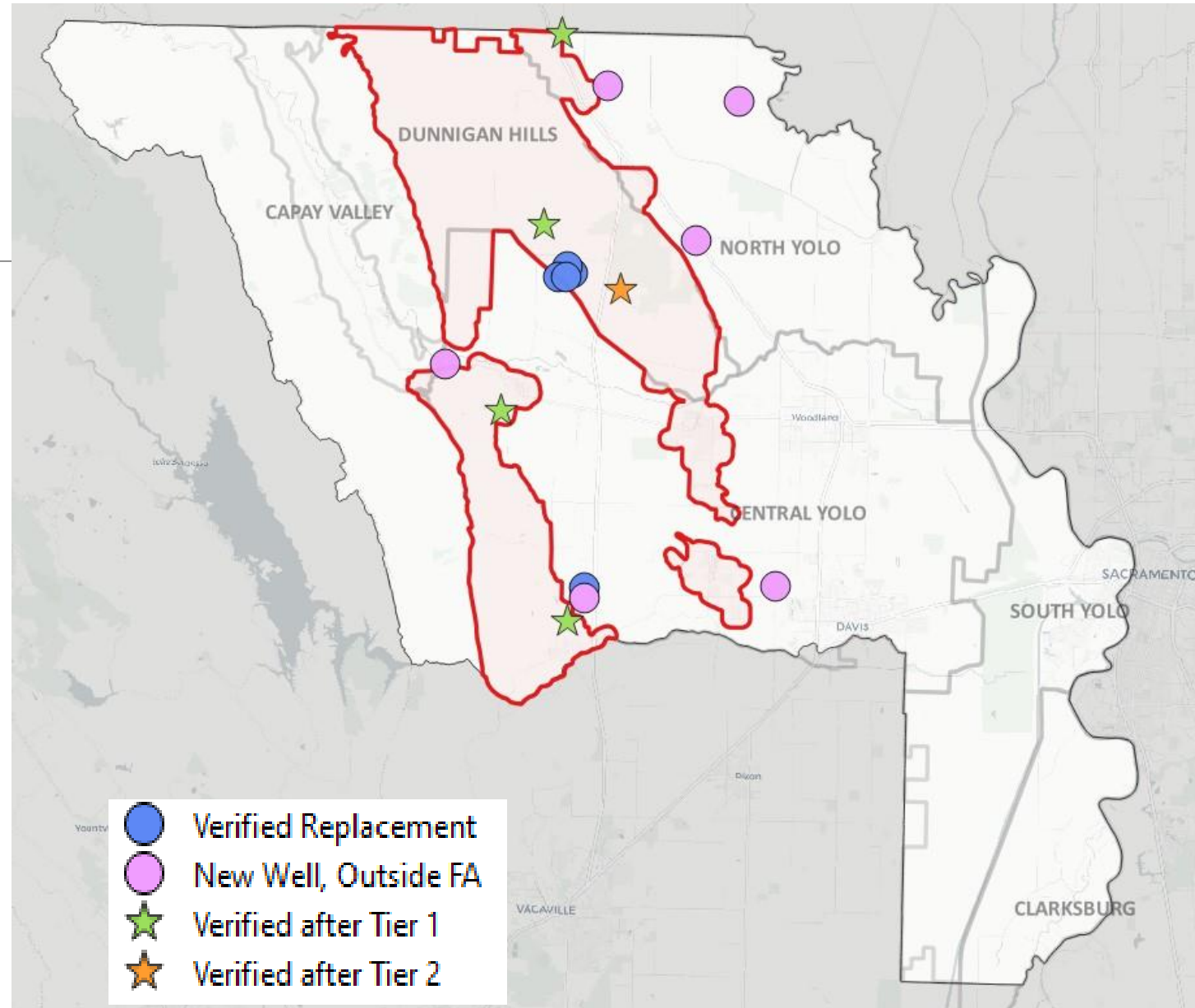




# Approved Well Permits

Since March 18, 2024 Procedures, YSGA has verified:

- 7 permits outside of Focus Areas
  - ✓ 6 new wells
  - ✓ 1 replacement
- Within Focus Areas:
  - ✓ 4 permits verified as replacements
  - ✓ 4 permits verified after Tier 1
  - ✓ 1 permit verified after Tier 2



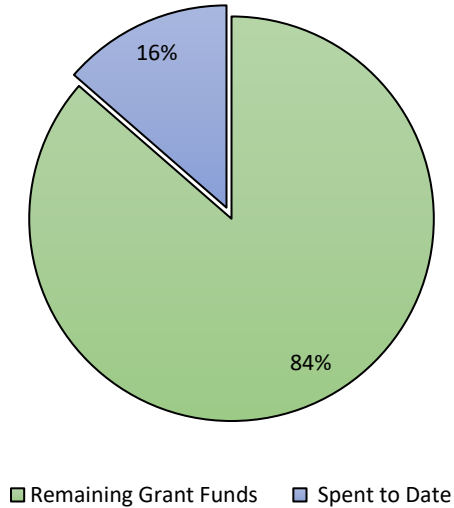


# GRANT BUDGET UPDATE



Grant Expenses through December 31, 2024

Grant Component	Remaining Grant Funds	Spent to Date
<b>Total</b>	<b>\$ 7,917,000</b>	<b>\$ 1,246,088</b>
<b>1. GRANT ADMINISTRATION</b>	<b>\$ 613,950</b>	<b>\$ 86,924</b>
<b>2. YOLO SUBBASIN GSP IMPLEMENTATION</b>	<b>\$ 1,721,000</b>	<b>\$ 452,198</b>
<i>YSGA</i>	\$ 460,000	\$ 65,963
<i>Consultant</i>	\$ 1,261,000	\$ 386,235
<b>3. YCFCWCD WINTER RECHARGE PROGRAM</b>	<b>\$ 2,600,000</b>	<b>\$ 299,070</b>
<i>YCFC&amp;WCD</i>	\$ 1,175,000	\$ 250,205
<i>Consultant</i>	\$ 1,425,000	\$ 48,866
<b>4. CITY OF WINTERS FEASIBILITY STUDIES</b>	<b>\$ 580,000</b>	<b>\$ 37,715</b>
<b>5. YOLO-ZAMORA GROUNDWATER RECHARGE PILOT PROJECT</b>	<b>\$ 1,221,100</b>	<b>\$ 334,921</b>
<i>YCFC&amp;WCD + YCFC&amp;WCD Consultants</i>	\$ 401,300	\$ 217,922
<i>YSGA</i>	\$ 105,000	\$ 2,676
<i>Consultant</i>	\$ 714,800	\$ 114,323
<b>6. DUNNIGAN AREA RECHARGE PROGRAM</b>	<b>\$ 1,180,950</b>	<b>\$ 35,261</b>



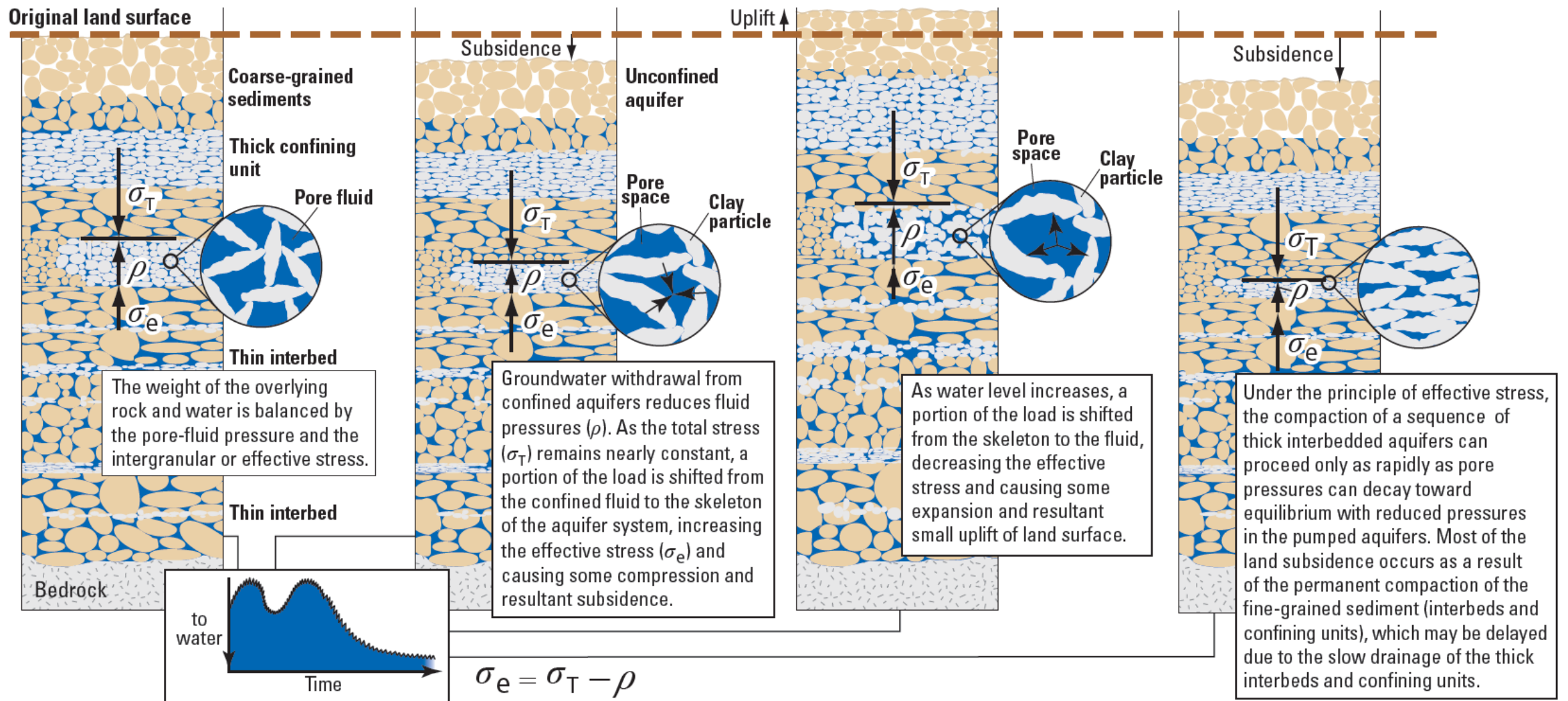
# Agenda

1. Call to Order and Determination of Quorum
2. Adding Items to the Posted Agenda
3. Public Forum
4. CONSIDERATION: Consent Items
5. Report of the Chair and Executive Officer
- 6. Update: Land Subsidence**
7. Update: SGMA Implementation Grant Projects
8. Members' Reports and Future Agenda Items
9. Next Meeting - March 17, 2025
10. Adjournment

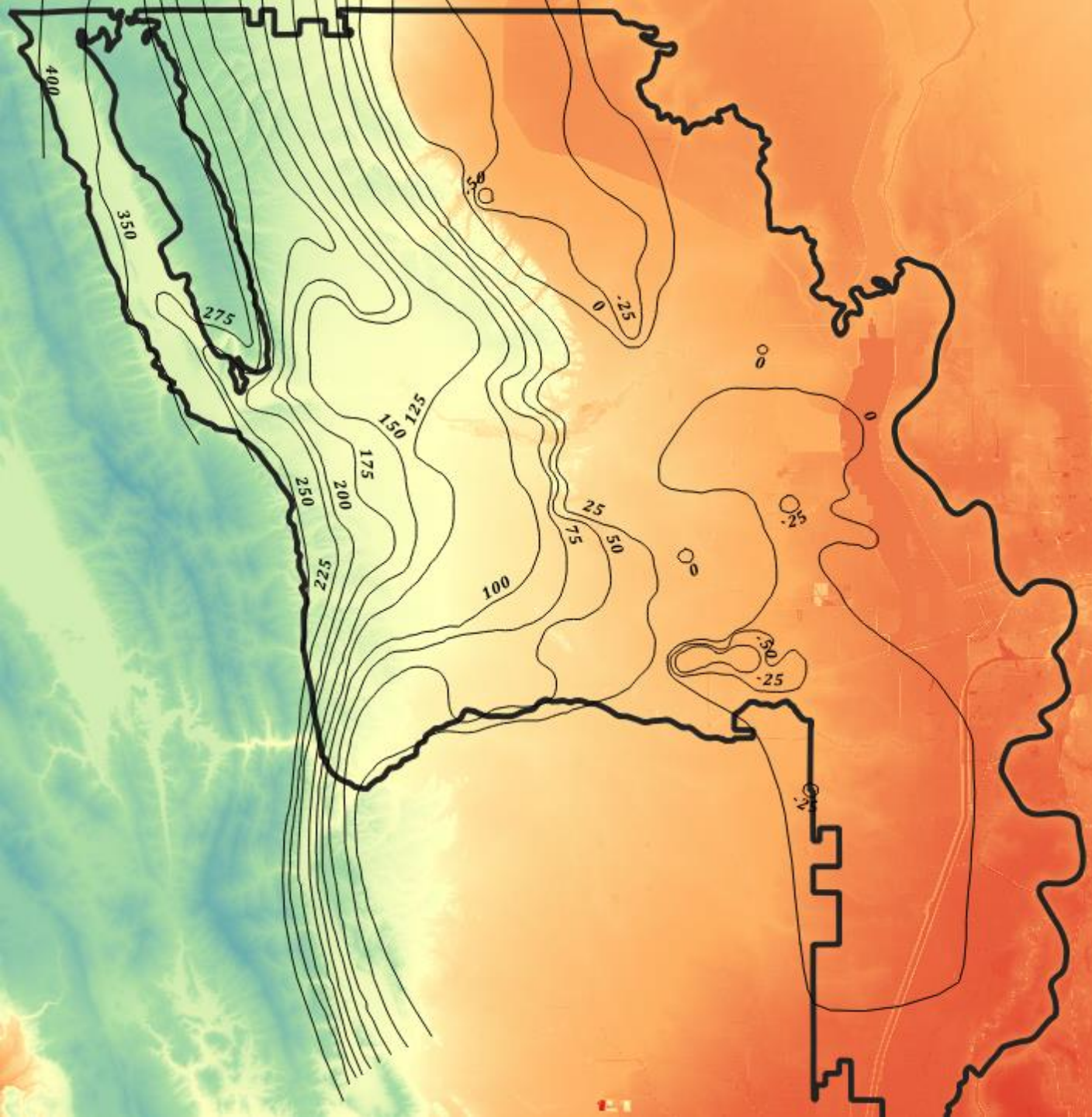
# NCWA/DWR Land Subsidence Forum

- NCWA, DWR, and Sac Valley GSAs met on December 12
- Q1 2025: DWR will release a draft *Land Subsidence Best Management Practices* (BMP) and scientific findings document **to guide GSAs through future regulations**
- DWR will develop new regulations to require GSAs to take immediate actions to prevent more land from sinking due to overdrafting aquifers
  - *“New regs will require GSAs to shore up monitoring, develop a better understanding of the hydrologic modeling, detail basin vulnerabilities, gather more information on the extraction wells, and home in on the infrastructure impacted by subsidence.”*
- Regulations will likely result in a change in management of groundwater pumping

# A Primer on How Land Subsidence Occurs



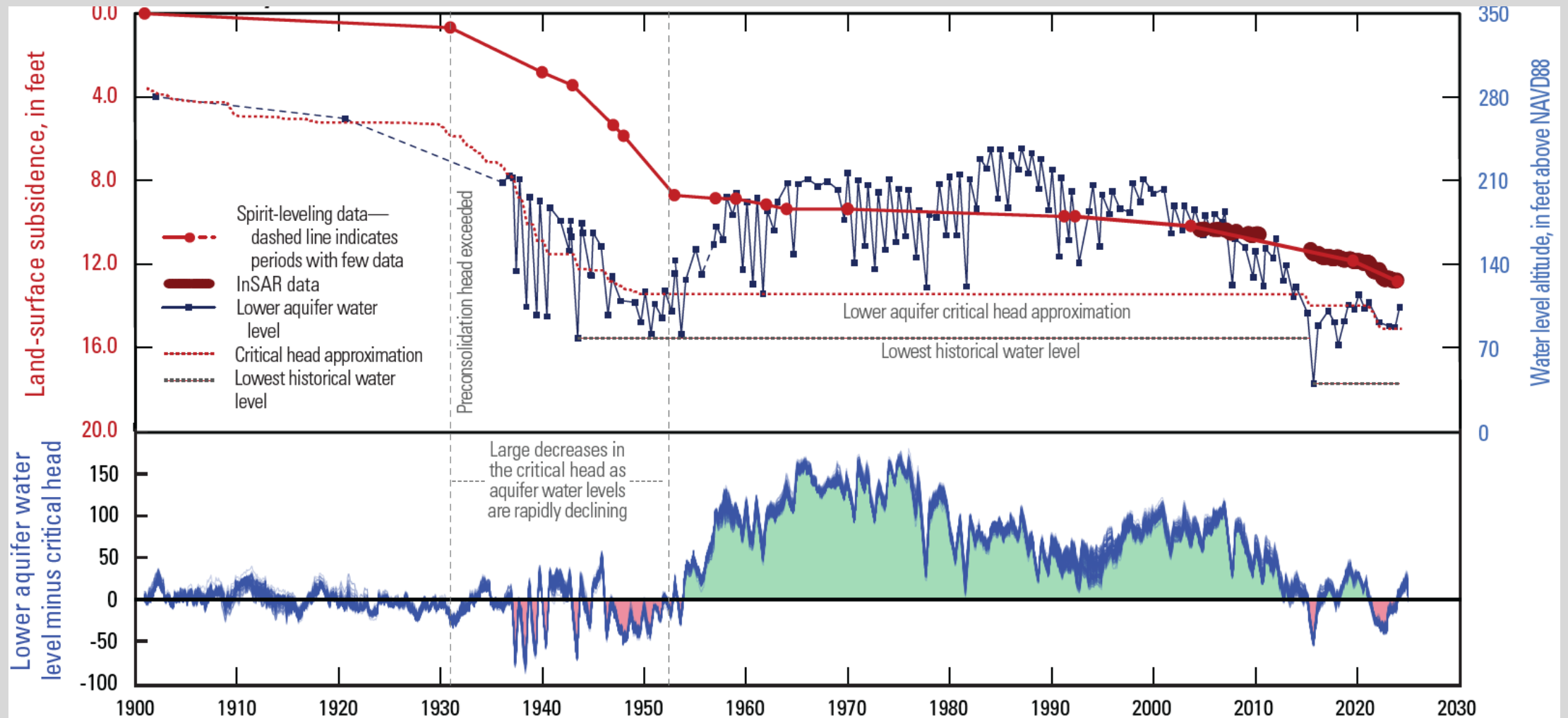




## FALL 2024 GROUNDWATER ELEVATION (DRAFT)

Figure shows groundwater elevation of *both* shallow unconfined and deeper semi-confined to confined aquifers

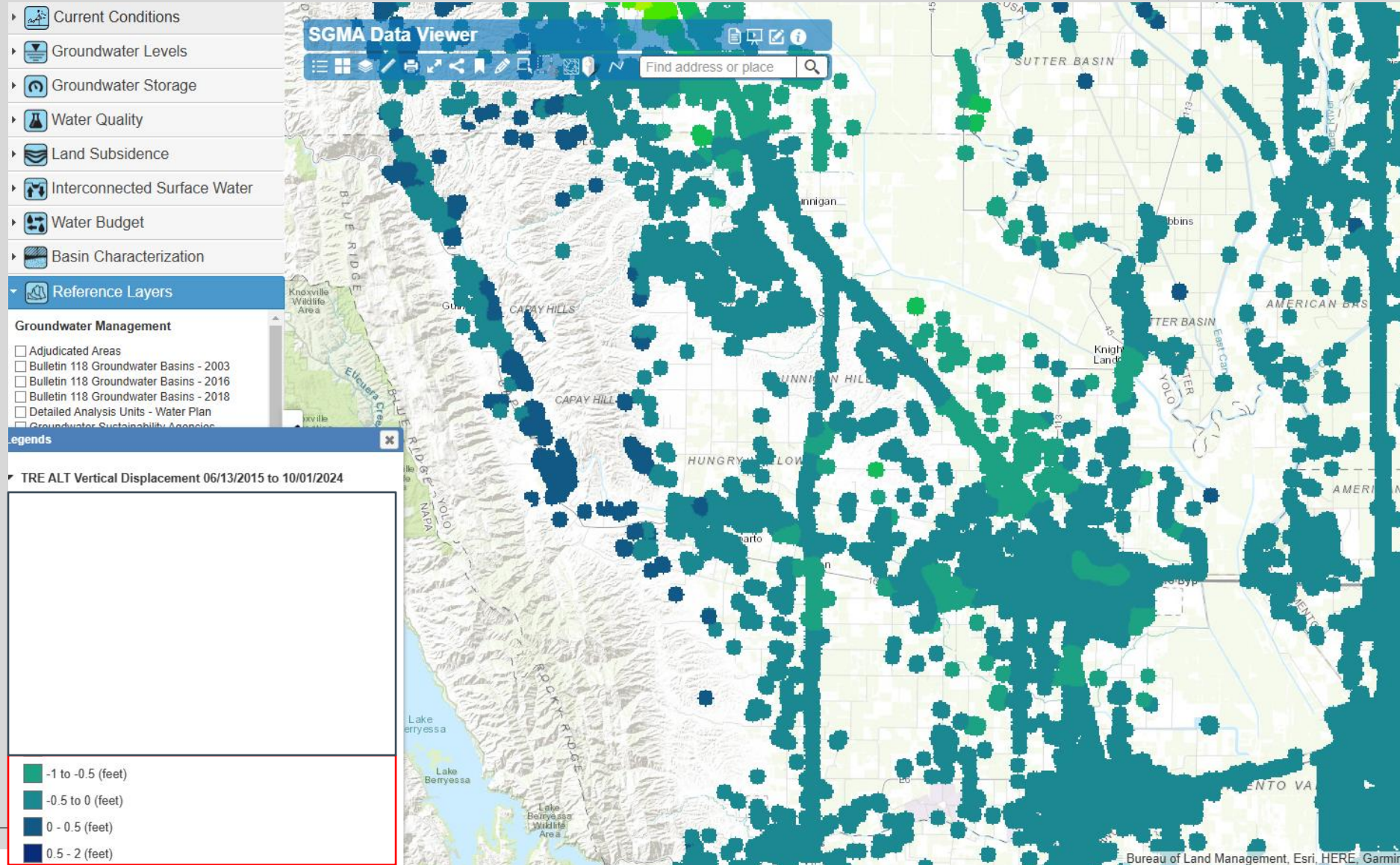
# Subsidence BMP – Estimating Critical Head



The critical head approximation shown on this figure was determined using a one-dimensional model where the groundwater level in the groundwater flow cell and the lowest groundwater level in the interbed delay cell are differenced. The critical head approximation is based on a model ensemble of about 200 realizations (individual models).

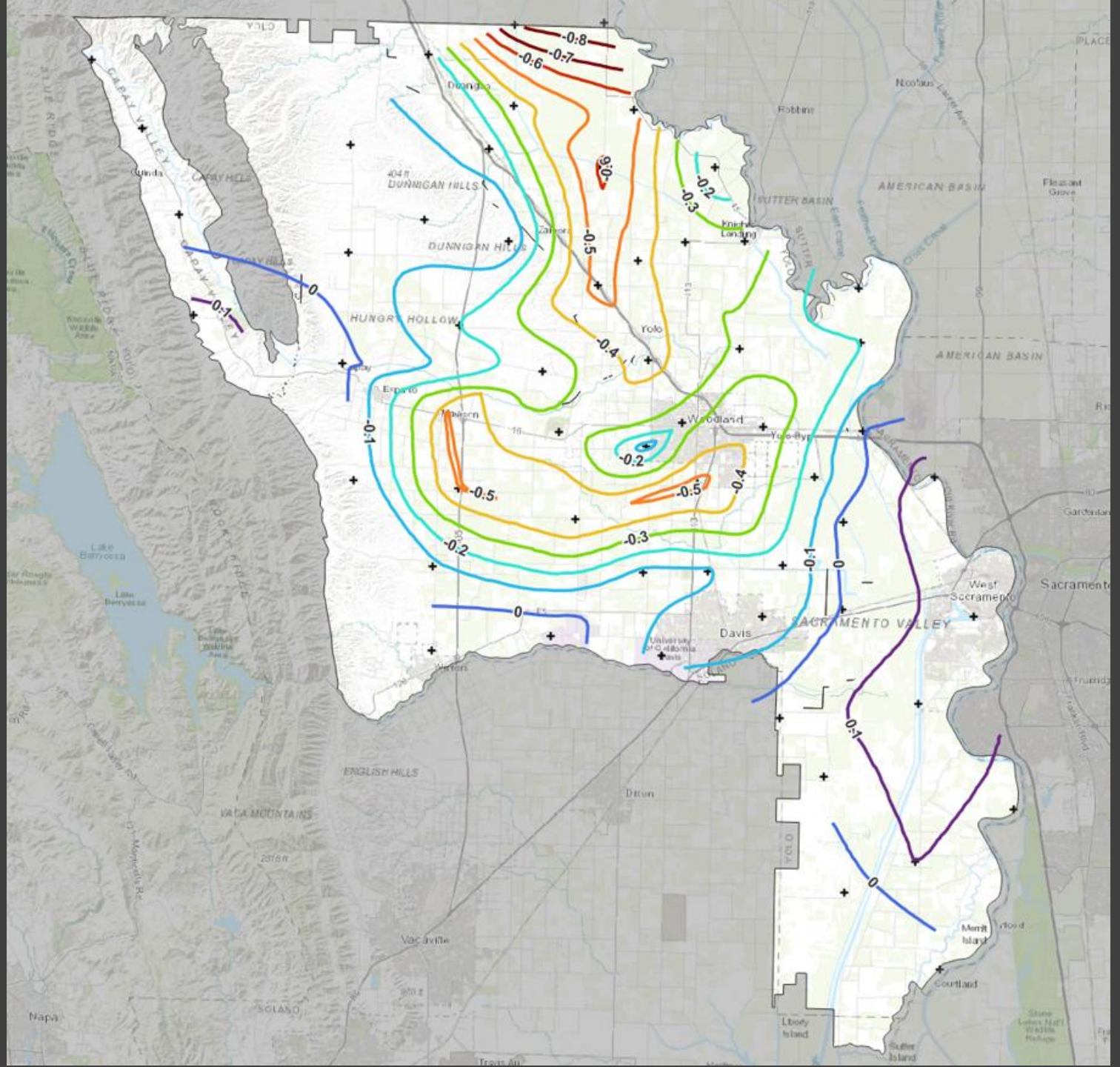


# Total Subsidence Since 2015 (InSAR)





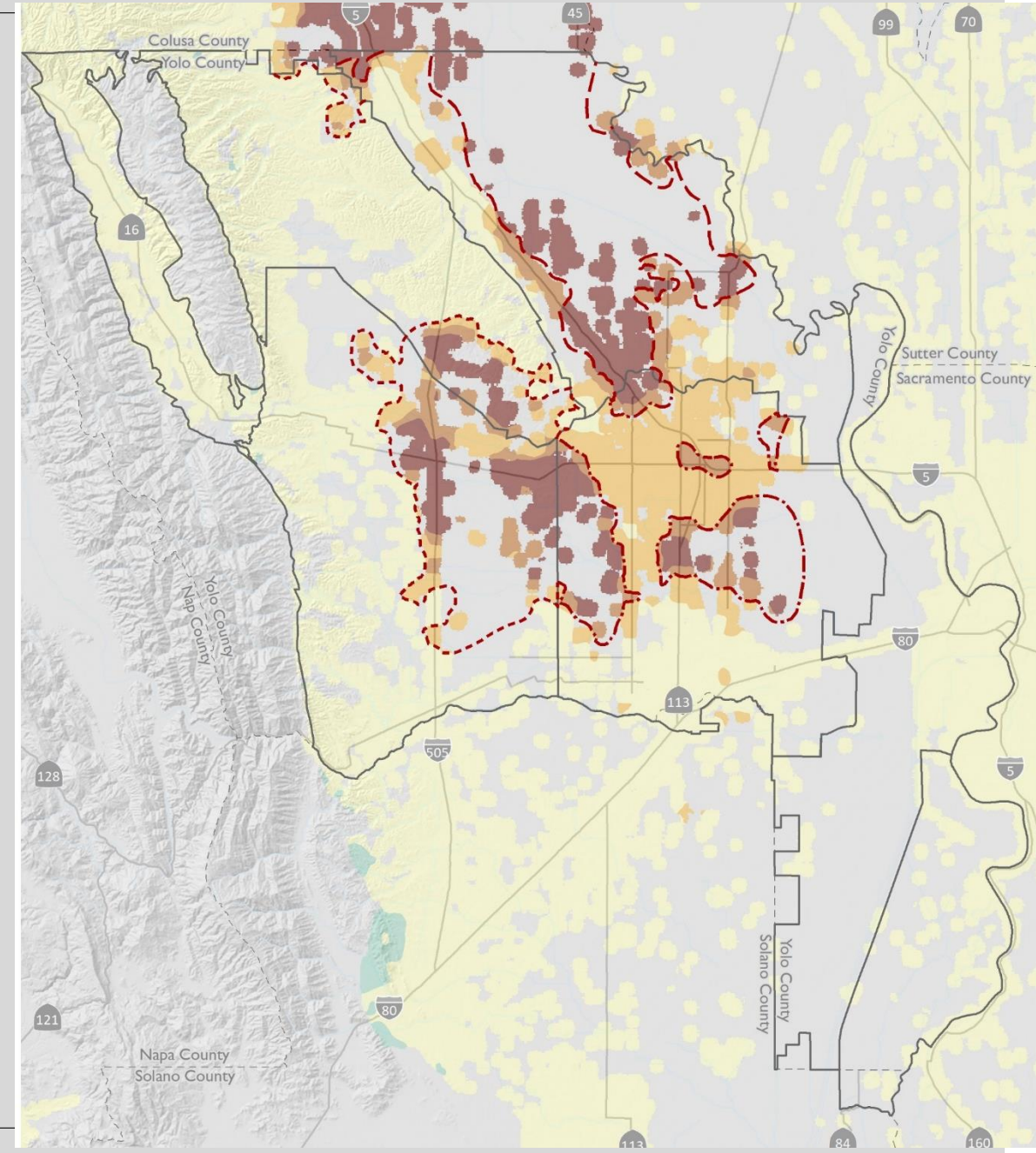
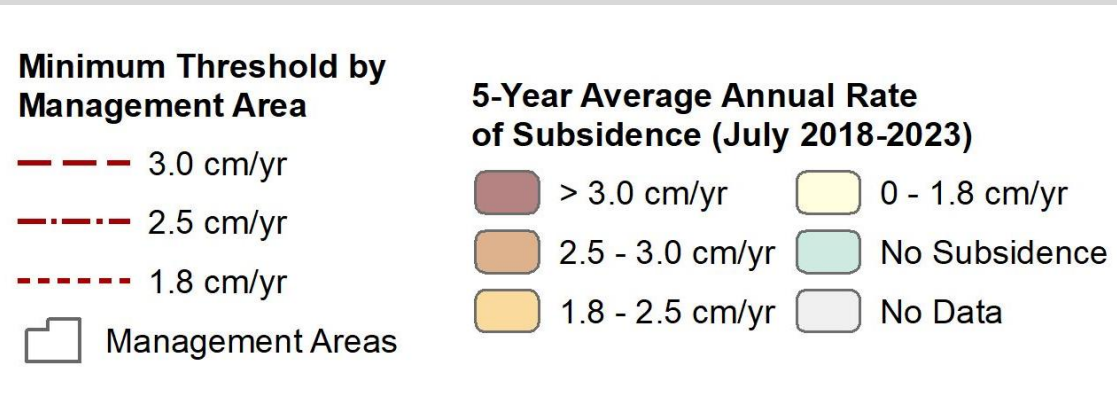
# TOTAL SUBSIDENCE SINCE 2017 (GPS)



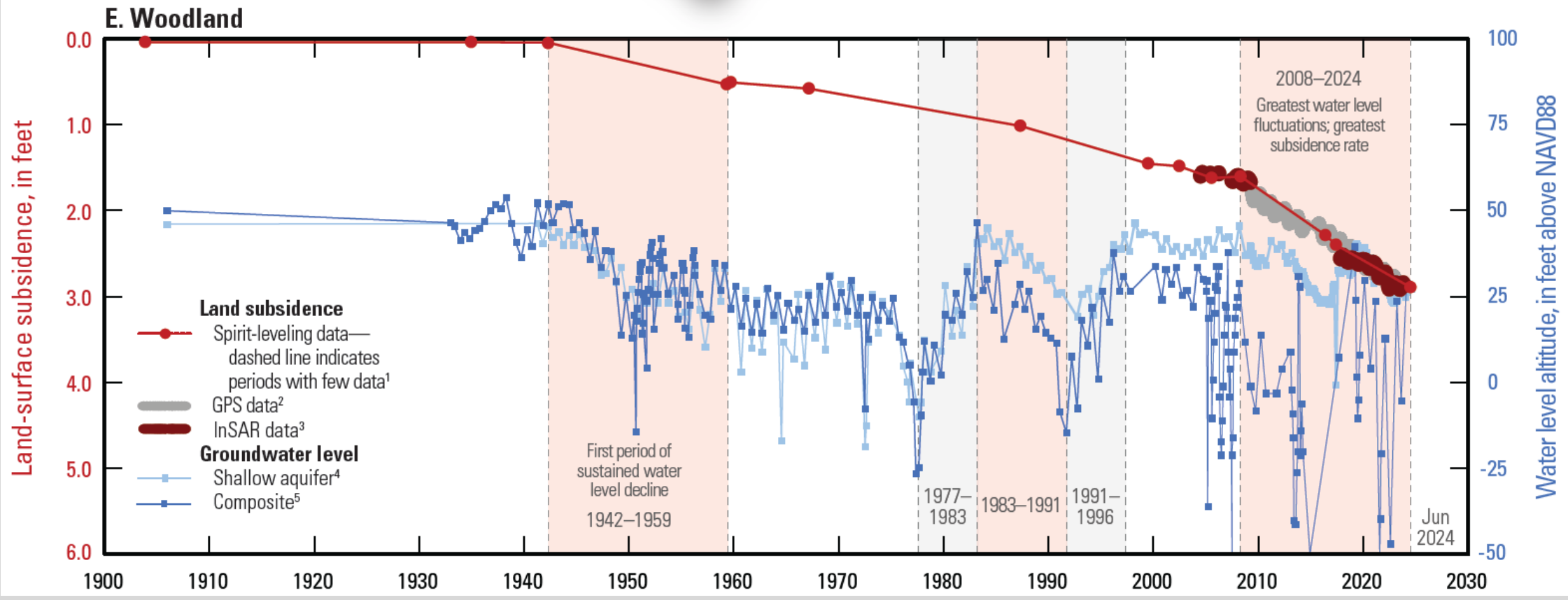
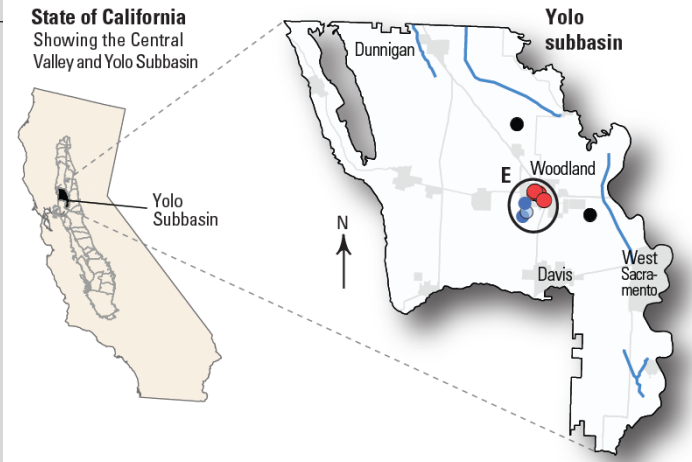


# Rates of Subsidence in Yolo

- Subsidence rates between July 2018 and July 2023
- Rates of subsidence in multiple areas *exceeded* the GSP defined Minimum Threshold *rates* during this period



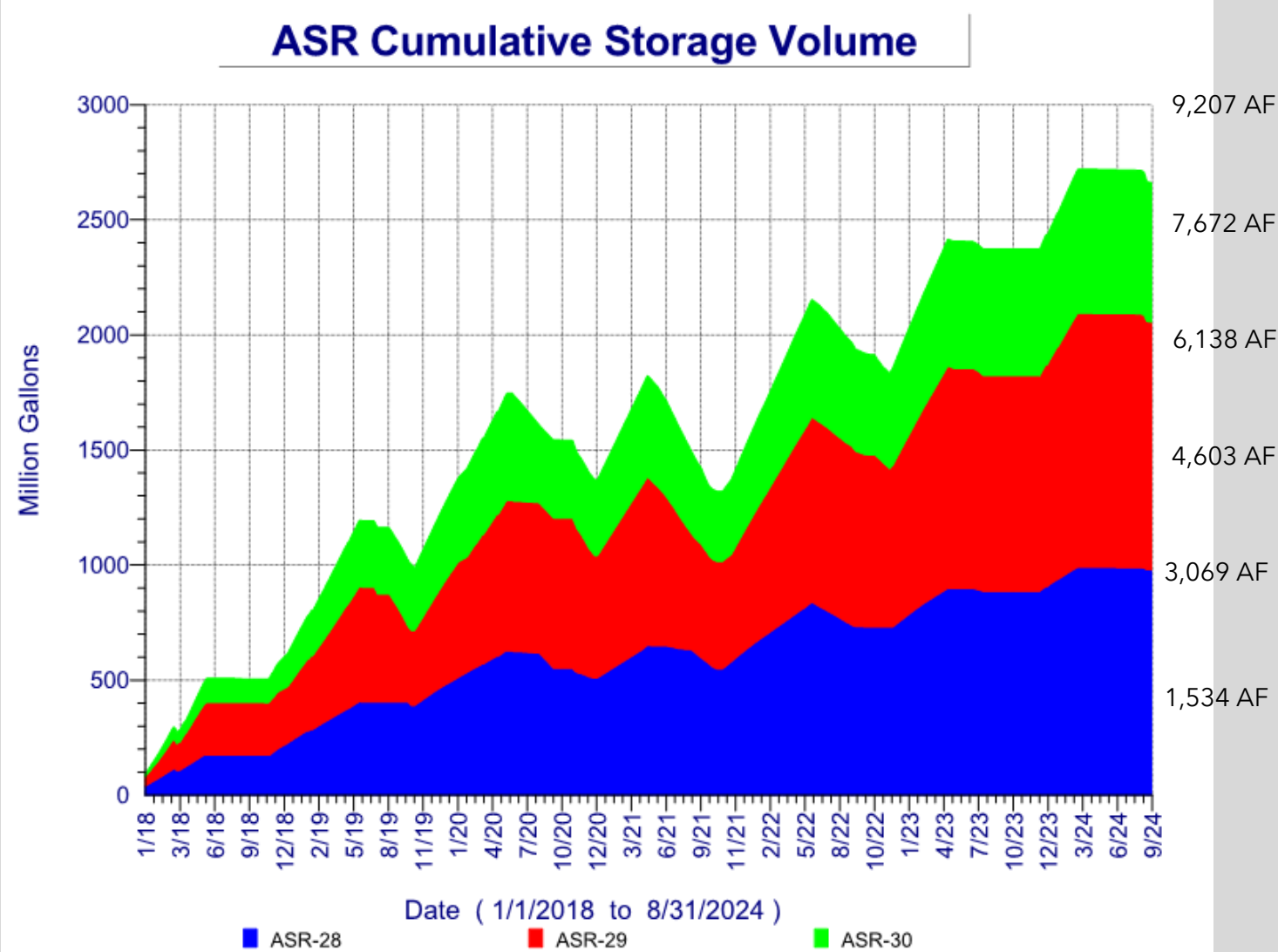
# One Example from Woodland





BUT THERE IS SOME  
GOOD NEWS!

# City of Woodland Aquifer Storage & Recovery Program



# Improving Water Quality in Woodland

Water Quality Parameter	Finished Surface Water (Current Supply)	Groundwater (Former Supply)	Percentage Change
Magnesium (mg/L)	5.4 - 6.5	48.0	89% reduction
Chromium VI (ppb)	0 (non detect)	18	Not Present
Nitrate (as N) (mg/L)	0 (non detect)	5-9	Not Present
Total Hardness as CaCO <sub>3</sub> (mg/L)	53 (3.1 grains)	382 (22 grains)	87% reduction
Sodium (mg/L)	14	60	77% reduction
Chloride (mg/L)	12	73	84% reduction
Sulfate (mg/L)	5.0 - 20	38	87% reduction
Total Dissolved Solids (mg/L)	95	531	82% reduction
Specific Conductance (EC)	190	926	81% reduction
Lead (mg/L)	0 (non detect)	Non detect	Not Present
Alkalinity (mg/L as CaCO <sub>3</sub> )	53	338	84% reduction
Boron (mg/L)	0 (non detect)	2.35	Not Present

Together, we can figure out a solution!





# Agenda

1. Call to Order and Determination of Quorum
2. Adding Items to the Posted Agenda
3. Public Forum
4. CONSIDERATION: Consent Items
5. Report of the Chair and Executive Officer
6. Update: Land Subsidence
- 7. Update: SGMA Implementation Grant Projects**
8. Members' Reports and Future Agenda Items
9. Next Meeting - March 17, 2025
10. Adjournment



# GSP IMPLEMENTATION



# Hungry Hollow Groundwater Working Group



**Third workshop held on  
December 11**



## **Discussed:**

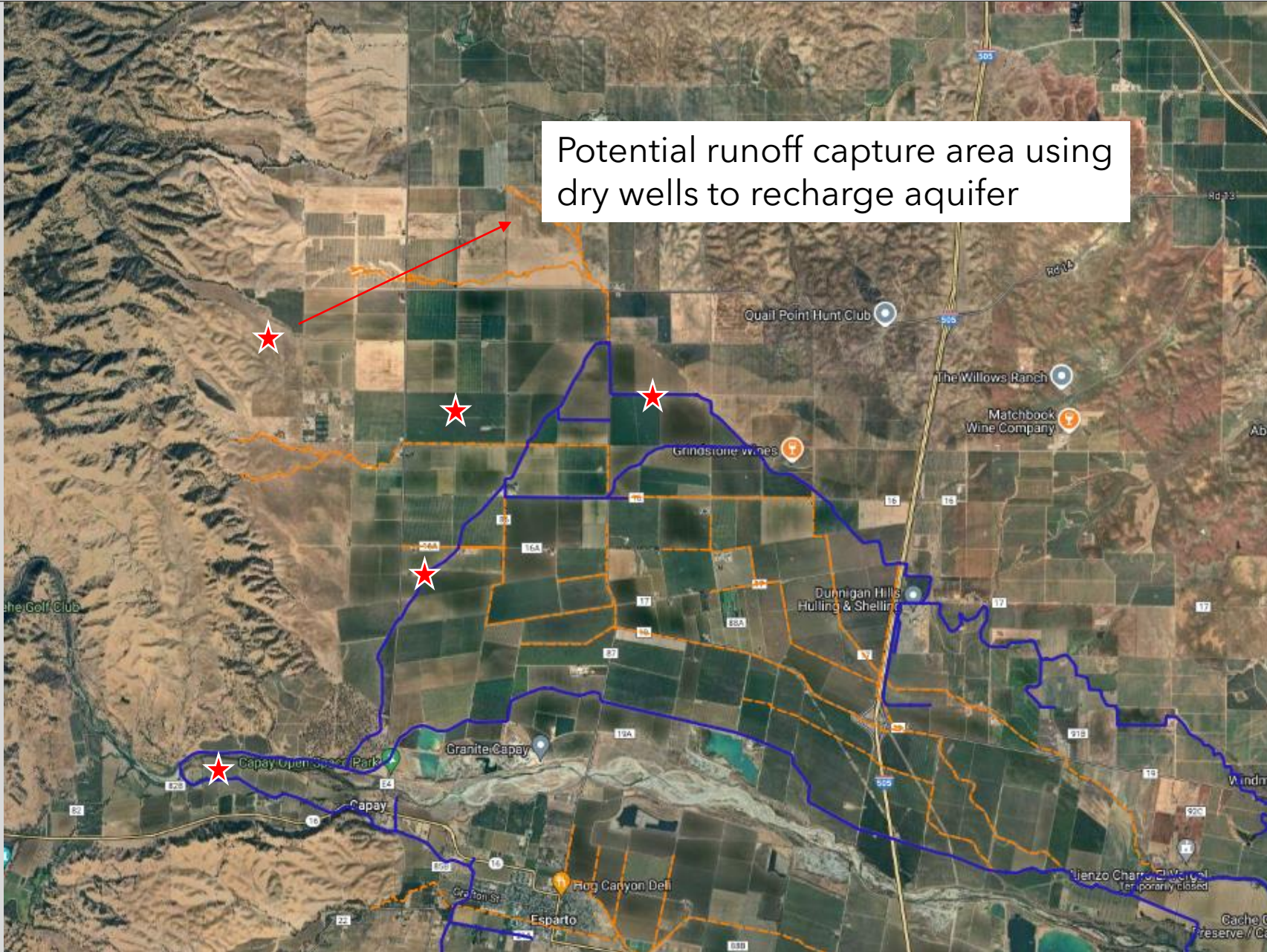
Declaration of Cooperation

Groundwork for Collaboration

YSGA Data Collection Updates and PMAs

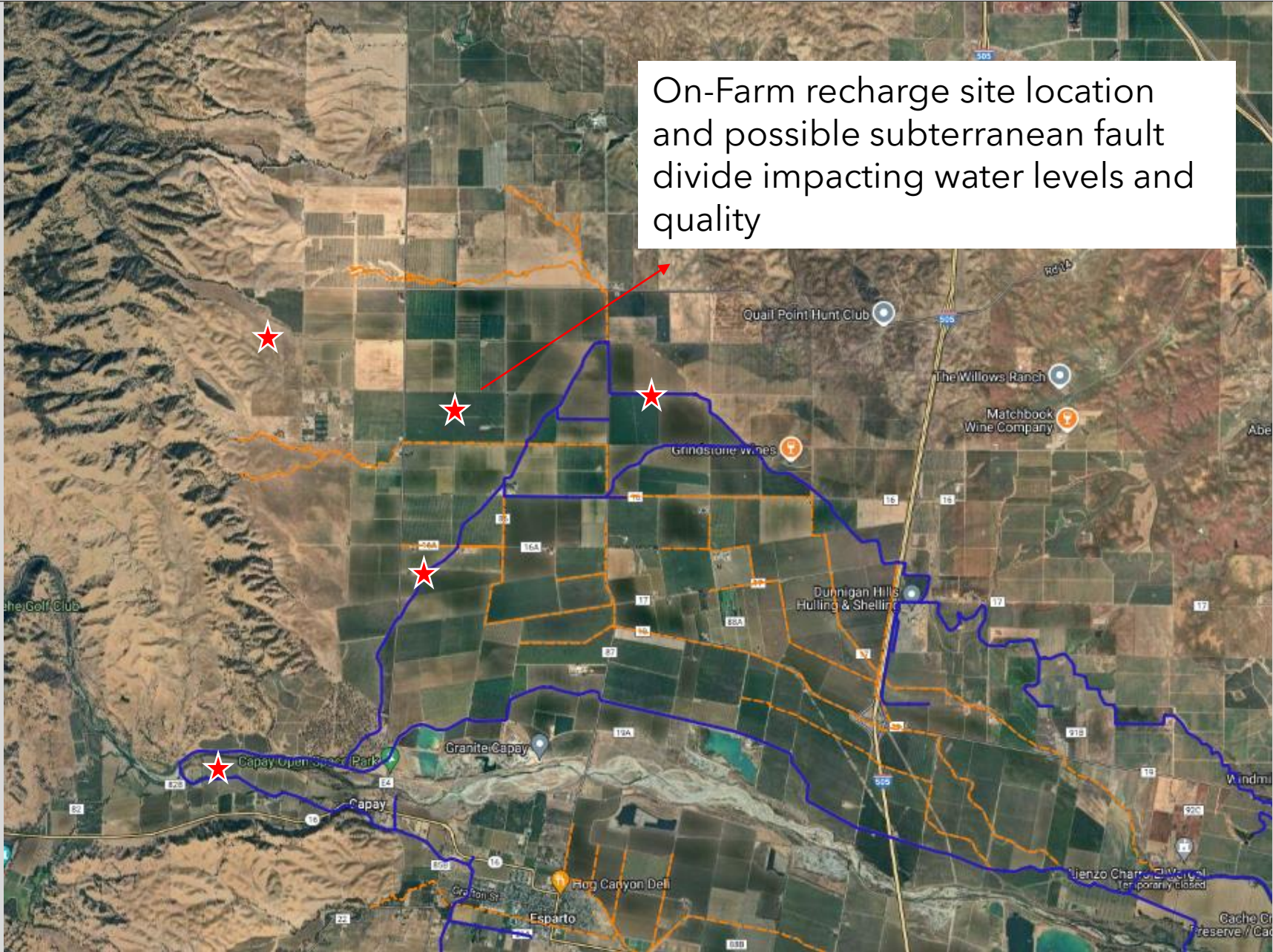
- Examples of collaboration with landowners
- Historical water level trends

Potential runoff capture area using dry wells to recharge aquifer



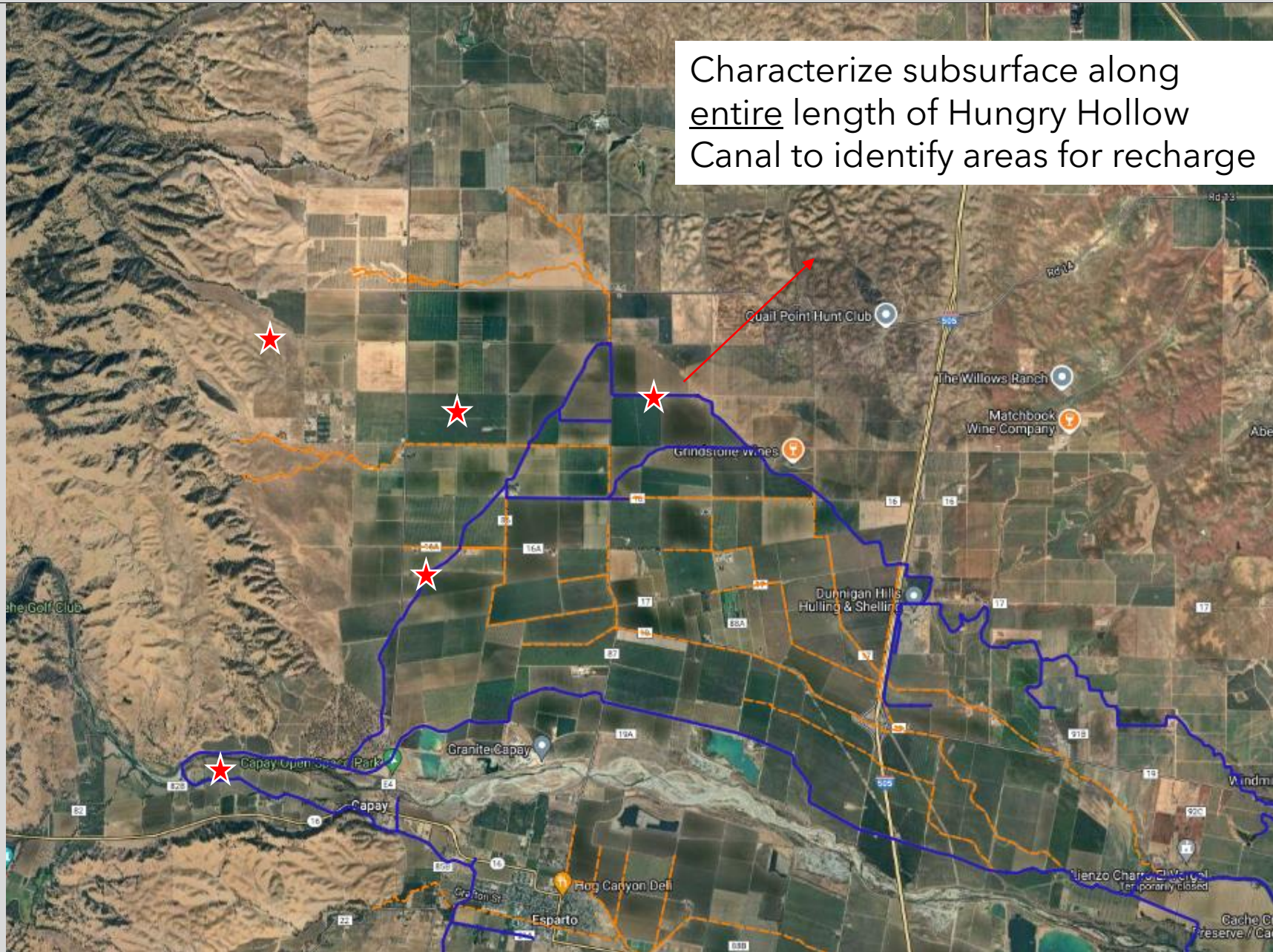


On-Farm recharge site location and possible subterranean fault divide impacting water levels and quality

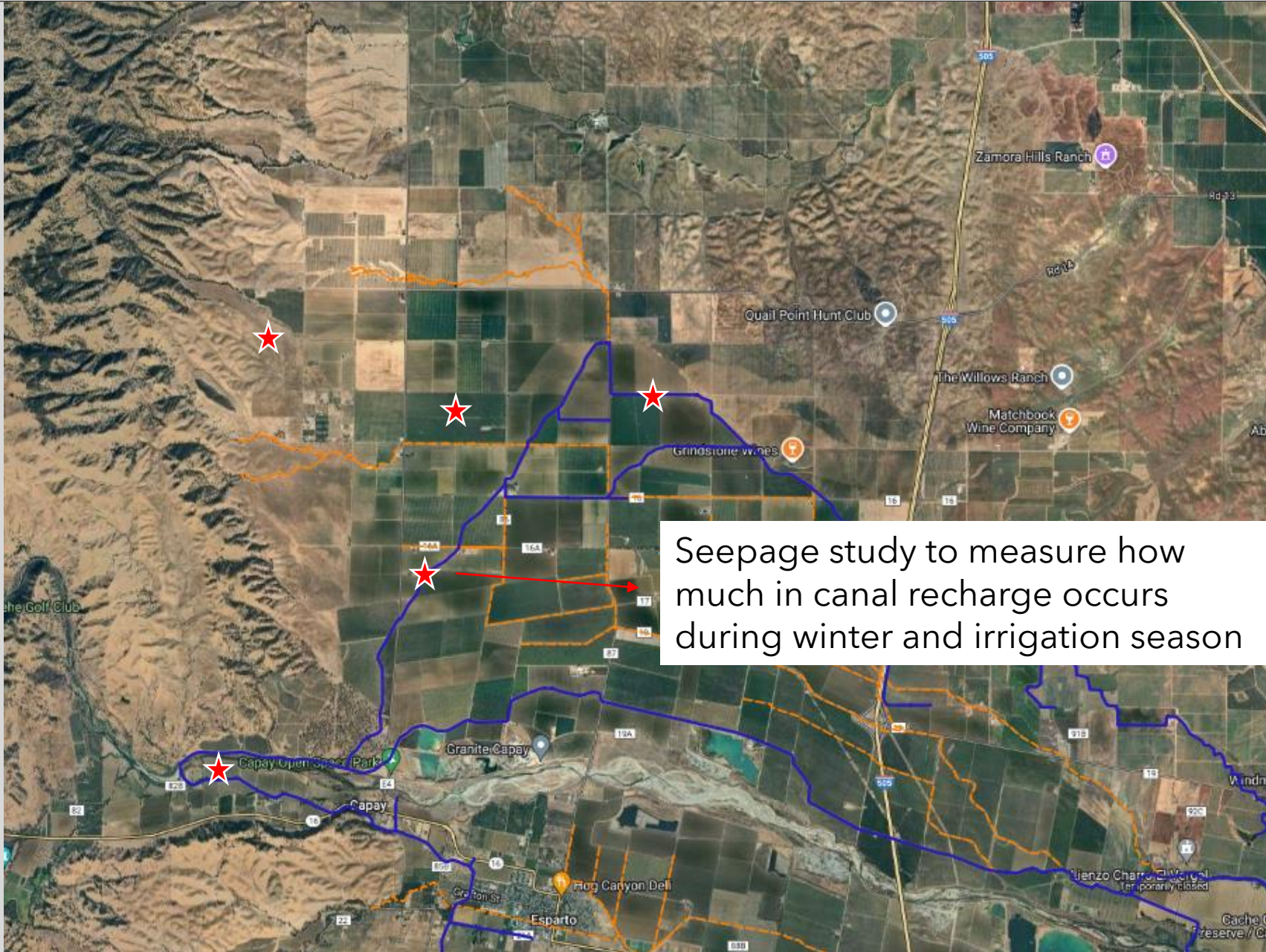




Characterize subsurface along entire length of Hungry Hollow Canal to identify areas for recharge

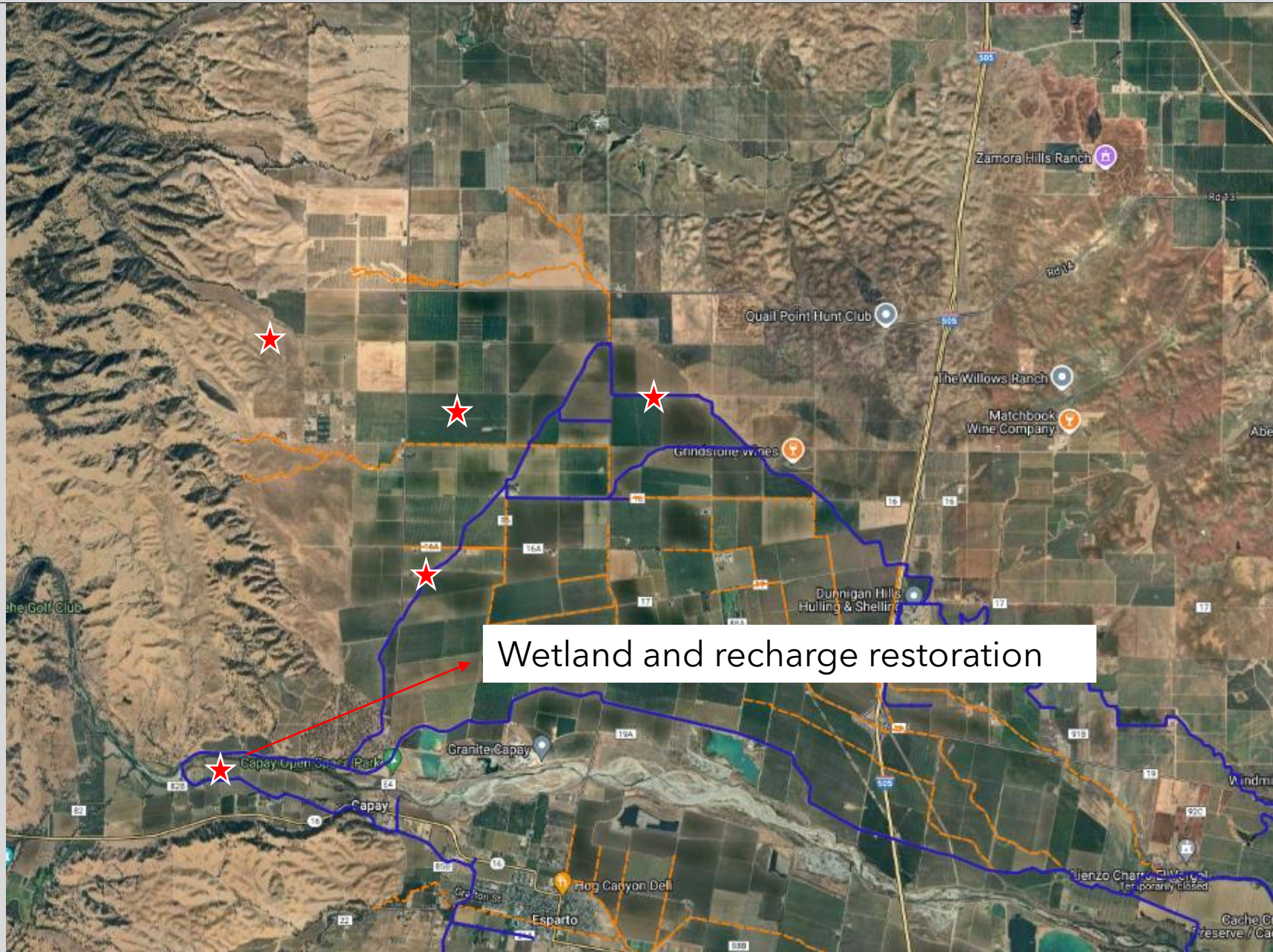






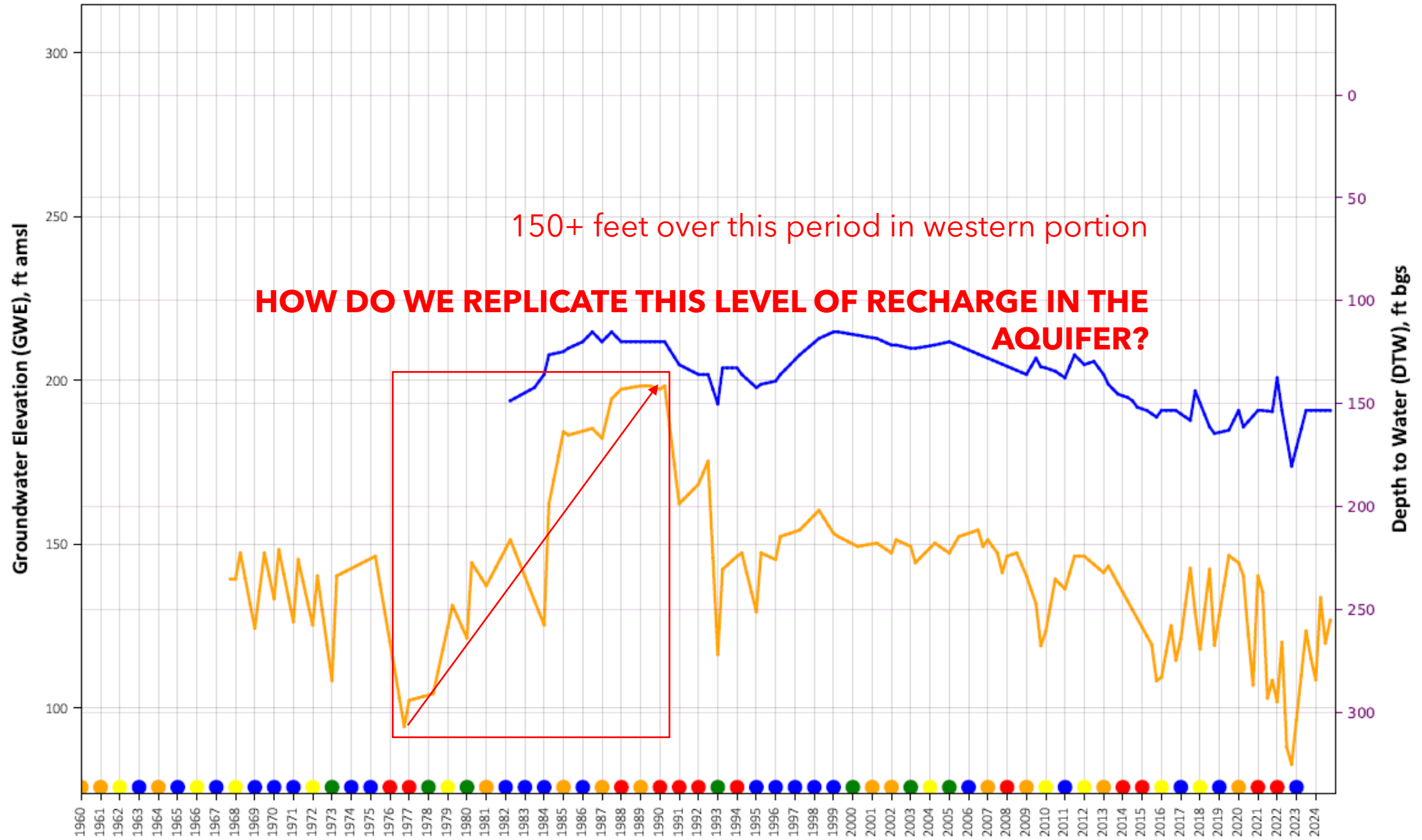
Seepage study to measure how much in canal recharge occurs during winter and irrigation season



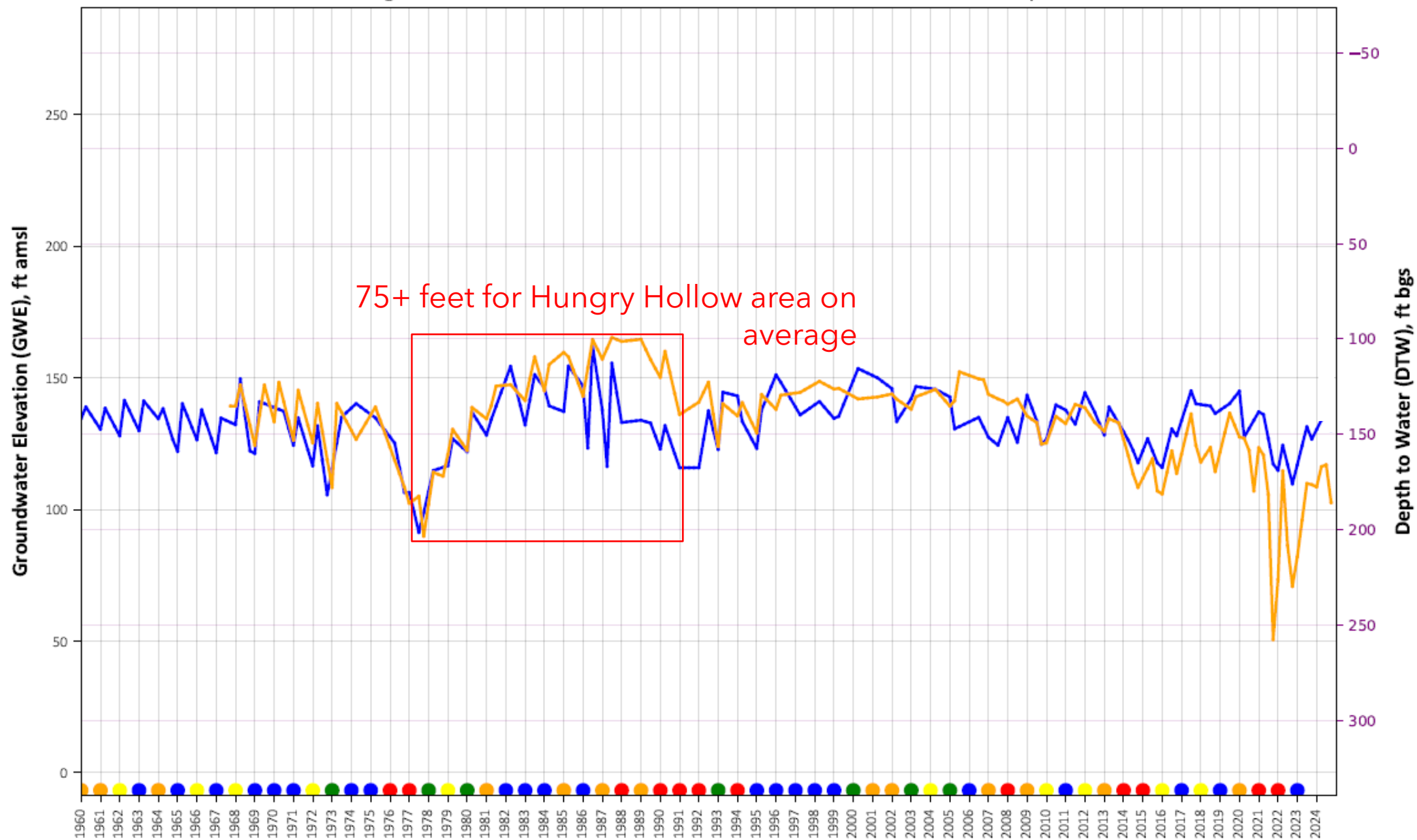


Wetland and recharge restoration

Average Groundwater Elevation for West Area by Aquifer



Average Groundwater Elevation for Shallow and Intermediate Aquifers





# Hungry Hollow Groundwater Working Group

Possible explanations for water level rise between 1978 - 1990:

- Indian Valley Reservoir releases
- Early 1990s transition to drip irrigation (i.e. less applied water recharge)
- Gravel mining changes along Cache Creek
- Commodity changes and interest rates due to economics
- Expansion of irrigated ground
- Less water intensive crops
- Transition away from sugar beets
- Well permitting trends

Likely a combination of factors. More to be investigated.



YCFC&WCD  
WINTER WATER  
RECHARGE

# YCFC&WCD Recharge Updates

- 2025 Temporary Permit application submitted in August and **approved on December 20, 2024**

Allows the District to divert winter water from Cache Creek for recharge between January 1 – April 15, 2025

Diversions into the canals started January 8, 2025 (continue to monitor Delta conditions and excess runoff in Cache Creek)



# YCFC&WCD Recharge Updates

- MBK Engineers has initiated the water availability analysis for long-term application & was expected to be submitted by end of 2024 ... now anticipating submission in March 2025
- District Staff, MBK Engineers, and Legal Council are currently discussing ways to maximize diversions









YOLO-ZAMORA  
RECHARGE  
PILOT PROJECT



# Yolo-Zamora Recharge Improvements in the District's Canal

- Culvert Enlargements
- Automatic Gate Installations
- Flow Measurement and Control for Groundwater Recharge to China Slough



# Yolo-Zamora Pilot Recharge Project Landowner Meeting

Water and Land Solutions and YSGA Staff presented to landowners at a workshop to share updates on the project:

- Presented refined data on project alternatives. Landowners provided feedback there is a preference for two of the four projects due to costs relative to potential benefits.
- Discussed challenges with permitting for rehabilitating China Slough
- Planned next steps
  - Schedule additional meeting to define a clear direction for project alternatives
  - Implement pilot recharge in China Slough
  - Pursue environmental permitting through CDFW *if costs are reasonable*





DUNNIGAN AREA  
RECHARGE  
PROJECT

# Dunnigan On-Farm Recharge

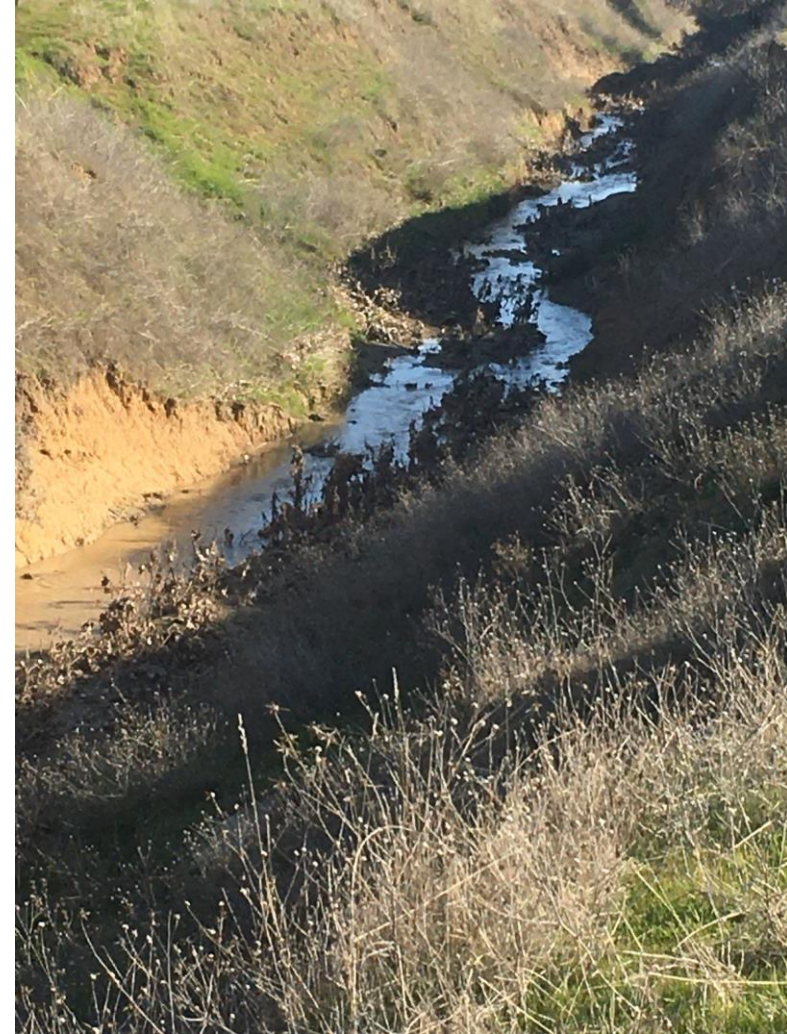
- Installed water control equipment to facilitate recharge on a landowner's property
- November: 78 acre-feet
- December: 253.5 acre-feet





# Recharge in Dunnigan Creek

- Plan to install stream gauges on Buckeye and Bird Creeks this spring
- Trickle-flow recharge at Dunnigan Creek began on Friday (1/10), 2 acre-feet per day flow



# Agenda

1. Call to Order and Determination of Quorum
2. Adding Items to the Posted Agenda
3. Public Forum
4. CONSIDERATION: Consent Items
5. Report of the Chair and Executive Officer
6. Update: Land Subsidence
7. Update: SGMA Implementation Grant Projects
- 8. Members' Reports and Future Agenda Items**
9. Next Meeting - March 17, 2025
10. Adjournment

# Agenda

1. Call to Order and Determination of Quorum
2. Adding Items to the Posted Agenda
3. Public Forum
4. CONSIDERATION: Consent Items
5. Report of the Chair and Executive Officer
6. Update: Land Subsidence
7. Update: SGMA Implementation Grant Projects
8. Members' Reports and Future Agenda Items
- 9. Next Meeting - March 17, 2025**
10. Adjournment

# Agenda

1. Call to Order and Determination of Quorum
2. Adding Items to the Posted Agenda
3. Public Forum
4. CONSIDERATION: Consent Items
5. Report of the Chair and Executive Officer
6. Update: Land Subsidence
7. Update: SGMA Implementation Grant Projects
8. Members' Reports and Future Agenda Items
9. Next Meeting - March 17, 2025

## **10. Adjournment**