

# EKI TECHNICAL PRESENTATION #30

WHITE WOLF GSA BOARD OF DIRECTORS  
3 OCTOBER 2023

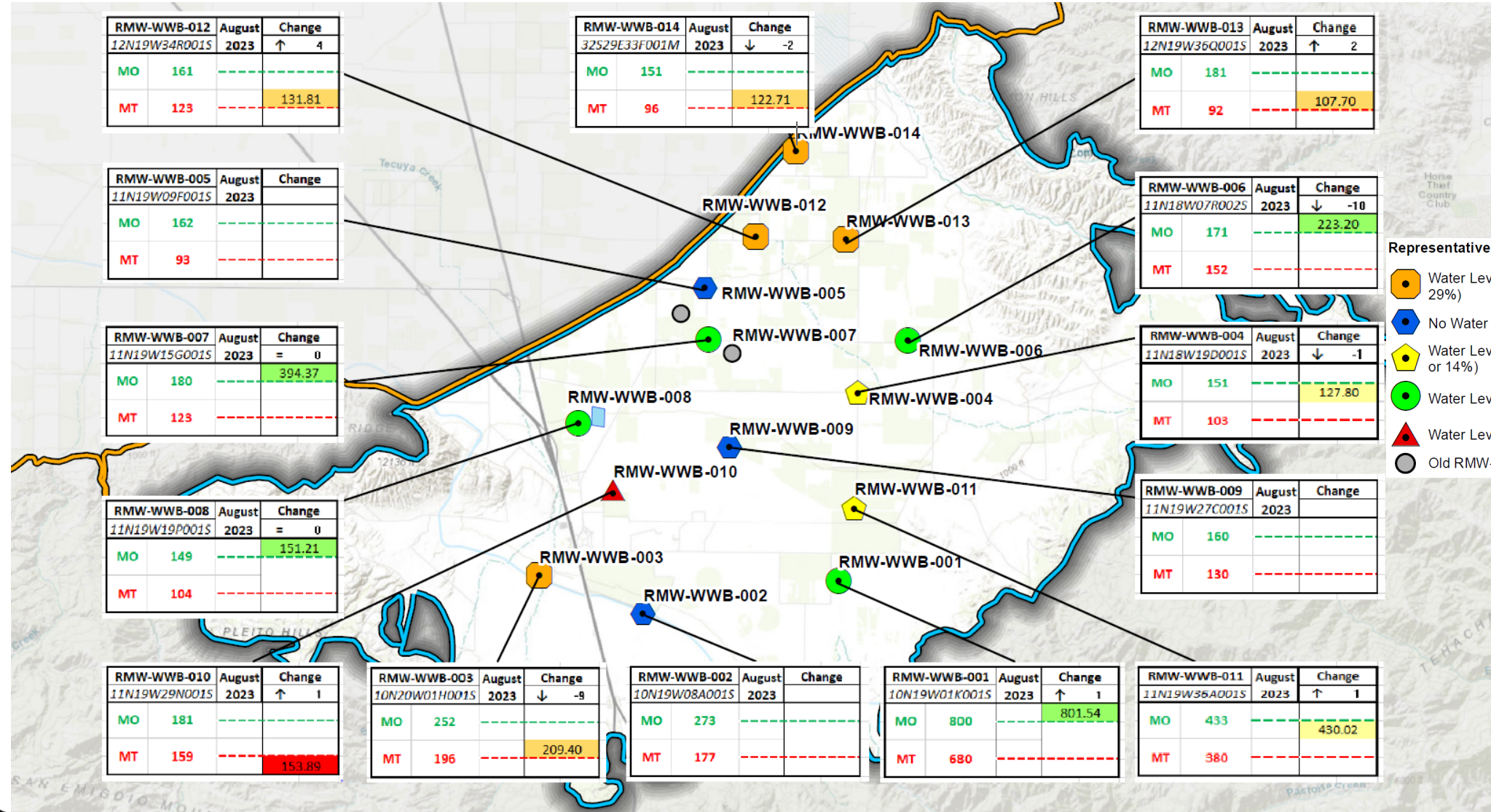


# OUTLINE

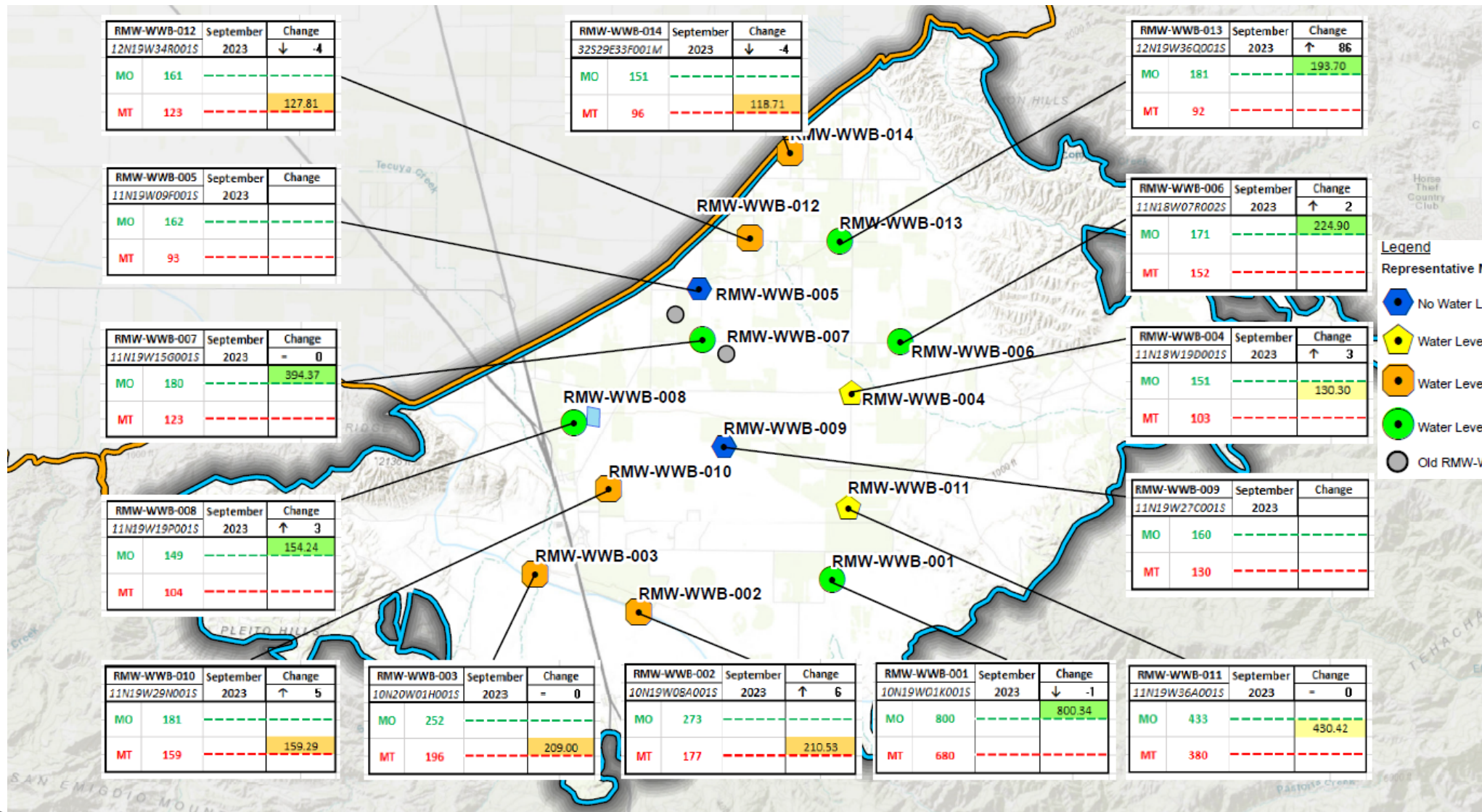
- Update on Groundwater Sustainability Plan (GSP) implementation activities
- Projects/Management Actions (P/MAs) updates
- Grant application updates

# GSP IMPLEMENTATION UPDATES

# AUGUST 2023 MEASUREMENTS COMPARED TO SMCs



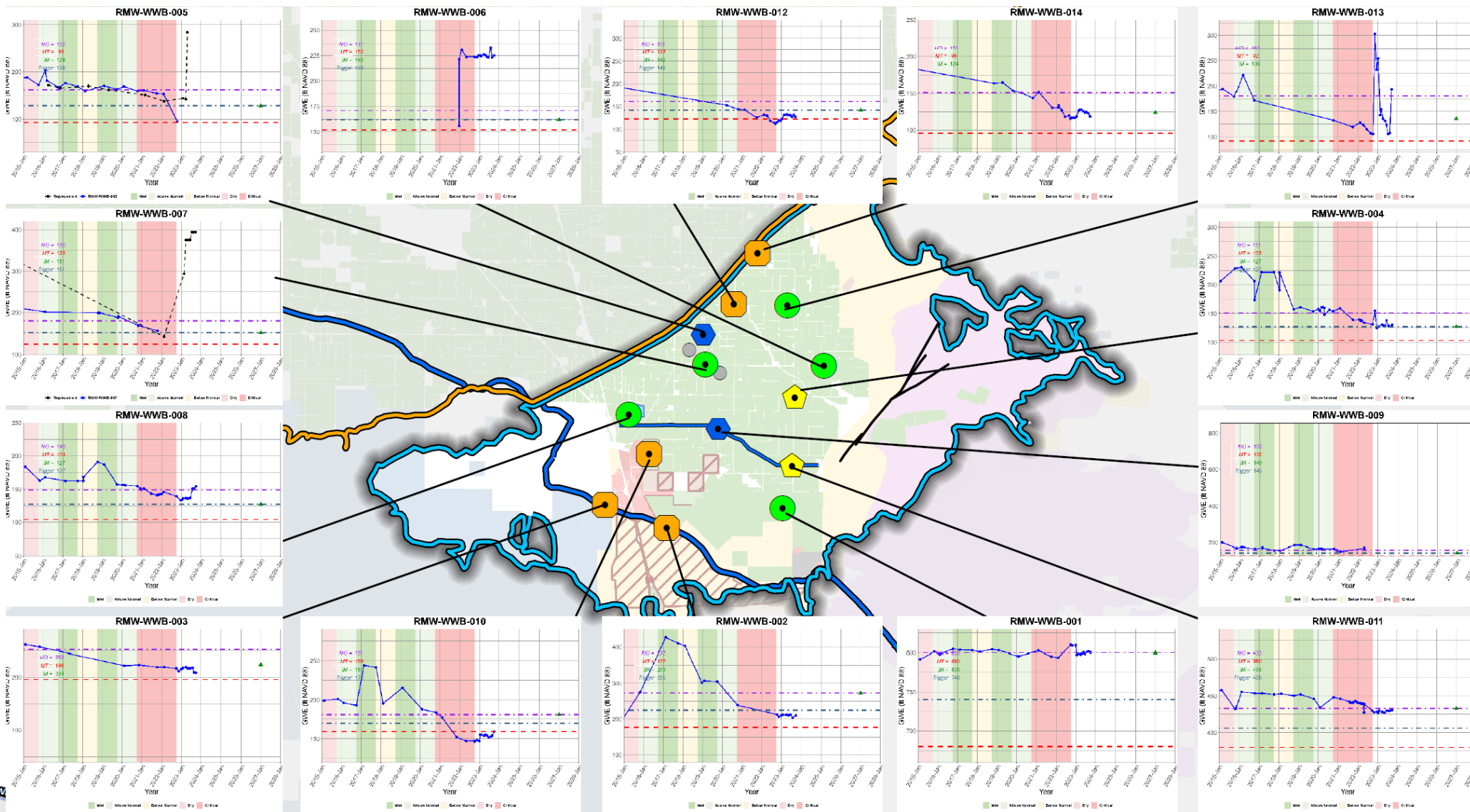
# SEPT. 2023 MEASUREMENTS COMPARED TO SMCs



**Legend**  
 Representative Monitoring Well Status as of September 2023

- No Water Level Measurement (2 or 14%)
- Water Level Between MO and MT but closet to MO (2 or 14%)
- Water Level Between MO and MT but closet to MT (5 or 36%)
- Water Level Above MO (5 or 36%)
- Old RMW-WL

# RMW-WL HYDROGRAPHS



**Legend**

**Groundwater Subbasin**

- White Wolf (DWR 5-022.18)
- Kern County (DWR 5-022.14)

**Land Use**

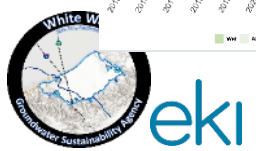
- Agricultural Land
- Developed
- Grazing
- Mining
- Oil Field
- Conservation Easement Area
- California Protected Areas
- Proposed Grapevine Development
- Mettler Recharge Project

**Representative Monitoring Well Status as of September 2023**

- No Water Level Measurement (2 or 14%)
- Water Level Between MO and MT but closer to MO (2 or 14%)
- Water Level Between MO and MT but closer to MT (5 or 36%)
- Water Level Above MO (5 or 36%)

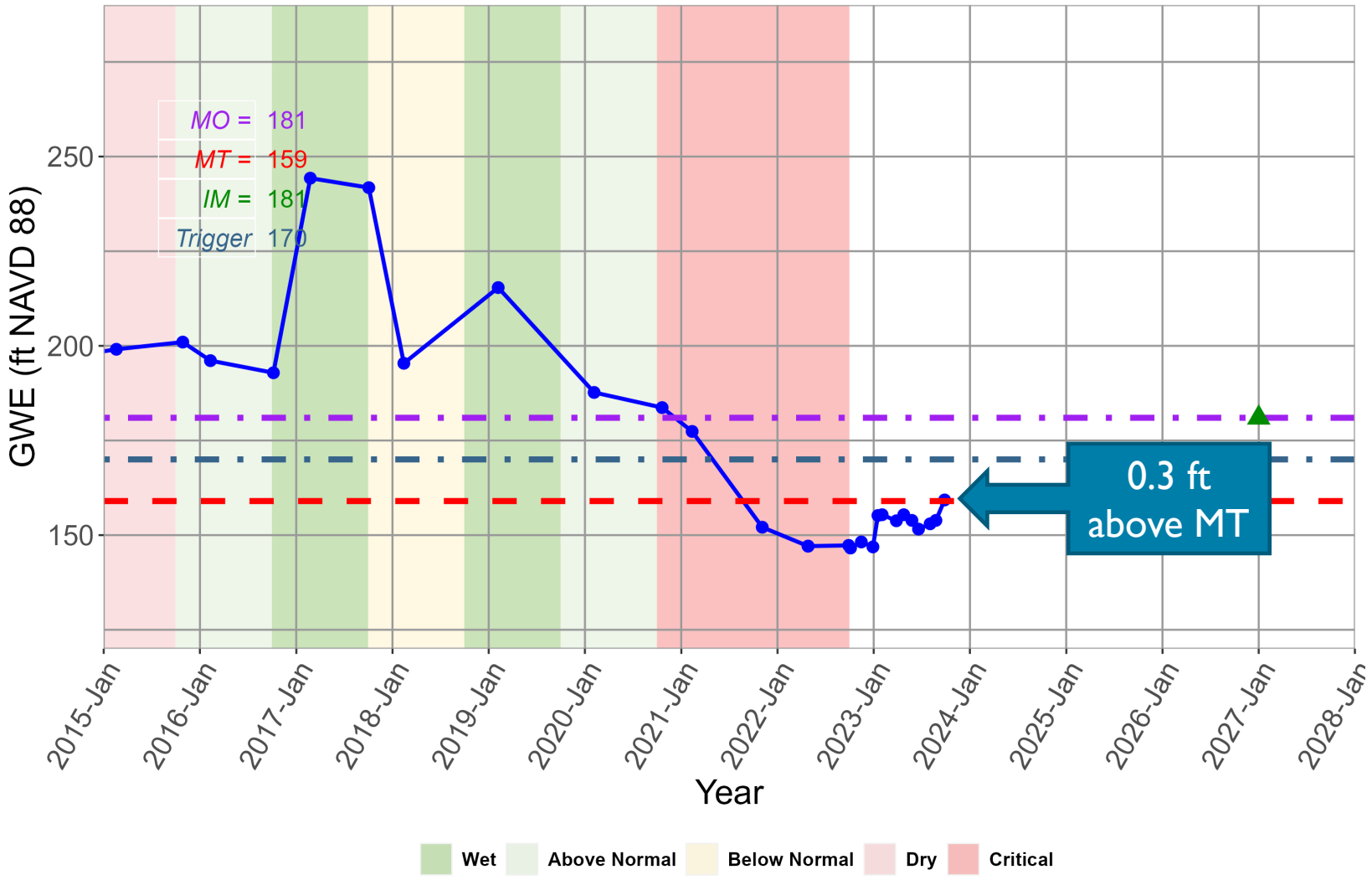
**Hydrograph Legend**

- Measurable Objective
- Trigger Threshold
- Minimum Threshold
- Groundwater Elevation



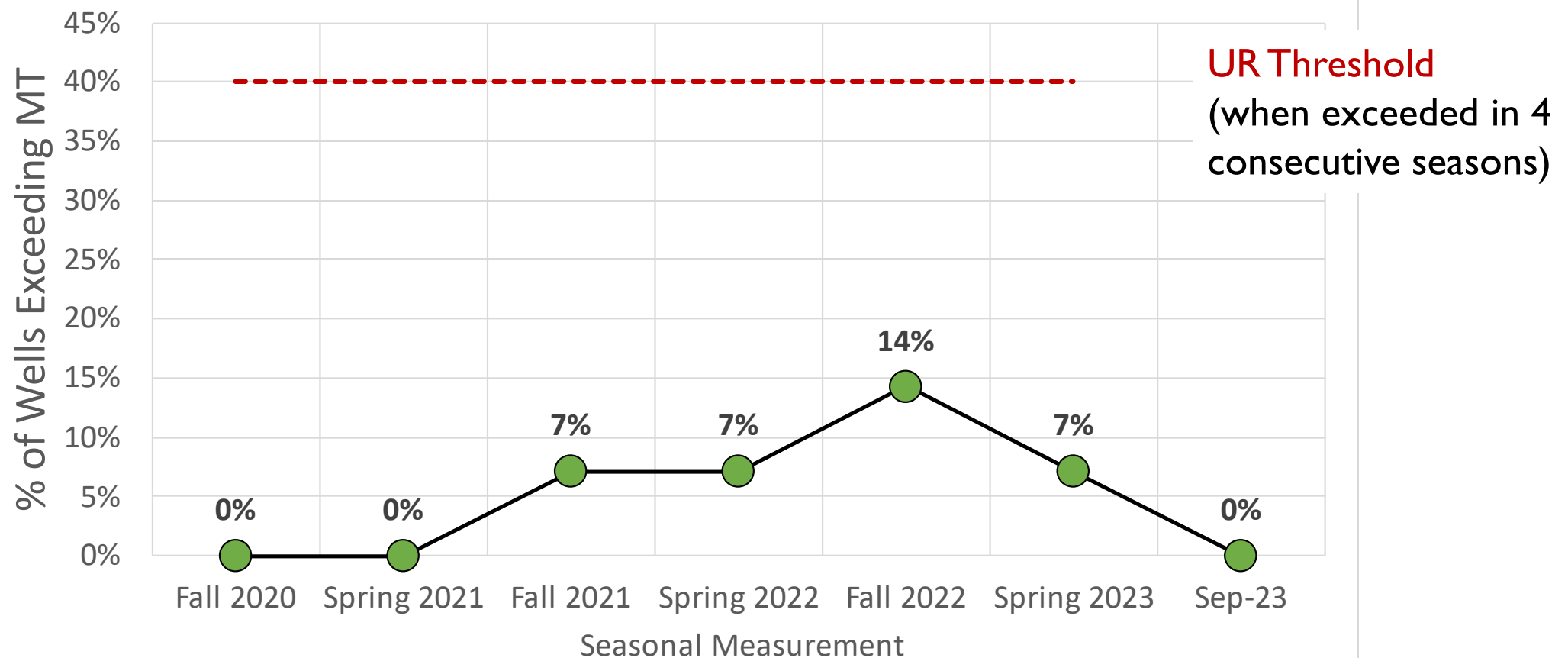
# SEPTEMBER WATER LEVEL IN RMW-WWB-010 IS SLIGHTLY ABOVE MT

## RMW-WWB-010



# UNDESIRABLE RESULTS ARE NOT YET OCCURRING

- UR definition: when 40% or more of RMWs exceed MTs over 4 consecutive seasonal measurements

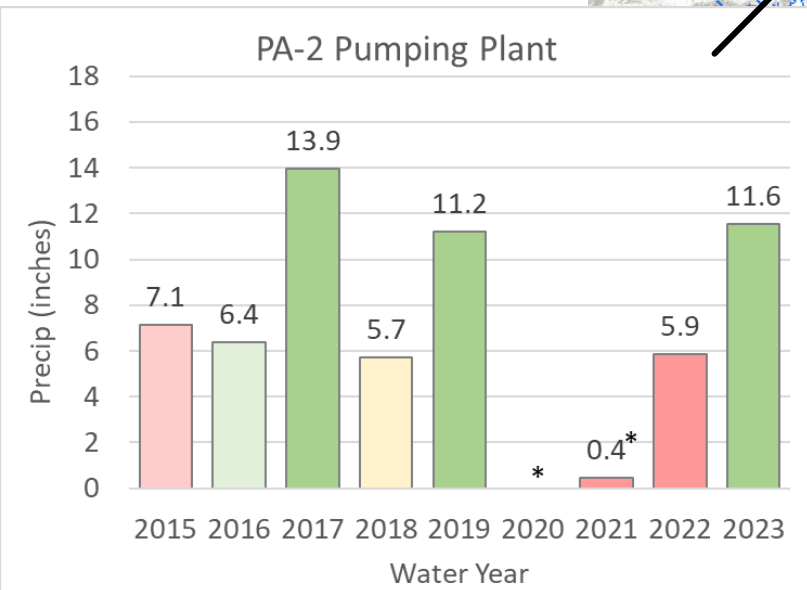
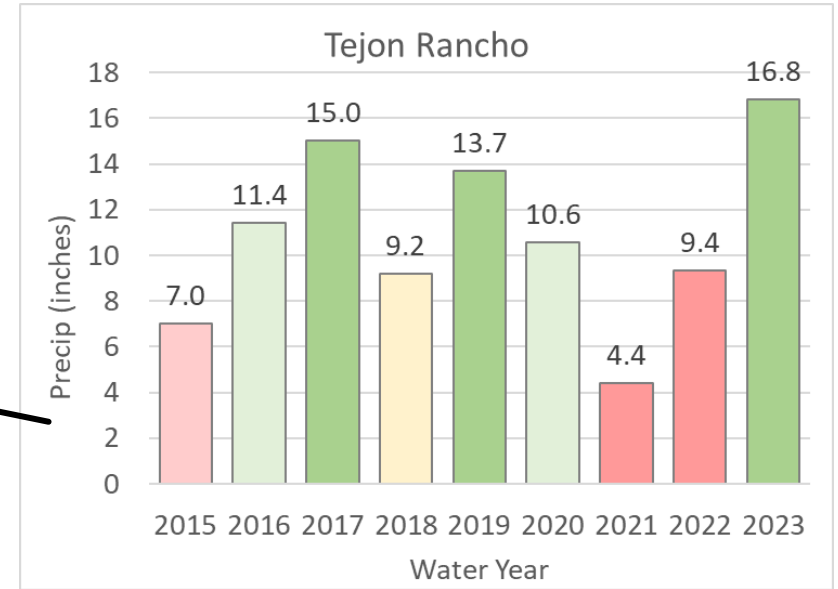
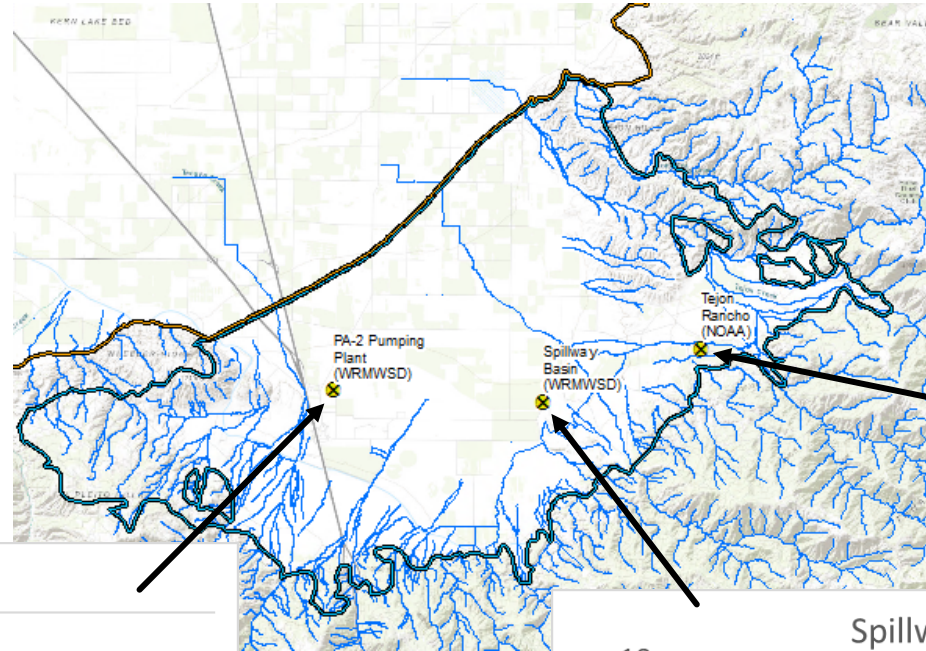




# MEASURED PRECIPITATION SINCE 2015

## DWR Water Year Type

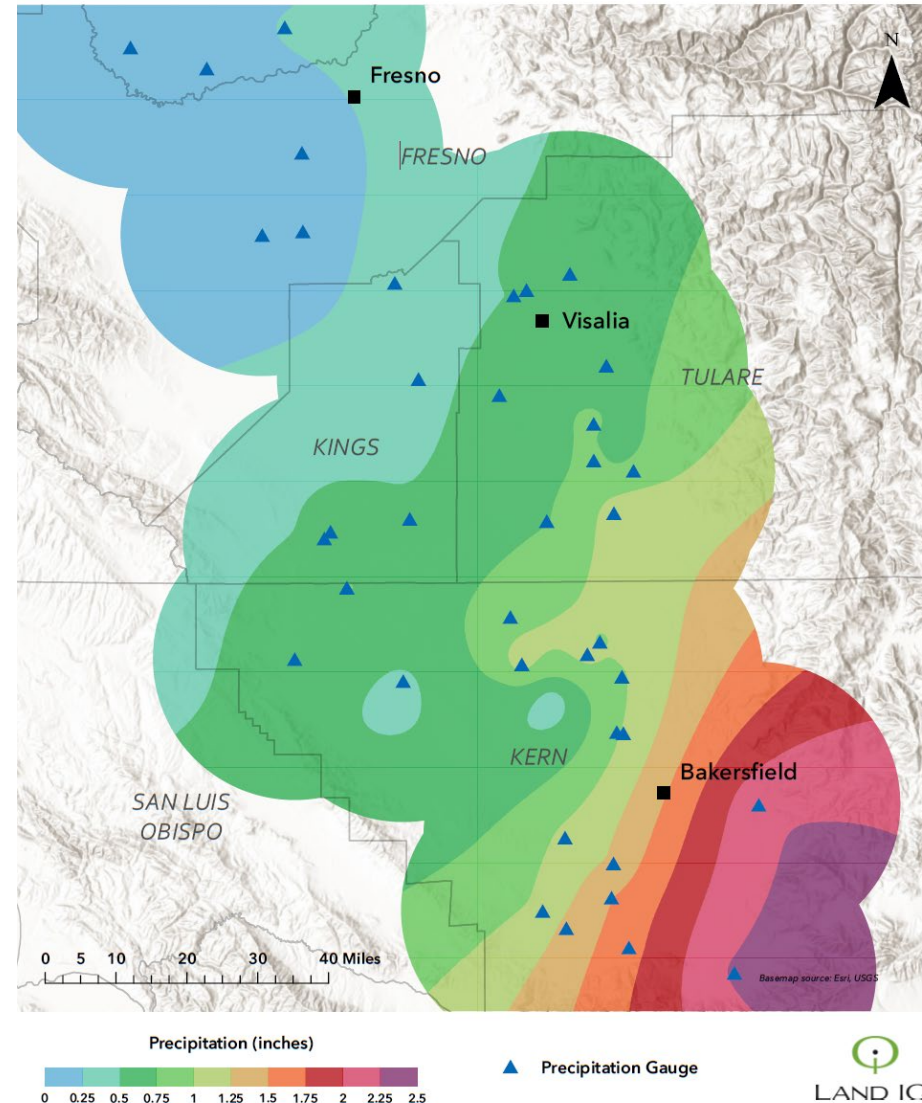
- = Wet
- = Above Normal
- = Below Normal
- = Dry
- = Critical



# HURRICANE HILARY PRECIPITATION FROM LandIQ

August 18 – 21, 2023

- Measured precipitation throughout the LandIQ climate station network from August 18-21, 2023



# DELAYED GROUNDWATER LEVEL RECOVERY IS A NOTED PHENOMENON

- Deeper and more depleted aquifers may exhibit slower recovery
- Groundwater recovery after drought can range from 1 month to 15 years in unmanaged US aquifers
  - Longest and most variable in Western US
  - Drought intensity and quantity of recharge have strongest impact on recovery times
  - Recovery is faster closer to recharge source

DWR 2019

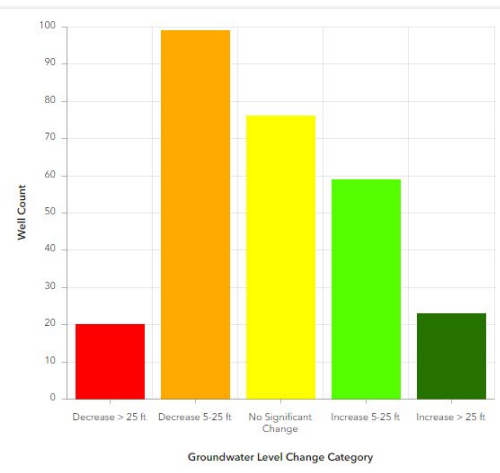
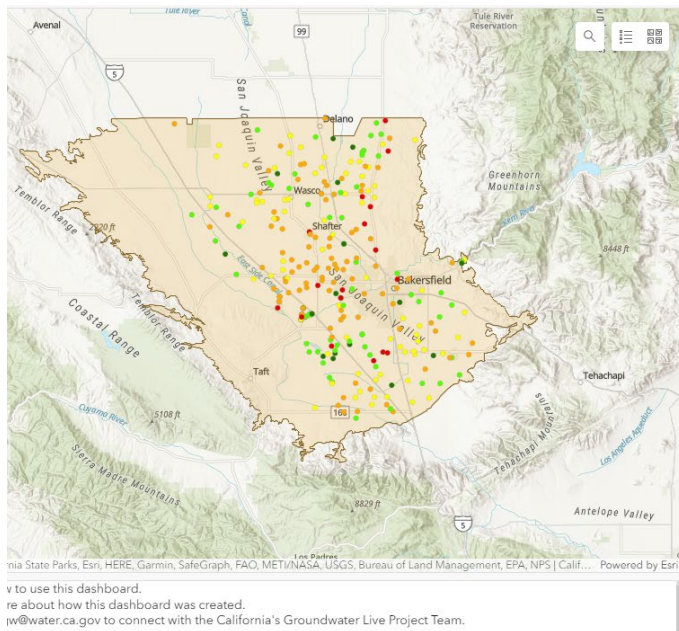
[https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Data-and-Tools/Files/Maps/Groundwater-Level-Change/DOTMAP\\_Reports/Spring-2019-Groundwater-DOTMAP-Report.pdf](https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Data-and-Tools/Files/Maps/Groundwater-Level-Change/DOTMAP_Reports/Spring-2019-Groundwater-DOTMAP-Report.pdf)

Schreiner-McGraw & Ajami 2021

<https://doi.org/10.1016/j.jhydrol.2021.126917>

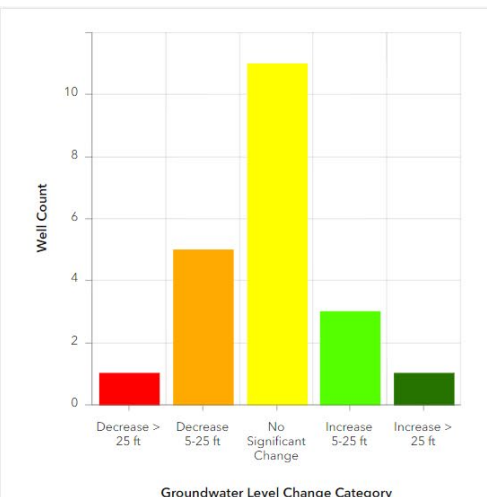
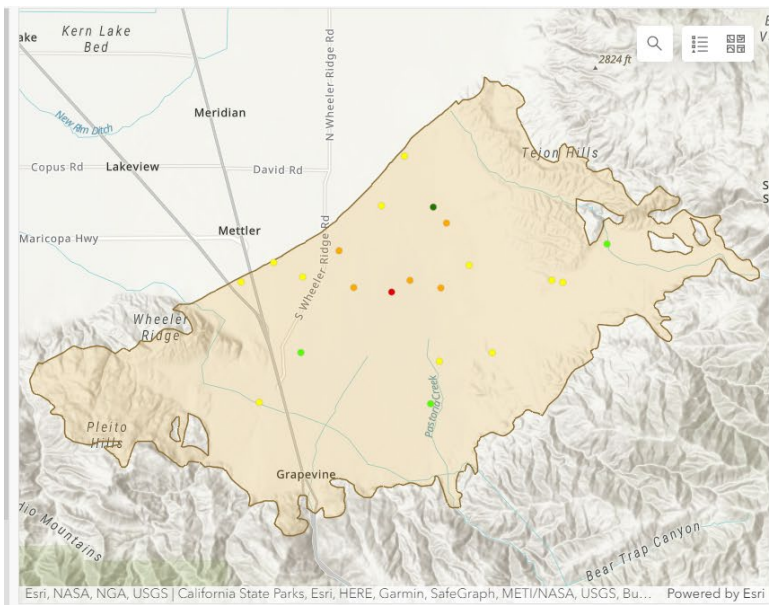


# KERN AND WHITE WOLF GROUNDWATER LEVELS SHOW VARIABLE RESPONSE OVER 2022-2023



Monitoring Wells **7.5k** Total

Monitoring Wells **277** Based on Selection



Monitoring Wells **7.5k** Total

Monitoring Wells **21** Based on Selection

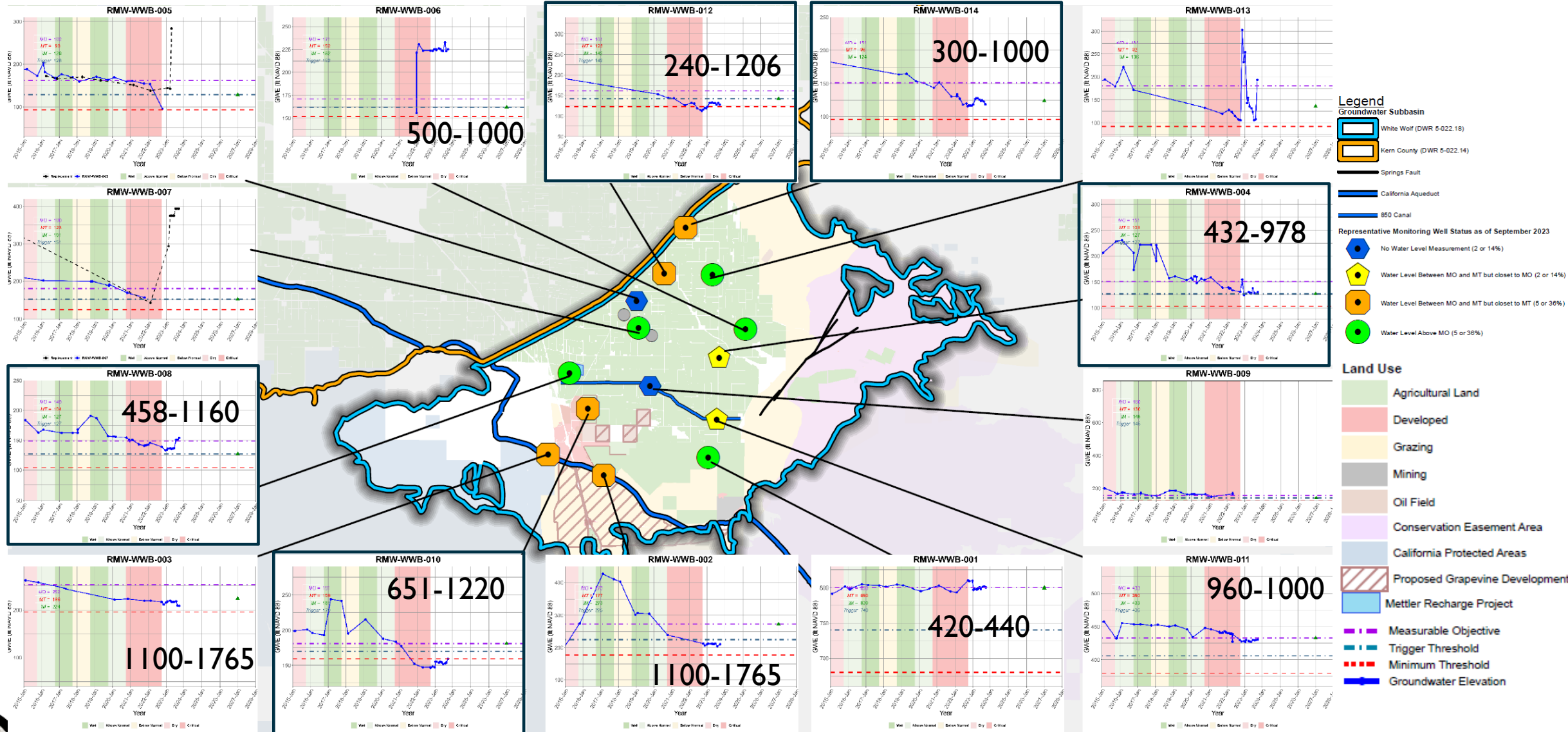
[Click here](#) to learn how to use this dashboard.  
[Click here](#) to learn more about how this dashboard was created.  
 Please email us at [calow@water.ca.gov](mailto:calow@water.ca.gov) to connect with the California's Groundwater Live Project Team.



California's Groundwater Live: Groundwater levels

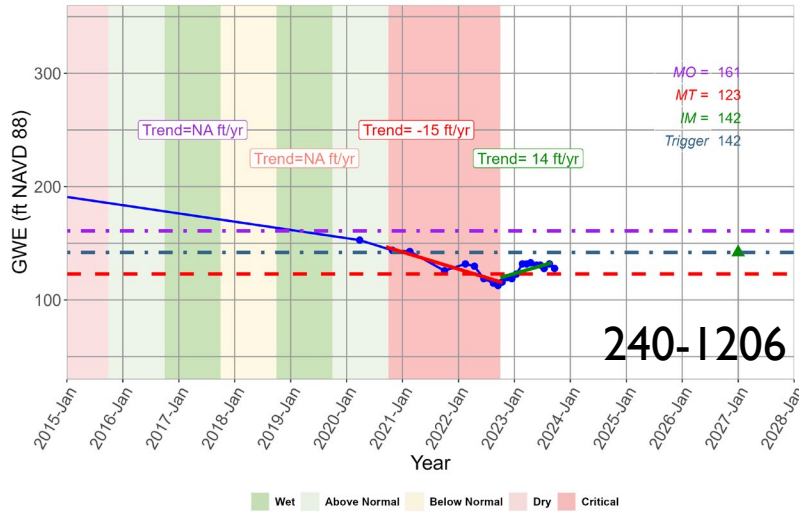
<https://storymaps.arcgis.com/stories/b3886b33b49c4fa8adf2ae8bdd8f16c3>

# RMW-WL HYDROGRAPHS & SCREENED INTERVALS

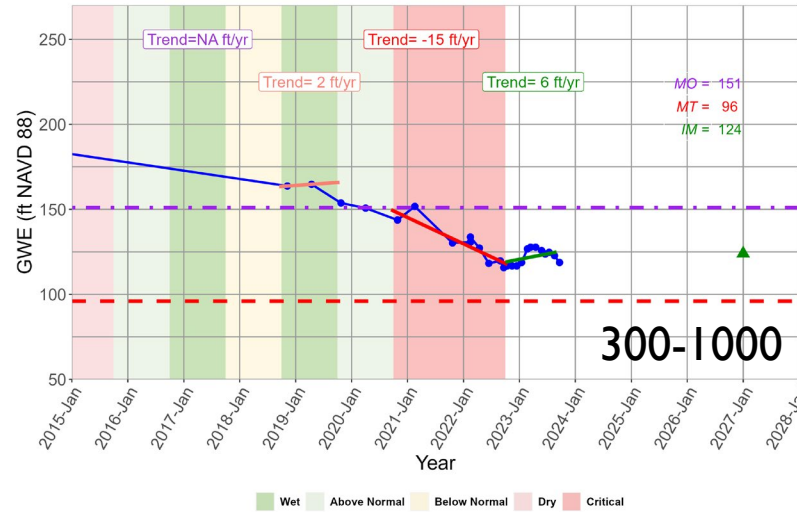


# GW TRENDS IN SHALLOWEST SCREENED RMW-WLs

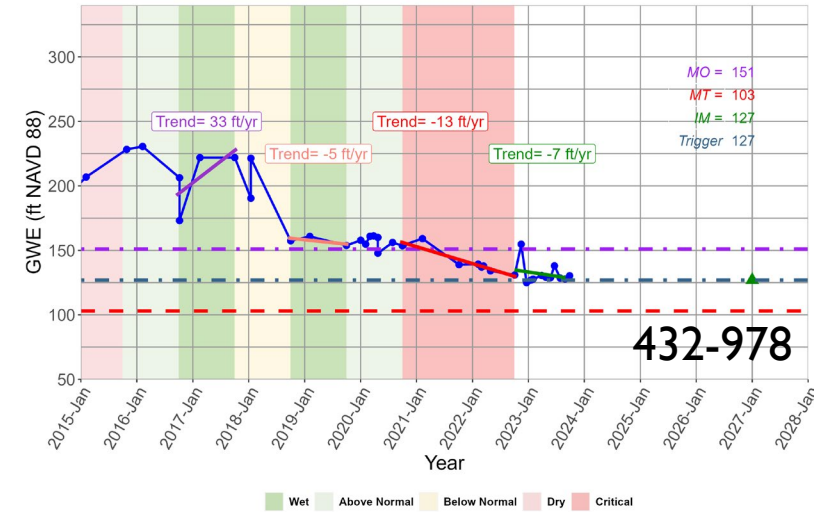
RMW-WWB-012



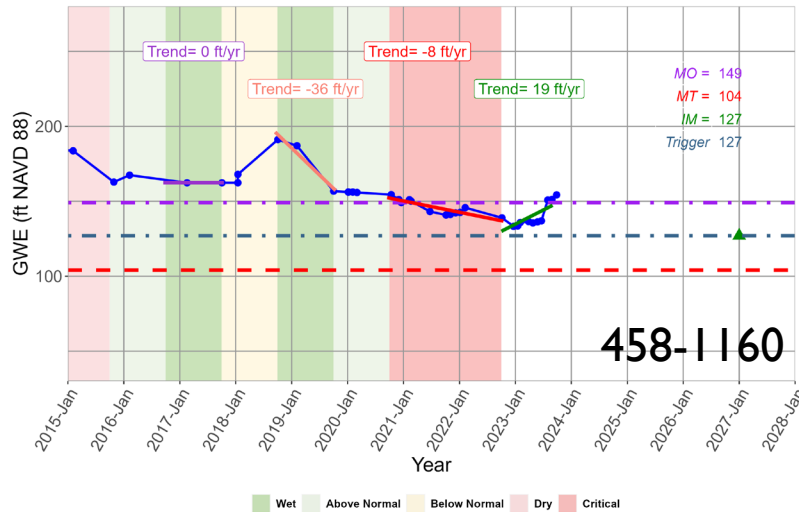
RMW-WWB-014



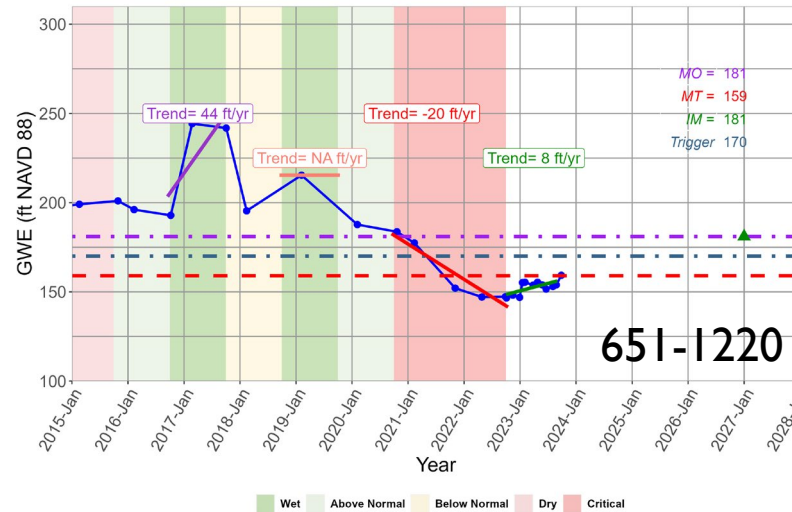
RMW-WWB-004



RMW-WWB-008



RMW-WWB-010



■ Most wells observed an increase in water levels over 2023

# NEXT STEPS

- Finish extending White Wolf Groundwater Flow Model (WWGFM) through Water Year 2023 and compare modeled to observed groundwater level response
- Continued statistical analyses to assess response due to stream flow events and better quantify lag time through unsaturated zone
- Process WRMWSD isotope sampling results, as available

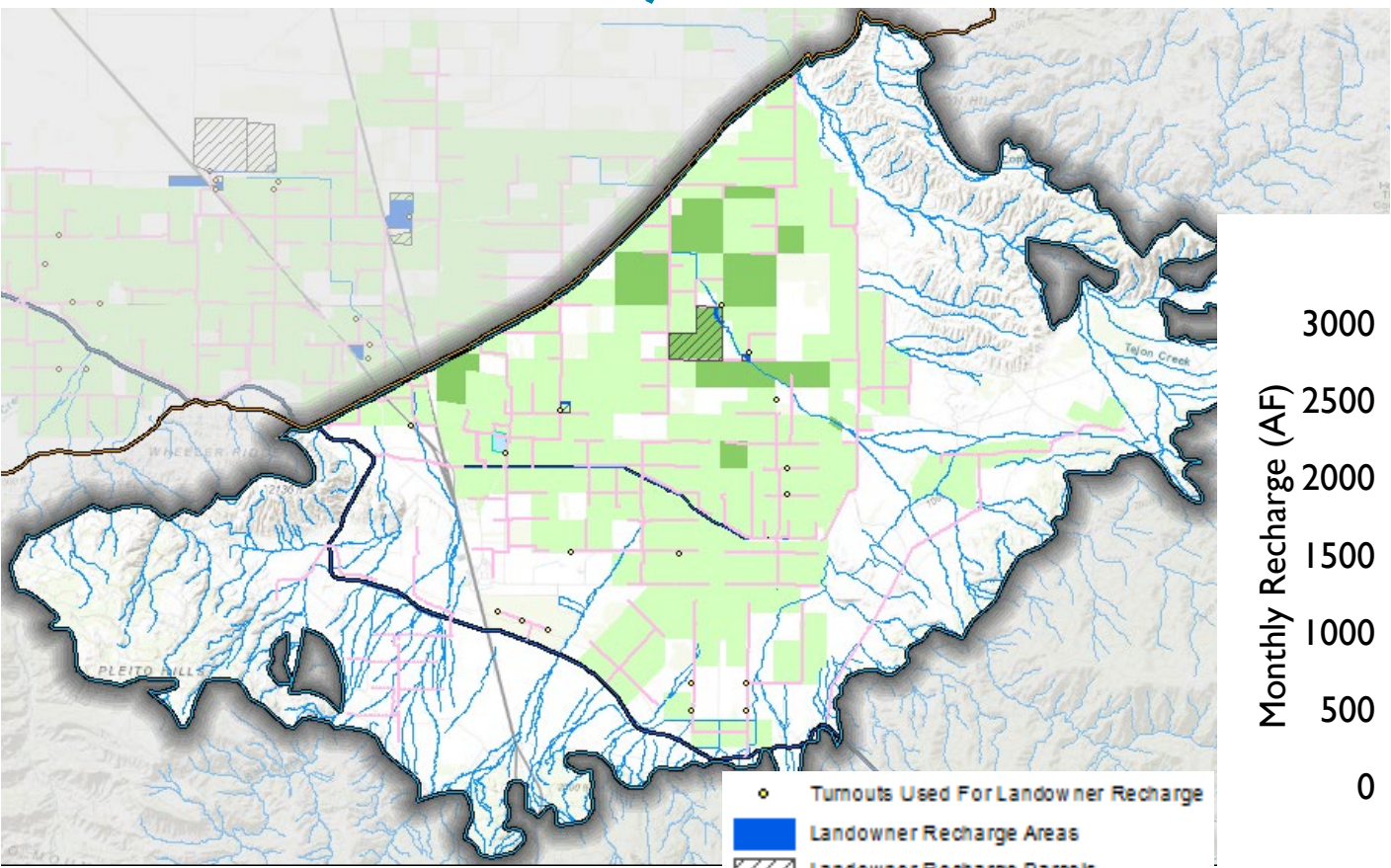
# OTHER DATA COLLECTION

- Districts collected water quality samples from supplemental monitoring wells and Mettler recharge pond
- Land surveyor completed vertical elevation survey at 2 benchmarks on 8/22

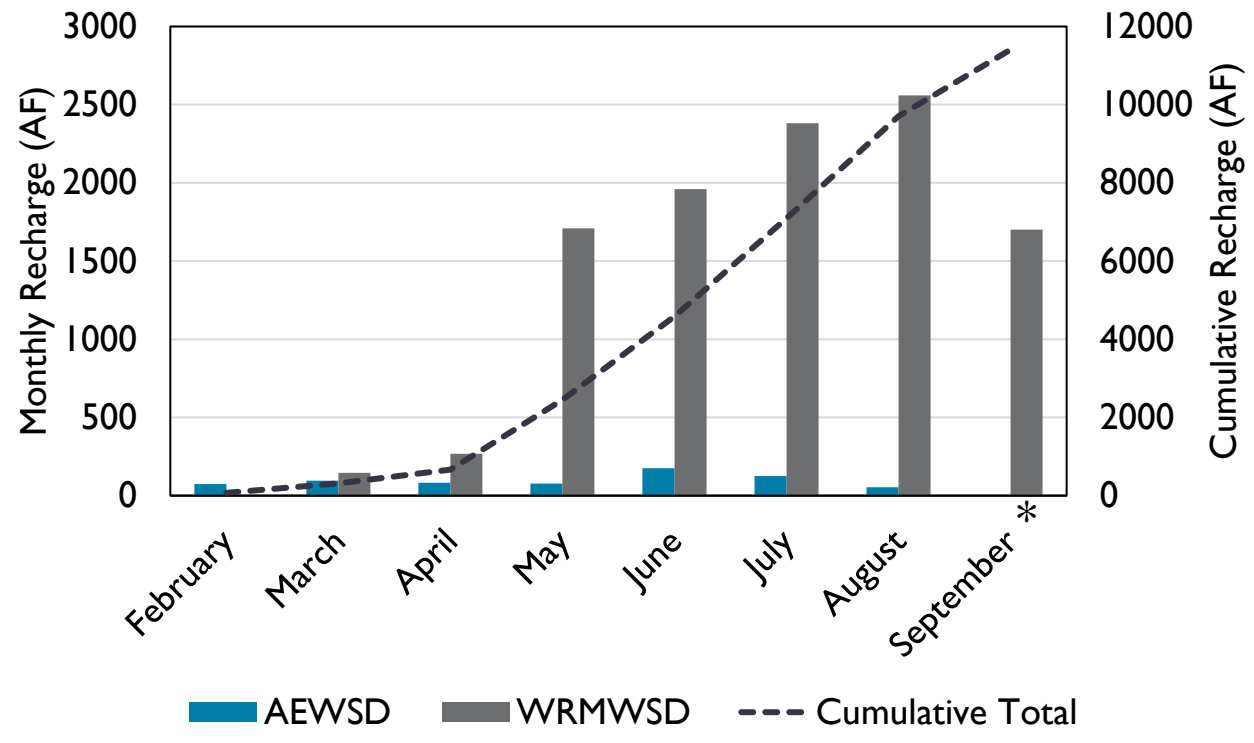


# P/MA UPDATE

# LANDOWNER RECHARGE PROGRAMS HAVE APPLIED >11,000 AF IN 2023



2023 Landowner Recharge in White Wolf

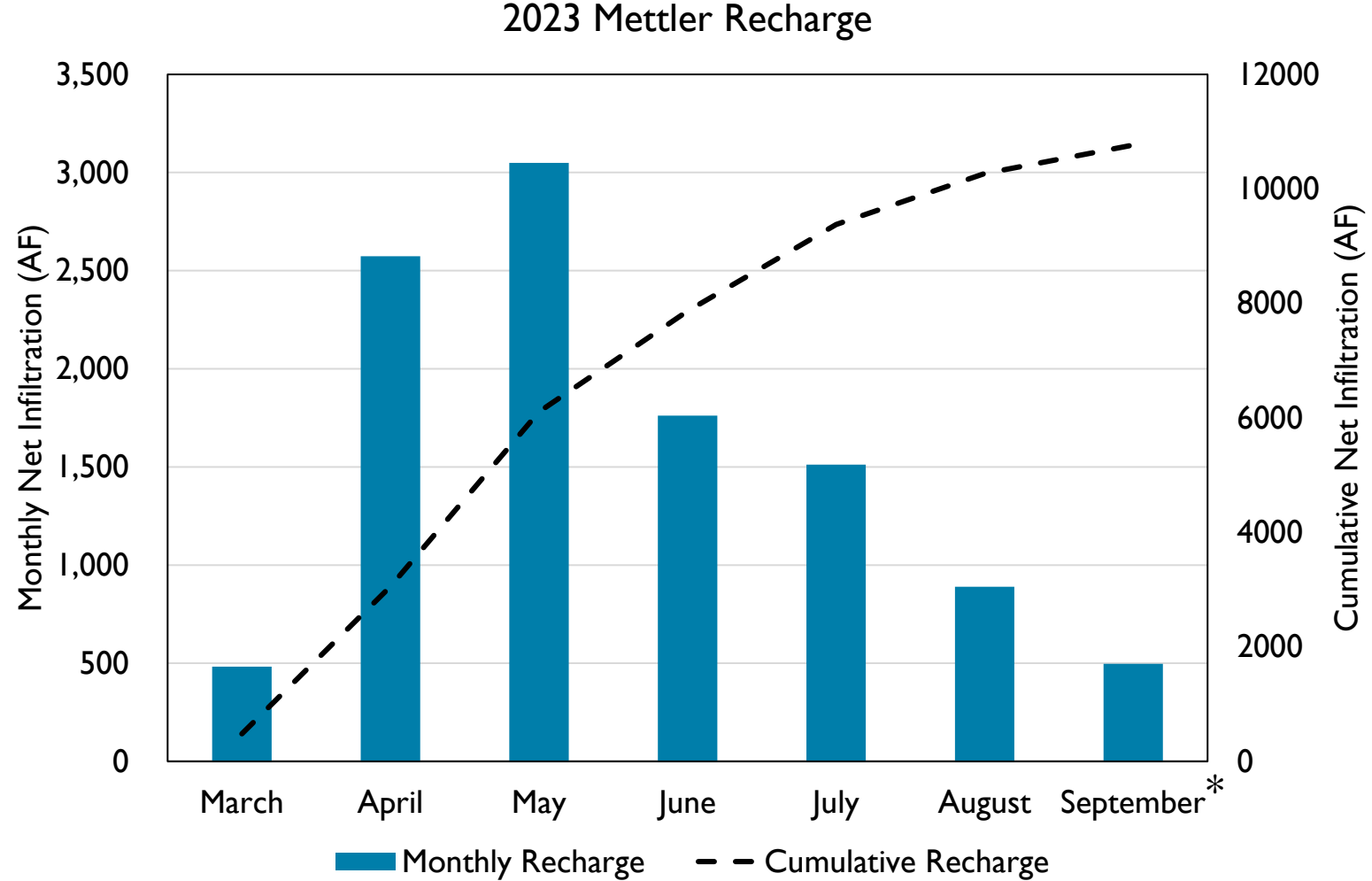


\* WRMWSD – amount as of 9/26/2023; AEWSD – not available



# 11,000 AF INFILTRATED AT METTLER FACILITY SINCE MARCH 2023

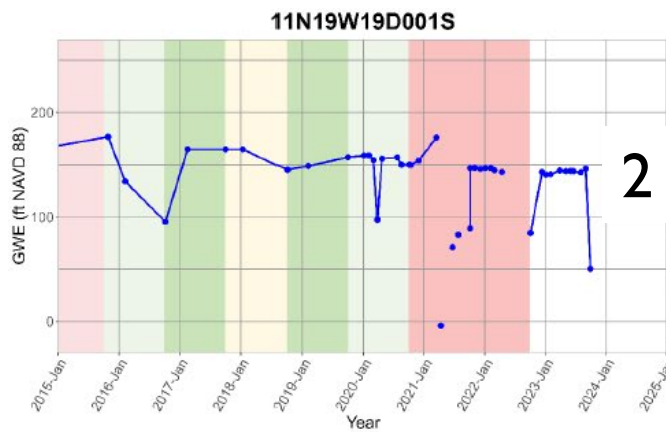
- Average infiltration rate 1.44 ft/day



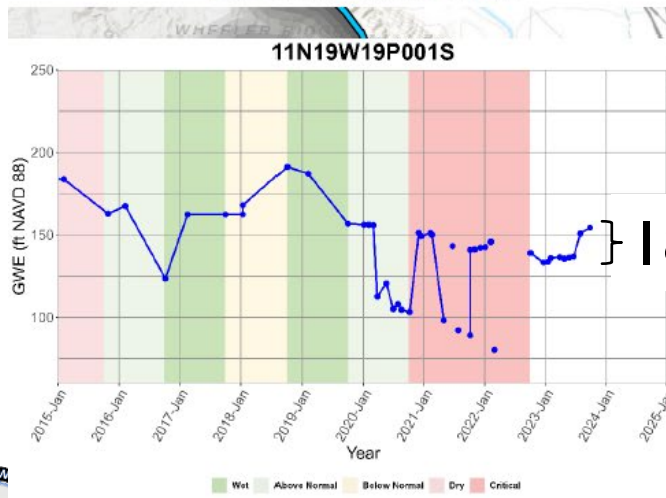
\* Amount as of 9/26/2023



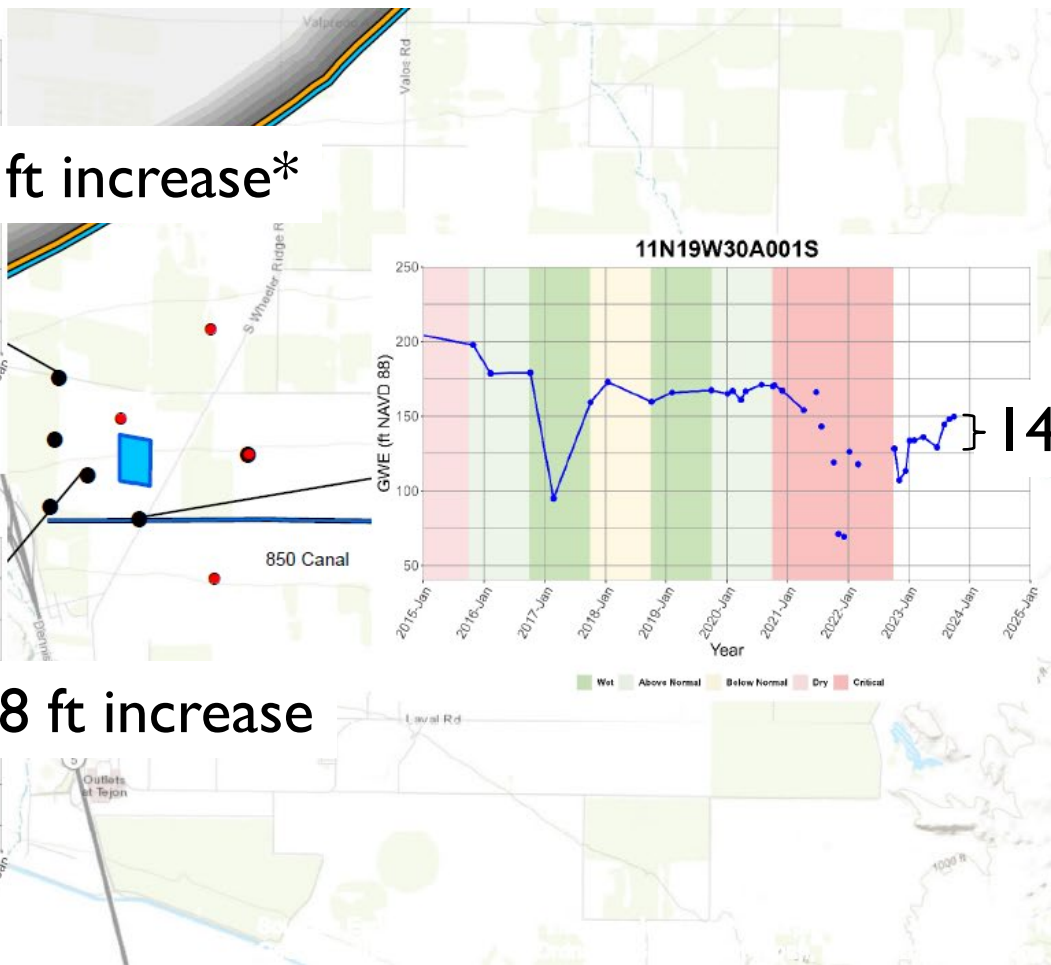
# RECENT GROUNDWATER LEVEL TRENDS NEAR METTLER RECHARGE FACILITY



2 ft increase\*



18 ft increase



■ Increase in nearby water levels since March 2023

14 ft increase

\*excluding questionable September measurement

# P/MA COMMITTEE MEETINGS UPDATE

- September meeting was canceled
- Next meeting: October 12<sup>th</sup> at noon
  - Review recently released DWR guidance documents
  - Begin drafting a policy to address landowner recharge program groundwater credit and leave behind pending Board direction (see Agenda item 6a)

# GRANT UPDATES

# SGMA IMPLEMENTATION GRANT – FINAL AWARDS

- Round 2 final awards list published September 12<sup>th</sup>
- White Wolf maintains the \$4.8 million award announced on the preliminary awards list

## Attachment 1 – SGM Grant Program’s SGMA Implementation – Round 2 Award List

Disclaimer: The Recommended Award are conditional until final terms and conditions are agreed upon and an agreement has been executed. The awarded grant amount listed in the executed agreement can be less than the Recommended Award amount listed here based upon final negotiations between the Awardee and DWR. DWR staff may determine certain tasks are not eligible or do not meet the requirements outlined in the 2021 SGM Grant Program Guidelines and 2021 SGM Grant Program Implementation PSP, revised 2022, and are subject to change. DWR staff may also determine that certain components provided in the application would be better suited combined into one for ease of quarterly reporting and closeout reporting.

2022SIR20061	5-022.18 San Joaquin Valley - White Wolf	32nd and 34th Assembly District, 14th and 16th Senate District, District 21 and 23 (CA)	White Wolf GSA	White Wolf Subbasin Groundwater Sustainability Projects and GSP Implementation	\$13,492,000	\$4,834,000	
				GSP Reporting, Data Gap Filling, Outreach, and SGMA Compliance Activities	This component will consist of the following activities: development and submittal of four annual reports; responding to DWR comments; filling of data gaps; installation of one to three dedicated monitoring wells; preparing of the 2027 GSP; and the conducting of stakeholder outreach and engagement.	\$2,352,000	\$2,352,000
				"South Canal" 850 Canal Intertie	This component consists of the intertying of the AEWS and WRMWS by constructing a new short pipeline segment from the end of the existing 573-P4 Lateral to the 850 Canal; and the replacing of approximately 4,100 lineal feet of the 573-P4 Lateral with a larger pipe to increase the amount of water that can be delivered into the 850 Canal by 20%.	\$925,000	\$925,000
				In-Lieu Banking Program	This component consists of the construction of 19 new irrigation landowner services or "turnouts" and associated piping that will allow Central Valley Project (CVP) floodwater, under AEWS's large Class 2 water supply contract, to be conveyed to lands that rely only on groundwater to meet their domestic and agricultural demands.	\$1,345,000	\$1,345,000
				Grant Administration	Perform tasks necessary to perform reporting and invoicing for the grant agreement.	\$212,000	\$212,000

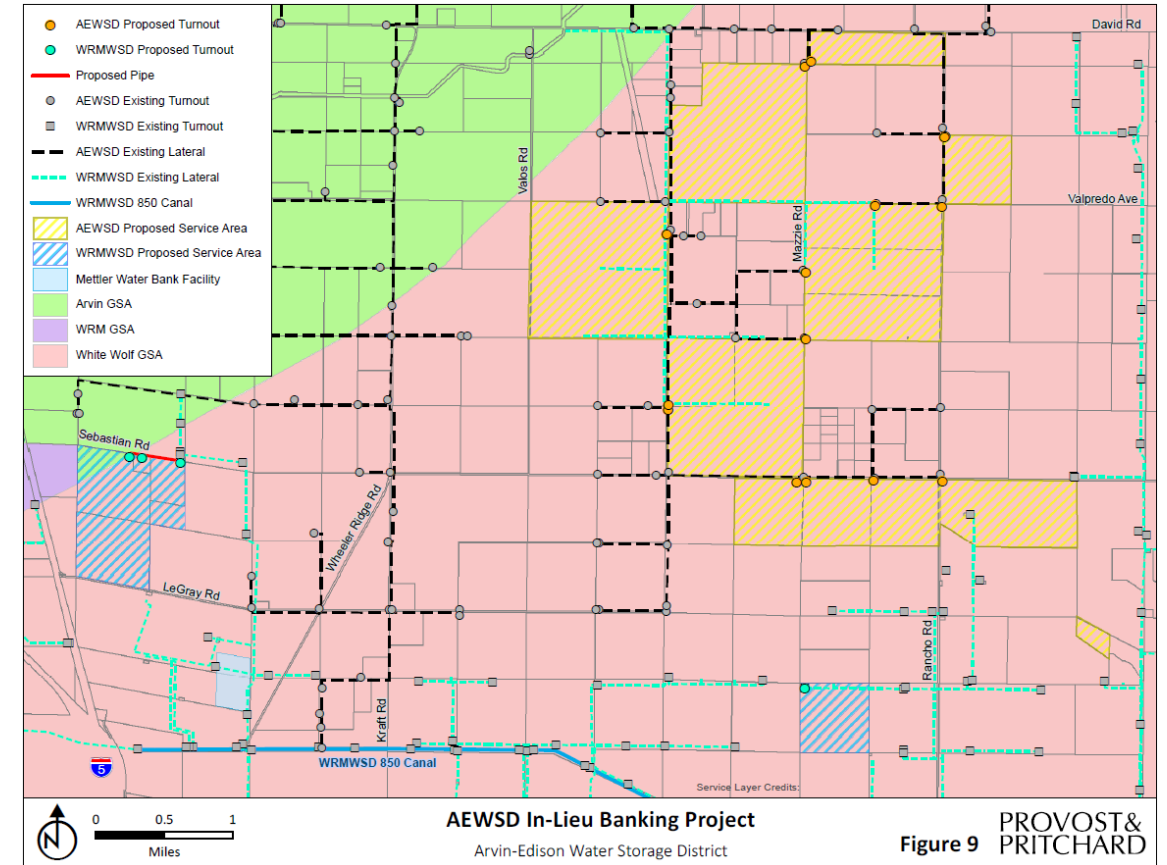
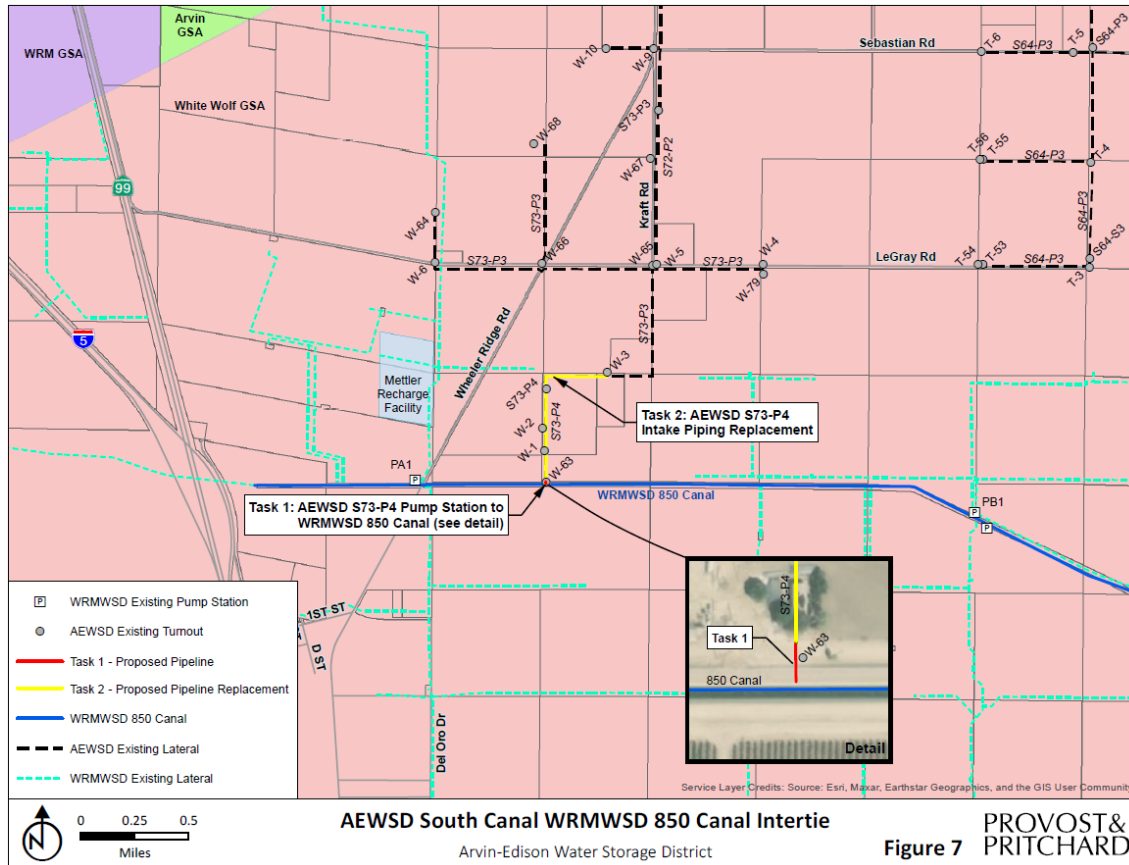
# RECOMMENDATIONS FOR GRANT TASK INITIATION

Component	Tasks	Status	Award
GSP Reporting, Data Gap Filling, Outreach, and SGMA Compliance Activities	<ul style="list-style-type: none"> <li>Monitoring well planning and permitting</li> <li>1 to 3 monitoring well installations</li> <li>GDE Field Assessment and Monitoring</li> <li>Data Gap Filling, Data Compilation, and Assessment</li> <li>WWGFM Update and Re-Calibration</li> <li>Prepare Annual Reports</li> <li>Modify GSP in Response to DWR Determination</li> <li>Five-Year GSP Update</li> <li>Stakeholder Engagement and Public Outreach</li> </ul>	<p>WY 2023 already included in existing EKITO #10</p> <p>Initiation recommended (EKI TO#11)</p> <p>Recommended to wait until WY2024</p>	\$2,352,000
“South Canal” 850 Canal Intertie	<ul style="list-style-type: none"> <li>CEQA and permitting</li> <li>Design plans and specifications</li> <li>Contracting</li> <li>Construction</li> <li>Monitoring</li> <li>Coordination with Interested Parties</li> </ul>	Pending district discussion	\$925,000
In-Lieu Banking Program	Same as above	Pending district discussion	\$1,345,000
Grant Administration	Support grant agreement execution, reporting, invoicing	Initiation recommended (EKI TO#11)	\$212,000

Legend: Green = Included in existing EKITO #10, Magenta = Initiation recommended (EKI TO#11), No Highlight = Wait/Pending



# CONSTRUCTION PROJECT MAPS

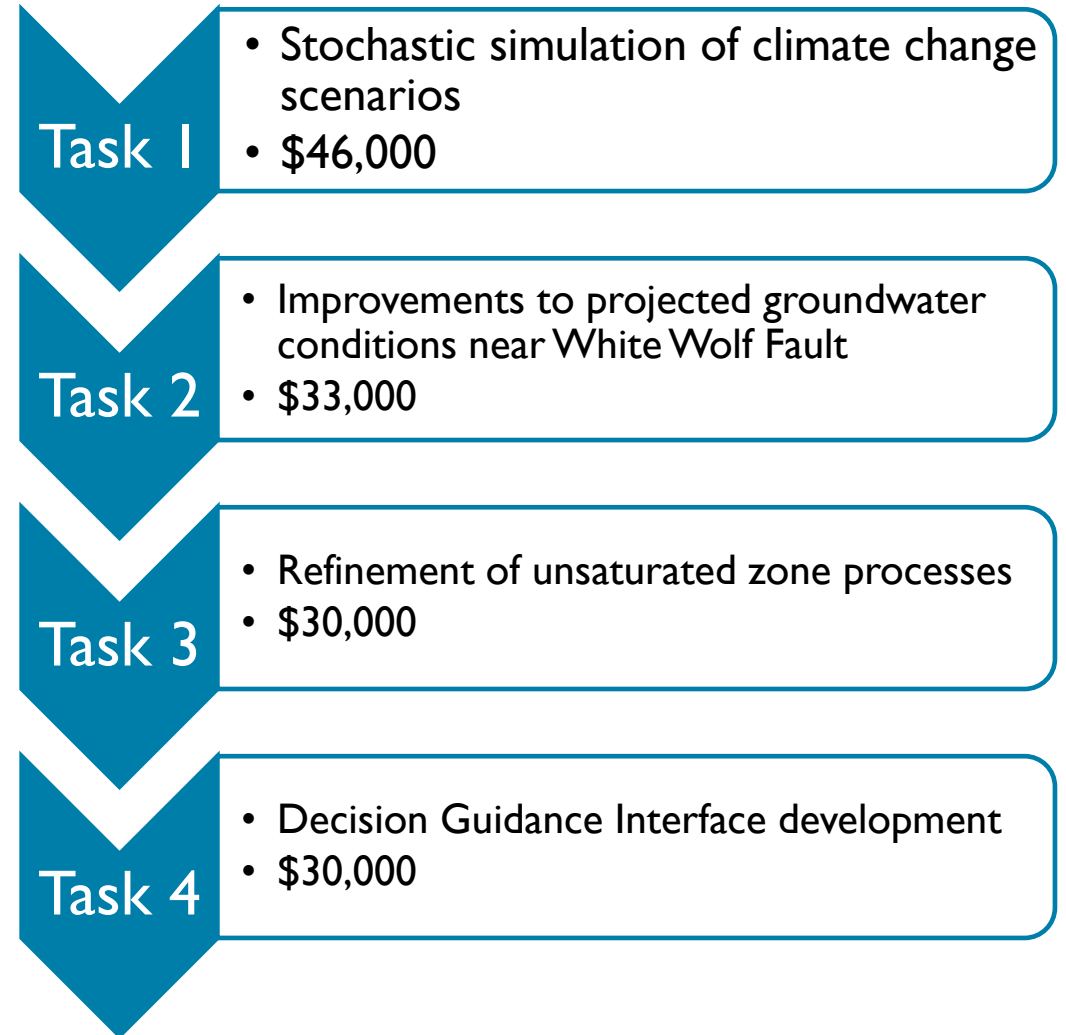


- Pipeline replacement (upsized) and install new short pipeline connecting existing S73-P4 lateral to 850 canal discharge

- 15 new AEWSD and 4 new WRMWSD turnouts and associated piping

# USBR WATERSMART: APPLIED SCIENCE GRANTS

- Applications due **October 17, 2023**
- Anticipated total cost **\$139,000**
  - Federal cost share **\$69,500** (50% of total)
  - Forthcoming grant funds from DWR can count toward local cost share – will need to provide a formal letter of commitment prior to award
- Complete projects within 2 years
  - Ideally, kick-off Fall 2024
- GSA will need an official resolution and funding letter of commitment prior to award



# WWGSA GRANT APPLICATION COST/BENEFITS SUMMARY

Application Year	Grant	White Wolf GSA Costs and Awards				Status
		Application Preparation	Grant Award	Funding Match	Total	
2017	DWR Proposition 1	\$ 20,000	\$ 557,998	\$ 557,998	\$ 1,115,996	Grant Completed - officially closed
2019	DWR Proposition 68	\$ 20,000	\$ 513,000	\$ 171,000	\$ 684,000	Grant Completed - officially closed
2022	<b>DWR SGMA Implementation Round 2</b>	<b>\$ 40,000</b>	<b>\$ 4,834,000</b>	<b>\$ -</b>	<b>\$ 4,834,000</b>	Final award announced Sept. Grant has not been executed yet.
	<i>GSP reporting, data gap, outreach, SGMA compliance</i>		\$ 2,352,000	\$ -	\$ 2,352,000	
	<i>"South Canal" 850 Canal Intertie</i>		\$ 925,000	\$ -	\$ 925,000	
	<i>In-Lieu Banking Program</i>		\$ 1,345,000	\$ -	\$ 1,345,000	
	<i>Grant Admin</i>		\$ 212,000	\$ -	\$ 212,000	
2022	DOC Multibenefit Land Repurposing Round 1	\$ 30,000	\$ -	\$ -	\$ -	Not Awarded
2023	DOC Multibenefit Land Repurposing Round 2	\$ 15,000	\$ -	\$ -	\$ -	Not Awarded
2023	USBR Applied Science (WWGFM)	pending				Application in progress
<b>Total</b>		<b>\$ 125,000</b>	<b>\$ 5,904,998</b>	<b>\$ 728,998</b>	<b>\$ 6,633,996</b>	

**\$1 of application preparation resulted in \$47 of grant funding**