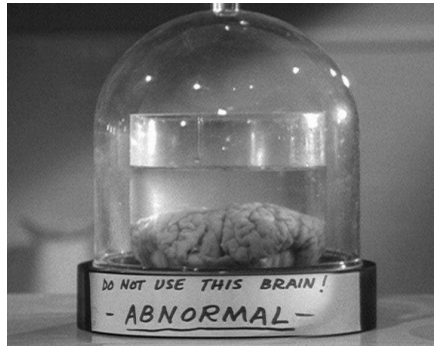


NEVADA DIVISION OF
WATER RESOURCES

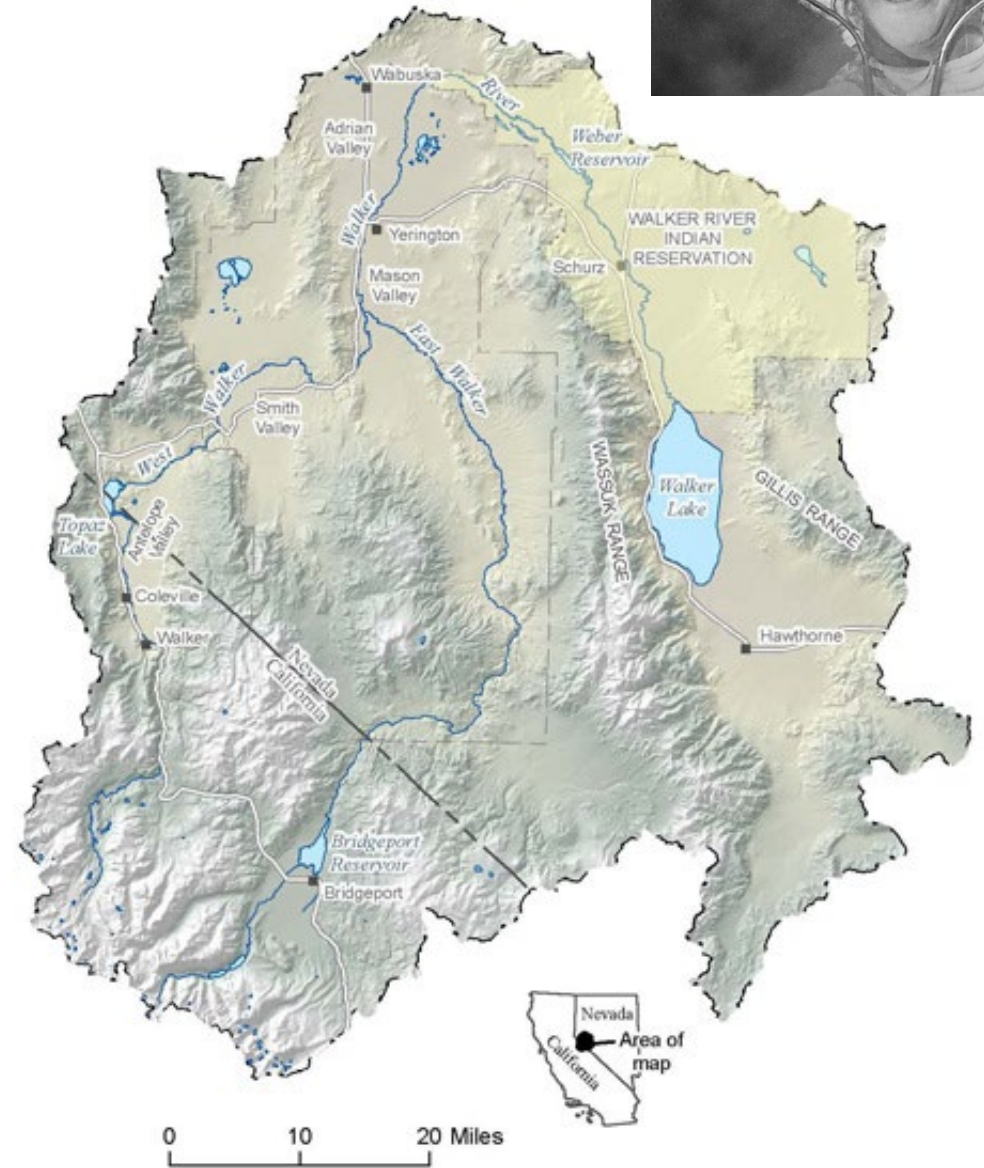


Groundwater Management for Mason Valley: An Abnormally Normal Year

March 12, 2025



Presented by:
**Lauren Bartels, Kip Allander, and
Jodi Roan**
Nevada Division of Water Resources



OVERVIEW

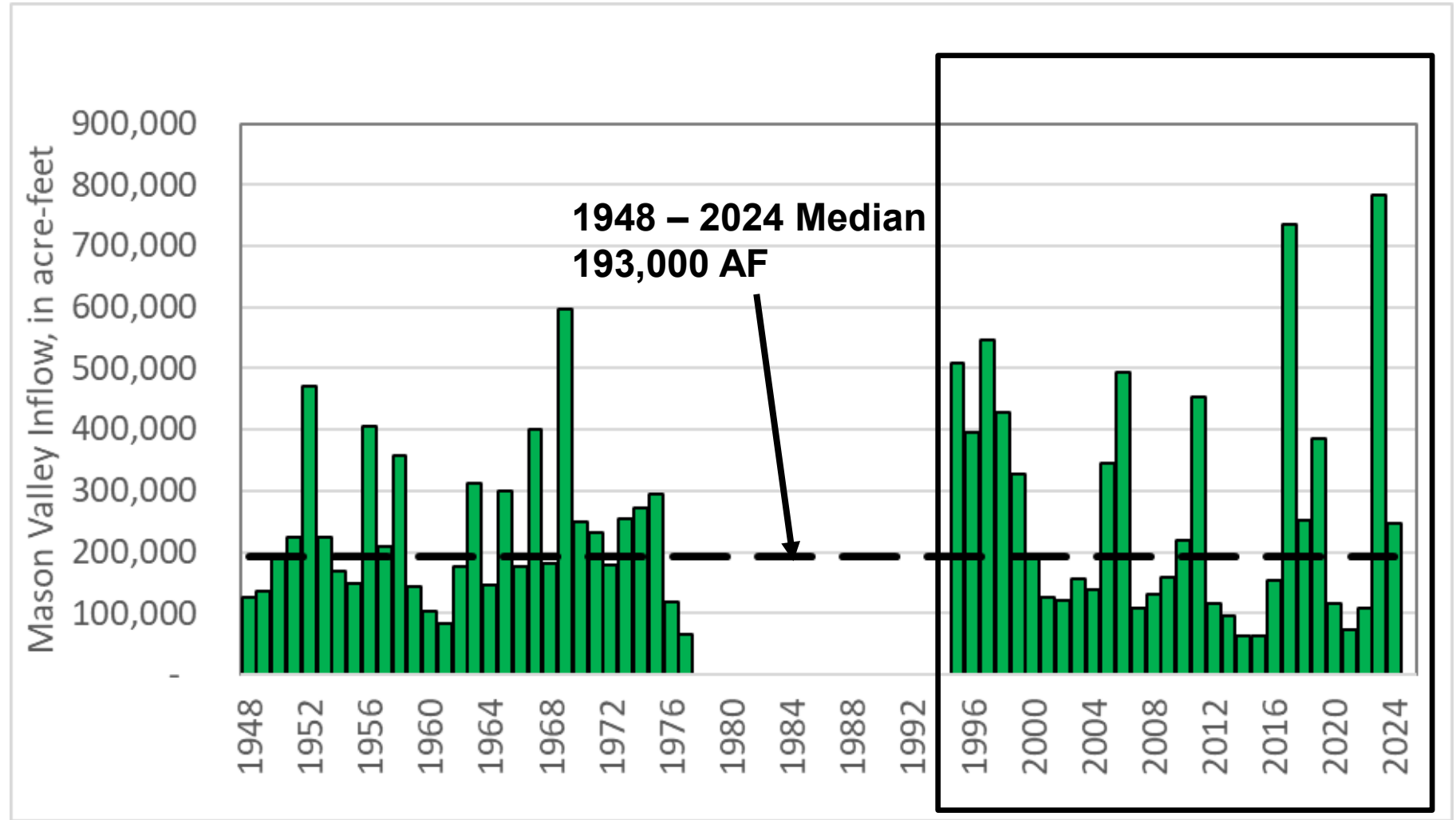
- Recap of 2024 runoff
- Pumping and water levels for 2024
- Current water supply conditions
- Pumping goals for 2025
- Summary and Outlook



RECAP OF 2024 RUNOFF SEASON

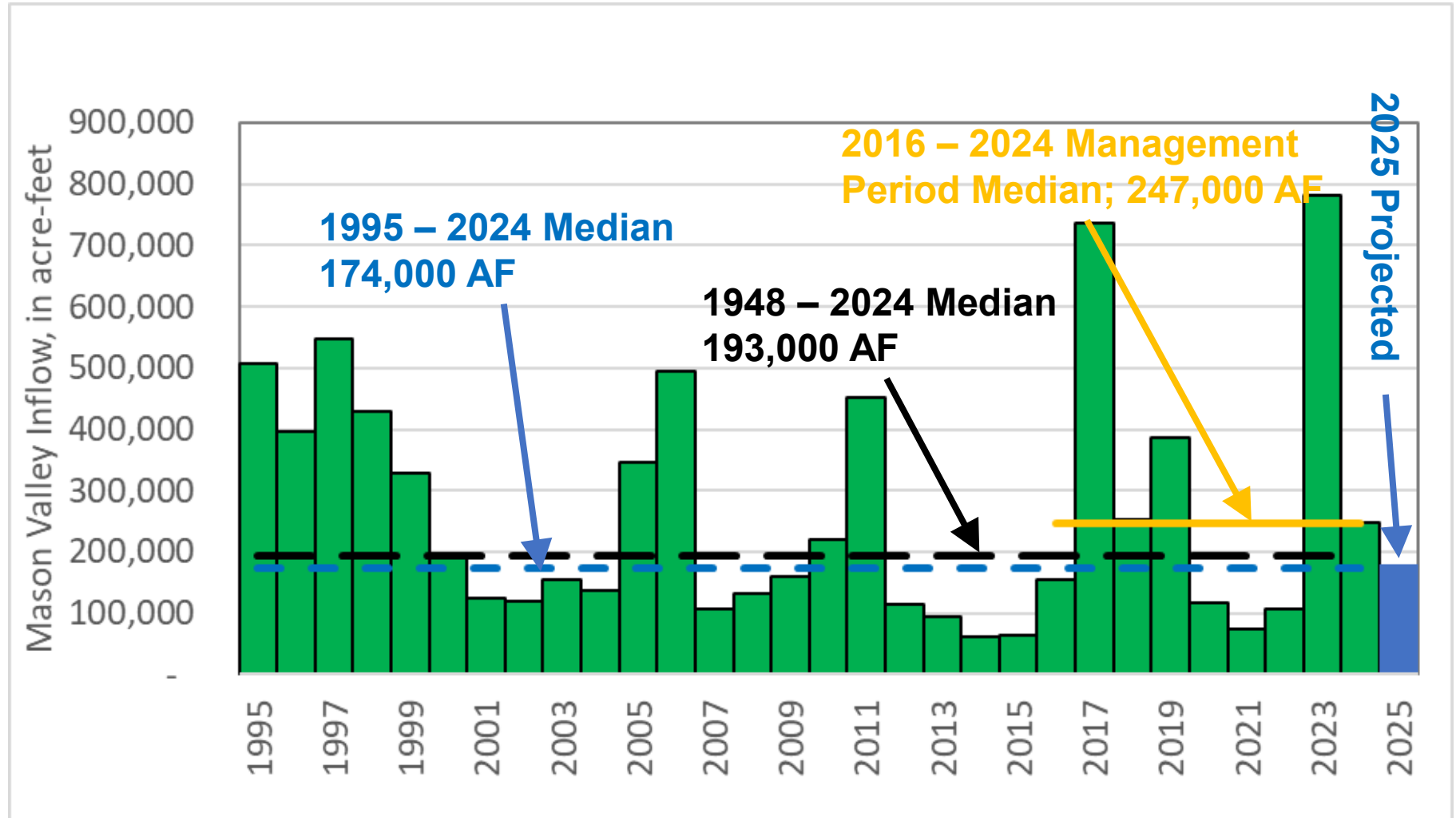
WALKER RIVER INFLOW TO MASON VALLEY – FULL PERIOD

2024 runoff was greater than long-term median.



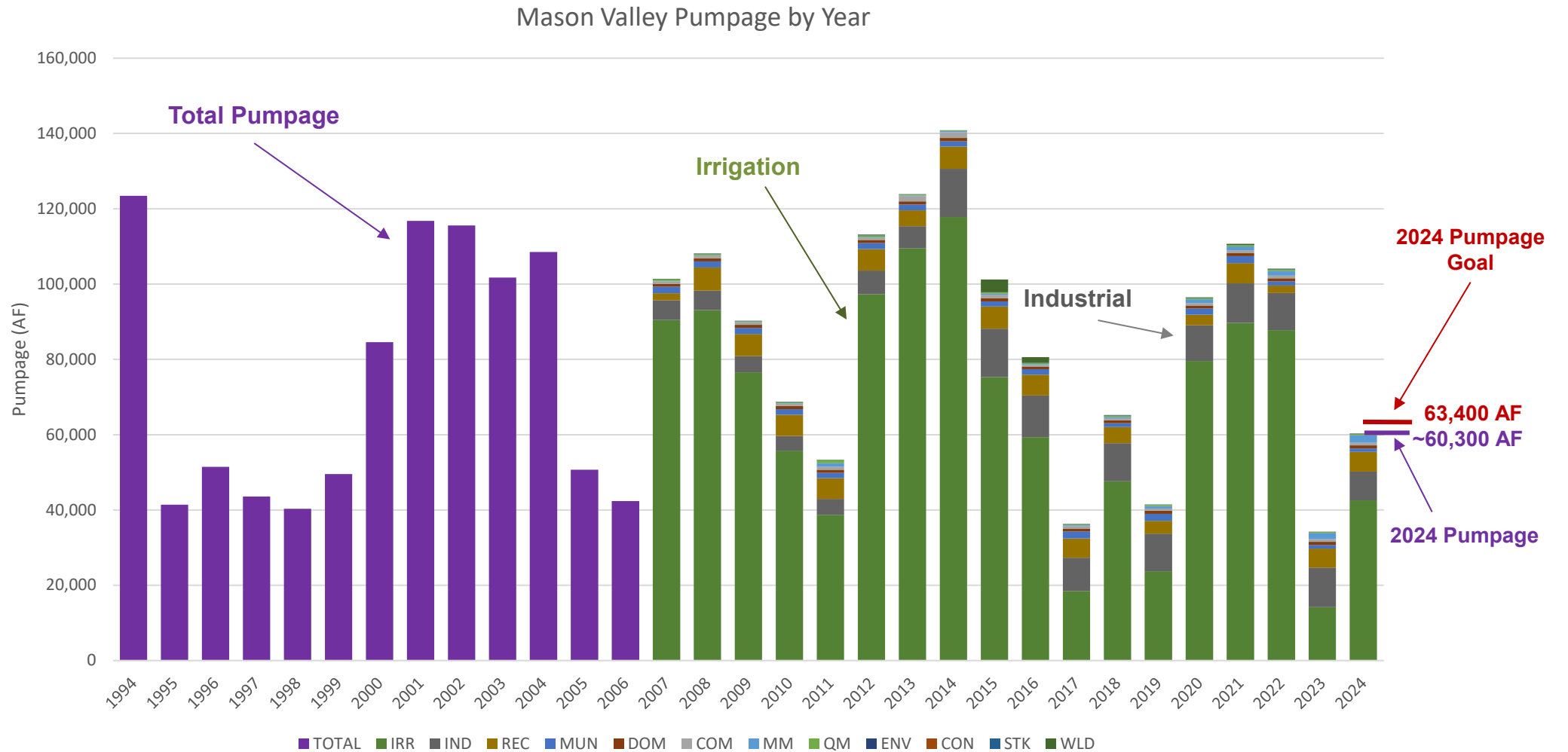
WALKER RIVER INFLOW TO MASON VALLEY – LAST 30 YEARS

2024 runoff represents median runoff for 2016 – 2024 management period.



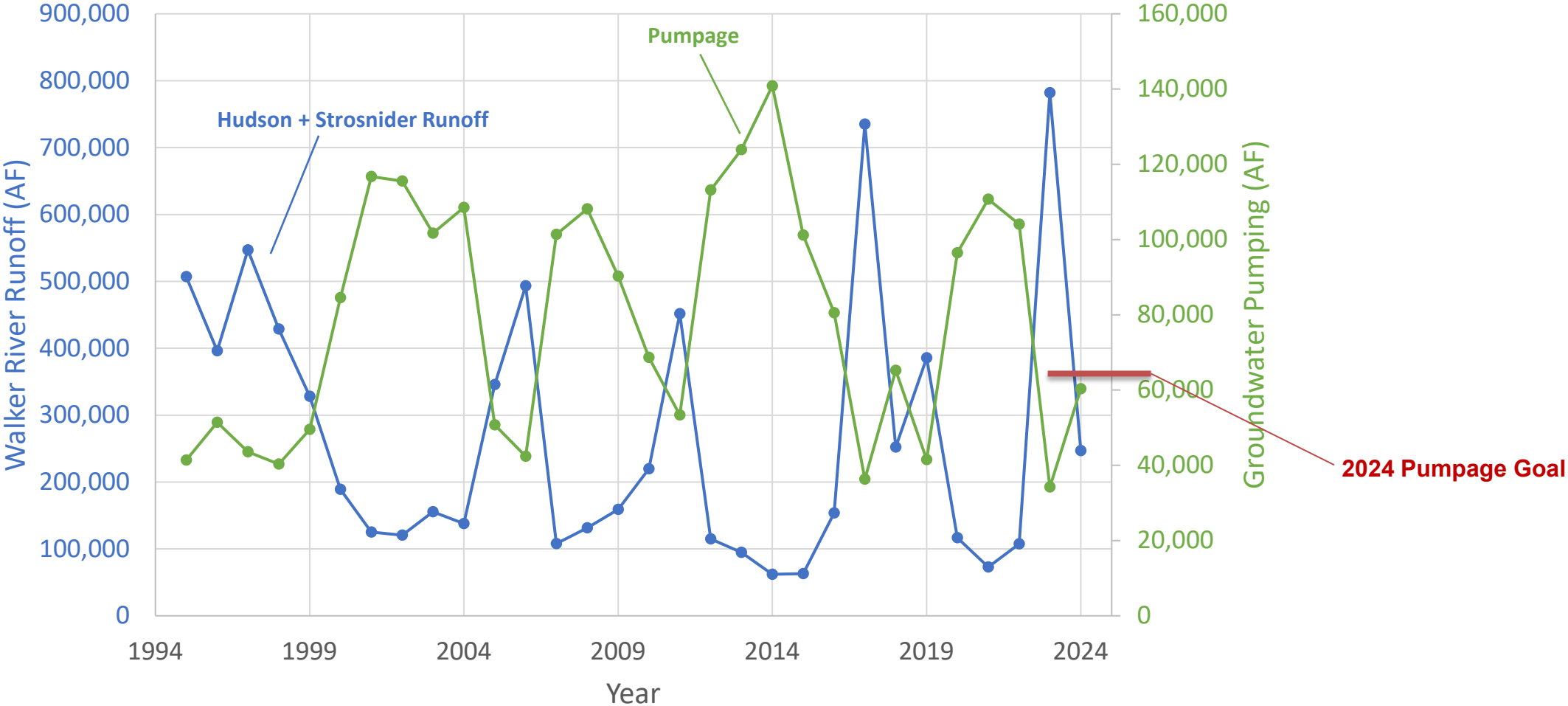
2024 PUMPING AND WATER LEVEL REVIEW

MASON VALLEY TOTAL PUMPAGE

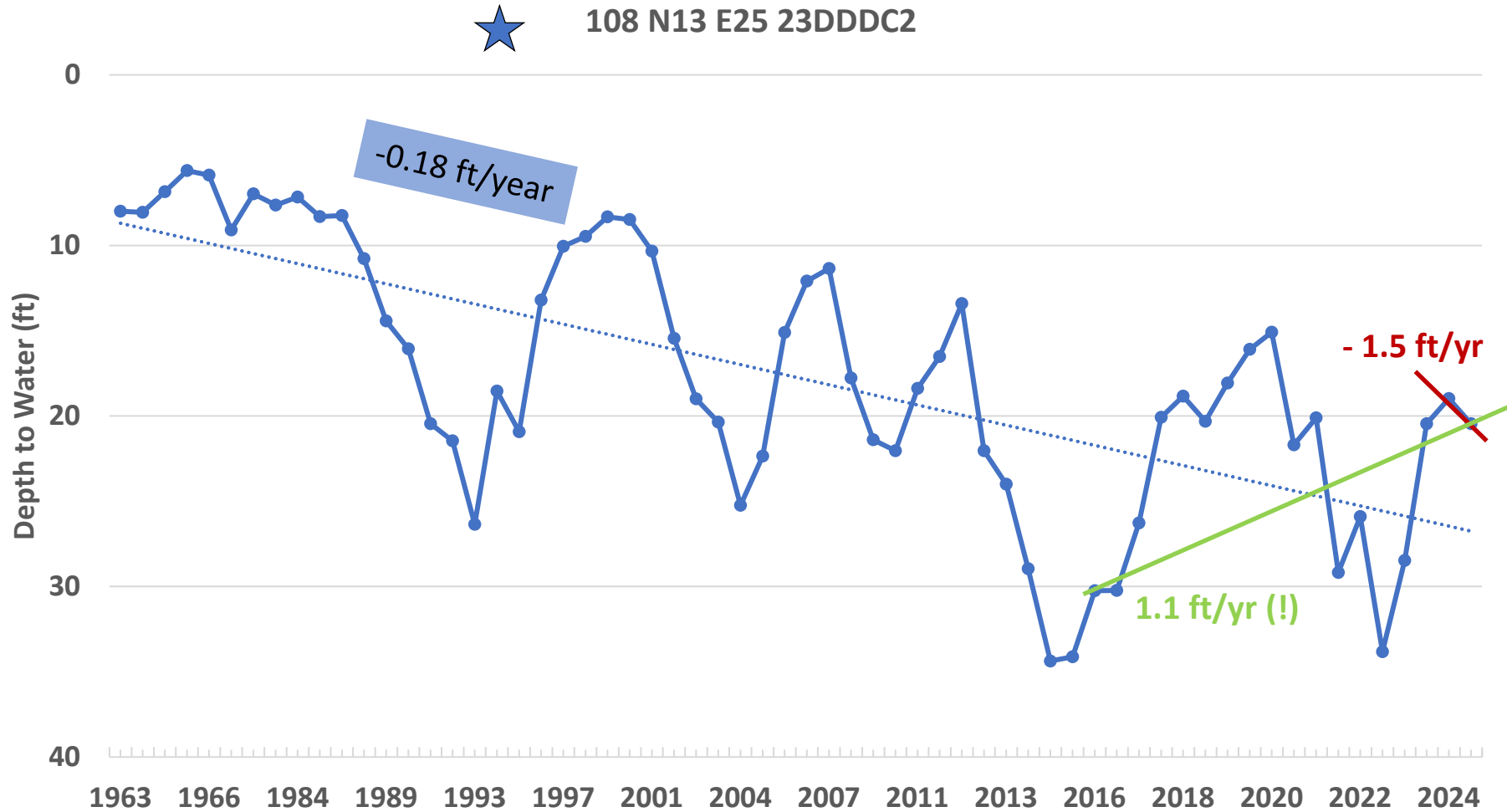
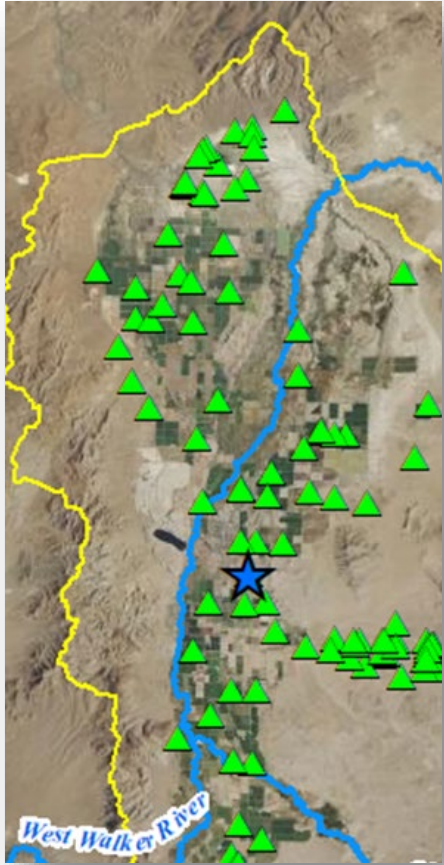


*2024 pumpage data are provisional and subject to revision.

WALKER RIVER STREAMFLOW VS. MASON VALLEY PUMPING

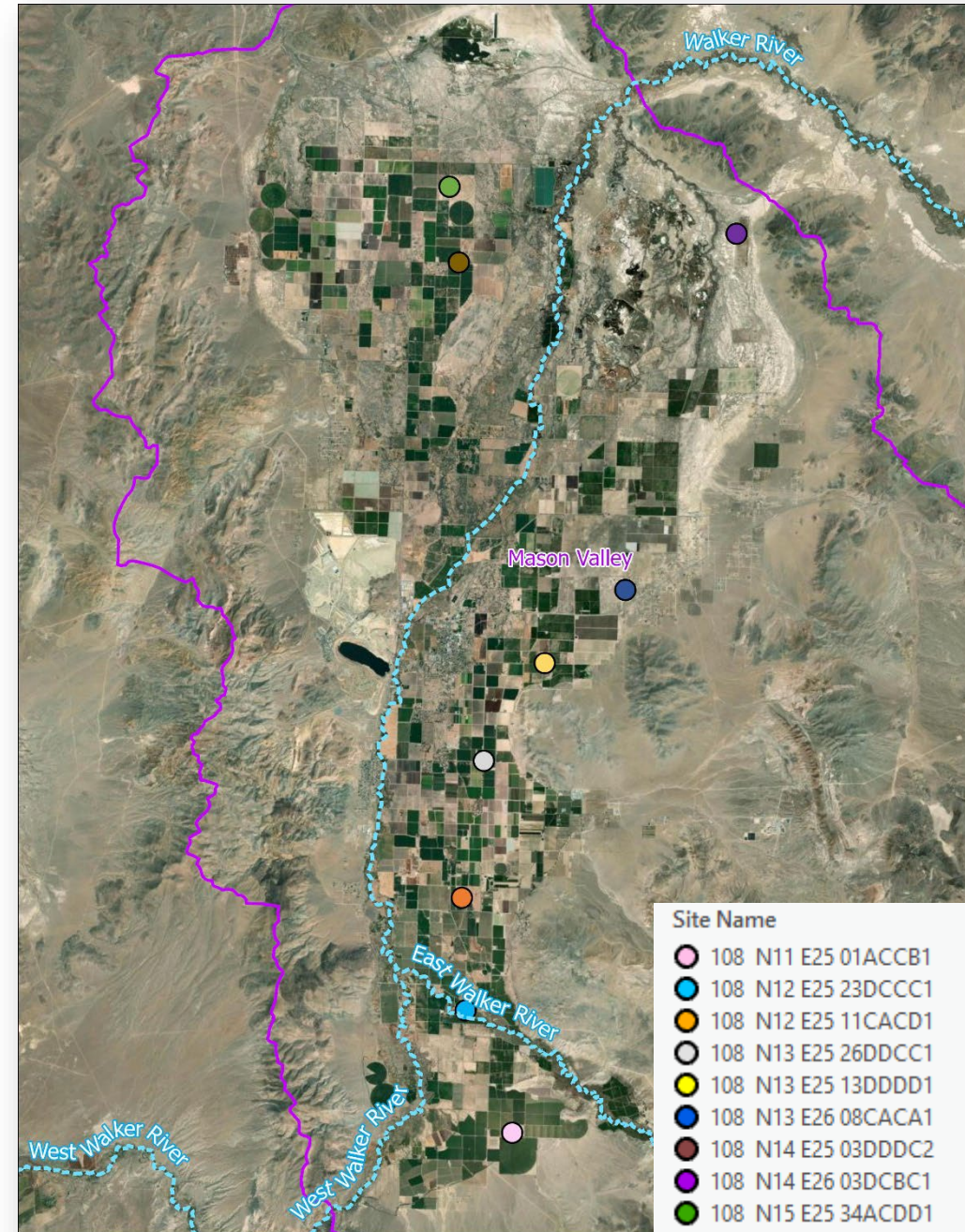
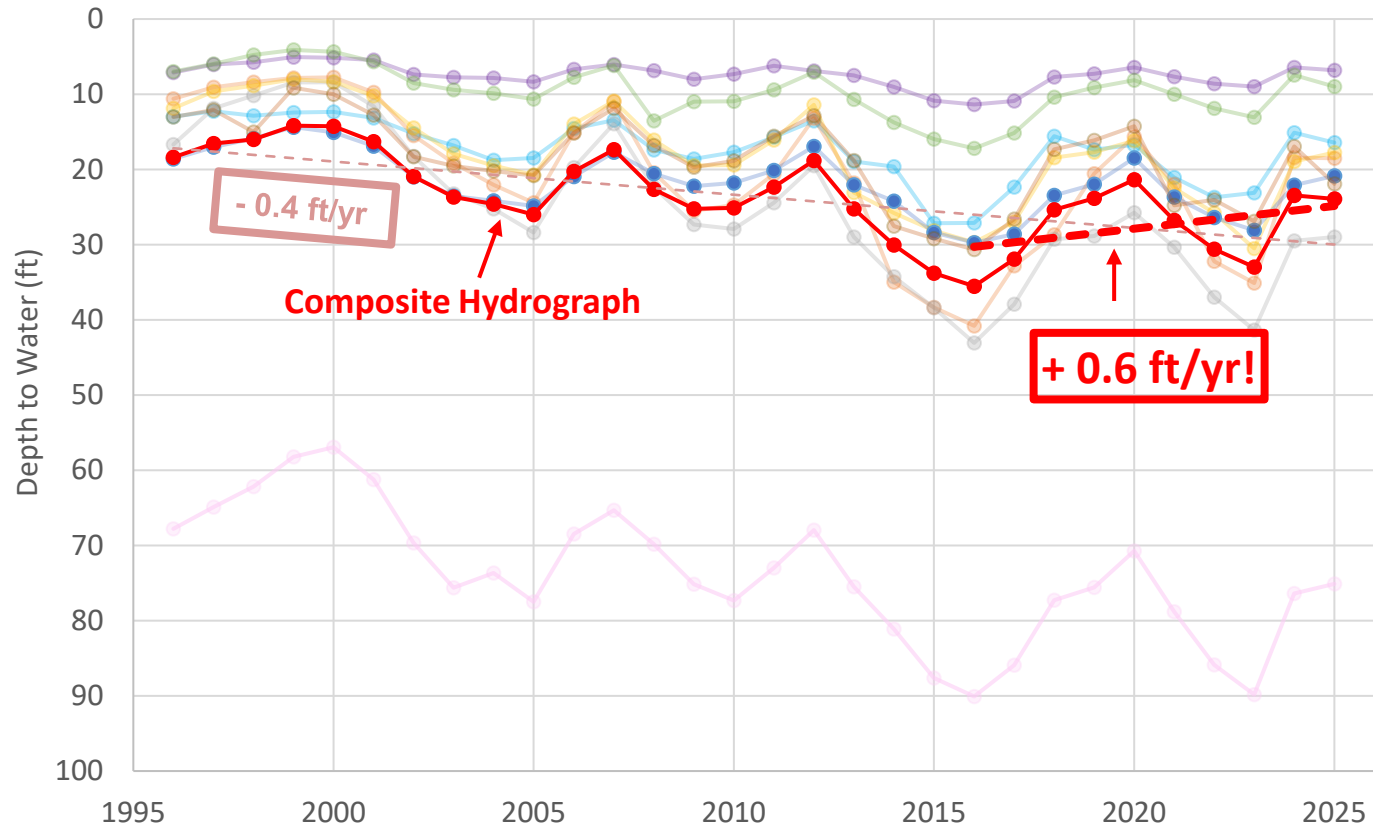


MASON VALLEY WATER LEVELS



Average Mason Valley Water Level Changes (ft/yr)		
2024-25	0.1	☹️
2016-25	1.1	☹️

MASON VALLEY WATER LEVELS SPRING 1996-2025

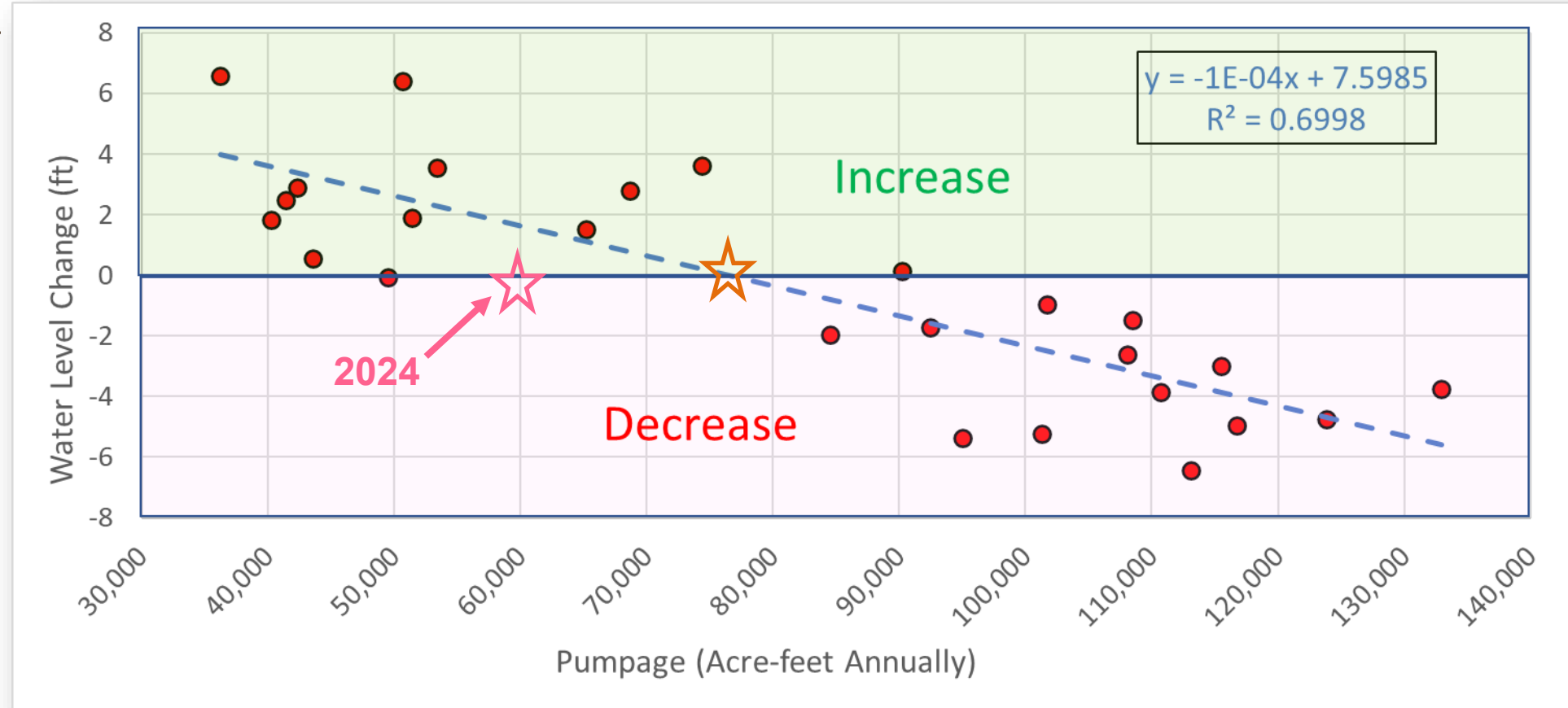


MASON VALLEY PUMPING VS. WATER LEVEL CHANGE

1996-2021 Average
Pumping: 81,256 AF

Estimated Average
Goal: <76,000 AF

**Pumping Reduction
Goal is $\geq 5,250$
AF/year**

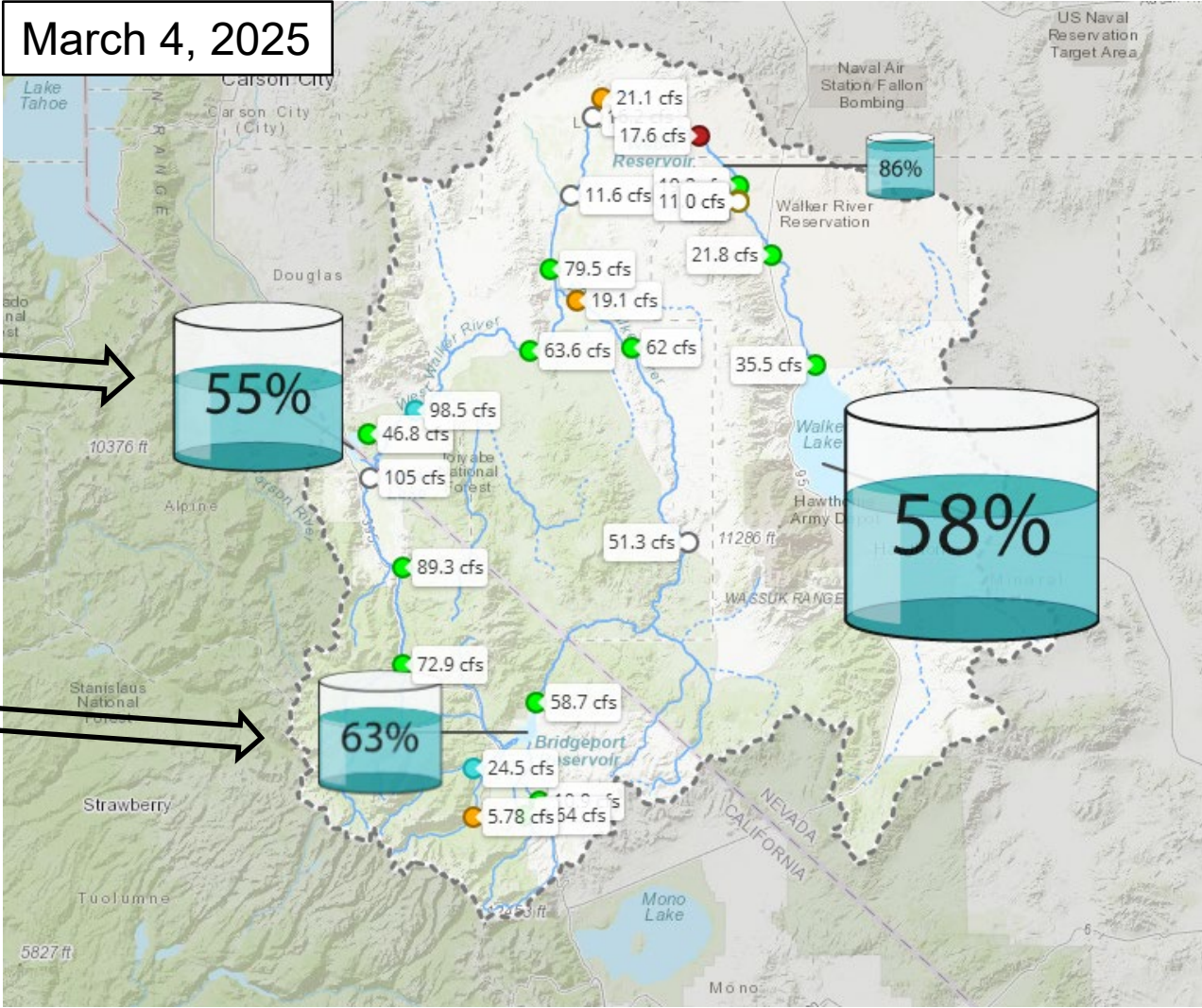


No water level change @ streamflow of ~ 242,000 AF (96-22 median = 155,400 AF)

WATER SUPPLY OUTLOOK

RESERVOIR STORAGE

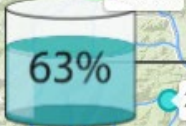
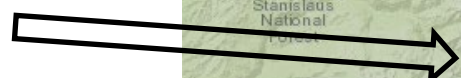
March 4, 2025



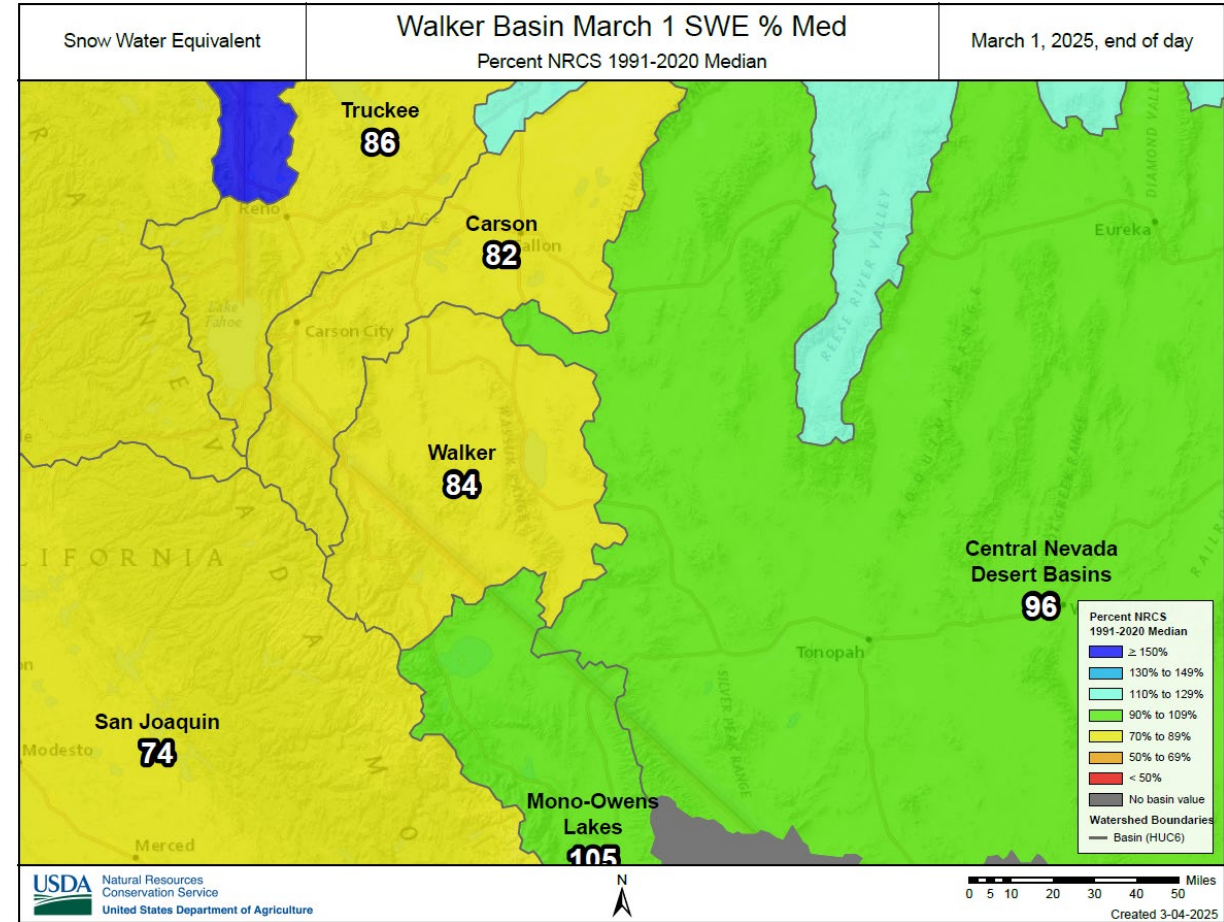
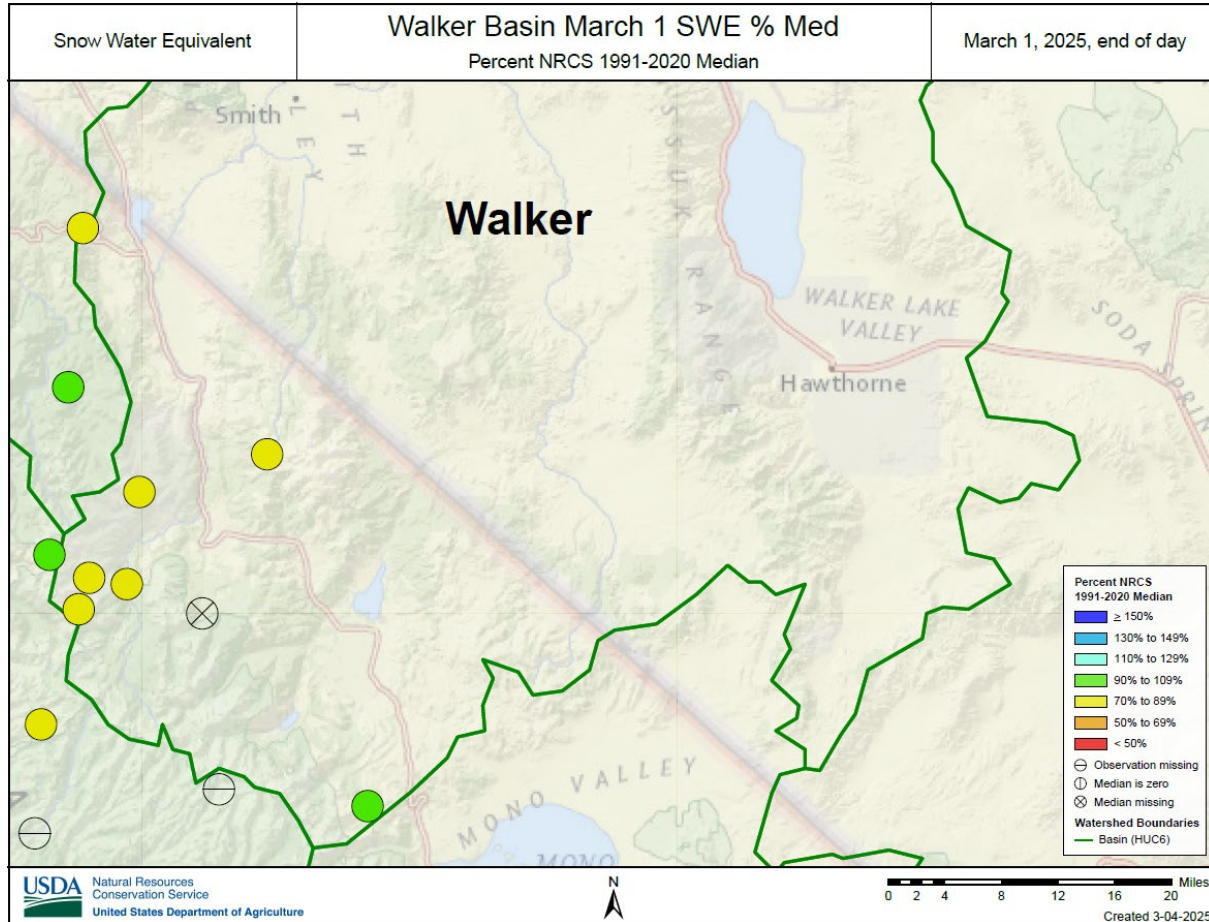
Down 35%



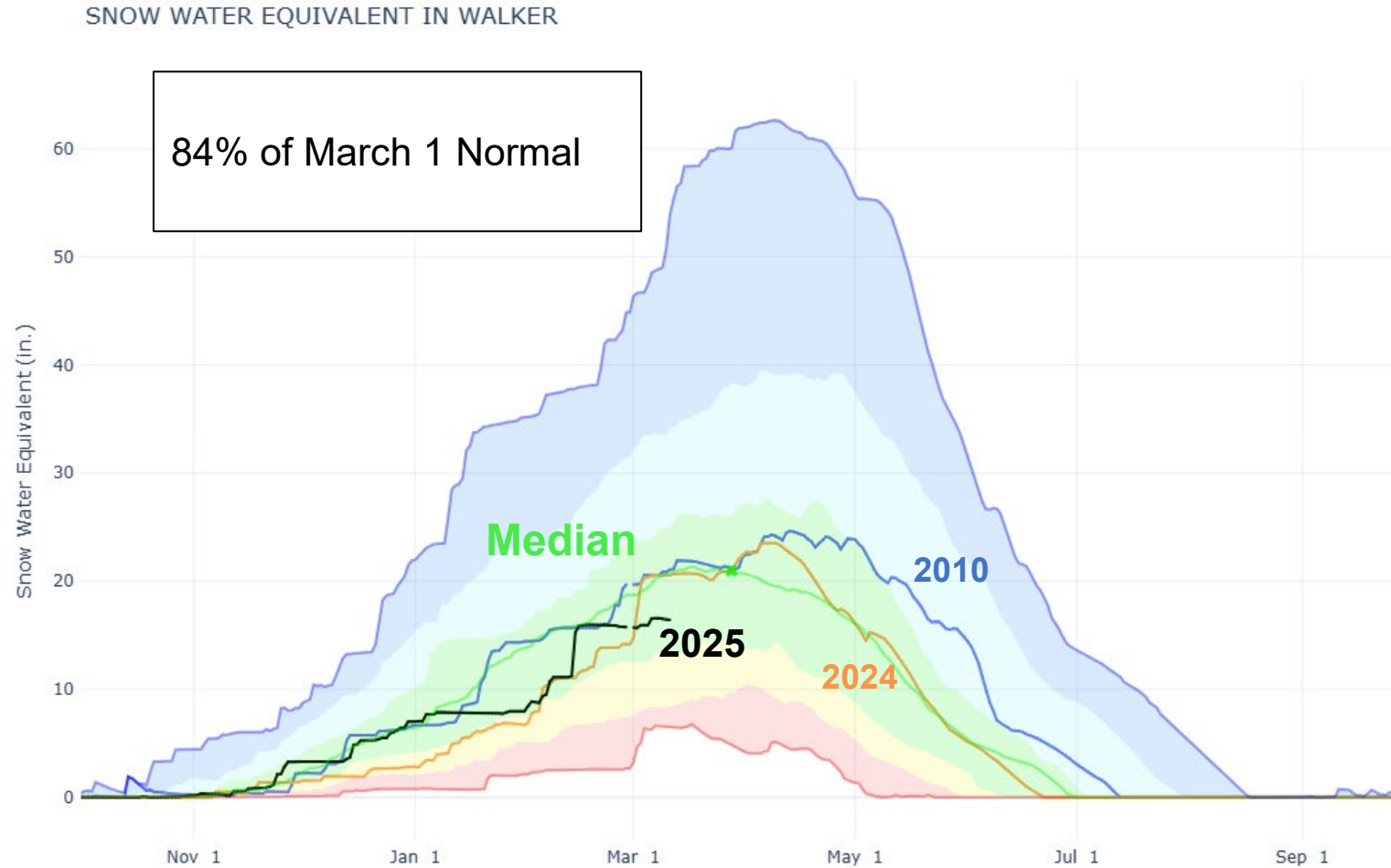
Down 30%



SNOW WATER EQUIVALENT (SWE), % OF MARCH 1 MEDIAN

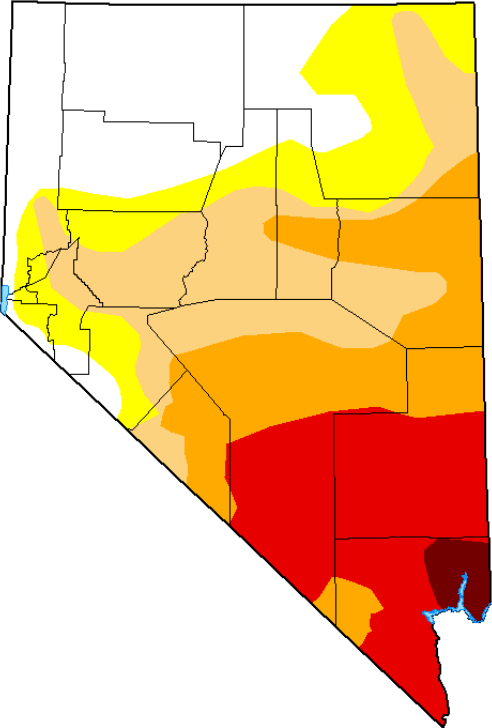


2025 WALKER SNOWPACK (SWE)



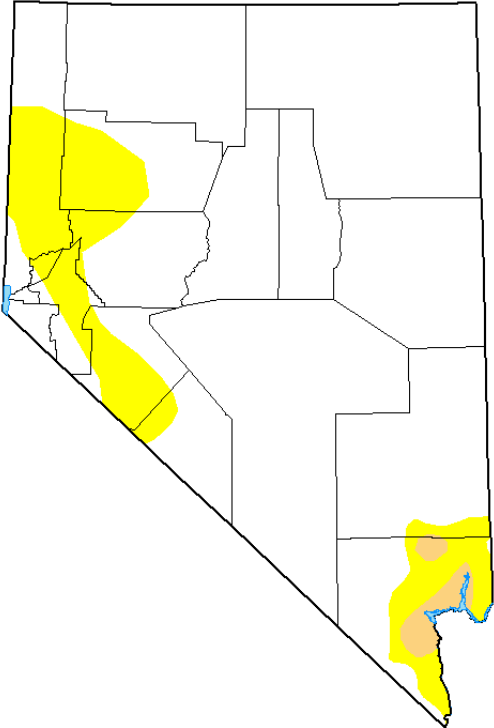
U.S. DROUGHT MONITOR

March 4, 2025



- Intensity:***
- None
 - D0 Abnormally Dry
 - D1 Moderate Drought
 - D2 Severe Drought
 - D3 Extreme Drought
 - D4 Exceptional Drought

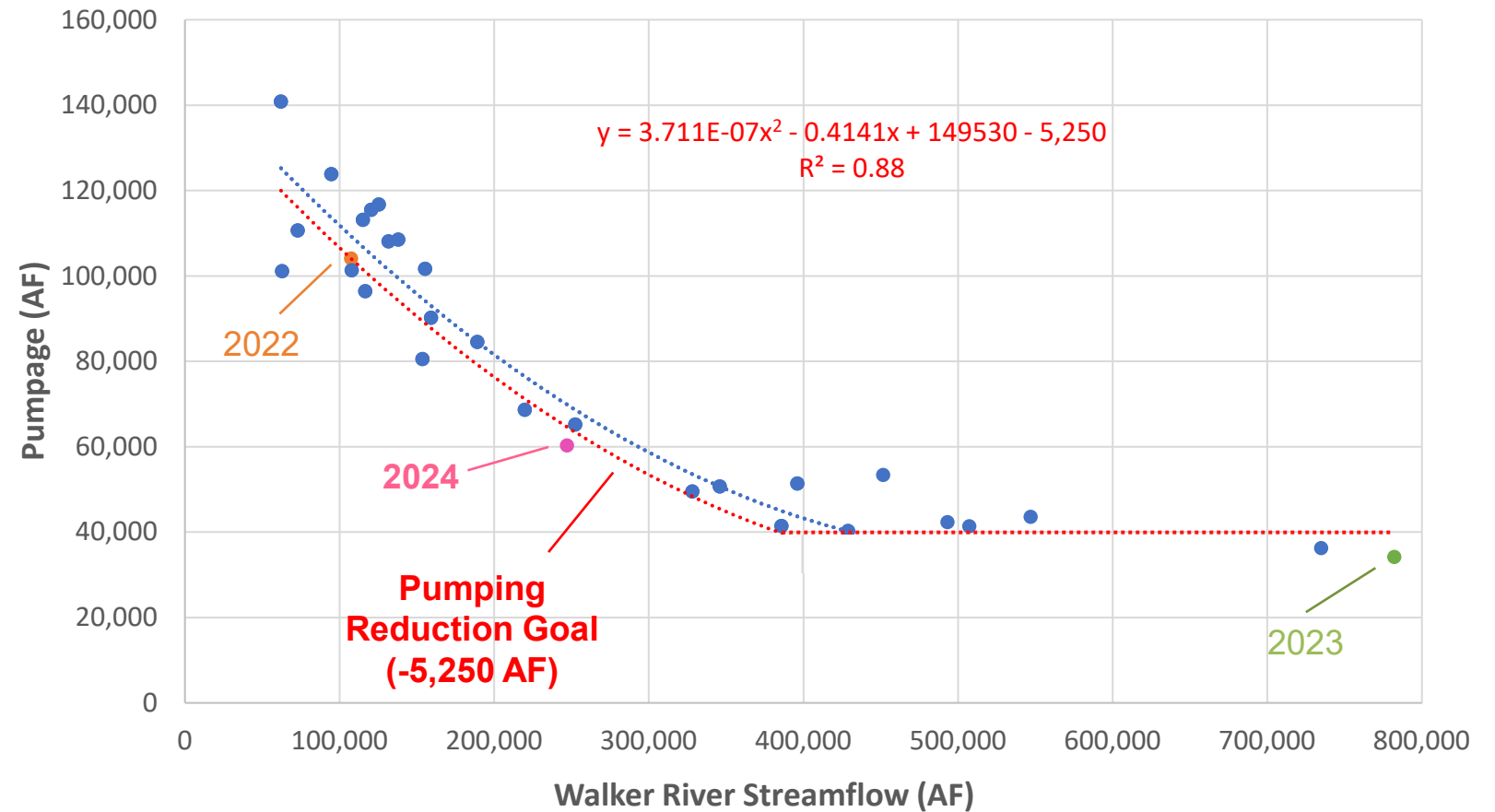
March 5, 2024



2025 PUMPING GOALS - EXPERIMENTAL

WALKER RIVER STREAMFLOW* vs. MASON VALLEY PUMPING

For 2024, based on actual streamflow and pumping; pumpage came in under goal line.



*Top 5 wettest years not used in this regression

PUMPING PREDICTION 2024 REVIEW (APRIL 1) – MASON VALLEY

$$\text{April Pre-Season Pumping Forecast} = -0.814 \cdot (0.55BP + 0.45TP) - 38,496 \cdot \text{SWE} + 149,895 - 5,250$$

April 1 Observations of:

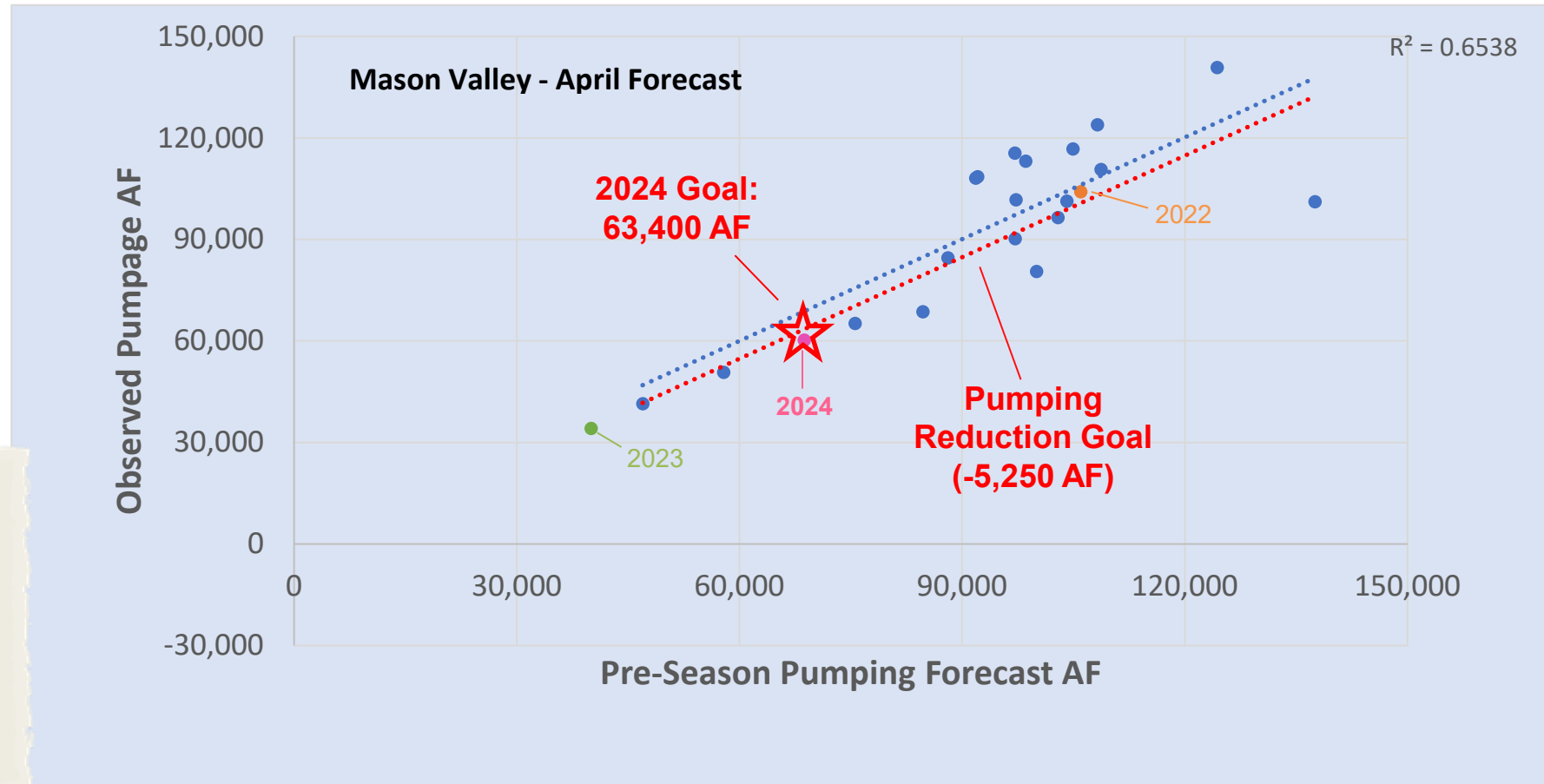
BP = Bridgeport Storage

TP = Topaz Storage

SWE = Walker Basin
Snow Water Equivalent

Based on pumping goal established last April, actual pumpage came in 3,100 AF below our goal for 2024.

Nice job everyone 😊.



PUMPING PREDICTION (MARCH 1) – MASON VALLEY

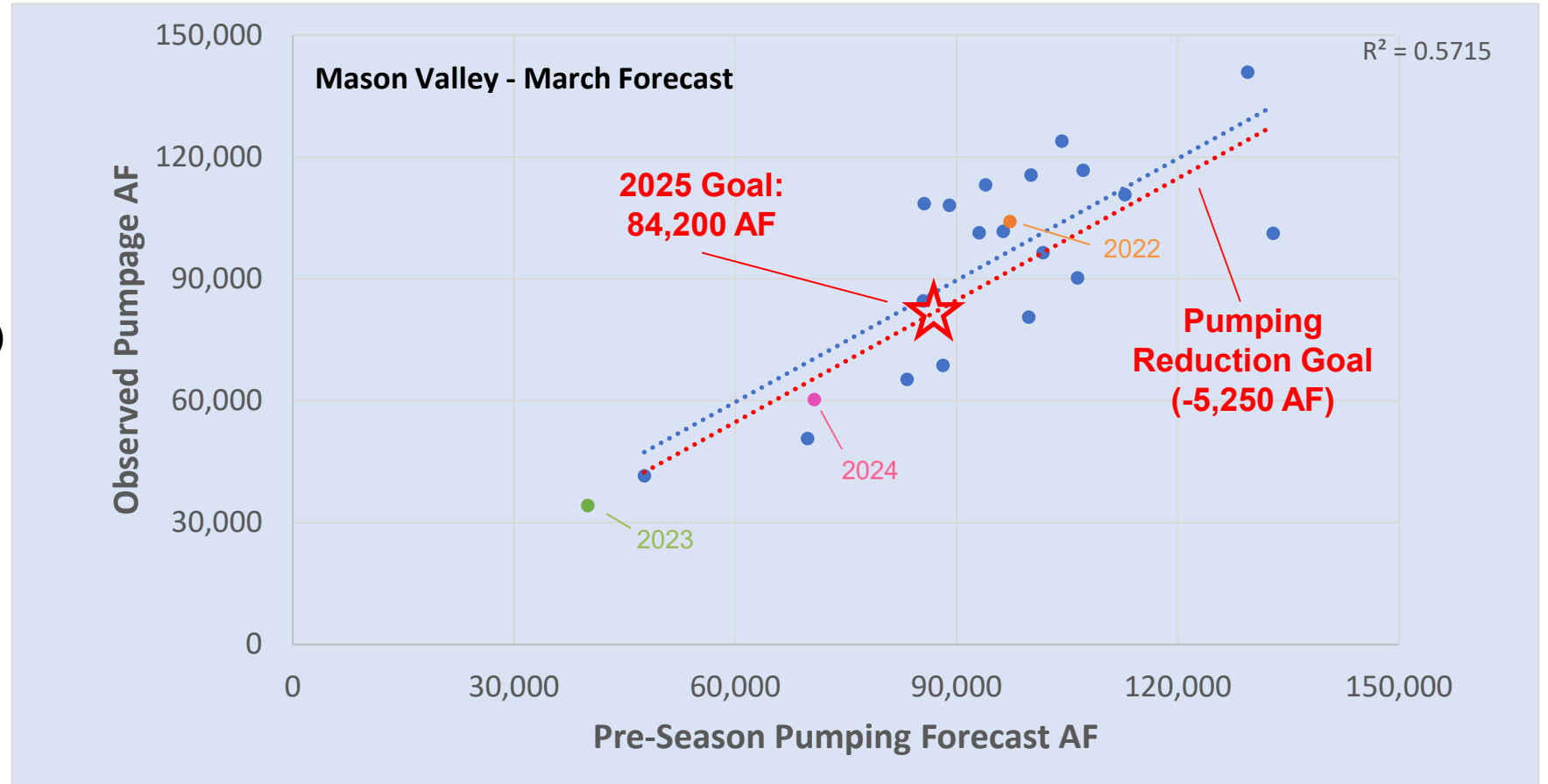
$$\text{March Pre-Season Pumping Forecast} = -1.226*(0.55BP+0.45TP) - 40,780*SWE + 159,593 - 5,250$$

March 1 Observations of:

BP = Bridgeport Storage (26,700 AF)

TP = Topaz Storage (32,500 AF)

SWE = Walker Basin
Snow Water Equivalent (84%)



**2025 pumpage goal
for Mason Valley is
< 84,200 AF.**

SUMMARY AND OUTLOOK

SUMMARY FOR 2024 SEASON

- 2024 pumping greater than 2023 (as expected).
- Pumpage goals met in both Smith and Mason Valleys.
- Record-setting water year (2023), followed by a near normal water year (2024), helped groundwater levels remain stable.
- Long-term hydrographs still show declining trends, but recent period (2016 – 2025) has increasing trend.



OUTLOOK FOR 2025 SEASON

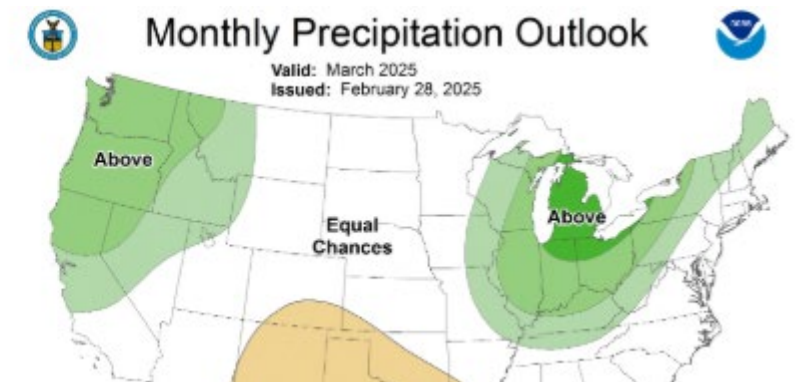
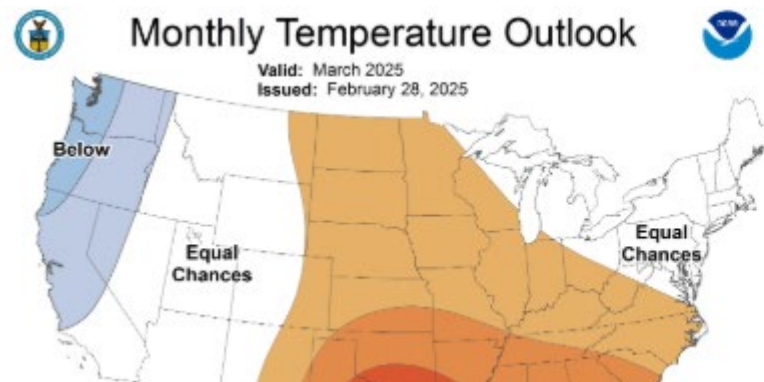
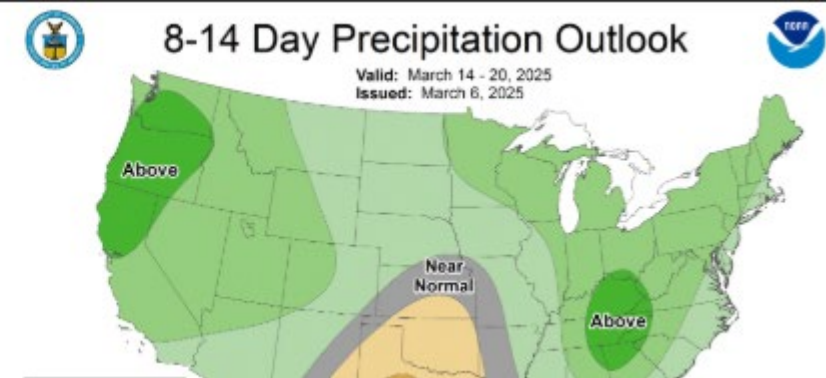
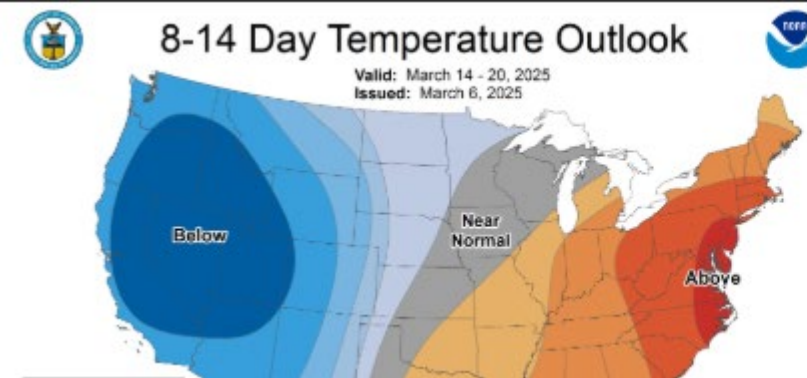
- The 2025 water year (WY25) is slightly below normal, but active weather in March is promising.
- WY25 may be similar to WY10 with respect to runoff and water deliveries.
 - About average water year preceded by an average water year.
 - Similar reservoir storage capacities.
 - 2010 pumpage: ~68,700 AF.
- More supplemental pumping might be needed this year than last year due to lower reservoir storage at the start of irrigation season (use surface water first please!).
- Voluntary pumping reductions are still needed to help reduce long-term average.

2025 pumpage goal for Mason Valley is < 84,200 AF.



MIRACLE MARCH?

- According to NWS, roughly 40+% odds of meeting or exceeding median snowpack in the Sierra*.
- Today's storms are helpful, and outlook products forecast cool and wet weather through the rest of March.
- Weather outlook for spring runoff season is still highly uncertain, but current stream flows are near normal.



*If March does not disappoint.

Questions?



Contact



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