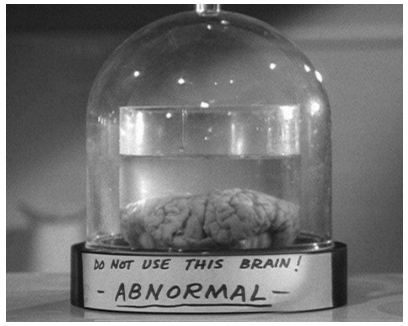
NEVADA DIVISION OF WATER RESOURCES

Nevada Department of CONSERVATION & NATURAL RESOURCES

Groundwater Management for Smith Valley: An Abnormally Normal Year

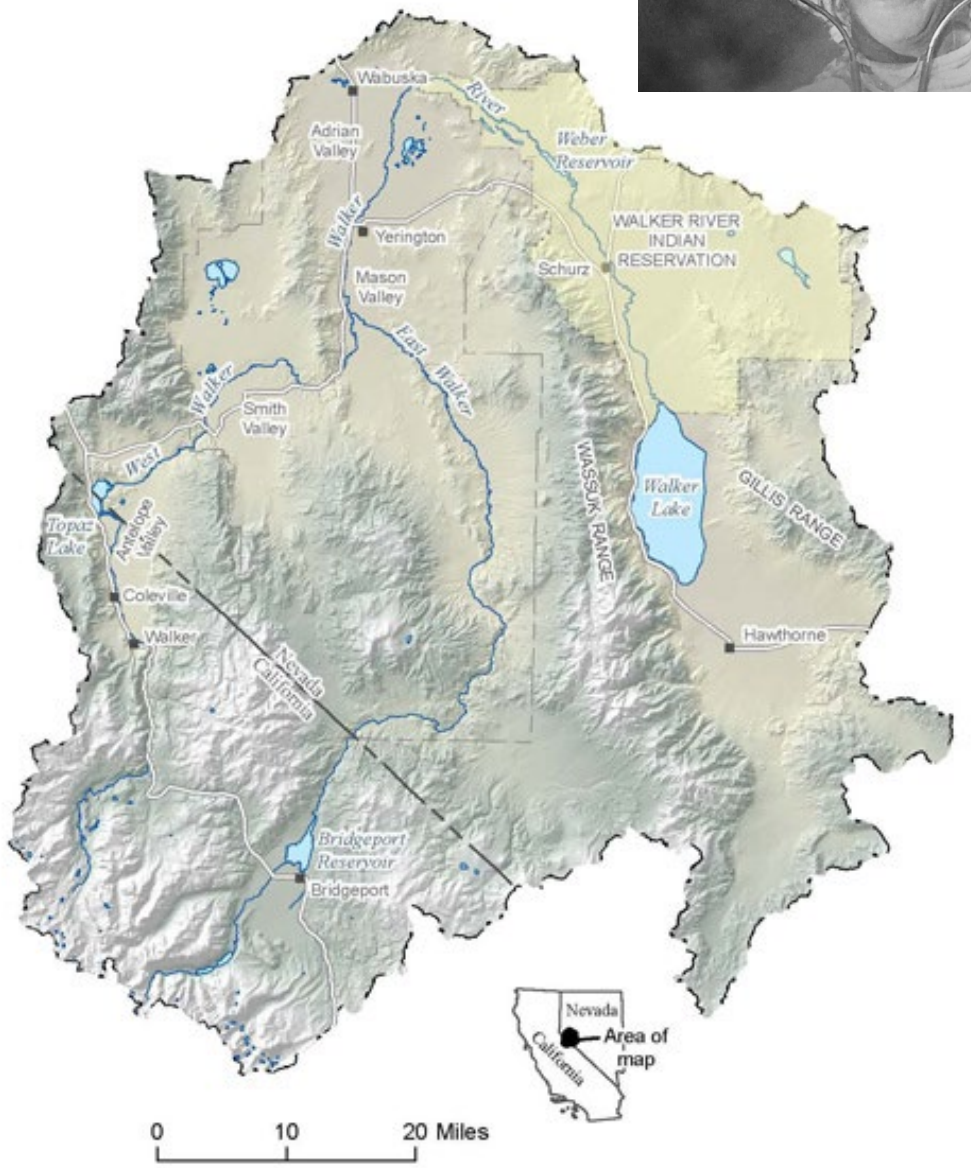


March 12, 2025

Presented by:

Lauren Bartels, Kip Allander, and Jodi Roan

Nevada Division of Water Resources



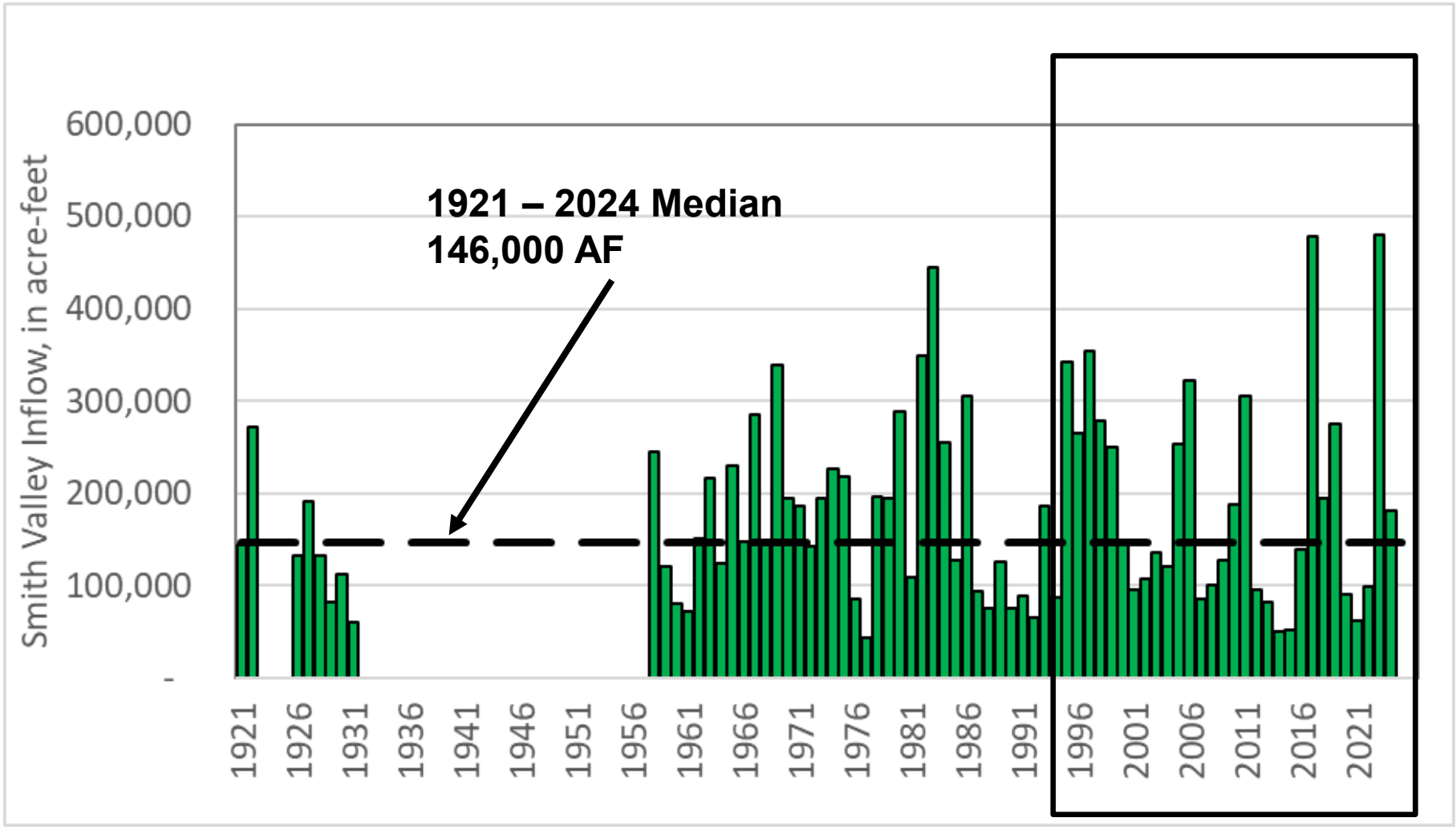
Overview

- 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

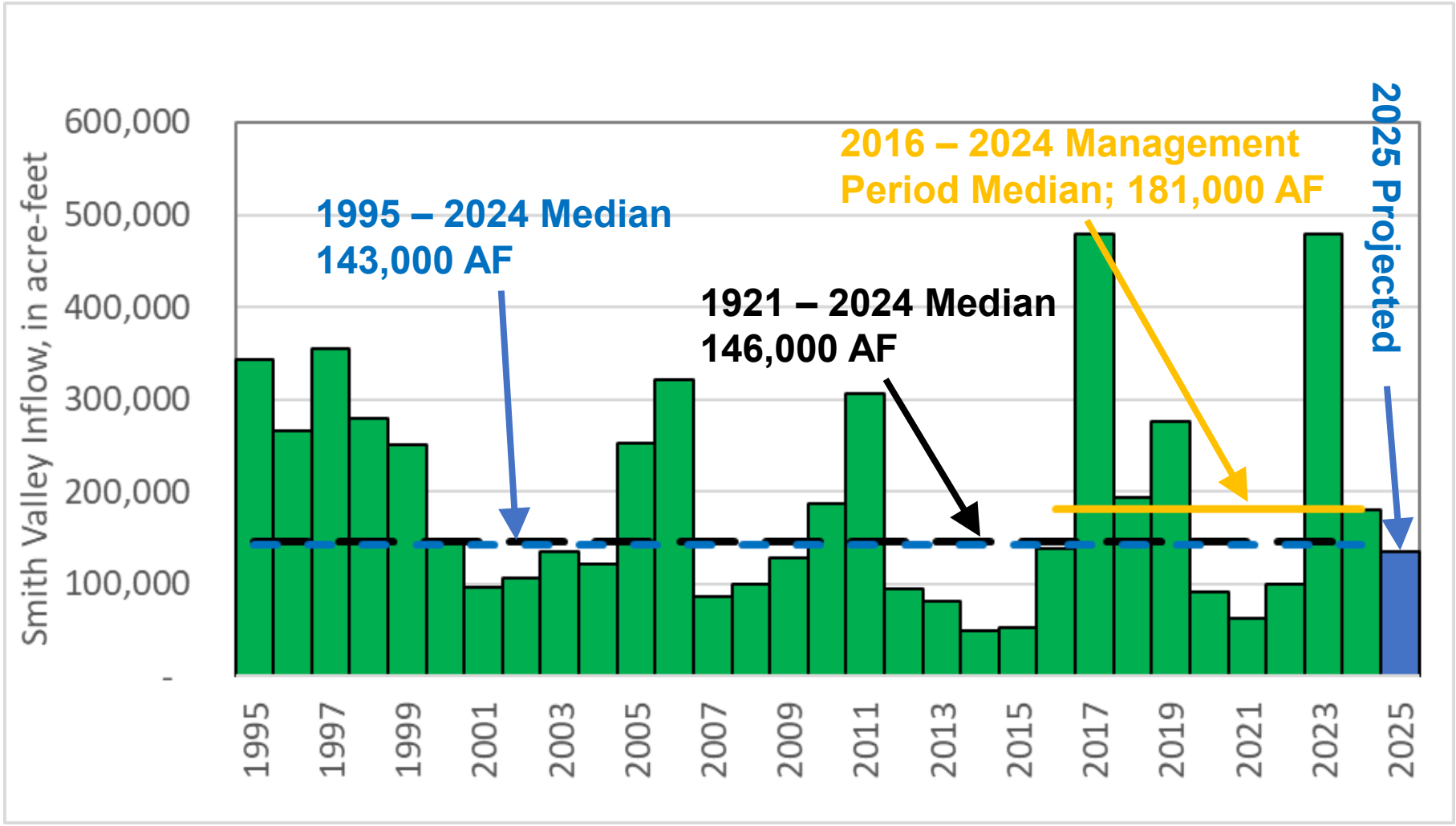
Walker River Inflow to Smith Valley – Full Period

2024 runoff was slightly greater than long-term median.



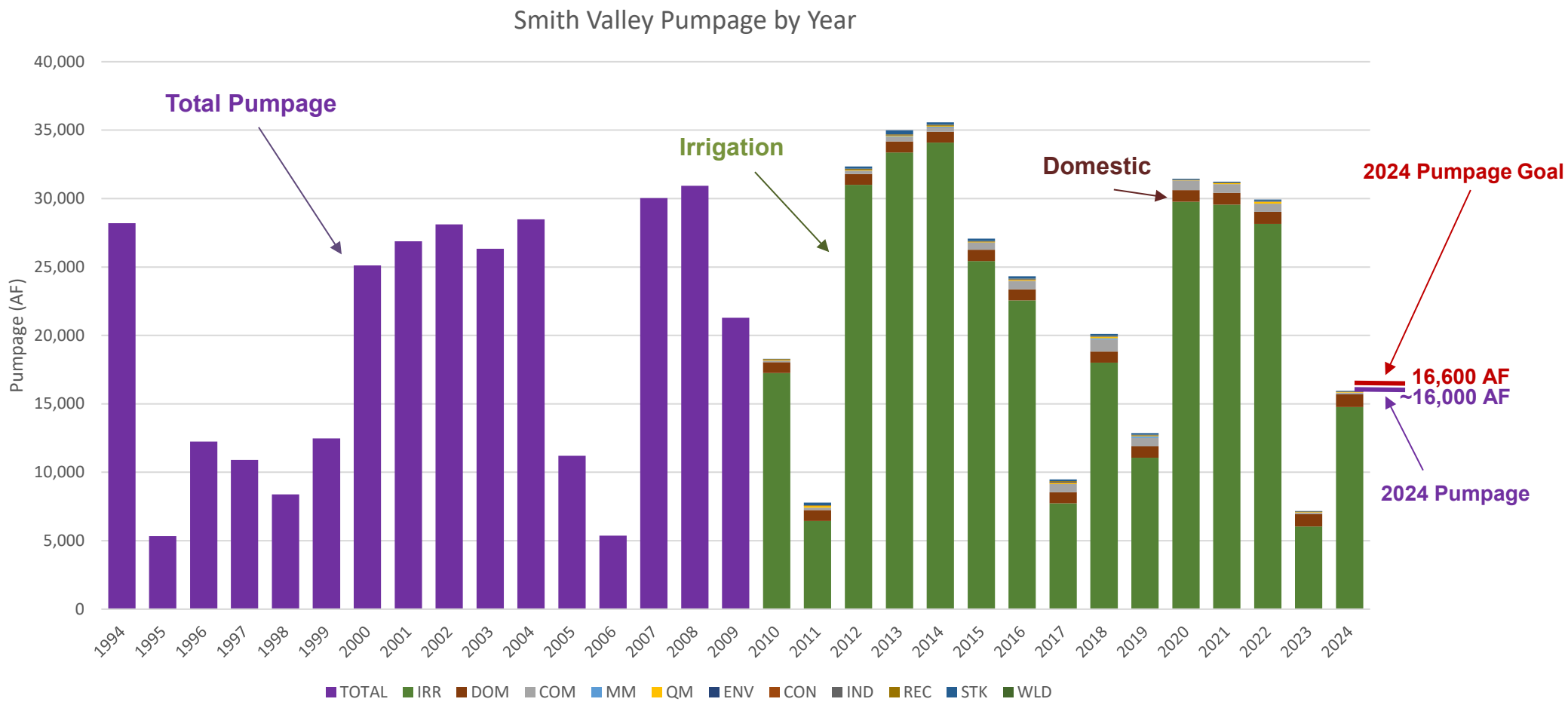
Walker River Inflow to Smith Valley – Last 30 years

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



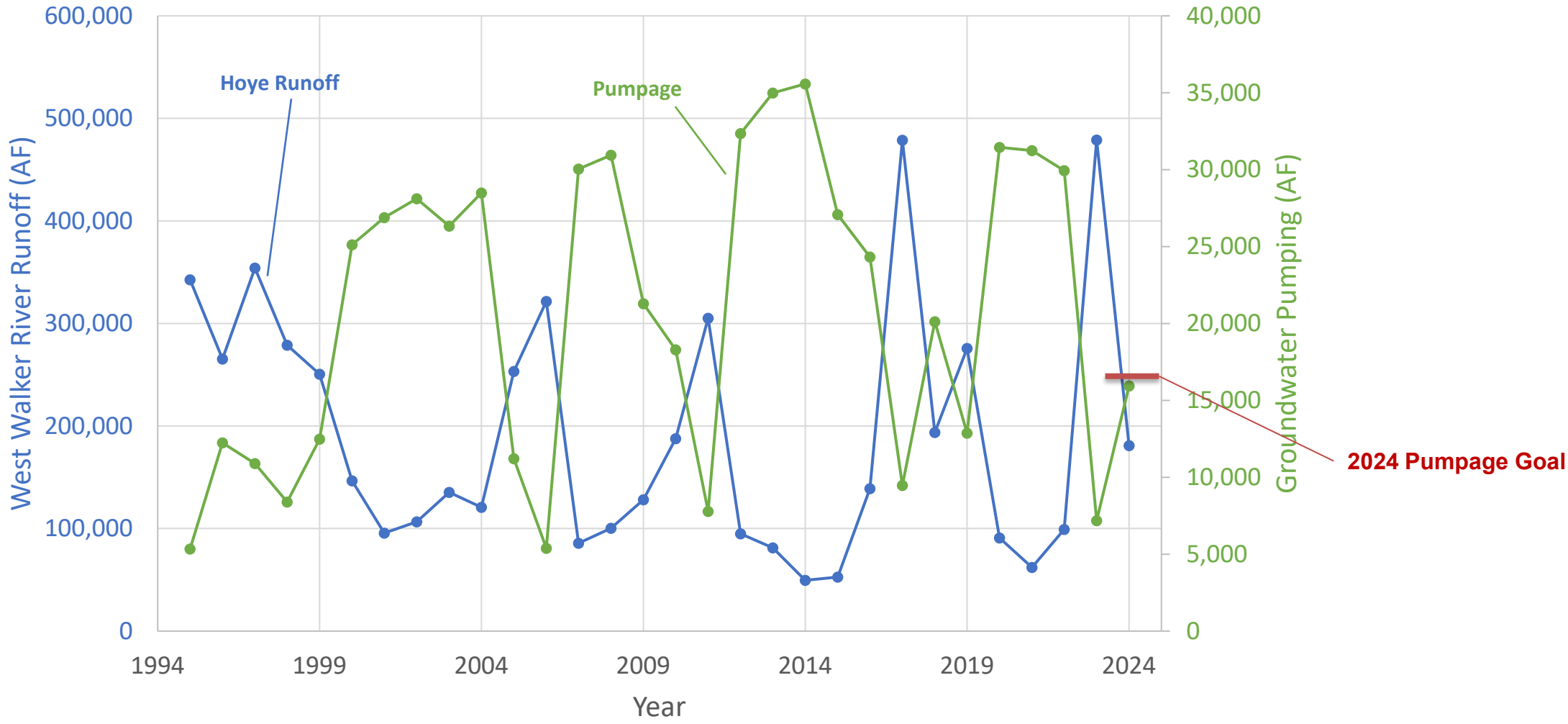
2024 PUMPING AND WATER LEVEL REVIEW

Smith Valley Total Pumpage (Minus Artesia)

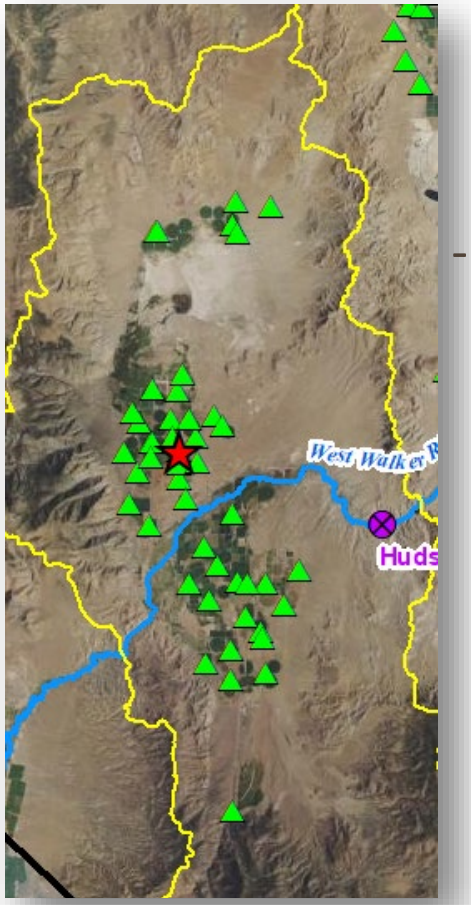


*2024 pumpage data are provisional and subject to revision.

Walker River Streamflow vs. Smith Valley Pumping

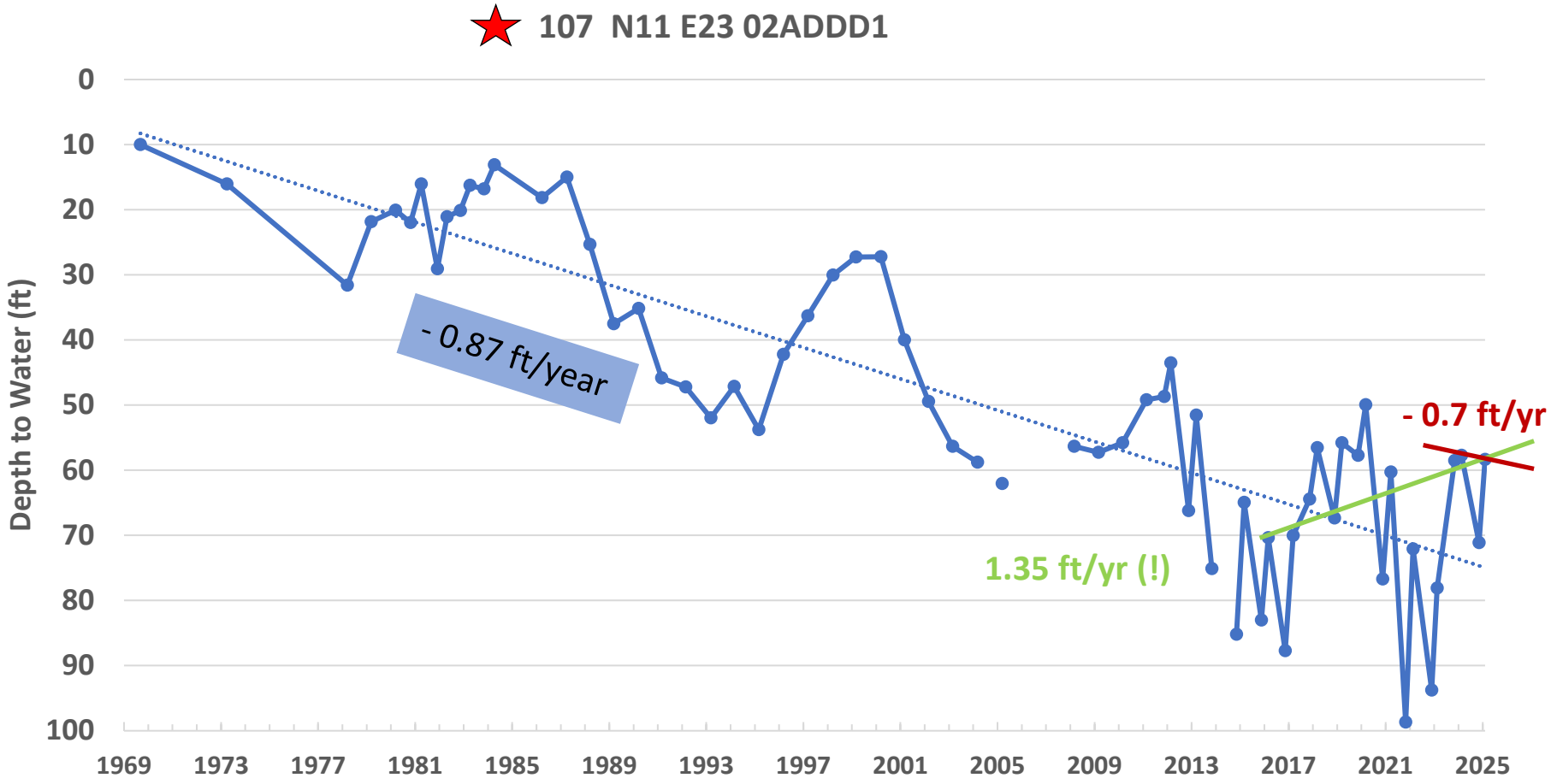


SMITH VALLEY WATER LEVELS

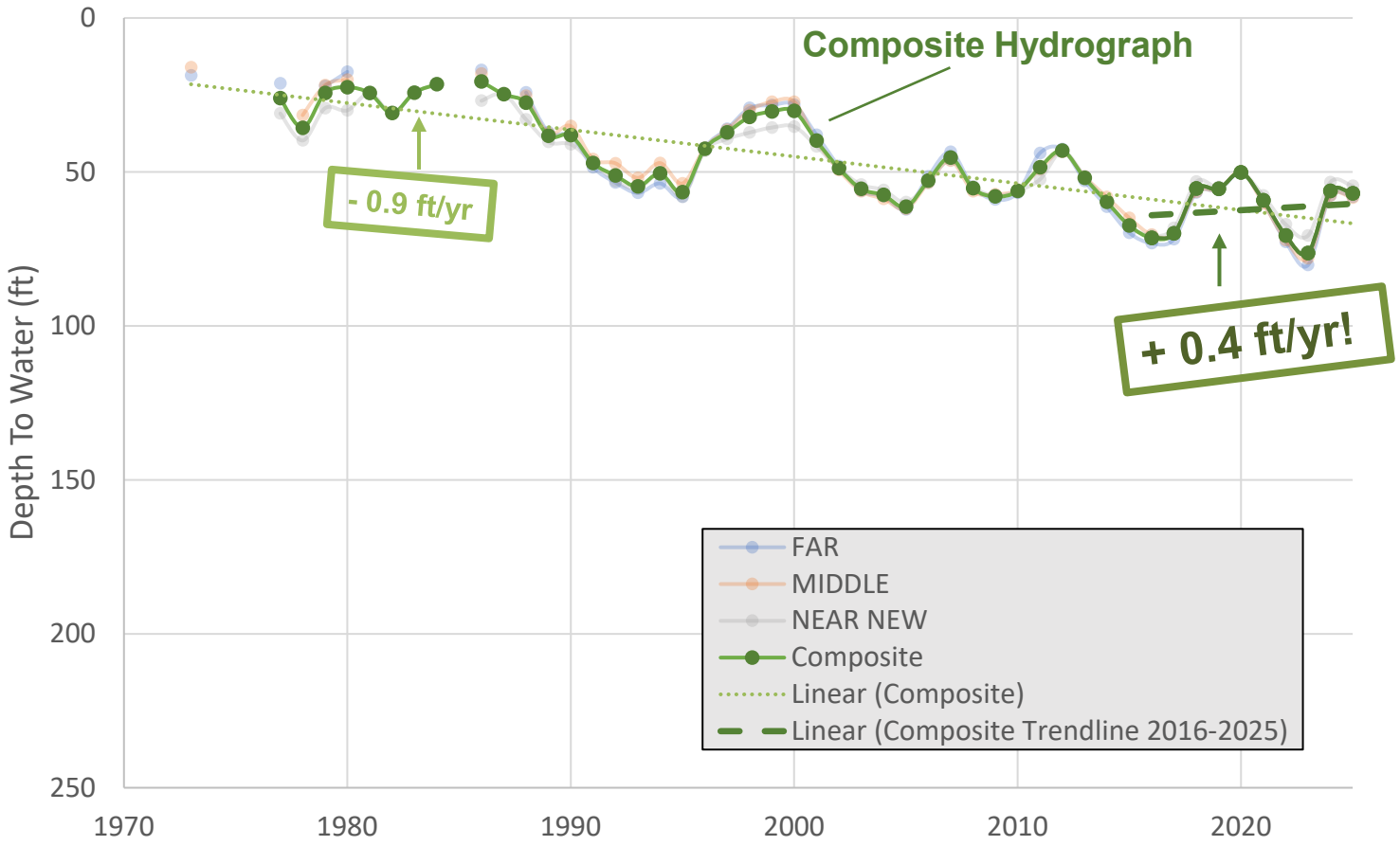


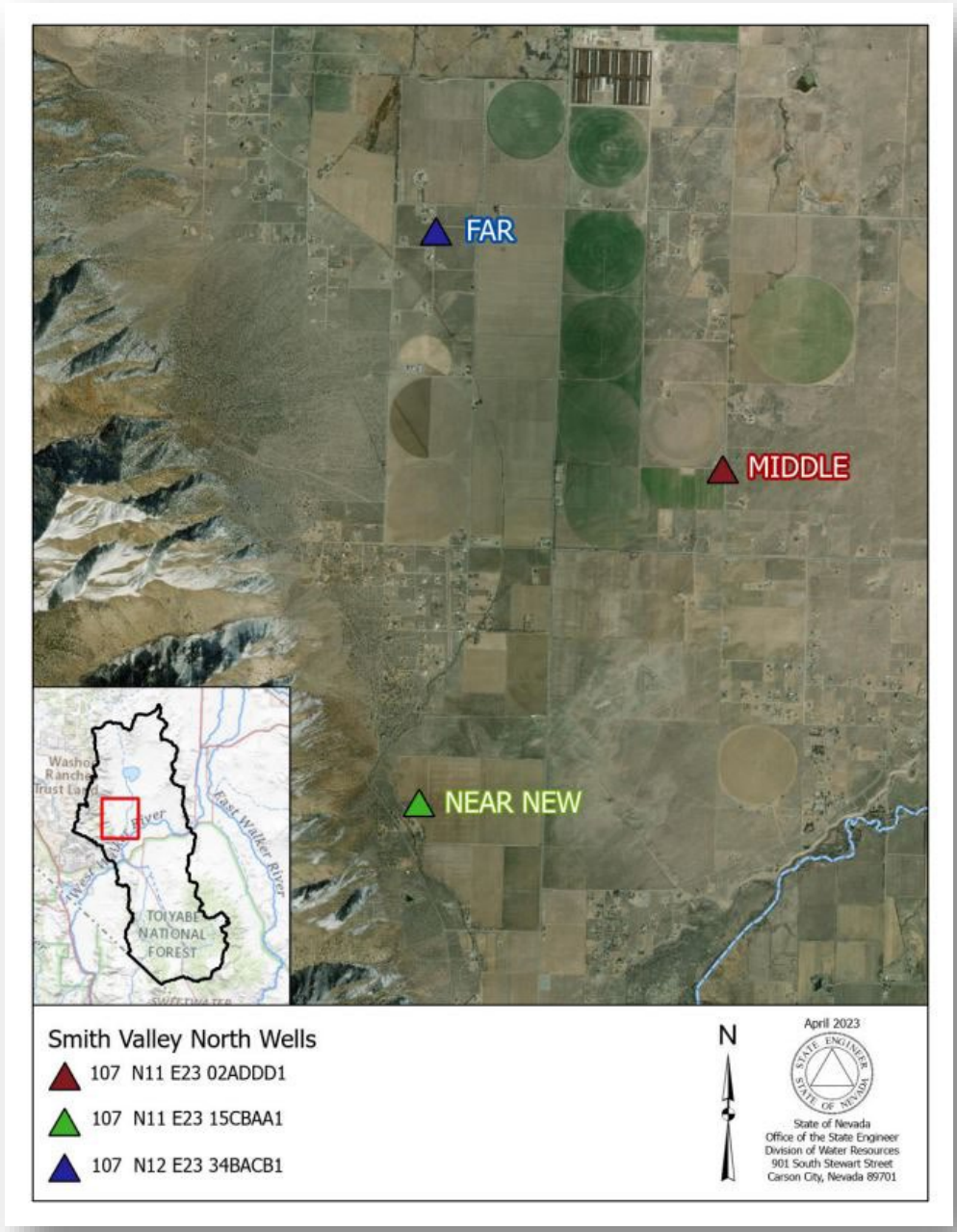
Average Smith Valley Water Level Changes (ft/yr)		
2024-25	-0.7	😑
2016-25	1.1	😎

*Excludes Artesia

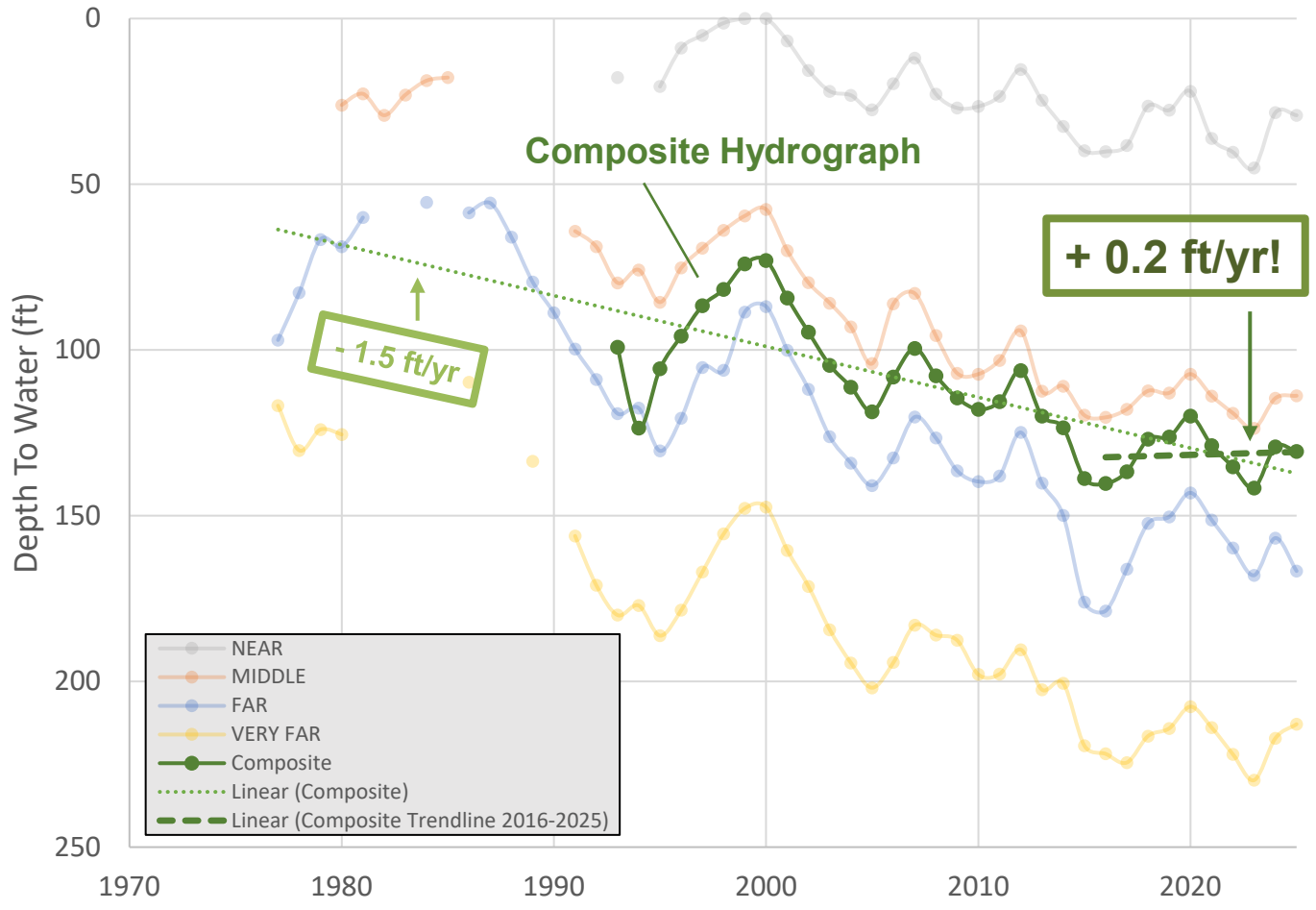


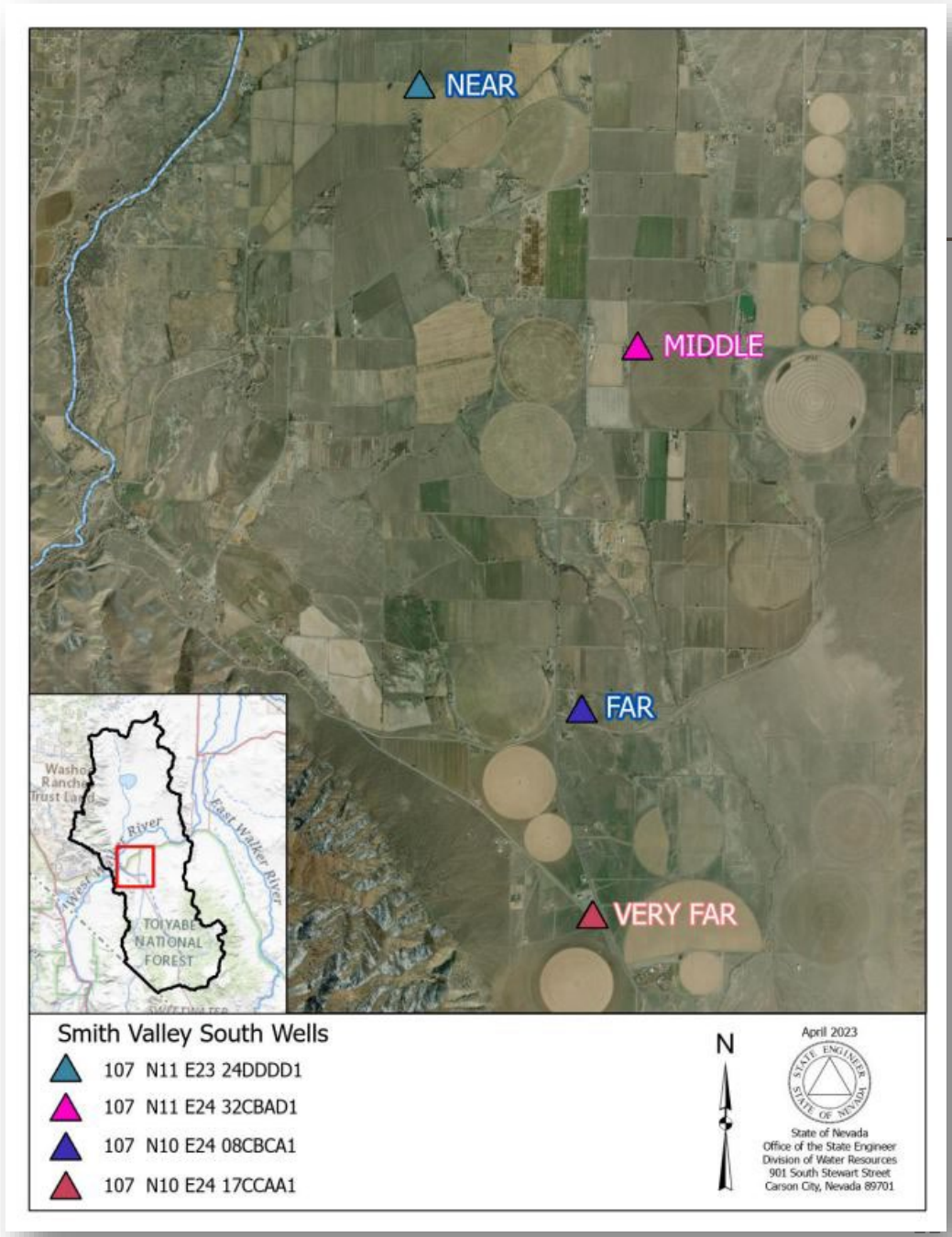
Northern Smith Valley Spring 1973-2025





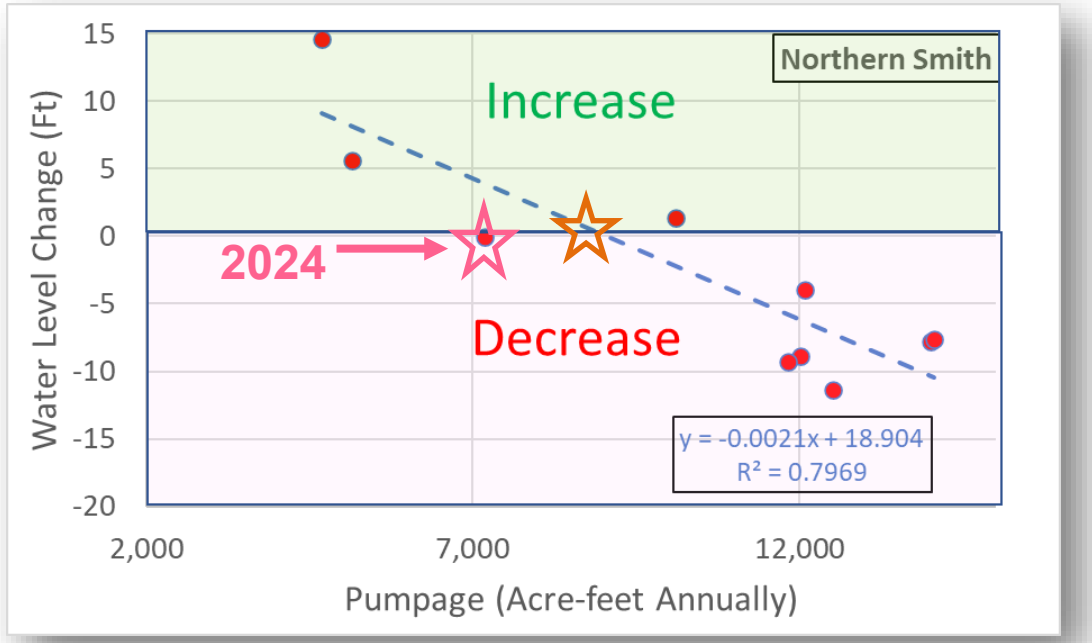
Southern Smith Valley Spring 1977-2025



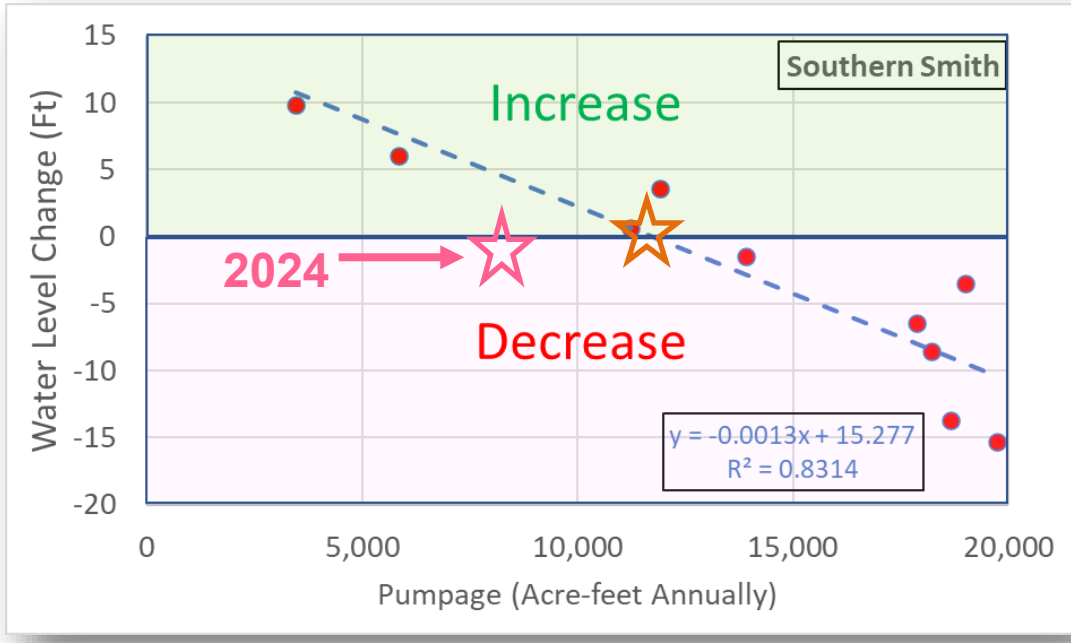


Smith Valley Pumping Vs. Water Level Change

Northern Smith*
2012-21 Average Pumping: 10,360 AF
Estimated Goal: <9,200 AF



Southern Smith
2012-21 Average Pumping: 13,980 AF
Estimated Goal: <11,800 AF



*Excludes Artesia

Total pumping reduction goal ≥ 3,400 AF/yr (average of 21,000 AF)

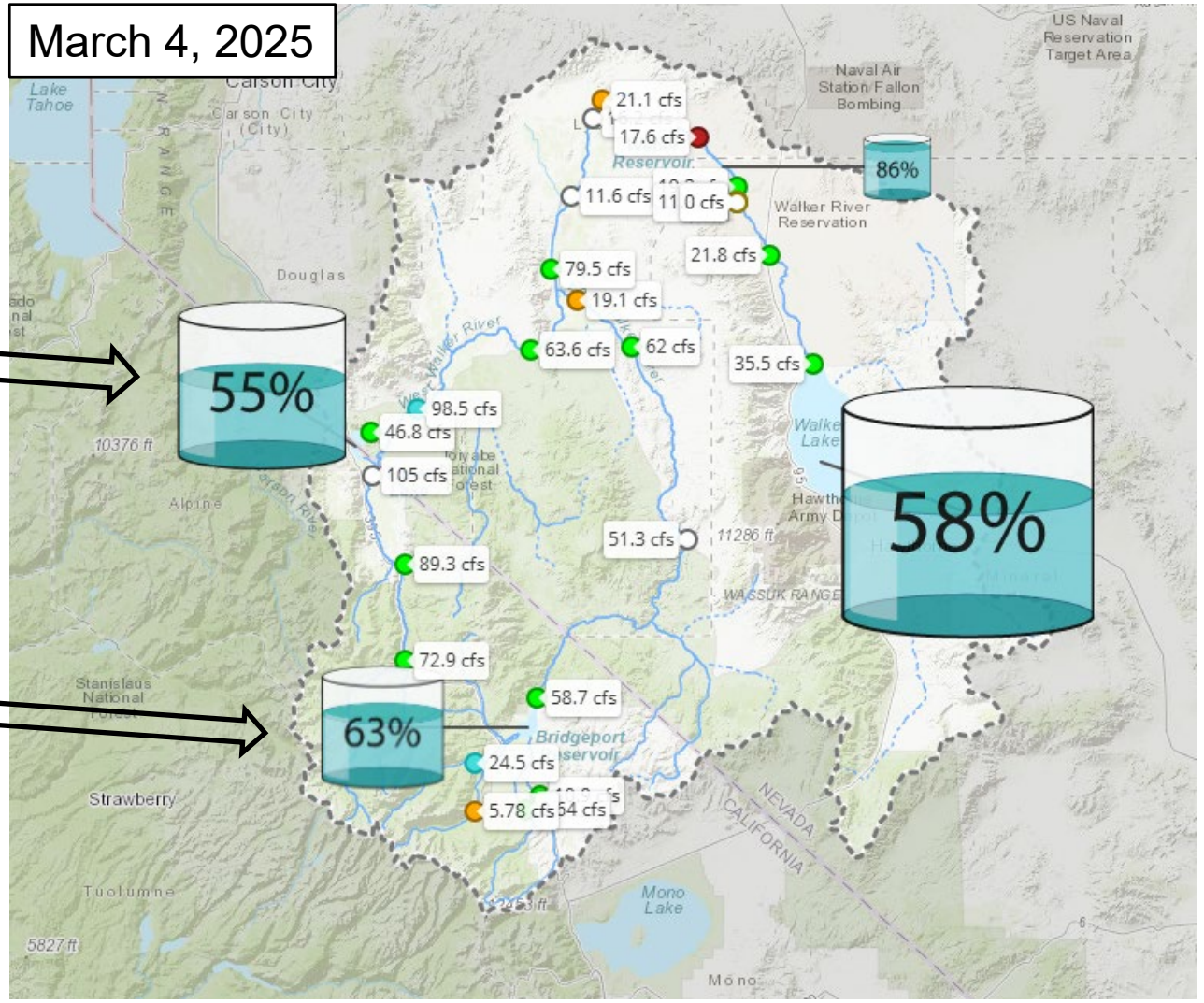
No water level change @ streamflow of ~ 169,000 AF (07-21 median = 100,000 AF)

WATER SUPPLY OUTLOOK

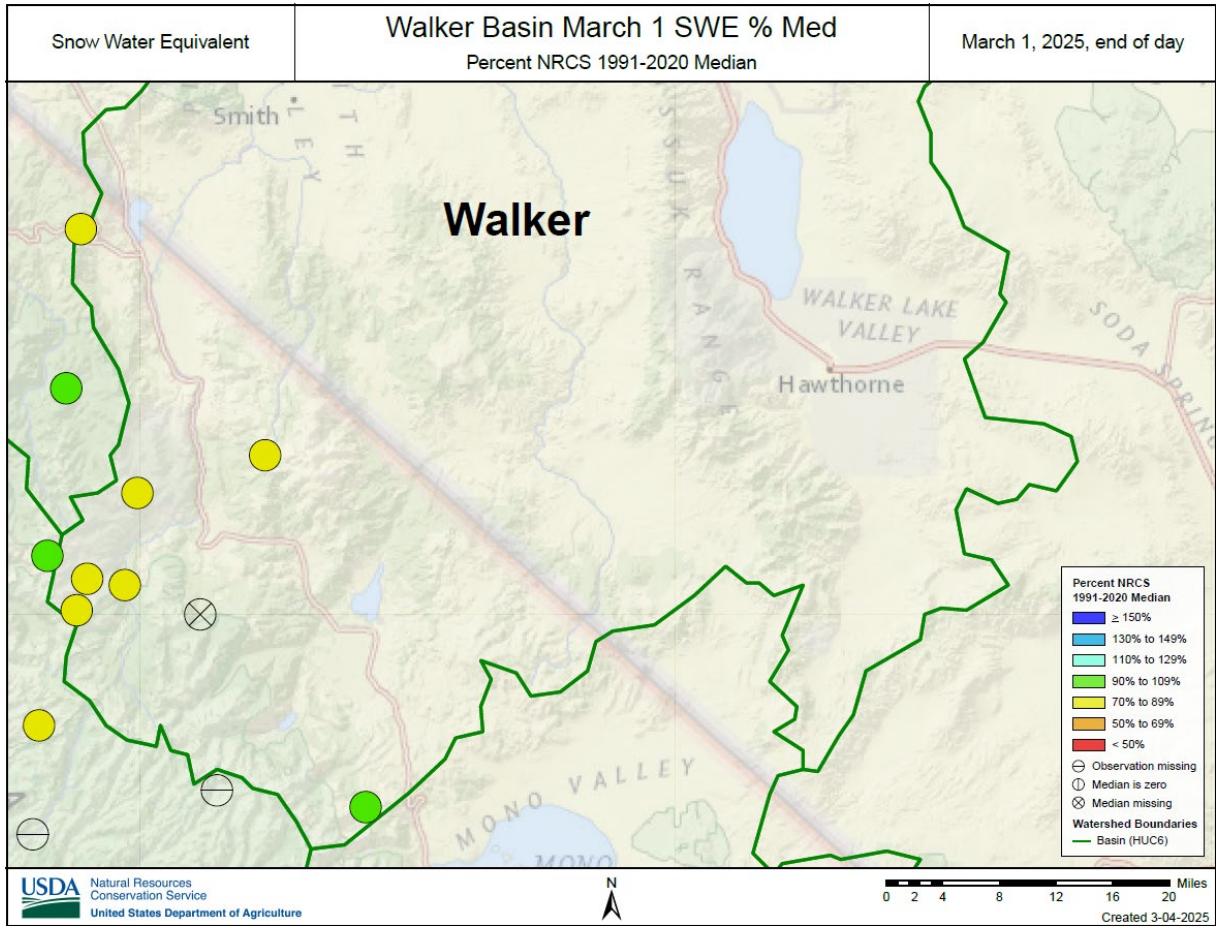
Reservoir Storage

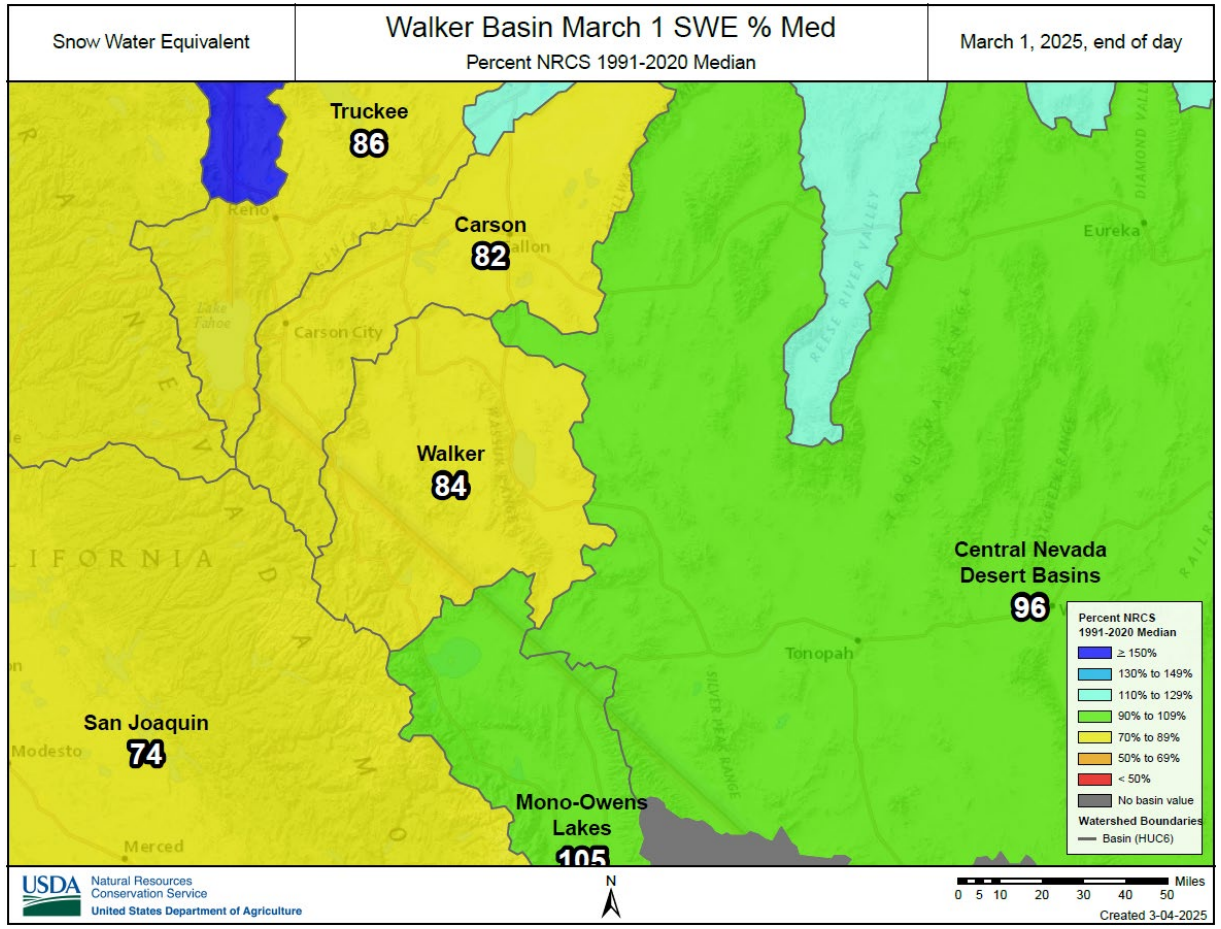
Down 35%

Down 30%

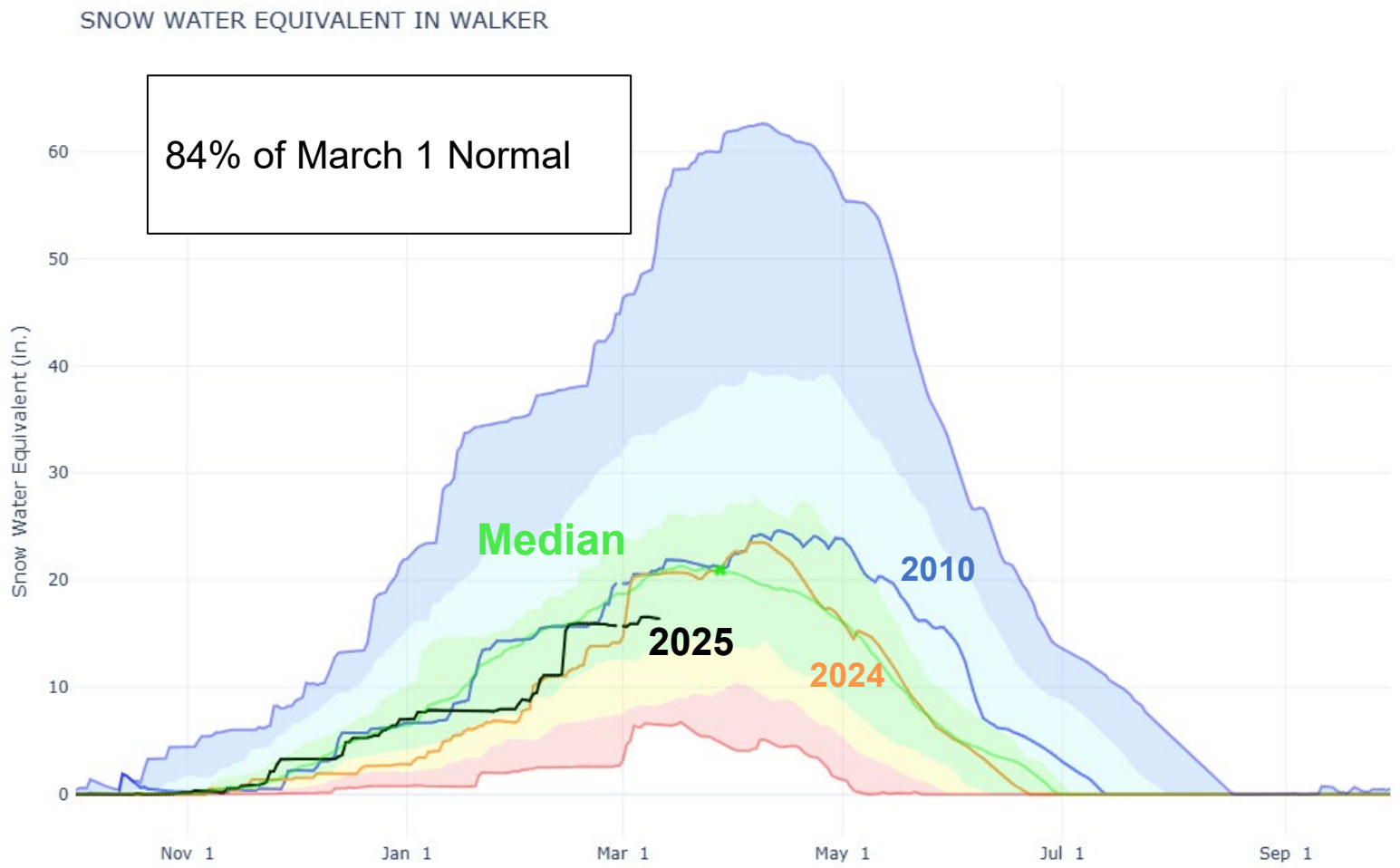


Snow Water Equivalent (SWE), % of March 1 median



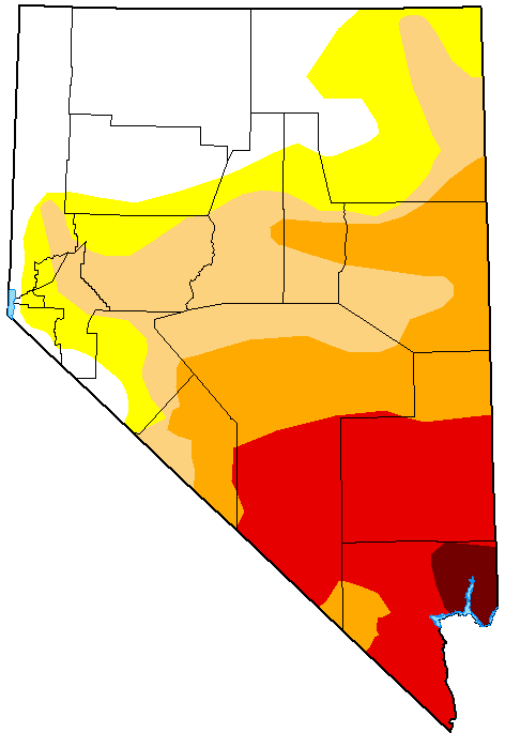


2025 Walker Snowpack (SWE)



U.S. Drought Monitor

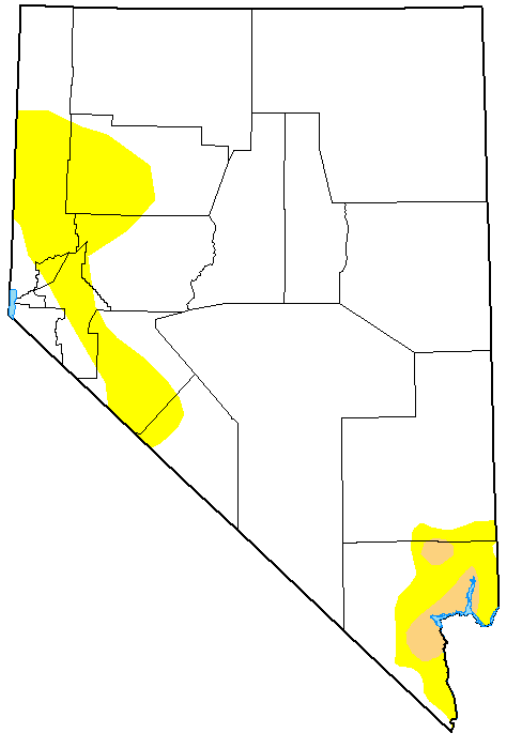
March 4, 2025



Intensity:

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

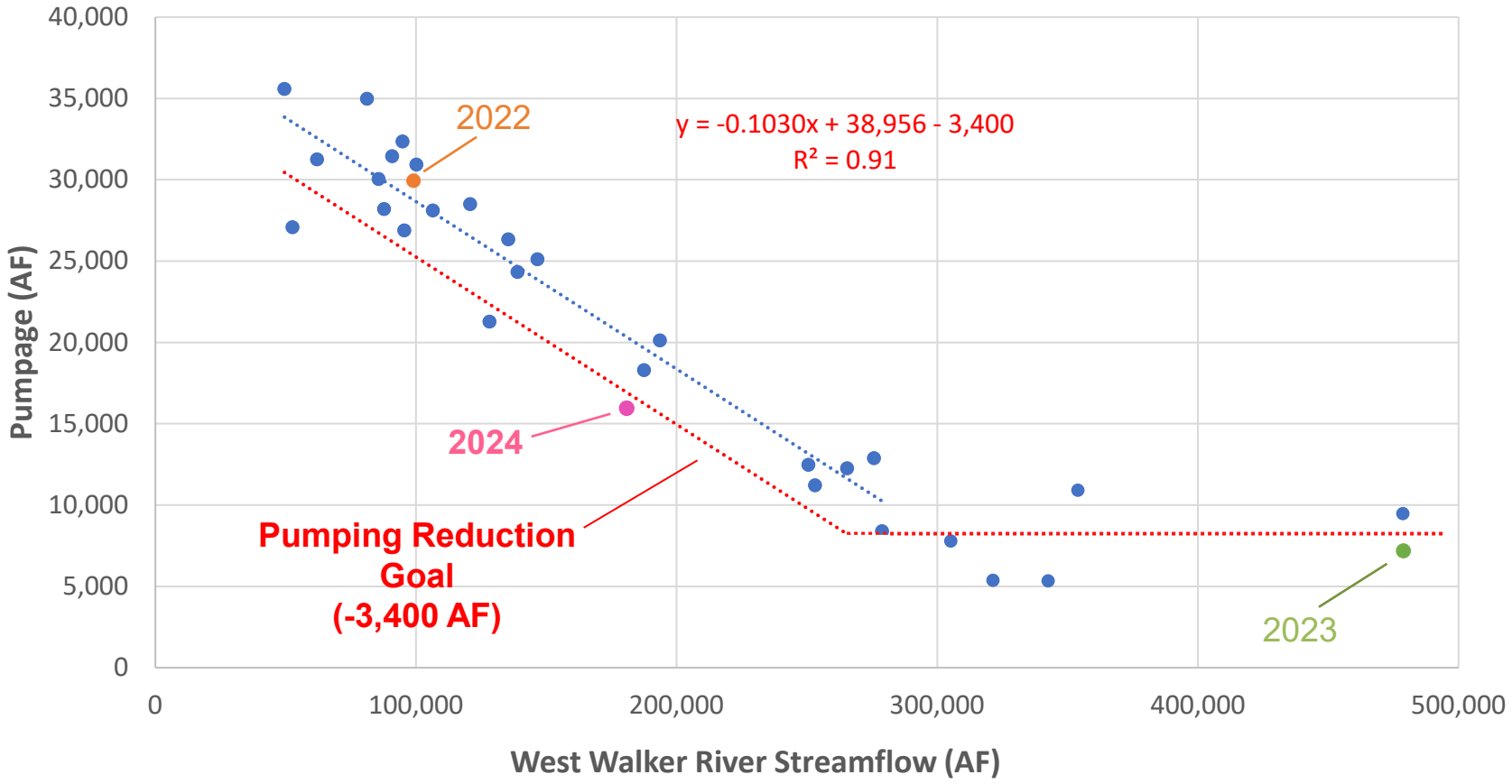
March 5, 2024



2025 PUMPING GOALS - EXPERIMENTAL

West Walker Streamflow* vs. Smith Valley Pumping

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



*Top 5 wettest years have been removed from regression; pumping doesn't include Artesia

Pumping Prediction 2024 review (April 1) – Smith Valley

April Pre-Season Pumping Forecast = -0.117*(TP) -11,826*(SWE) + 39,760 - 3,400

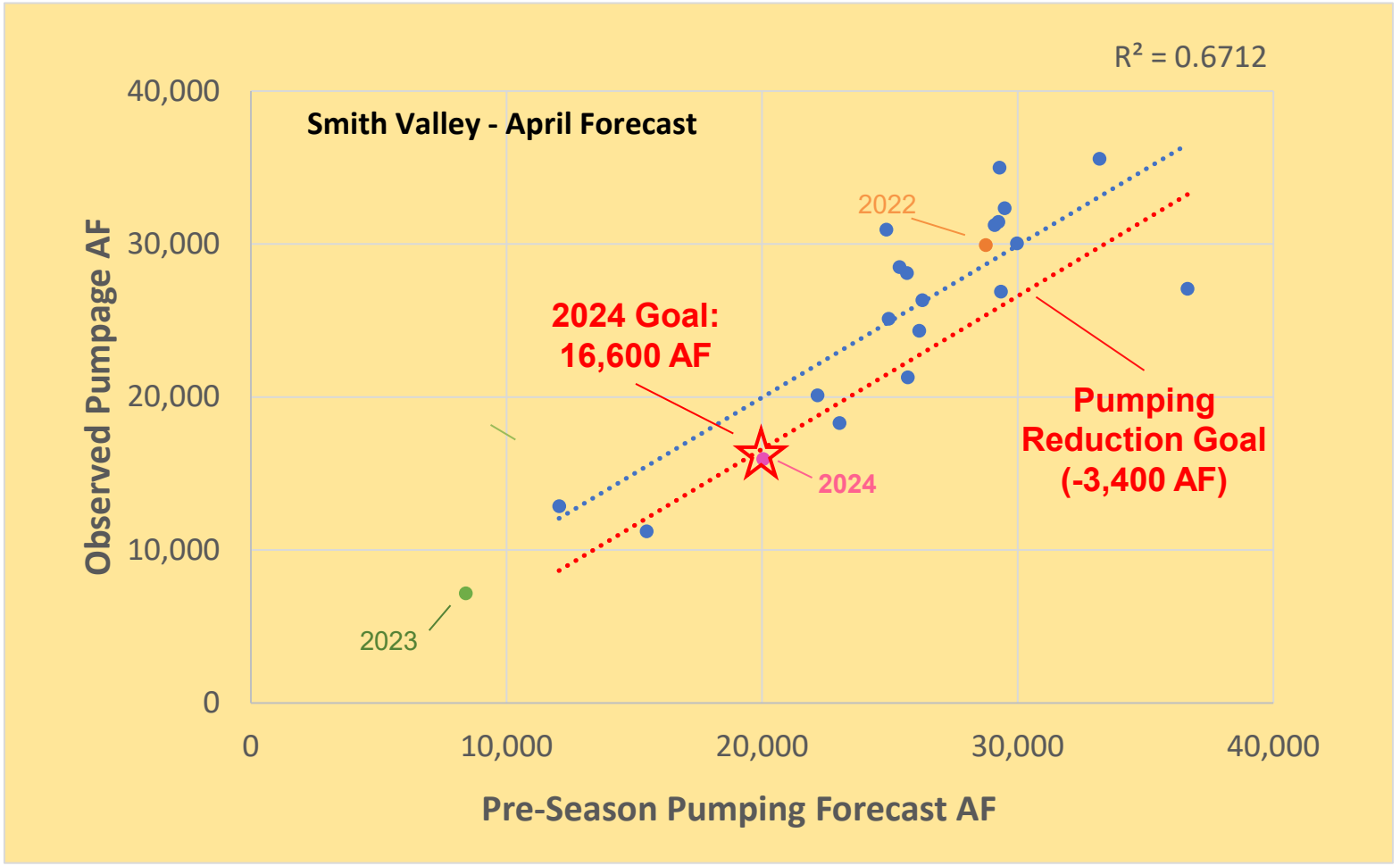
April 1 Observations of:

TP = Topaz Storage

SWE = West Walker Basin
Snow Water Equivalent

Based on pumping goal established last April, actual pumpage came in 600 AF below our goal for 2024.

Nice job everyone ☺.



Pumping Prediction for 2025 (March 1) – Smith Valley

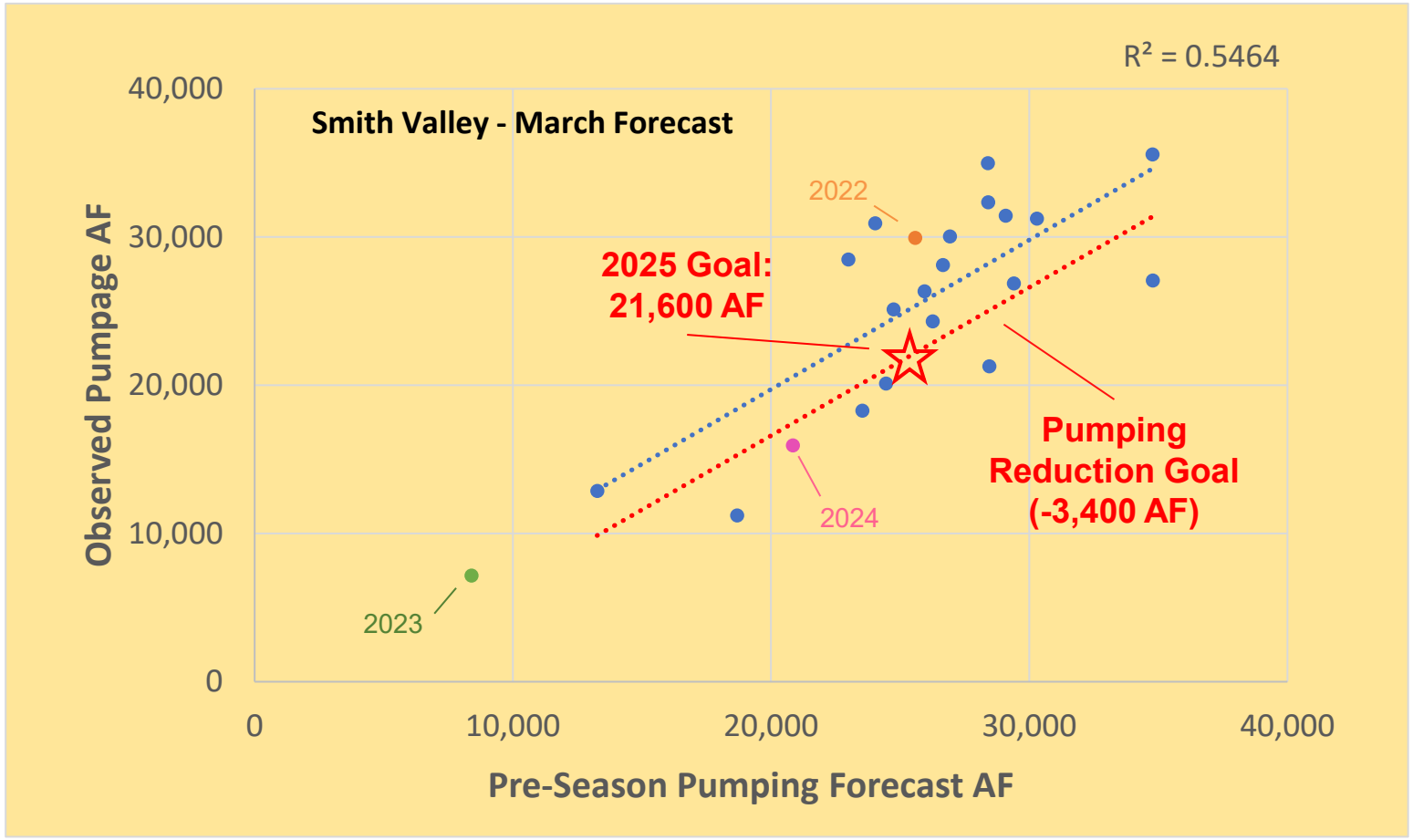
March Pre-Season Pumping Forecast = -0.215*(TP) -11,870*(SWE) + 41,894 - 3,400

March 1 Observations of:

TP = Topaz Storage (32,500 AF)

SWE = West Walker Basin
Snow Water Equivalent (83%)

2025 pumpage goal for Smith Valley is < 21,600 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.

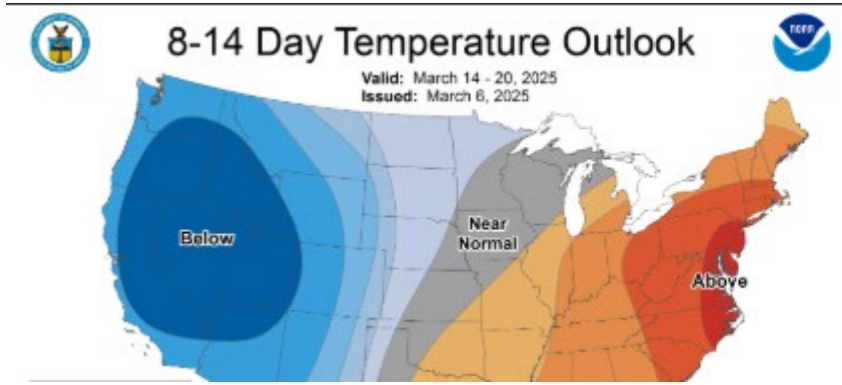
Outlook for 2025 season

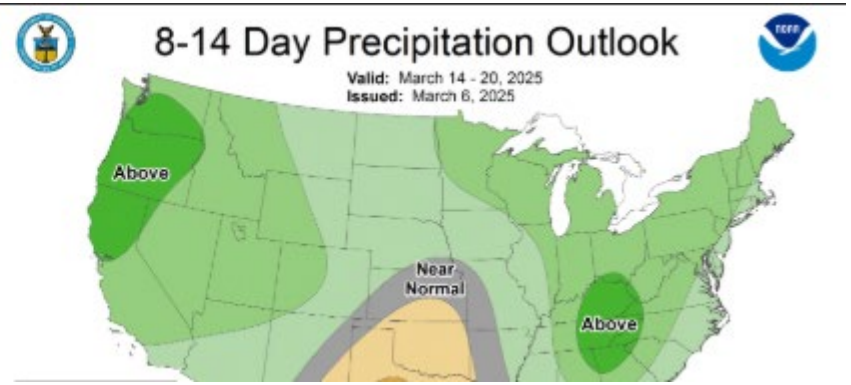
- The 2025 water year (WY25) is slightly below normal, but active weather in March is promising.
- WY25 may be similar to WY10 with respect to runoff and water deliveries.
  - About average water year preceded by an average water year.
  - Similar reservoir storage capacities.
  - 2010 pumpage: ~18,300 AF.
- More supplemental pumping will 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.

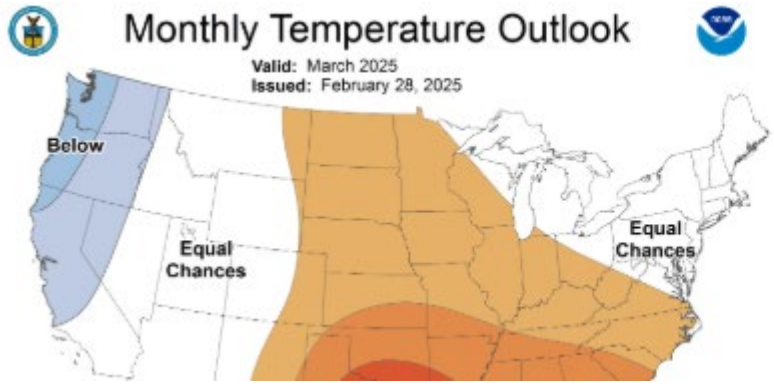
2025 pumpage goal for Smith Valley is < 21,600 AF.

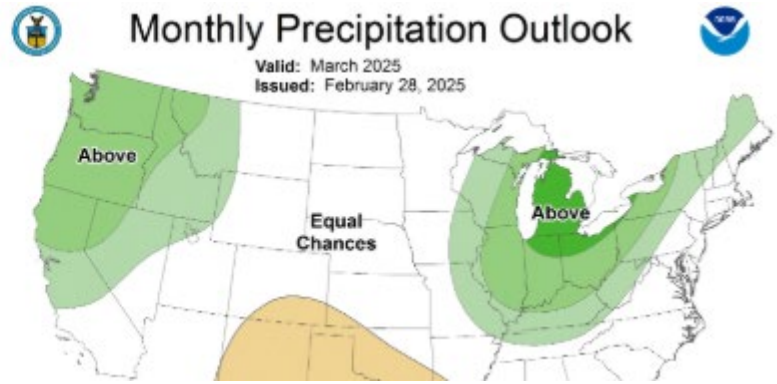
Miracle March?

- 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.







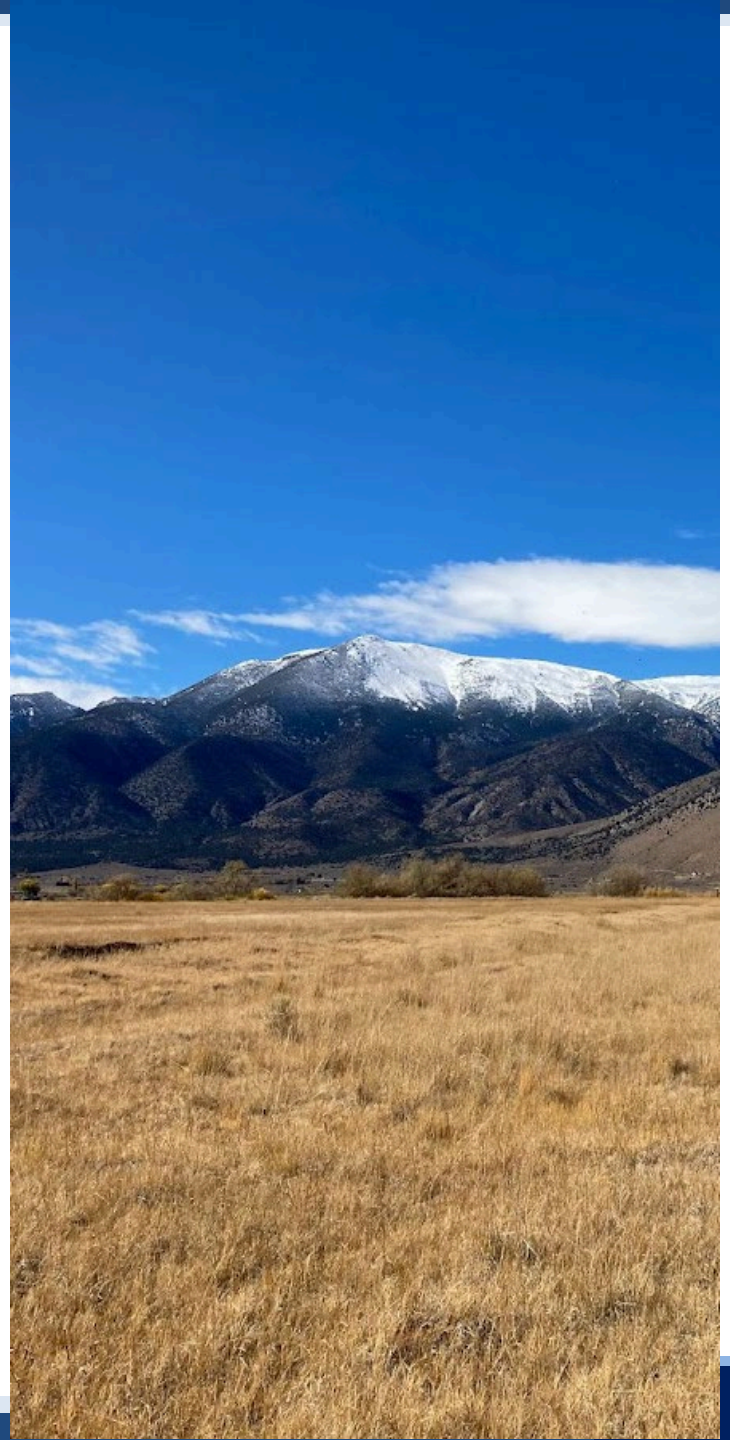


*If March does not disappoint.

Future Consideration: WBC Water Right Retirements

- Walker Basin Conservancy (WBC) administered the Ground Water Retirement program for the Walker River Basin.
- The goal of the program was to fund the purchasing and permanent retirement of groundwater rights from willing sellers in over-appropriated groundwater basins.
- In 2024, WBC retired 1,700 AF of groundwater rights (primary and supplemental) in Smith Valley.
- Depending on success of the program and ‘wetness’ of water rights being purchased, may help Smith Valley toward achieving reduction in annual pumpage goal.

Questions?



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