

# EKI TECHNICAL PRESENTATION #28

WHITE WOLF GSA BOARD OF DIRECTORS

6 JUNE 2023

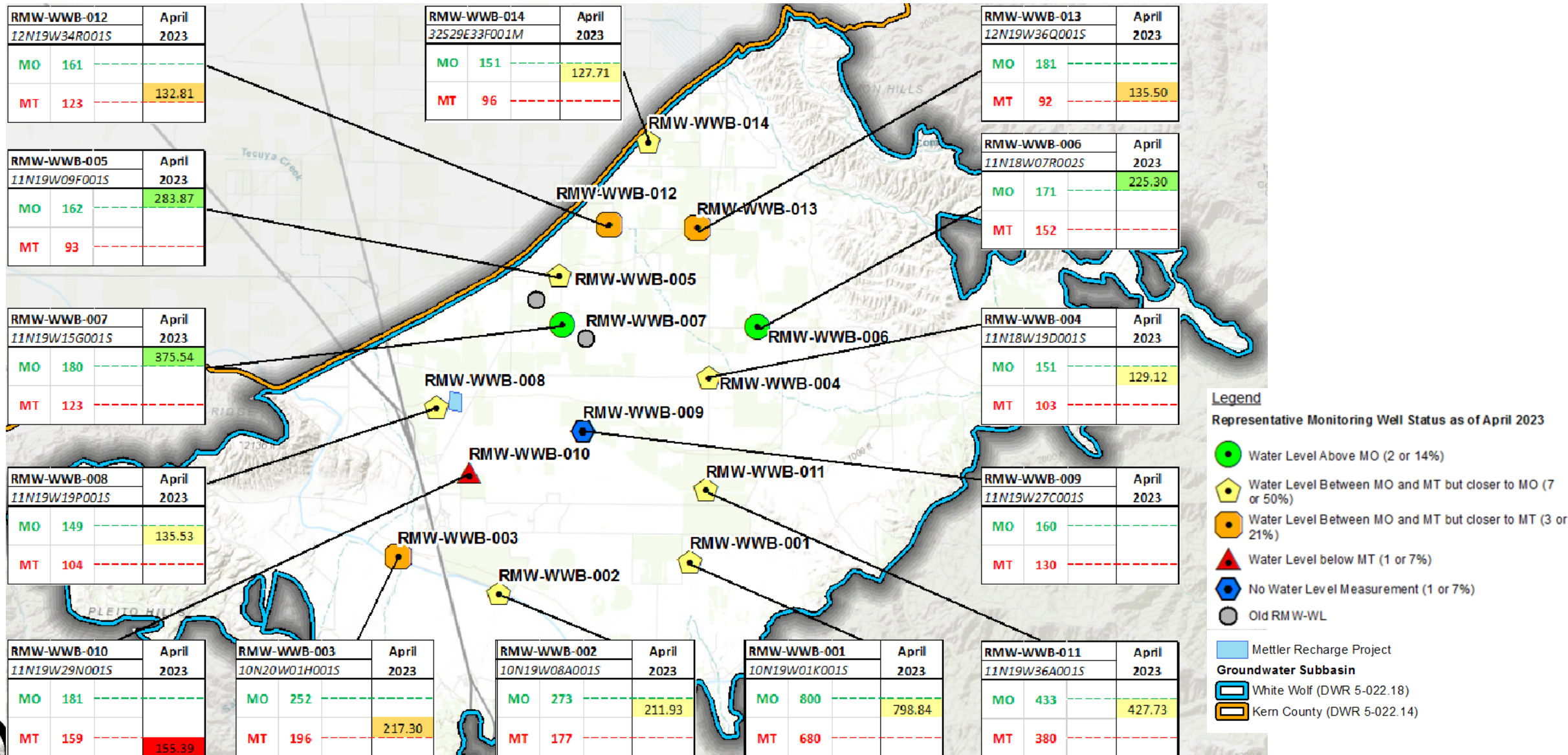


# OUTLINE – AGENDA ITEM #5

- Update on Groundwater Sustainability Plan (GSP) implementation activities
  - April and May 2023 groundwater levels
  - Data gap filling activities
- Grant Application Updates
- Projects/Management Actions (P/MAs) Committee Update
- DWR GSP Determinations Update

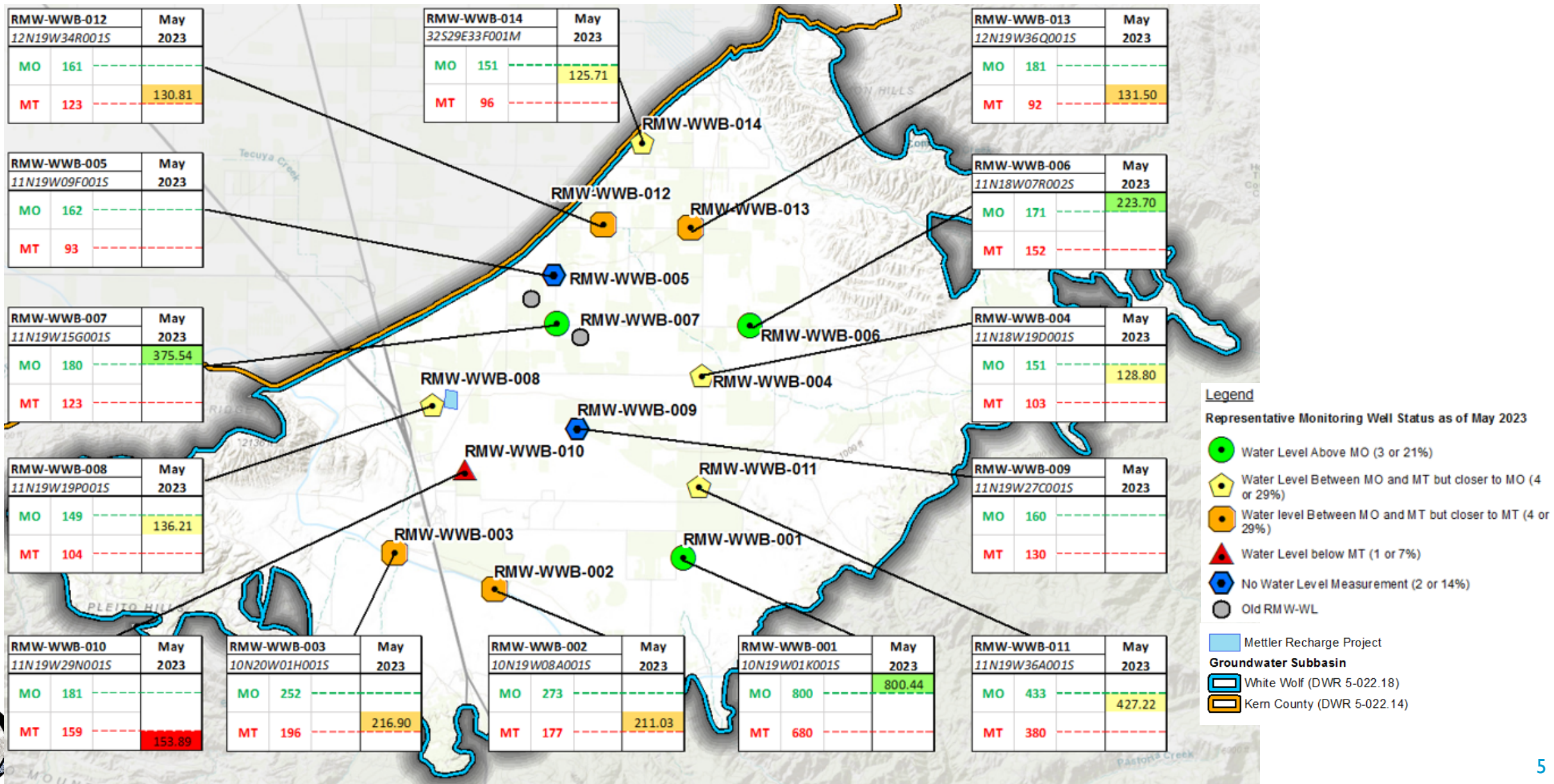
## 5a. GSP IMPLEMENTATION UPDATES

# APRIL 2023 MEASUREMENTS COMPARED TO SMCs

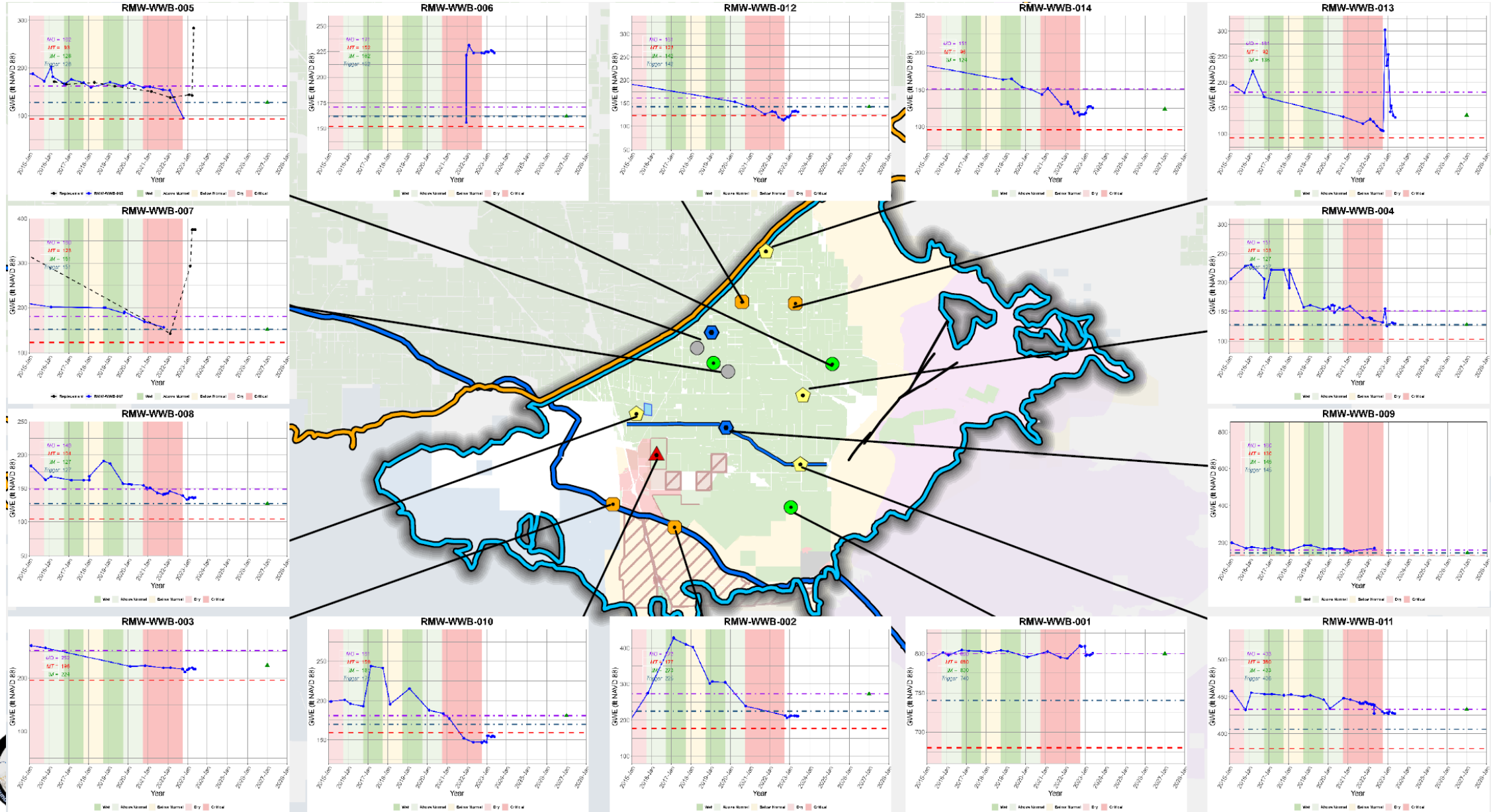




# MAY 2023 MEASUREMENTS COMPARED TO SMCs

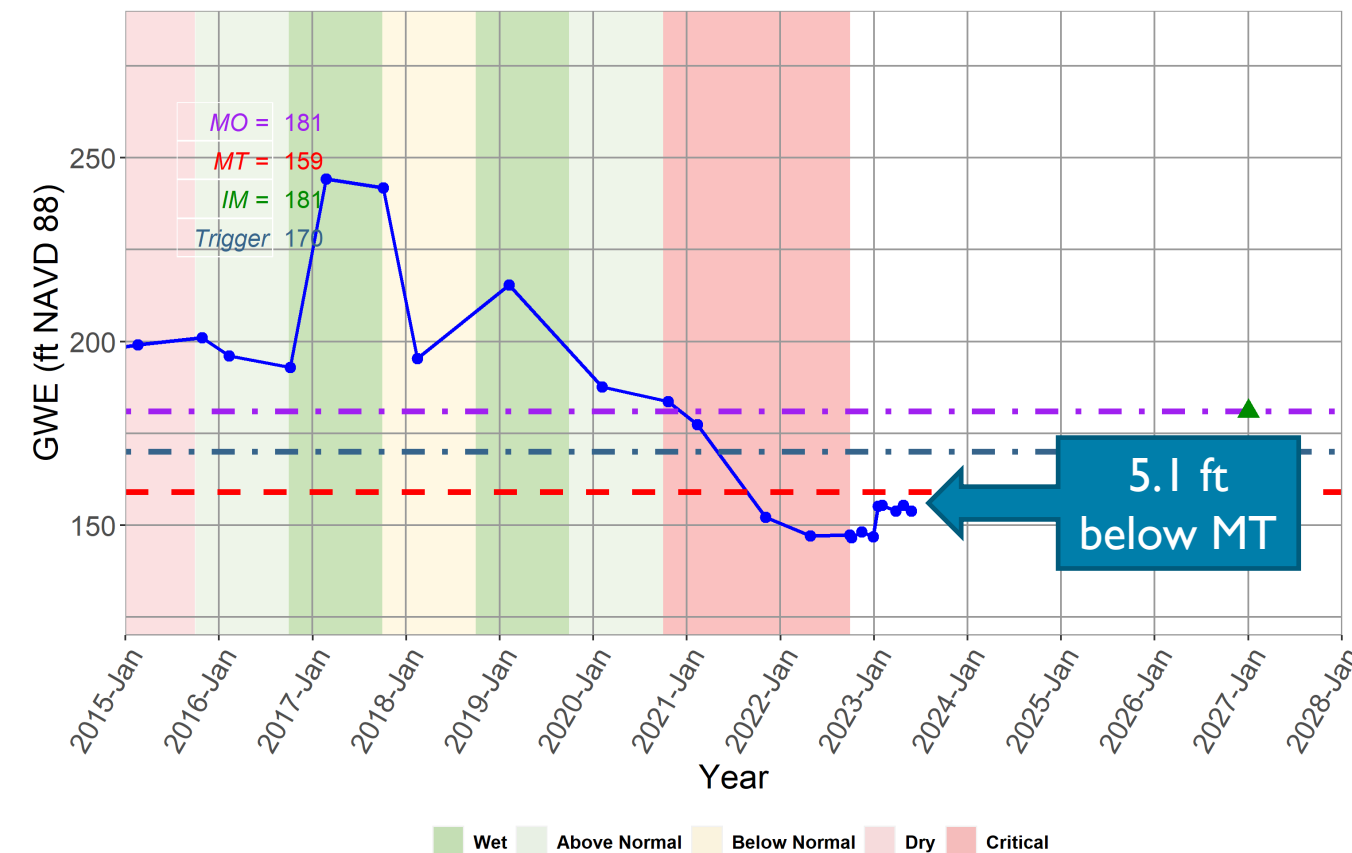


# RMW-WL HYDROGRAPHS



# CONTINUED MT EXCEEDANCE IN RMW-WWB-010

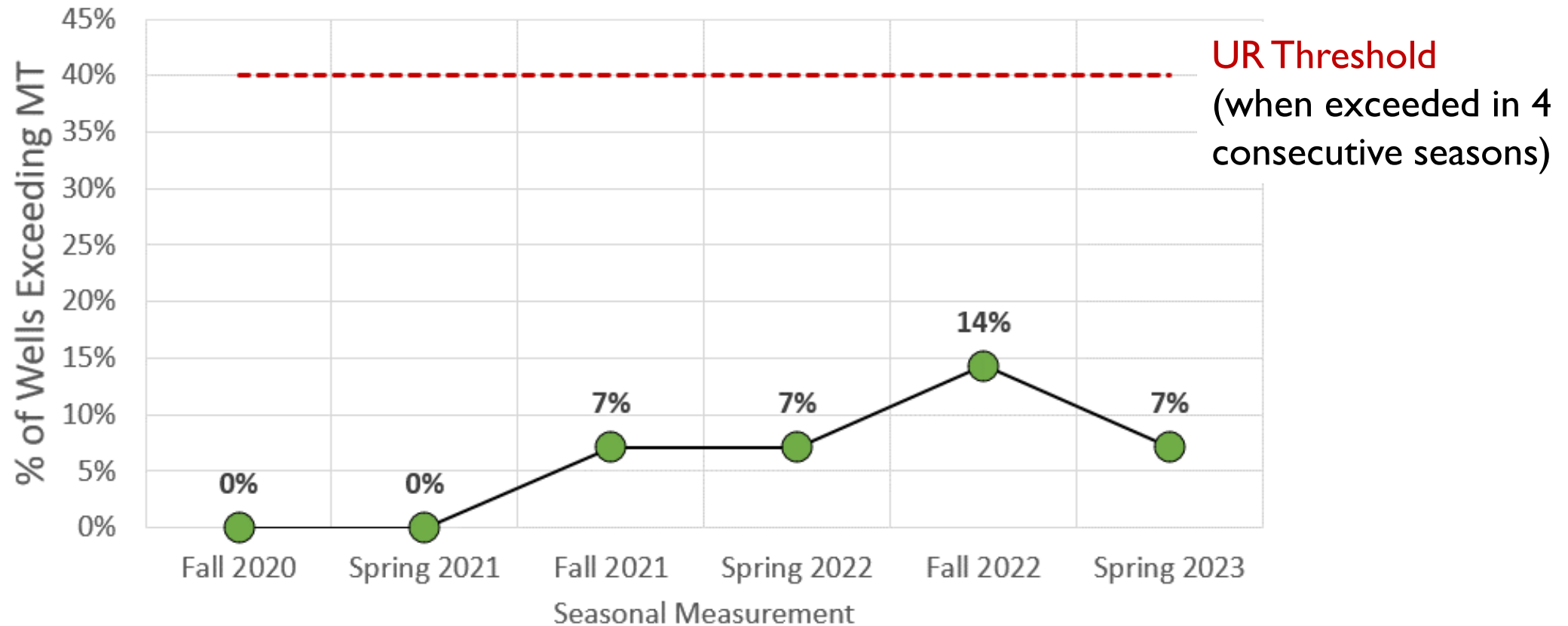
RMW-WWB-010



- Will continue monthly water level measurements and tracking through the Fall 2023 measurement (Nov 15<sup>th</sup>) before conducting additional analyses
- Anticipate reduced pumping due to increased surface water supply and restrictions on WRMWSD User Input program

# UNDESIRABLE RESULTS ARE NOT YET OCCURRING

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





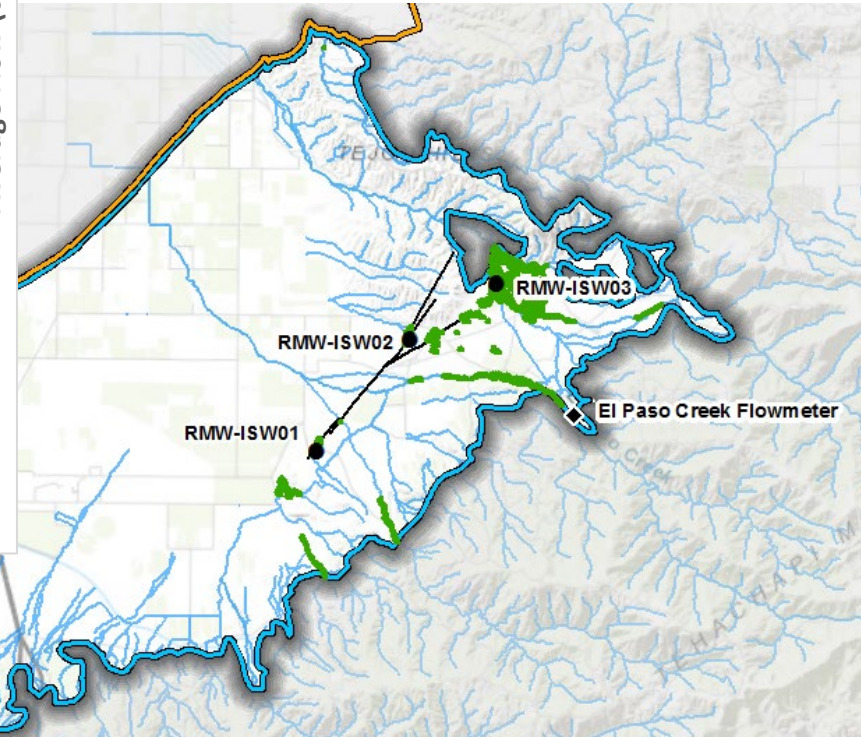
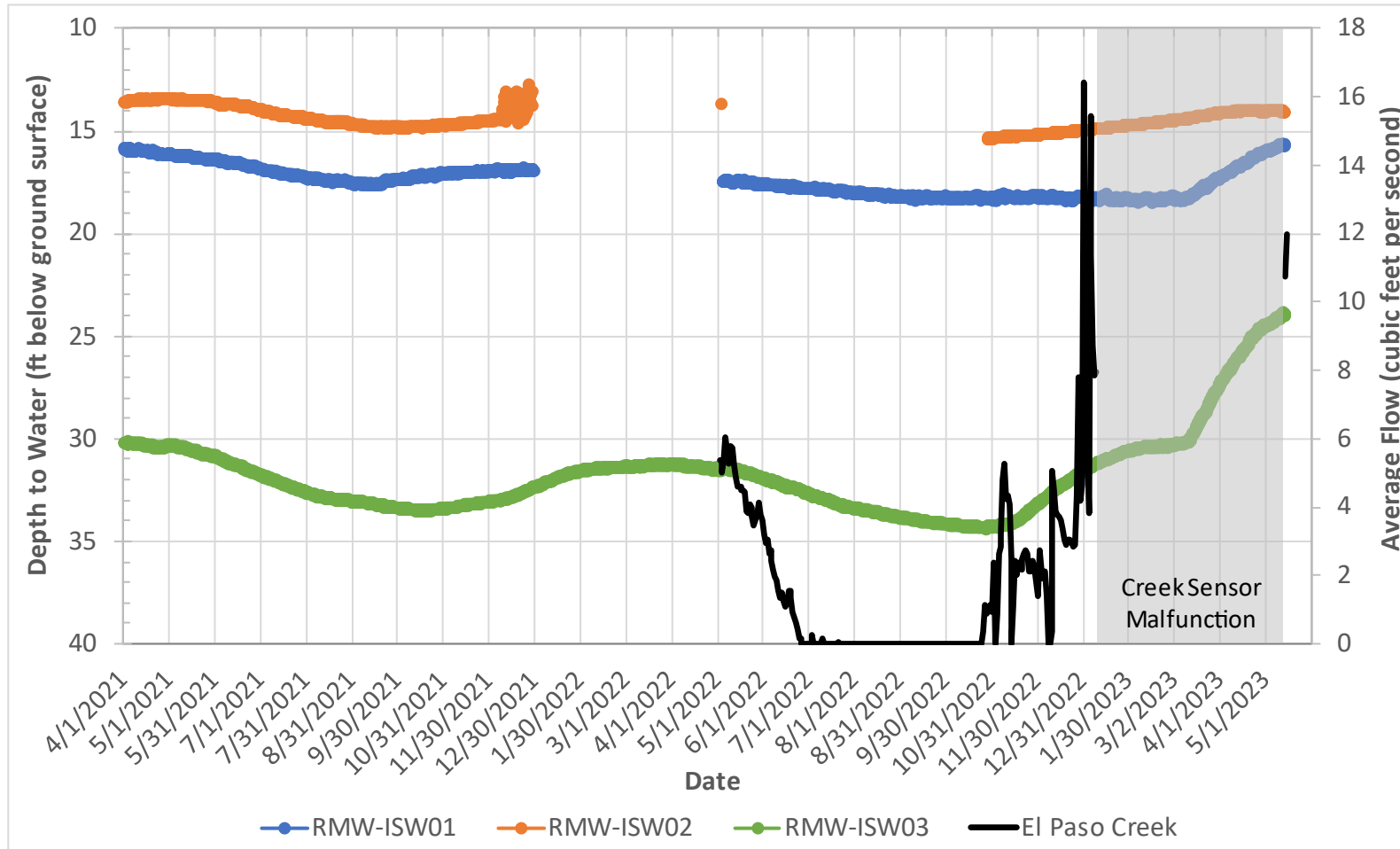


# SPRING FIELD WORK CONDUCTED MAY 15-16<sup>TH</sup>

- Downloaded all monitoring well transducer data and creek flowmeter data
- Measured streamflow on El Paso Creek
- Conducted equipment maintenance
- Trained District staff to transition fieldwork



# RMW-ISW HYDROGRAPHS AND CREEK FLOW



May 2023 El Paso Creek flow ~12 cfs



# FORTHCOMING DATA GAP FILLING ACTIVITIES



Land  
Subsidence

- Contracting for land surveying 2 benchmarks along 850 Canal underway



Surface Water  
Depletion

- Coordinate with DWR California Aqueduct Subsidence Program (CASP) for subsidence monitoring from Feb 2023 survey



Degraded  
Quality

- Process GDE Pulse data received from TNC on 6/1/2023
- Download and process water quality samples from public water systems and supplemental wells
- Review DWR AEM interpolated report and data and strategize use in updating Basin Setting

## 5b. GRANT APPLICATION UPDATES



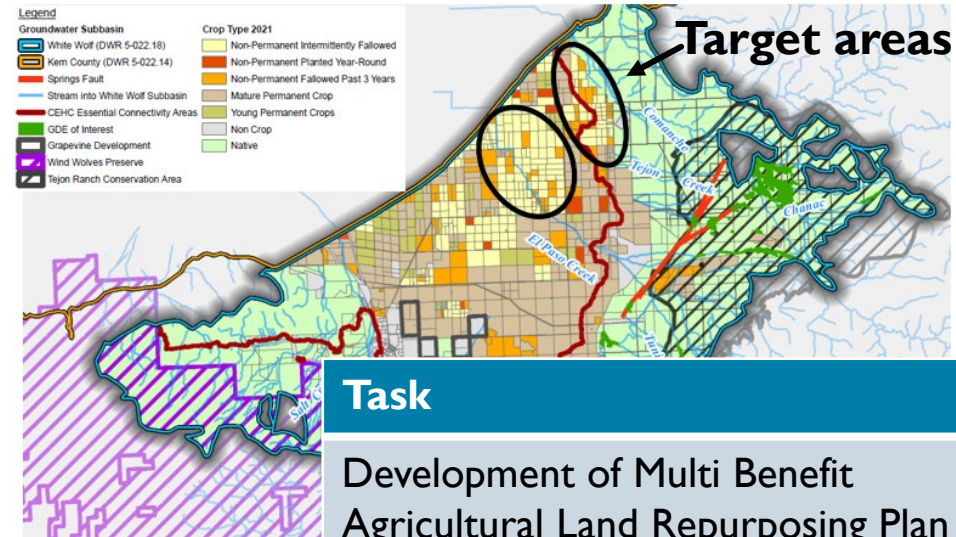
# SGMA IMPLEMENTATION ROUND 2 AWARDS

- 82 applications submitted requesting > \$795M out of \$187M available
- White Wolf GSA among 31 applications selected in draft awards list

Component	Priority	Amount Requested	Recommended Award Amount
GSP Reporting, Data Gap Filling, Outreach, and SGMA Compliance Activities	1	\$2,352,000	\$2,352,000
“South Canal” 850 Canal Intertie	2	\$925,000	\$925,000
In-Lieu Banking Program	3	\$1,345,000	\$1,345,000
Oilfield Reclaimed Water from the Tejon Oilfield Phase 2 Pilot Plant	4	\$1,940,000	Not selected
Tejon Recharge Basin Demonstration Project	5	\$ 6,718,000	Not selected
Grant Administration	6	\$212,000	\$212,000
<b>Total</b>		<b>\$13,492,000</b>	<b>\$4,834,000</b>

# MULTIBENEFIT LAND REPURPOSING PROGRAM (MLRP) APPLICATION

- Incorporated feedback from P/MA Committee and Round 1 reviewers
- Coordinated with Project Partners and Collaborators on roles/responsibilities
- Submitted application to Department of Conservation (DOC) on March 29<sup>th</sup>
- Interviewed with DOC reviewers on April 28<sup>th</sup>



Task	Budget
Development of Multi Benefit Agricultural Land Repurposing Plan	\$ 392,000
Project Development and Permitting	\$ 581,000
Land Repurposing Project Implementation	\$ 6,741,000
Partner Capacity Needs	\$ 250,000
Outreach, Education, and Training	\$ 475,000
Monitoring	\$ 315,000
Indirect Costs	\$ 136,000
<b>TOTAL</b>	<b>\$ 8,890,000</b>

# ROUND 2 MLRP GRANT DECISION SCHEDULE

<b>Decisions announced</b>	<b>June 2023</b>
Enter grant agreement with DOC	July/ August 2023
Last reimbursable expenditures	March 2027
End of program	June 2027

*Draft – For Discussion Purposes Only*

## WWB LAND REPURPOSING VISION

- Initiate land repurposing through a systematic process that considers multiple beneficial uses, engages landowners, reduces groundwater use, supports wildlife habitat, and helps the Basin work toward achieving its Sustainability Goal as outlined in the Groundwater Sustainability Plan (GSP) through a three-step process:

Groundwater Use (MGD)

Year	Groundwater Use (MGD)
2015	27,700
2020	5,000
2025	9,500

Legend:   
■ Without Development   
■ With New Supplies   
■ Complete Reduction

- Step 1:** Develop a Plan containing ranked strategies tailored to succeed identified through a community input process
- Step 2:** Implement groundwater-use reducing Projects/Management Actions (P/MAs)
- Step 3:** Demonstrate how land repurposing can both reduce groundwater use and create regional benefits

*Draft – For Discussion Purposes Only*

## HOW WE ANTICIPATE ACHIEVING OUR VISION

**GSA and member agency staff**

- Grant administration
- Policies to facilitate repurposing
- Implement repurposing projects
- Organize and participate in outreach
- Monitoring

**Project Partners**

- Conduct outreach
- Host workshops
- Develop educational materials
- Native plant workplan
- Project selection and ranking system

**Collaborators**

- Subject matter expertise
- native cover cropping
- sustainable farming
- DAC outreach
- habitat monitoring
- Community connection

**Central Intersection: P/MA Committee**

## 5c. P/MAS COMMITTEE UPDATE



# SUMMARY OF P/MA COMMITTEE MEETINGS

March  
9th

*Discuss MLRP grant application and obtain input on land repurposing projects that are the most feasible in the White Wolf Subbasin*

9 landowner participants  
GSA reps

April  
13th

*Discuss recharge credit policies for consideration by the White Wolf GSA Board of Directors*

11 landowner participants  
GSA reps & BOD ad-hoc

May  
11th

*Discuss top 3 recharge credit policy questions for consideration by the White Wolf GSA Board of Directors*

5 landowner participants  
GSA reps & BOD ad-hoc



# KEY OUTCOMES AND ANALYSIS REQUESTED BASED ON LANDOWNER INPUT DURING MEETINGS

- Obtained direct landowner input on land repurposing strategies and partnerships for inclusion in MLRP application
- Conducted research as to whether a recharge credit policy could work without an established groundwater allocation system
- Summarized District policies and GSA authorities to identify potential nexus
- Facilitated landowner discussion to identify preferences for recharge credit policies
- Mapped basin-wide recharge suitability
- Identified infrastructure constraints to conducting on-farm recharge
- Calculated the lost recharge potential so far this year

# UPDATED MLRP APPLICATION

- Identified and included new landowner-identified land repurposing options in MLRP application
- Reinforced project partnership with Wind Wolves Preserve and identified Anthony Vineyards, ACSD, and TNC as new project collaborators

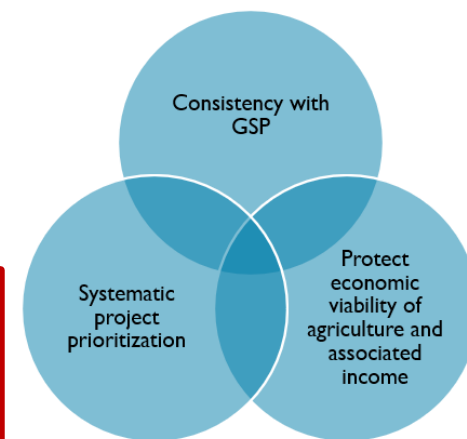
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## TASK 1 – DEVELOPMENT OF MULTIBENEFIT LAND REPURPOSING PLAN

- Establish land repurposing project selection and ranking system
- Identify strategies and potential projects, including consideration and expansion on existing P/MAs from the GSP and conceptualized through P/MA Committee:
  - P/MA #14: AEWSD Groundwater Subsidies for Land Conversion
  - P/MA #15: WRMWSD Land Retirement and/or Conversion
  - Incentivize landowners to plant diverse blends of cover crops on intermittently fallow lands
  - Wind Wolves Preserve native seed collection and plant propagation initiative
  - Floodplain restoration and landscape rewilding near creeks



✓ Deliverable: Multibenefit Agricultural Land Repurposing Plan



Budget = \$392,000

# RESEARCH ON RECHARGE CREDITING OPTIONS

Can a recharge credit policy work without a groundwater allocation system?

- Landowners could be able to redeem recharge credits for:

Money

- Incentive programs like AEWSD and WRMWSD which pay landowners to conduct on-farm recharge when wet winter supplies are available

Reduction in groundwater extraction fees

- Pilot program like Pajaro Valley where recharge basin operators receive a yearly rebate on their metered/delivered water rate

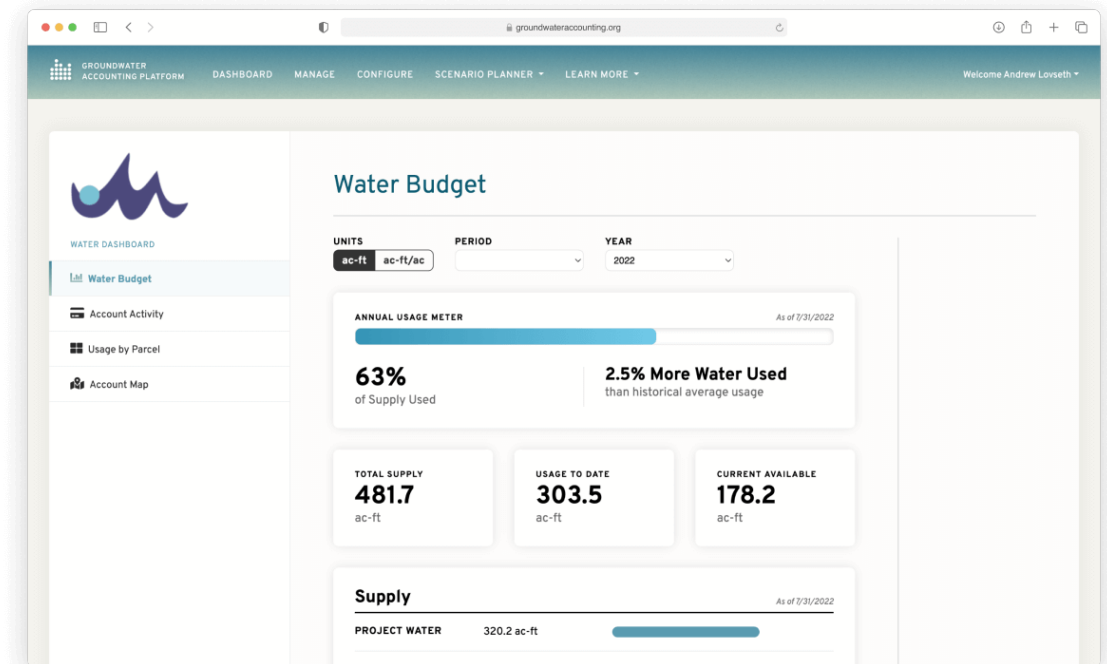
Groundwater in which would otherwise be pumped

- Credit towards a groundwater allocation, similar to most example existing landowner recharge credit policies



# RECHARGE CREDIT TRACKING SYSTEMS ARE IN DEVELOPMENT

- Case study: Groundwater Accounting Platform
- Open-source software that allows for parcel-based water use accounting and water budgets
- In pilot phase, but will be available to GSAs soon



<https://groundwateraccounting.org/>

# COST TO INCENTIVIZE PARTICIPATION

- Case Study: Land repurposing in Merced County
- Voluntary program
- Landowners to propose an annual per acre incentive payment to repurpose their fields
- 2022: proposed annual incentive payment ranged from \$300/ac to \$800/ac, with an average of around \$570/ac
- Concurrently developing a groundwater allocation framework

How much money does it take to incentivize landowner participation? What is an appropriate land-based cost?

**Get Paid to Repurpose your Land!**

through the  
Merced Subbasin Groundwater Sustainability Agency  
**Land Repurposing Program**

*Accepting applications  
in fall 2022  
for repurposing starting  
in 2023*

*Land Repurposing* aims to reduce groundwater pumping and overdraft, and can include:

- Fallowing
- Switching from high to low water use crops

Participants receive *incentive payments!*

Visit  
<https://mercedsubbasingsa.org/>  
or scan QR code for more information

[QR code for link]

**Merced Subbasin**  
Groundwater Sustainability Agency

# EXISTING GSA-MEMBER DISTRICT POLICIES

What is the nexus between District and GSA policies?

Program	District	Summary	Water Source
AEWSD on-farm recharge	AEWSD	District pays landowner \$40/AF to recharge. District maintains ownership of water.	District water
WRMWSD landowner recharge	WRMWSD	District pays landowner \$75/AF to recharge. District maintains ownership of water.	District water
Mettler Recharge	WRMWSD	Facility owner and District each receive first priority for a portion of the recharge capacity. Water recharged by each party accrues to their respective account.	Parties acquire their own water
Groundwater service charge	WRMWSD	Groundwater service charge anticipated to begin in July 2023. Fee based on volume of groundwater pumped.	Groundwater
Kern Water Bank	WRMWSD	Water users can make use of excess District capacity in the Kern Water Bank and receive credits to an account.	Established by District



# BRIEF SUMMARY OF RELEVANT GSA AUTHORITIES

## CWC 10725.4 Investigations

- GSP preparation and adoption
- Propose and update fees
- Monitoring compliance and enforcement

## CWC 10725.6 Registration of Extraction Facilities

- Well registration

## CWC 10725.8 Measurement Devices and Reporting

- Metering (equipment costs borne by owner)
- Annual extraction reporting

## CWC 10726.2 Acquisitions, Augmentation of Local Water Supplies, etc.

- Appropriate/acquire water or water rights, import surface water, and/or bank water for recharge
- Develop a voluntary following program
- Enable in-lieu program

## CWC 10726.4 Additional Authorities

- Establish groundwater extraction allocations
- Establish accounting rules, including transfers and carry over

What is the nexus between District and GSA policies?

## JPA White Wolf GSA

- GSA has all the powers that a GSA is authorized under SGMA
- GSA does not control water rights
- GSA cannot restrict how water is used
- If the GSA establishes an allocation, water transfers will be considered, conditions regarding transfers will be defined, and transfers should not materially harm other parties.





# DISTRICT/GSA RECHARGE POLICY NEXUS

What is the nexus between District and GSA policies?

GSA member District	Landowner On Farm Recharge Incentive
AEWSD	\$40/AF
WRMWSD	\$75/AF (on approved lands)
TCWD	--

- No existing GSA-wide policy, current policies are not applicable to landowners outside of AEWSD and WRMWSD service areas
- No existing groundwater allocation framework
- Landowners have not historically acquired their own water for recharge and would have to compete with Districts for conveyance capacity
- Distribution systems set up for irrigation delivery not recharge

# LANDOWNER POLICY PREFERENCES

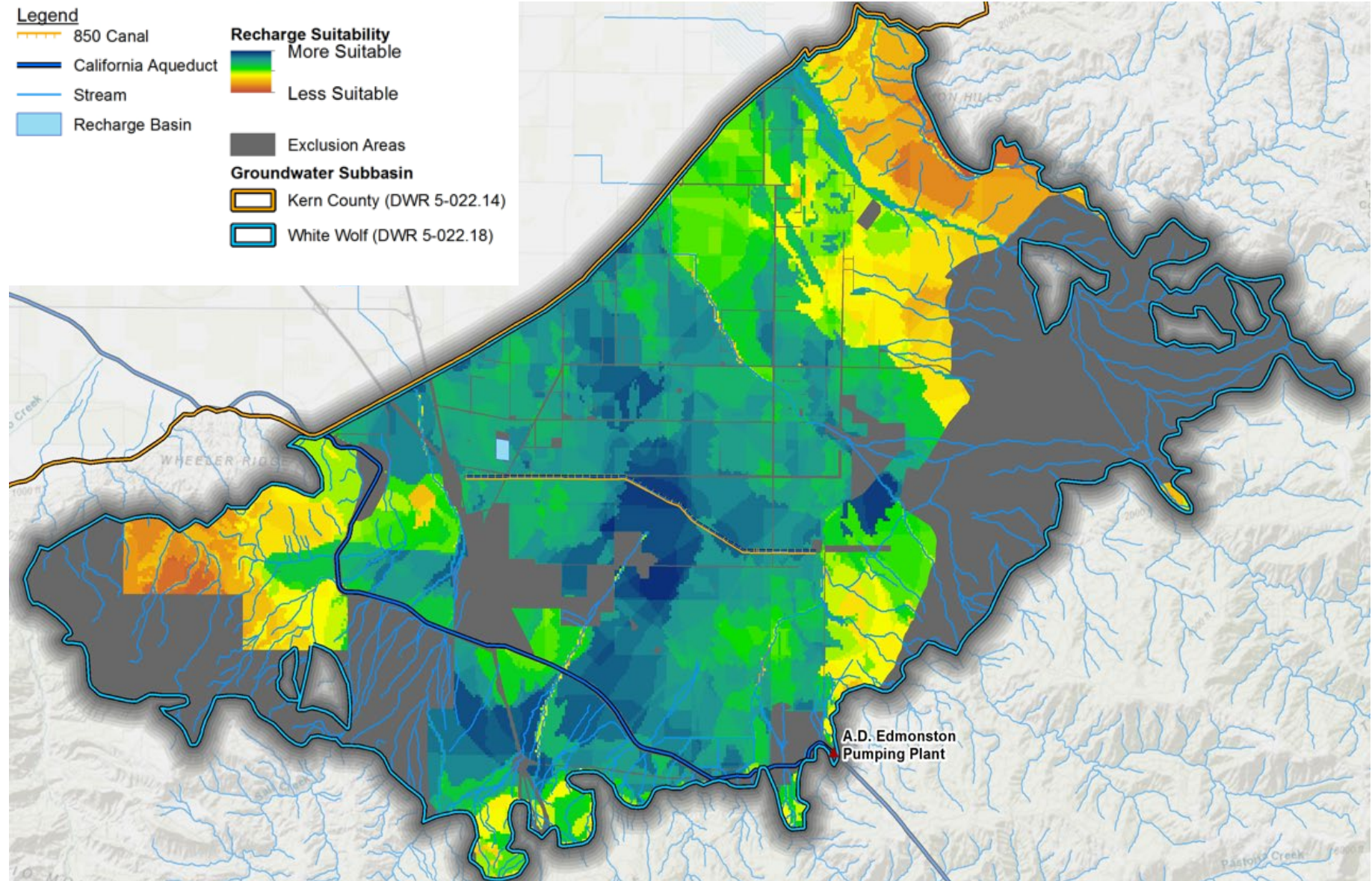
How can a credit policy be structured to encourage landowners to bring water into the basin to bank for future use?

- Landowners would favor a policy that:
  - Provides economic incentives instead of assigning allocations
  - Identifies suitable lands for recharge
  - Maintains land use flexibility (i.e., farms remain, not dedicated recharge basins)
  - Is voluntary
  - Provides flexibility for recharge water sources
  - Has a low leave behind percentage
  - Allows for withdrawing banked water in subsequent years

Have the best areas for recharge been identified?

# RECHARGE SUITABILITY

- Based on soil properties and geology most areas of the WWB are suitable for surface recharge
- Depth to the water table may reduce efficiency



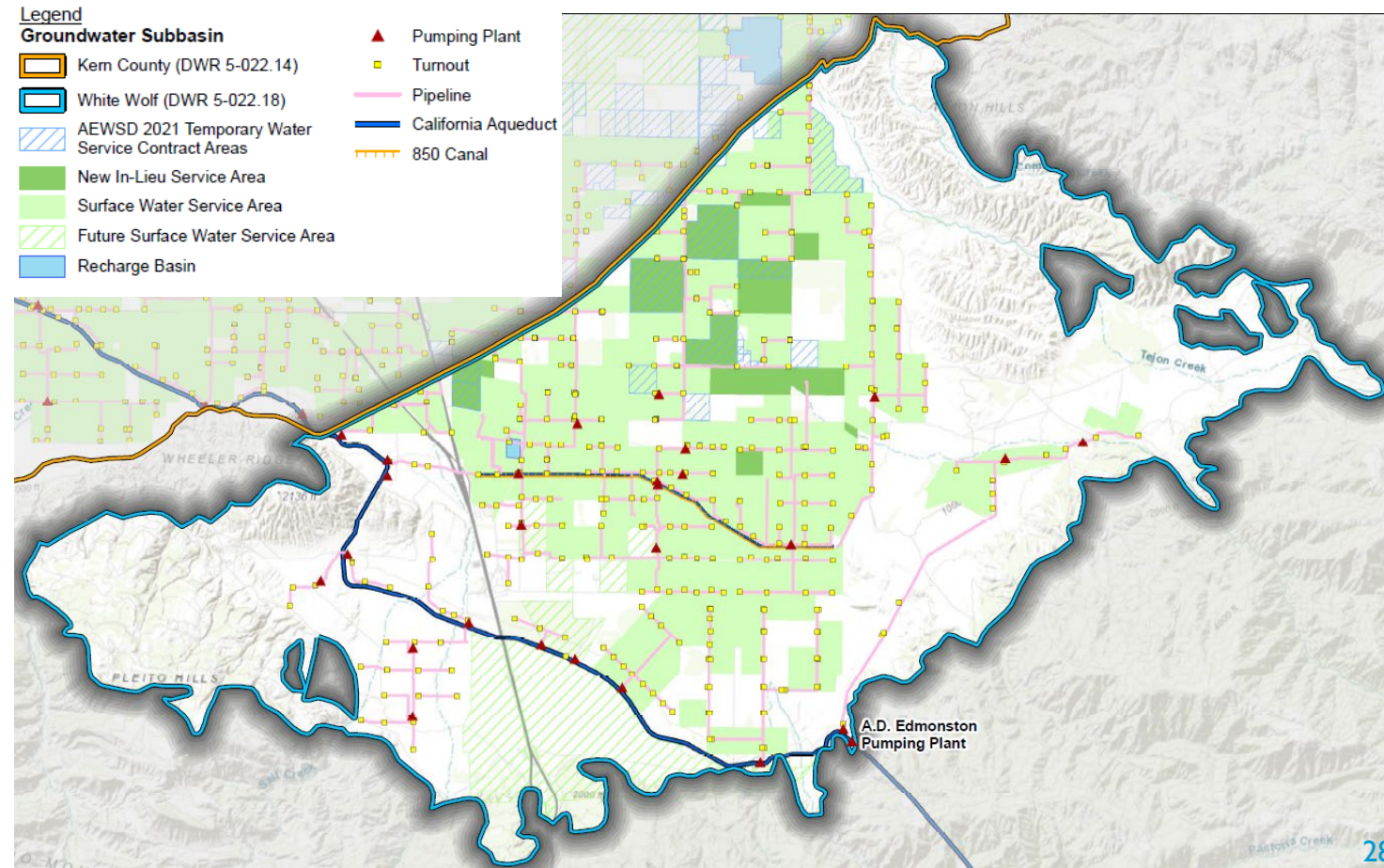


# INFRASTRUCTURE CONSTRAINTS

What District infrastructure are needed to deliver surplus water when it is available?

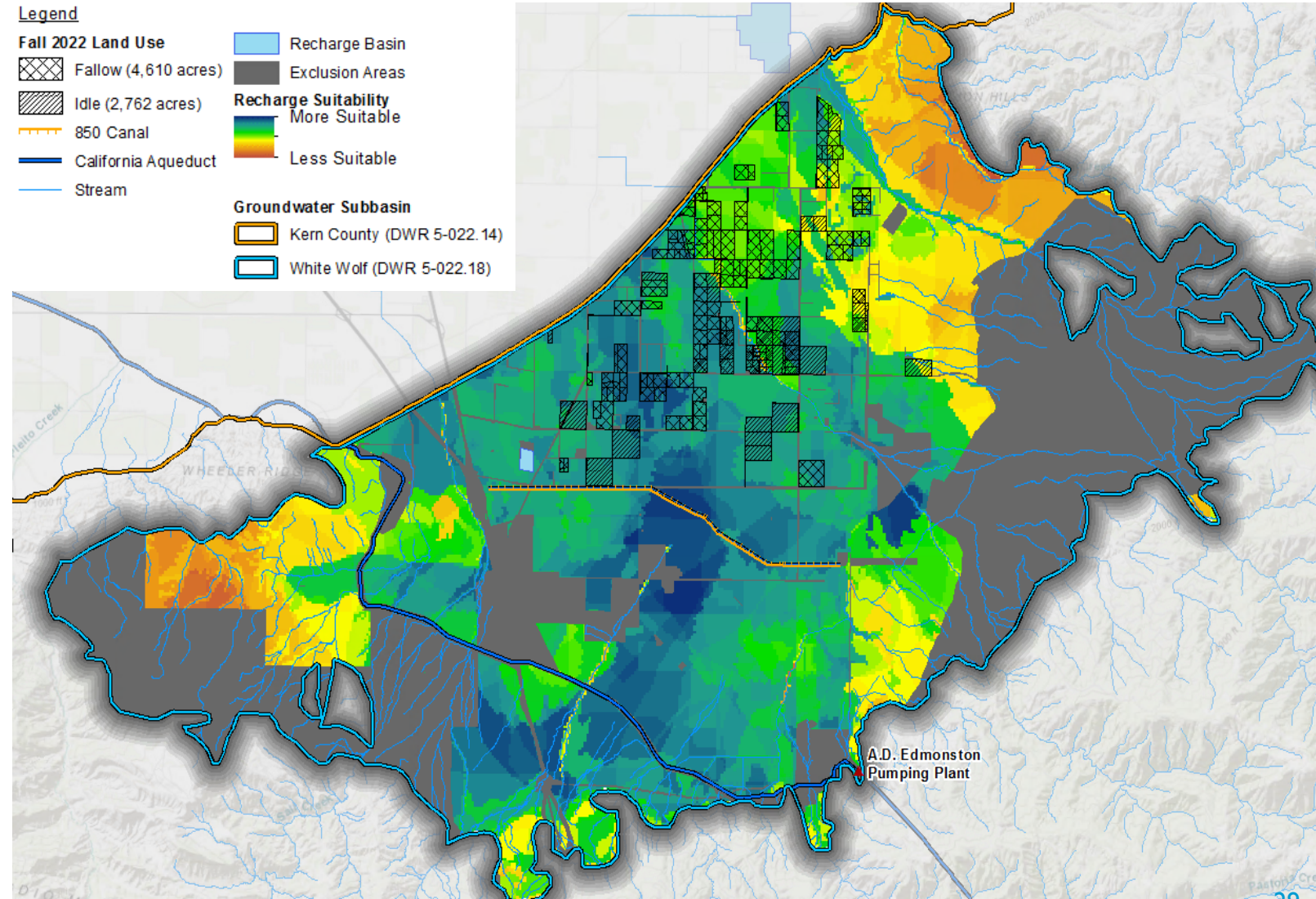
GSA member District	Approx. Maximum Existing Delivery Capacity (AF/mo)
AEWSD	5,500
WRMWSD	20,000

- 33,000 acres are in surface water service area (SWWSA)
  - 97% of agricultural lands
- 8,900 acres planned to be added to SWWSA



# FALL 2022 RECHARGE POTENTIAL

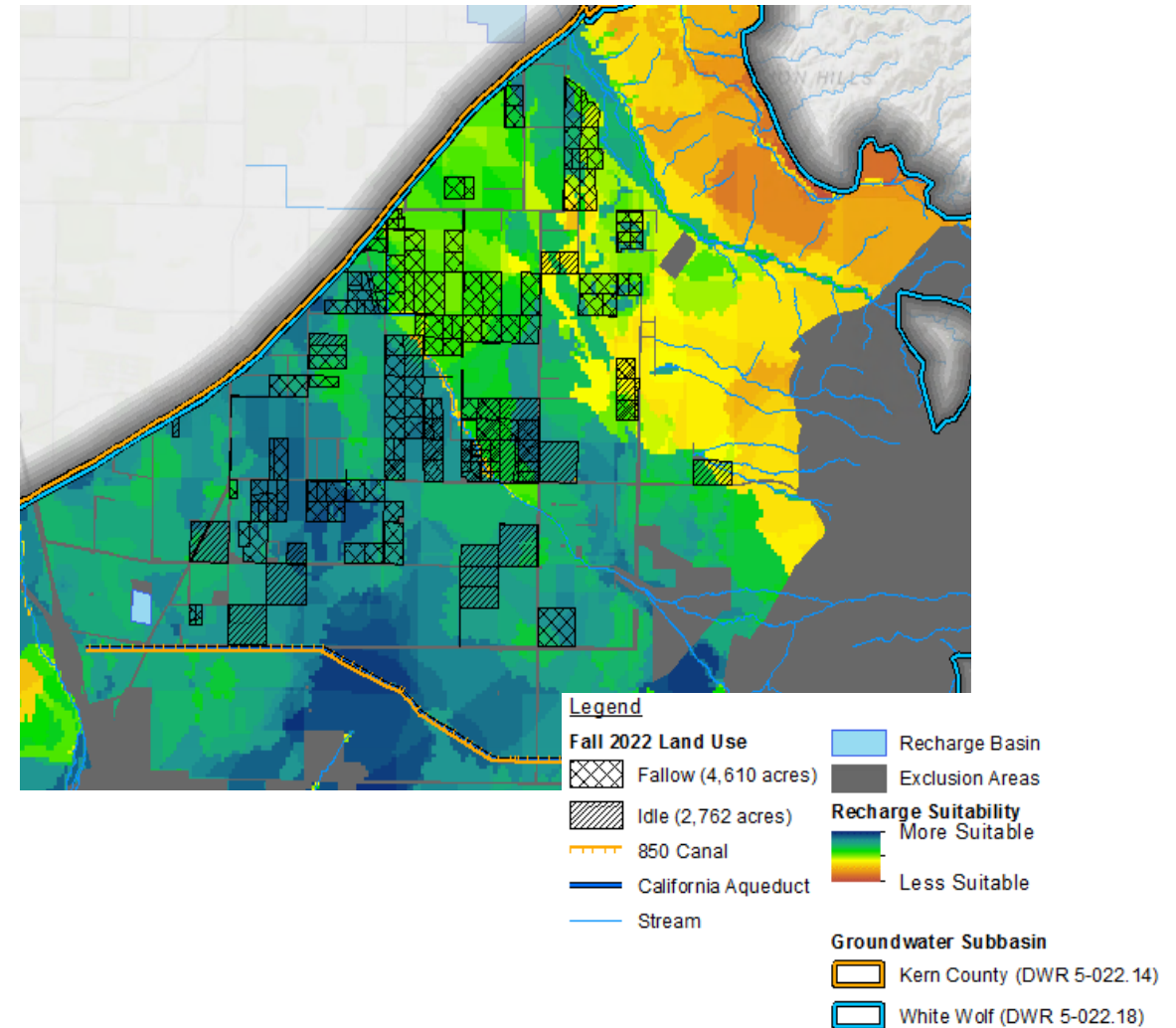
- 7,372 acres of fallow/idle lands within the SWWSA in Fall 2022
- Soil recharge capacity ranges from 0.25 to 39 ft/d
  - Mettler: 1.0 ft/d (1/4 of soil recharge capacity)
- Turnout capacity to deliver water is approx. 0.02 ft/d (AEWSD) to 0.03 ft/d (WRMWSD)





# WATER LEFT BEHIND THIS YEAR

- AEWSD declined ~70,000 AF from Feb 1 to July 2023
  - Could have delivered and recharged ~**21,000 AF** on fallow/idle lands with existing infrastructure
- WRMWSD declined unallocated Article 21 water from March 22 to June 2023
  - Could have delivered and recharged ~**7,000 AF** on fallow/idle lands with existing infrastructure





# CONSIDERATIONS FOR GSA BOARD

- What policies/actions does the GSA want to take to better capture future wet winter water?
- Does the GSA want to consider a land re-purposing or a landowner-based recharge program? If yes, what policies/actions would need to support that?

## WW GSP P/MA Implementation “Glide Path”

Year	2027	2032	2037	2042
<b>P/MA Contributions</b>	AFY			
<b>Grapevine Development</b>	1,000	1,400	1,900	2,400
<b>Wet Year Supplies</b>	0	1,500	3,500	5,000
<b>Other New Supplies</b>	0	0	1,000	1,000
<b>Pumping Reduction</b>	2,700	5,000	7,200	9,500
<b>P/MA Total Contributions</b>	3,700	7,900	13,600	17,900

## 5d. DWR GSP DETERMINATIONS UPDATE

