



— BUREAU OF —  
RECLAMATION



US Army Corps  
of Engineers®  
Albuquerque District

# 2023 February Runoff Forecast

8th Annual Rio Chama Congreso  
February 25, 2023

# Definitions 1.1

- **Native/natural Rio Grande water:** water that comes directly from the Rio Grande Basin
- **San Juan-Chama water:** water imported from San Juan Basin of Colorado River into Rio Grande Basin through San Juan-Chama Project
- **Rio Grande Compact:** agreement between Colorado, New Mexico, and Texas apportioning Rio Grande water between the three states

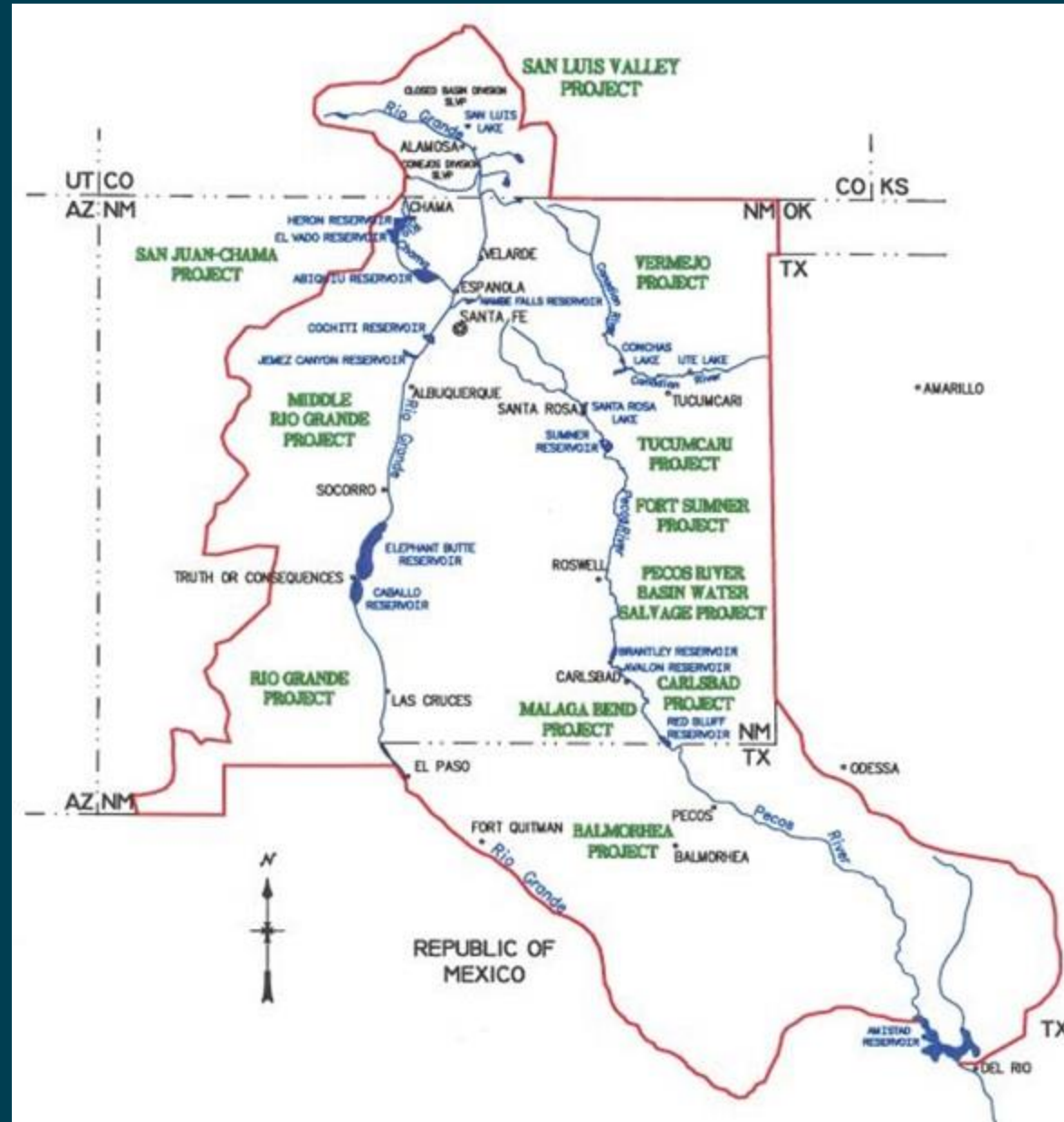


# Definitions 1.2

- MRGCD – Middle Rio Grande Conservancy District
- The City/Water Authority – Albuquerque Bernalillo County Water Utility Authority (ABCWUA)
- NRCS – Natural Resources Conservation Service
- Supplemental water – water leased by Reclamation to augment flows in support of Rio Grande Silvery Minnow as outlined in 2016 Biological Opinion
- P&P – Prior & Paramount lands of the six Middle Rio Grande Pueblos



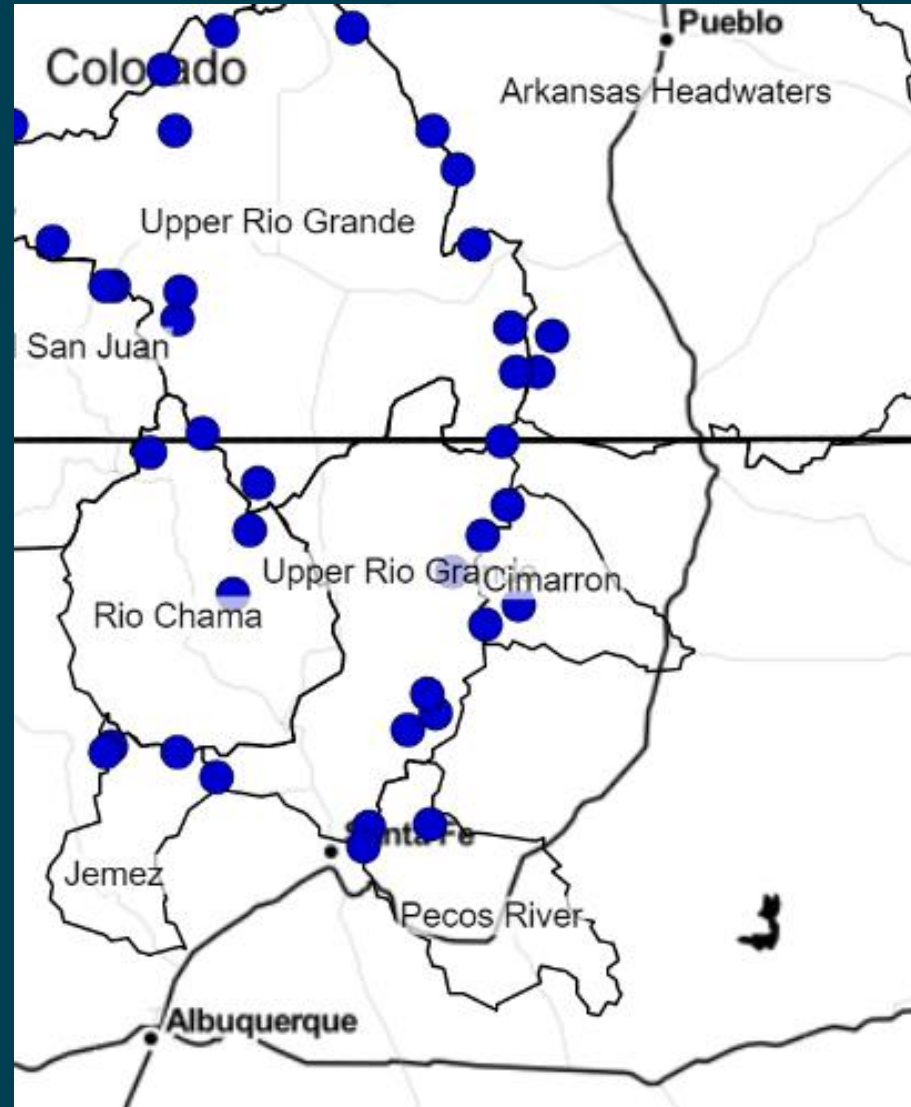
# Map of Reclamation's Albuquerque Area Office Projects



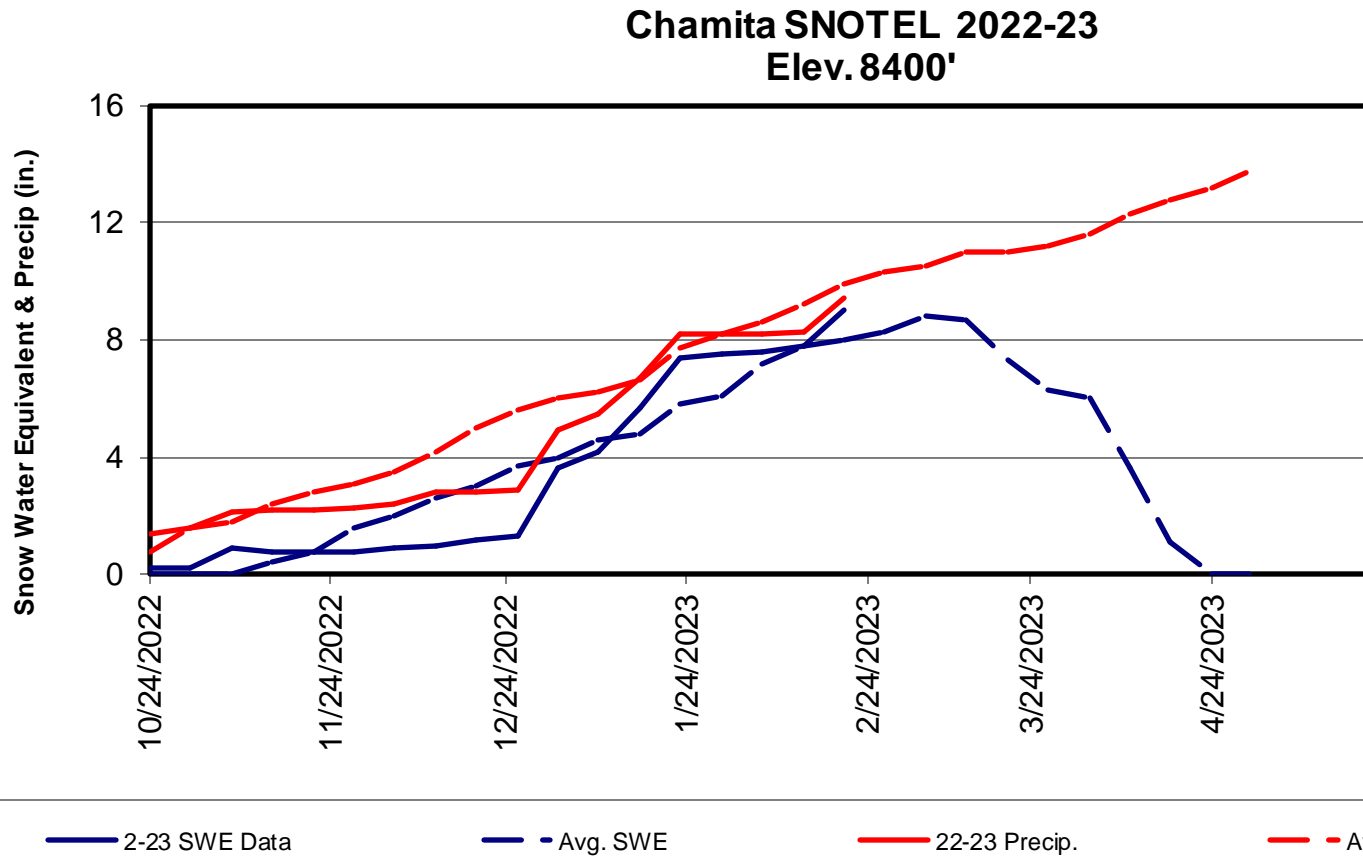
# Current Snow Conditions



# SNOTEL Locations

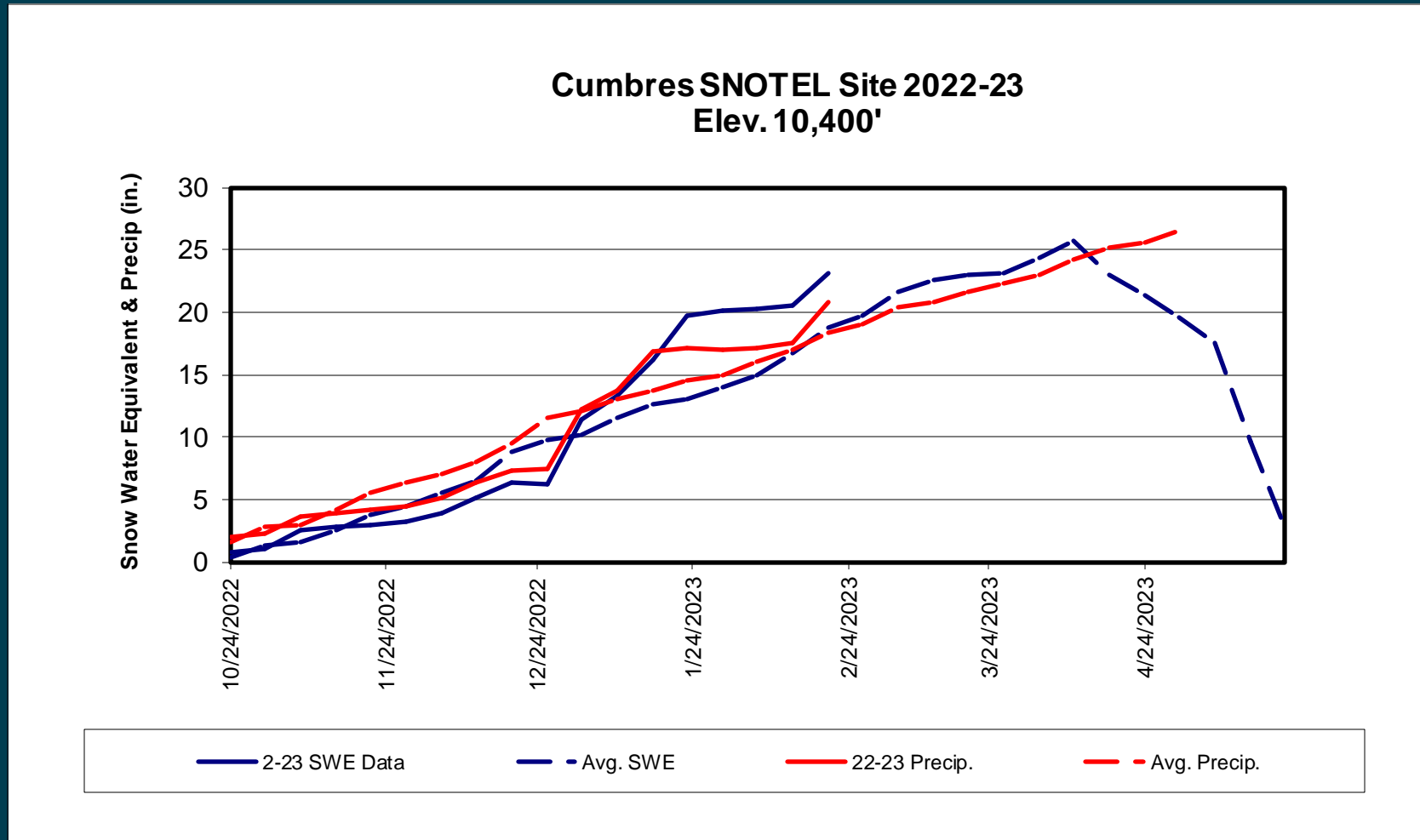


# Rio Chama Snow Data



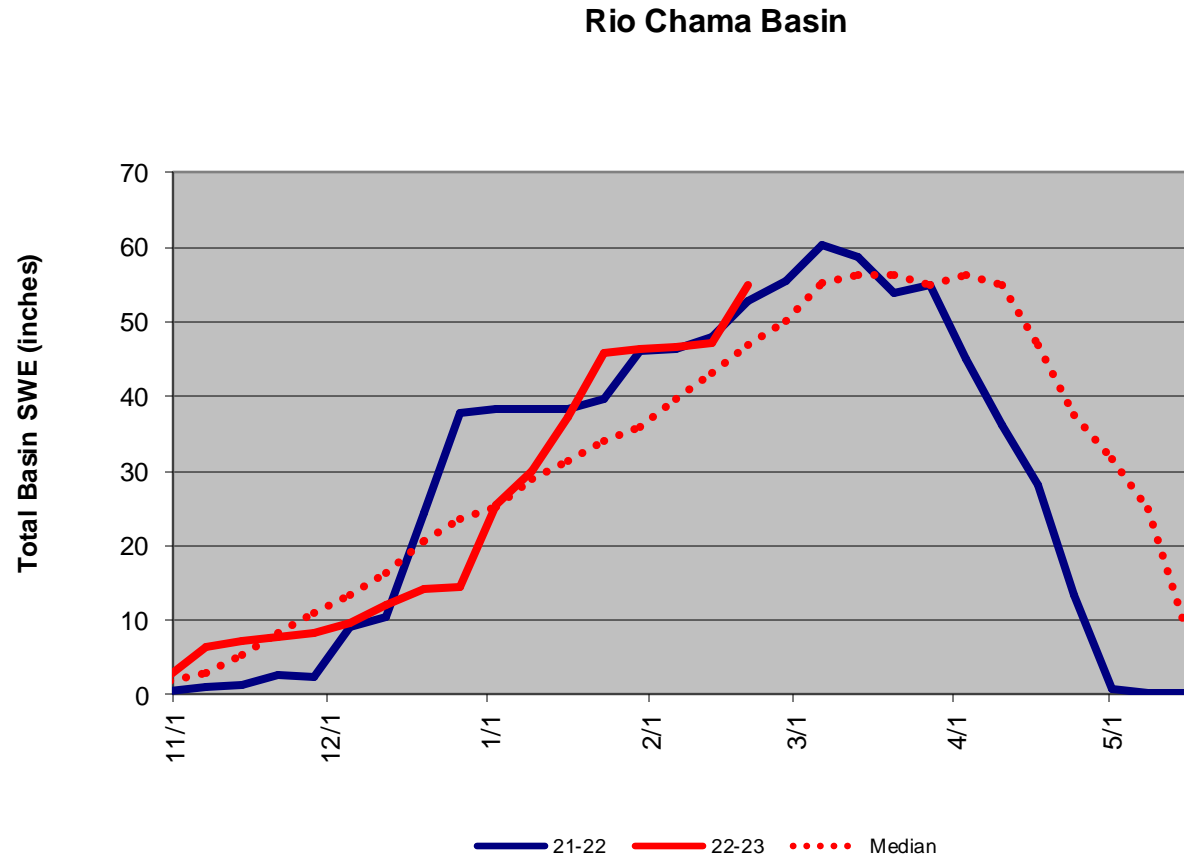
# Rio Chama Snow Data

(continued)

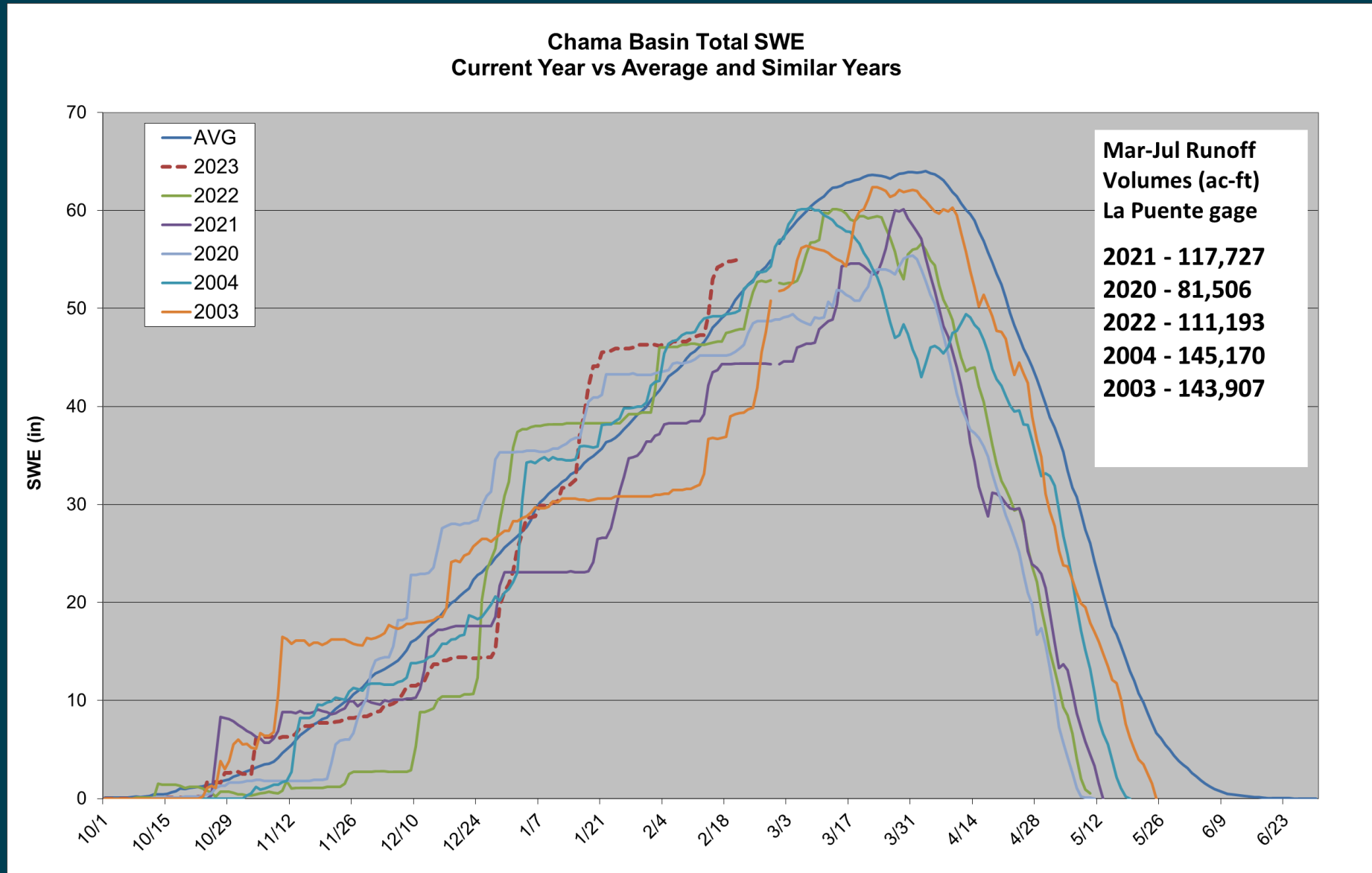




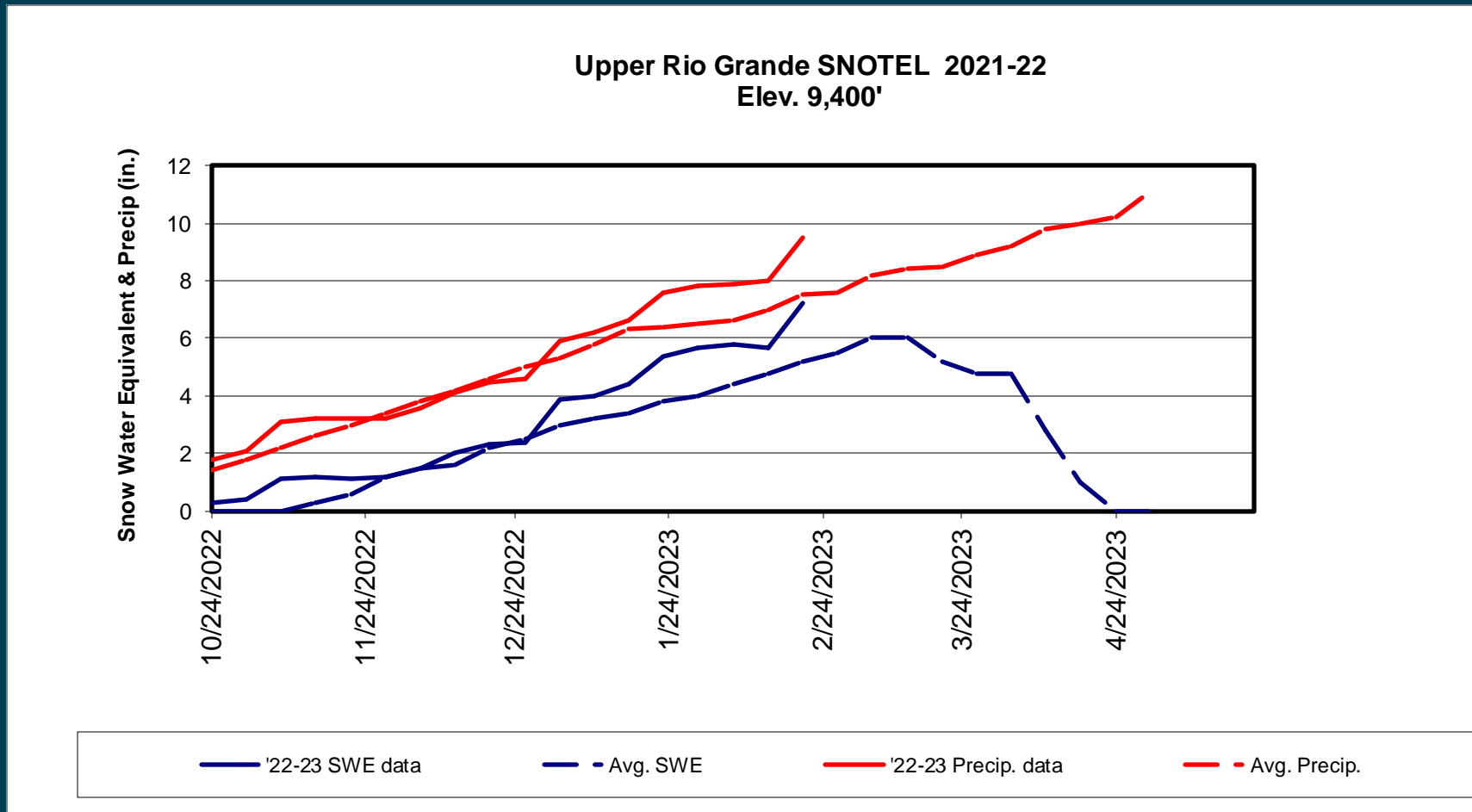
# Rio Chama Snow Comparison



# Similar Snowpack Years

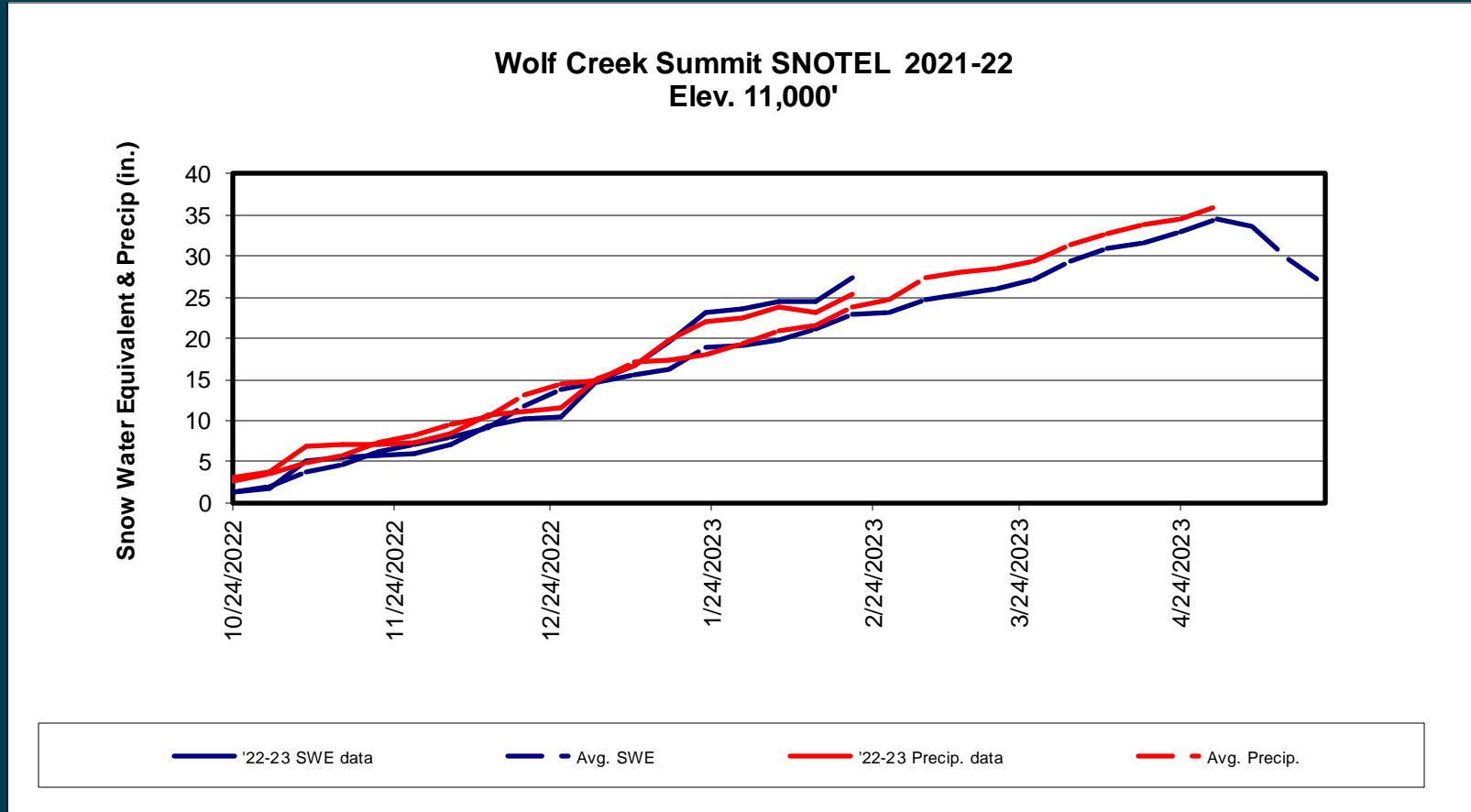


# Rio Grande Snow Data

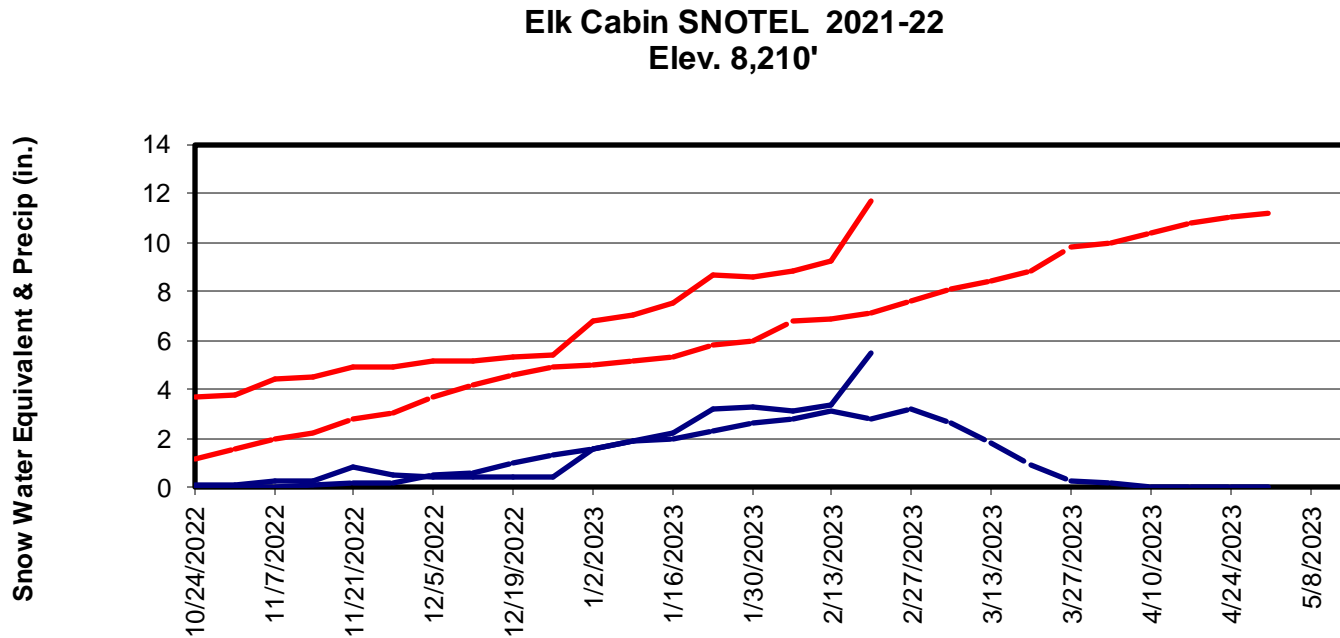


# Rio Grande Snow Data

(continued)

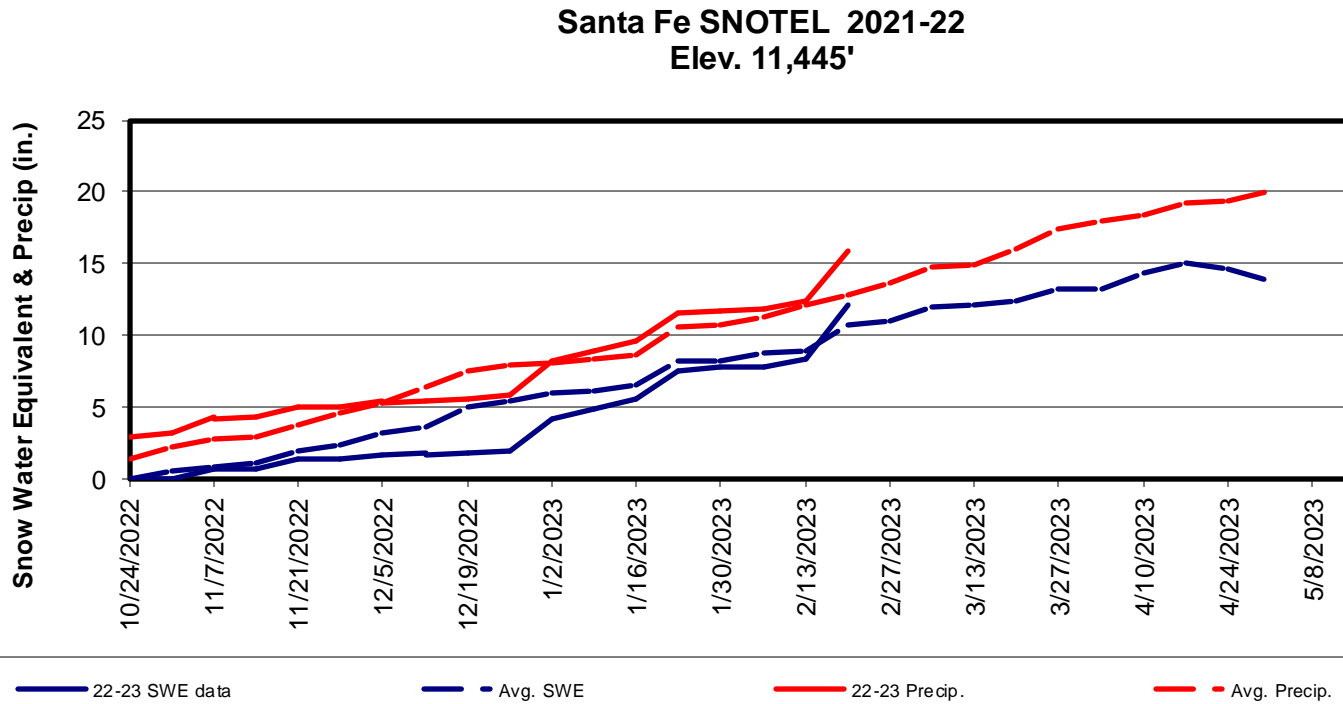


# Sangre de Cristo Snow Data

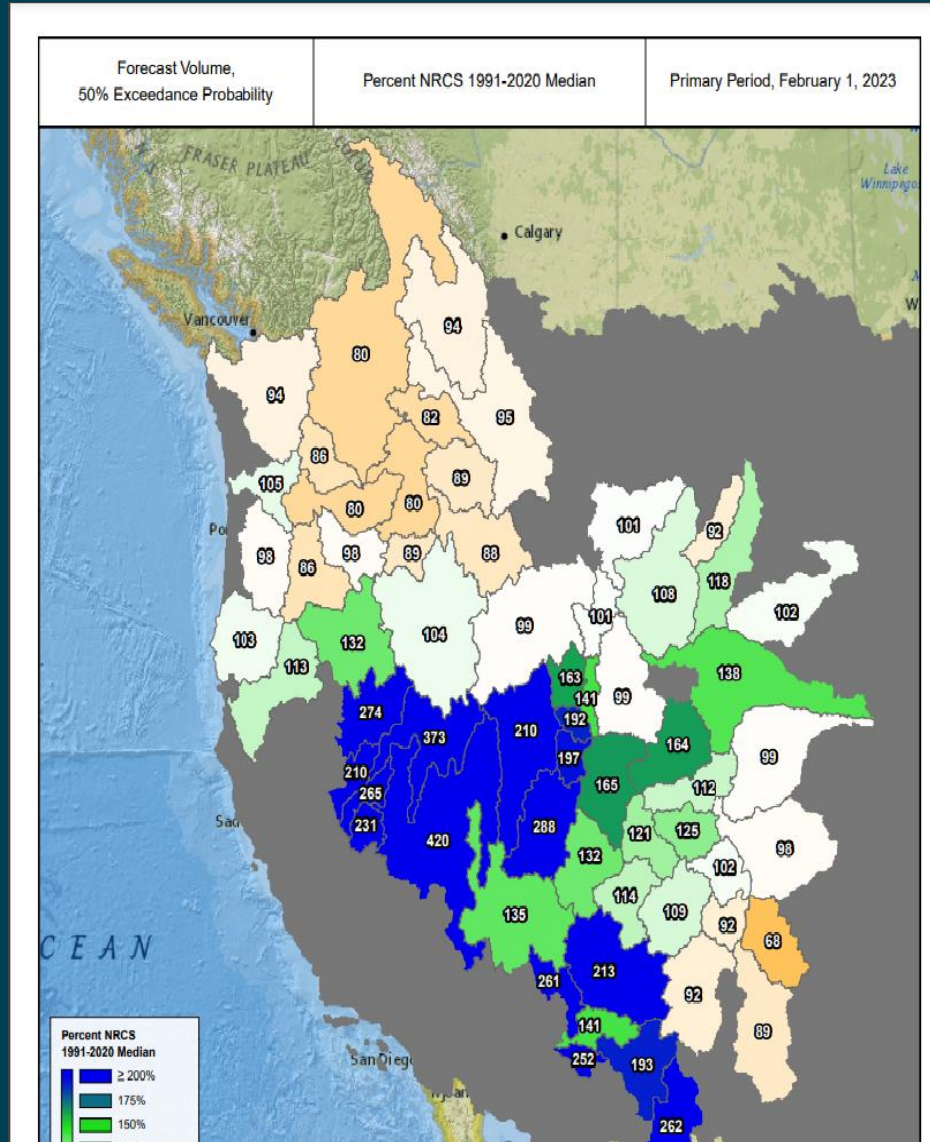


# Sangre de Cristo Snow Data

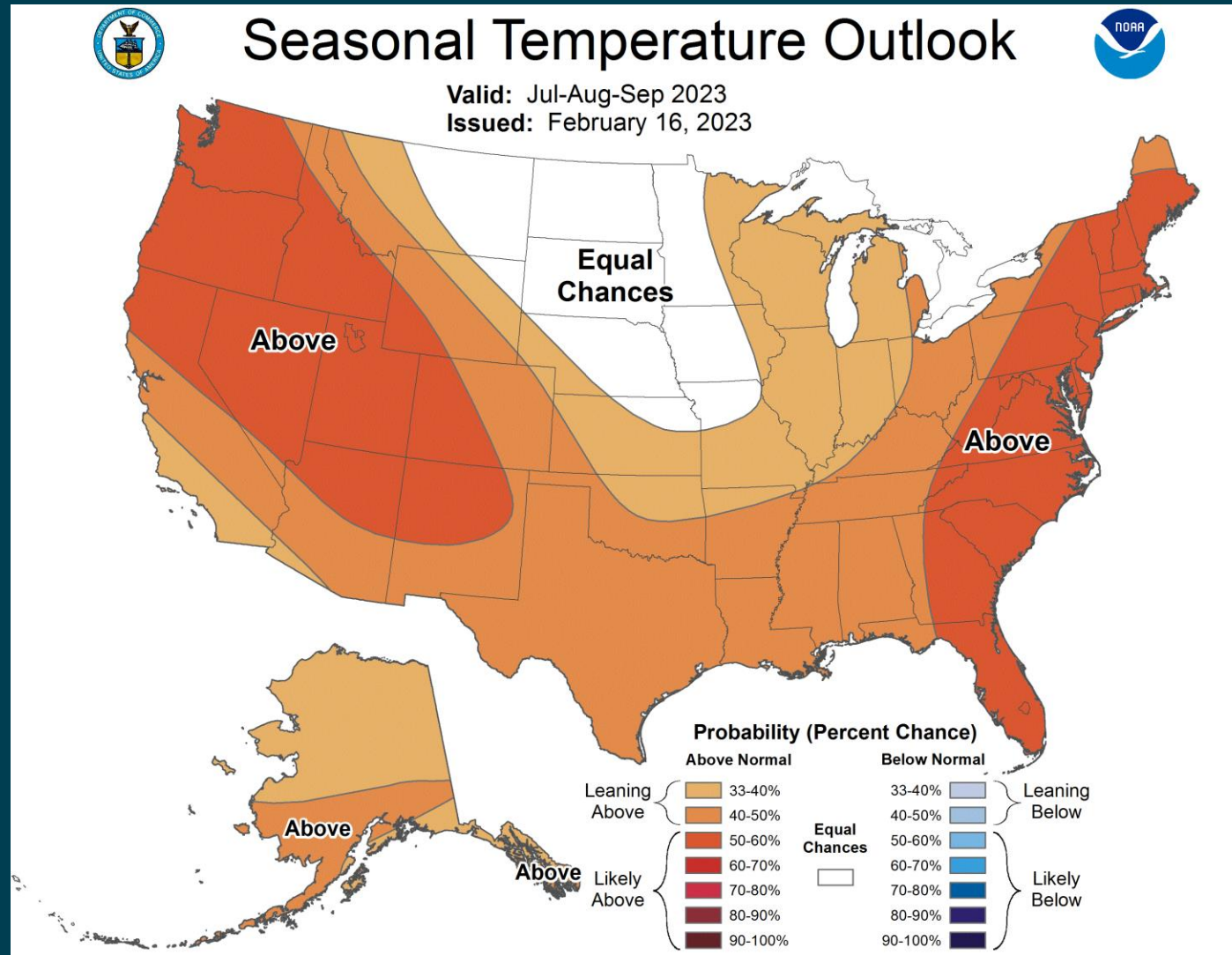
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# Western U.S. River Basin Streamflow Forecast



# Monsoon Season Temperature Outlook



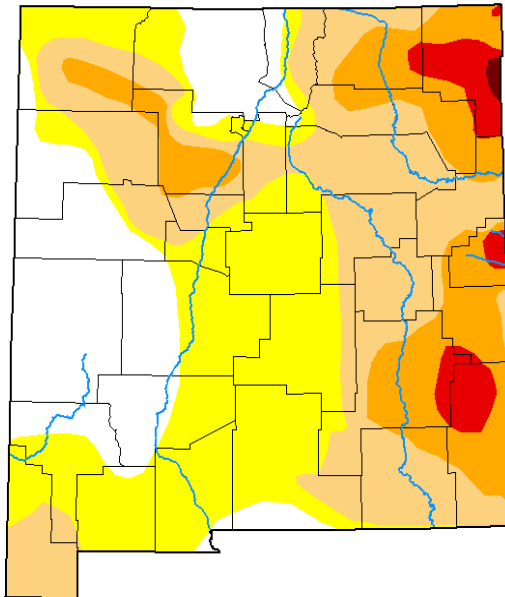




# U.S. Drought Monitor – New Mexico

## U.S. Drought Monitor New Mexico

February 14, 2023  
(Released Thursday, Feb. 16, 2023)  
Valid 7 a.m. EST



**Intensity:**

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

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

**Author:**

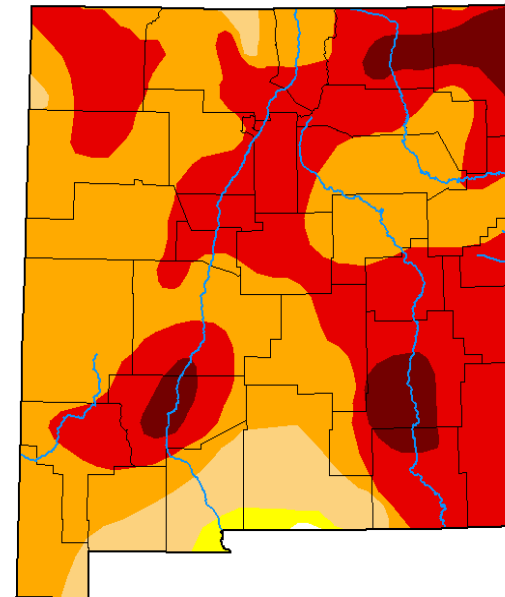
Brian Fuchs  
National Drought Mitigation Center



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

## U.S. Drought Monitor New Mexico

April 5, 2022  
(Released Thursday, Apr. 7, 2022)  
Valid 8 a.m. EDT



**Intensity:**

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

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

**Author:**

Deborah Bathke  
National Drought Mitigation Center



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)



# 2023 Water Operations Modeling

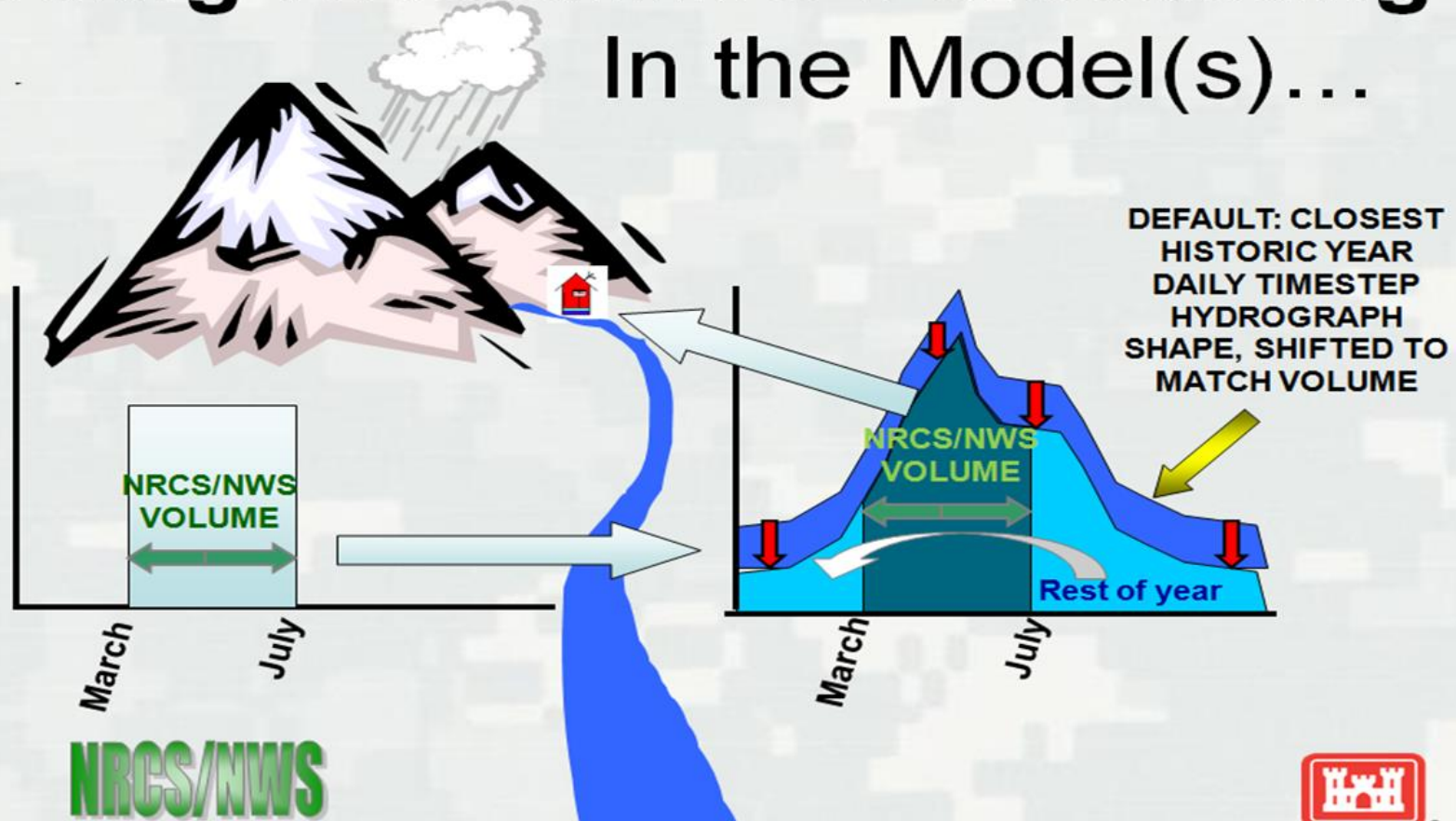


# What Drives the Process

- Volume forecast from NRCS
- Based on snowpack, soil moisture, climate forecast
- Choose similar year based on similar volume
- Actual hydrograph vs. average hydrograph
- Can tweak timing of hydrograph to best match forecasted conditions (warm spring vs. cool spring)
- Inflows/outflows based on nature and policies
- Article VII restrictions
- Flood control and channel capacity
- Timing of water deliveries
- Demand curves from water users



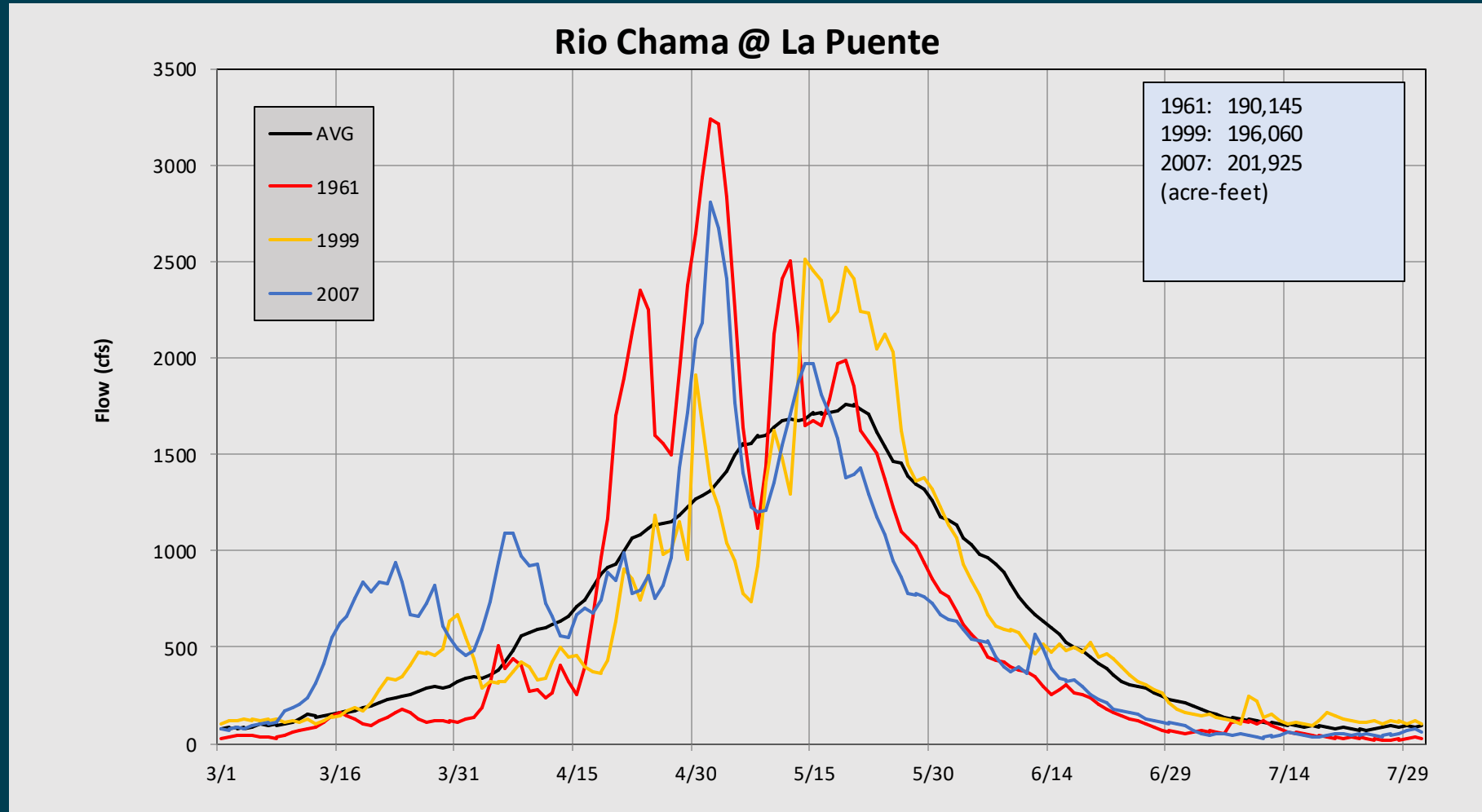
# Using NRCS/NWS Forecasting In the Model(s)...



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# Similar Year Hydrographs

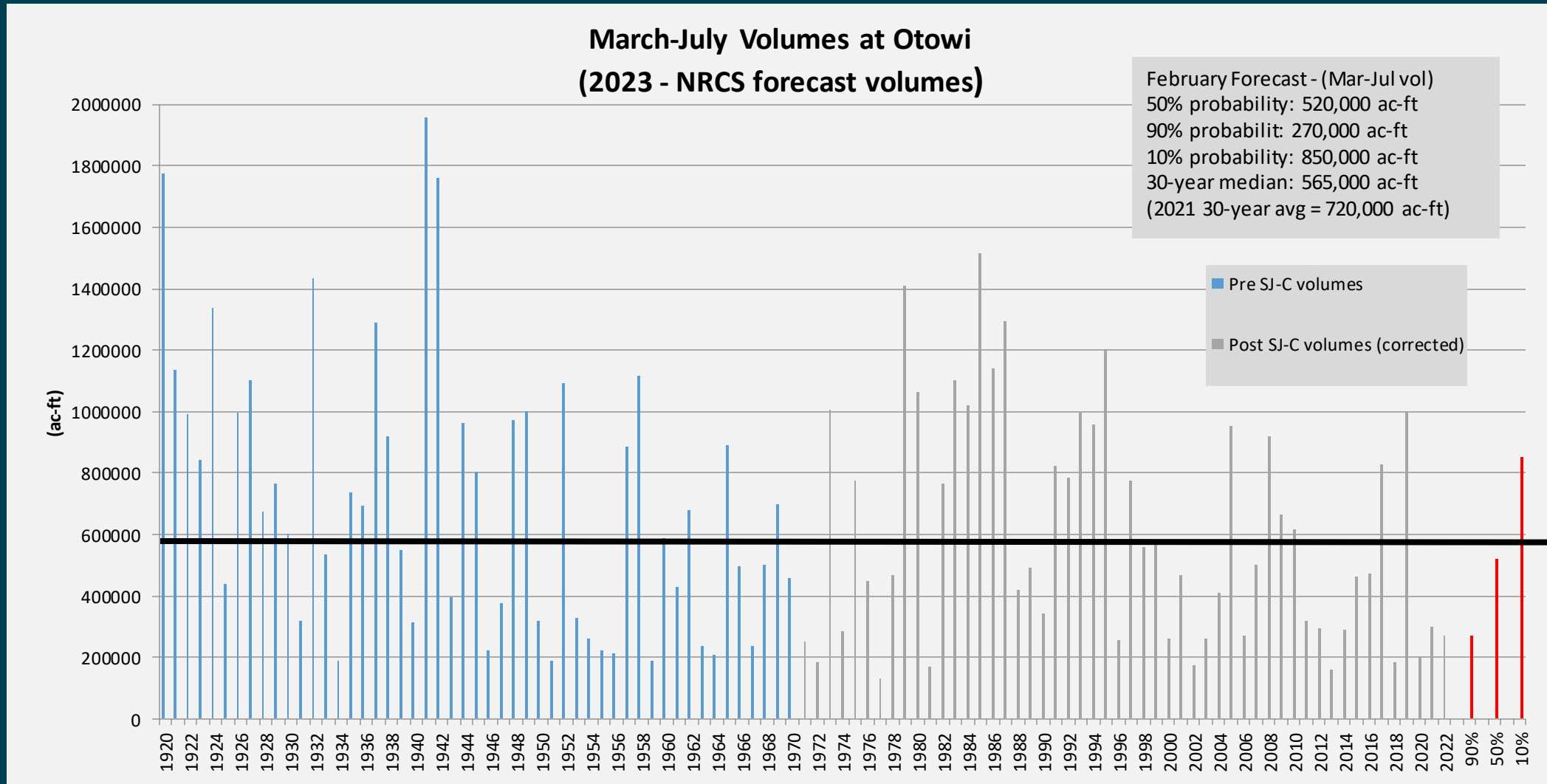


# February Forecast Data

	Most Probable Percent of Median		February 1 50% / 70% Probability Volume, ac-ft
	2023	2022	2023
Rio Grande nr Del Norte	98%	79%	470,000 / 395,000
El Vado Reservoir Inflow	105%	88%	195,000 / 155,000
Rio Grande at Otowi	92%	70%	520,000 / 410,000
Nambe Reservoir Inflow	93%	57%	5,200 / 4,300
Jemez blw Jemez Dam	105%	35%	23,000 / 18,200
Rio Blanco @ Diversion	104%	83%	50,000 / 42,000
Navajo River @ Diversion	109%	86%	61,000 / 51,000



# Historic Mar-Jul Flow Volumes at Otowi

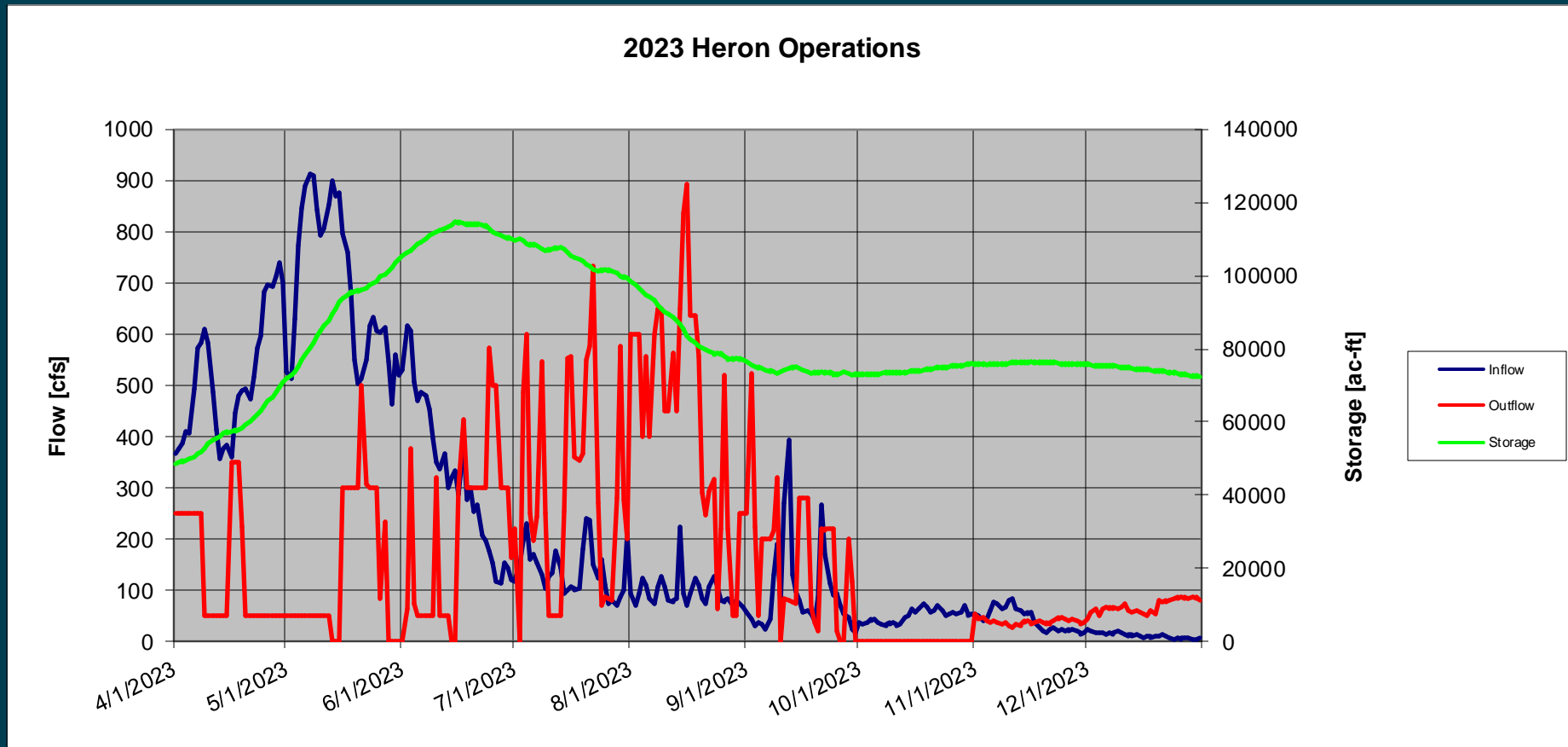




# Heron Reservoir



# Proposed 2023 Heron Operations

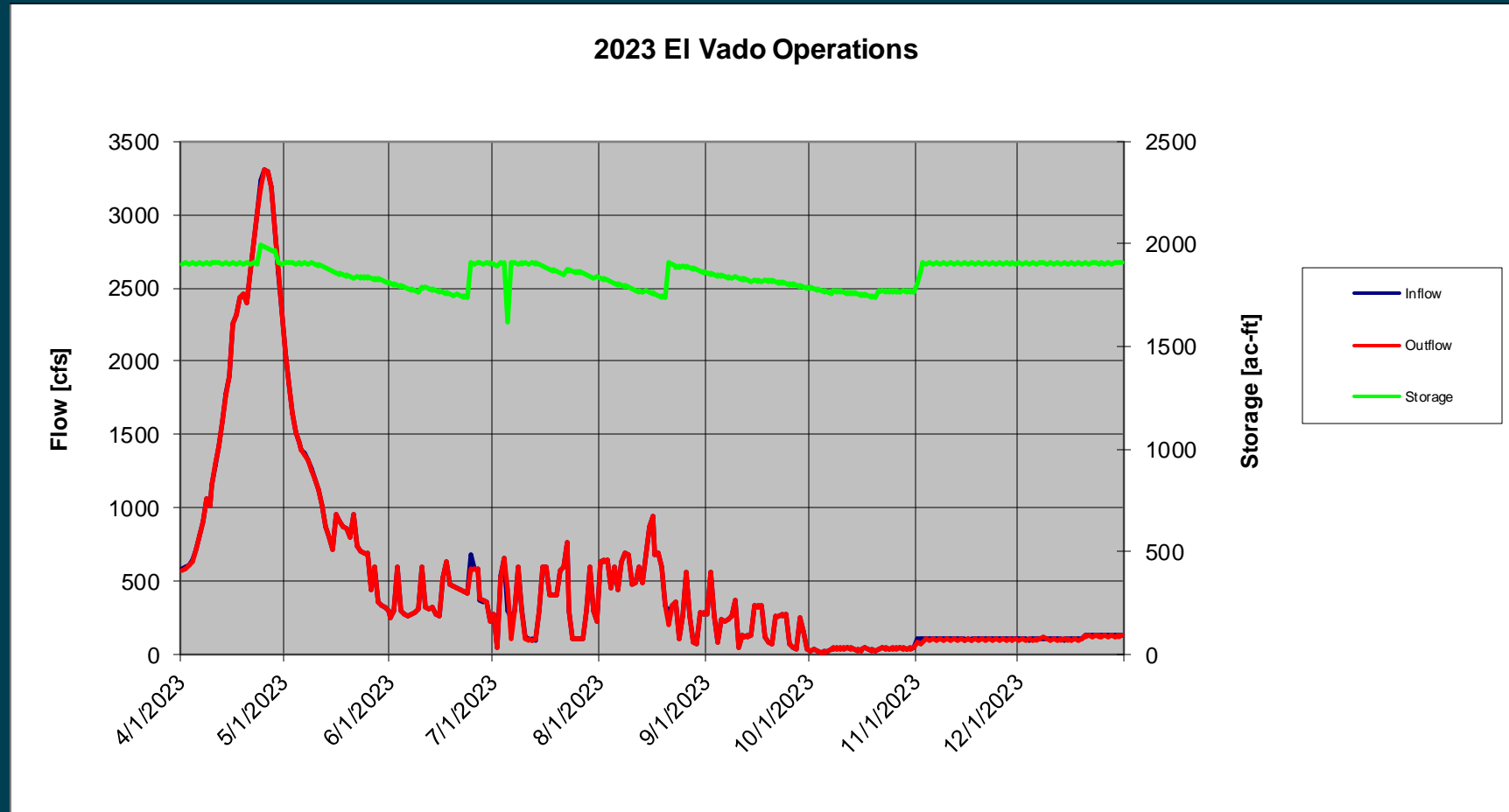


# El Vado Reservoir





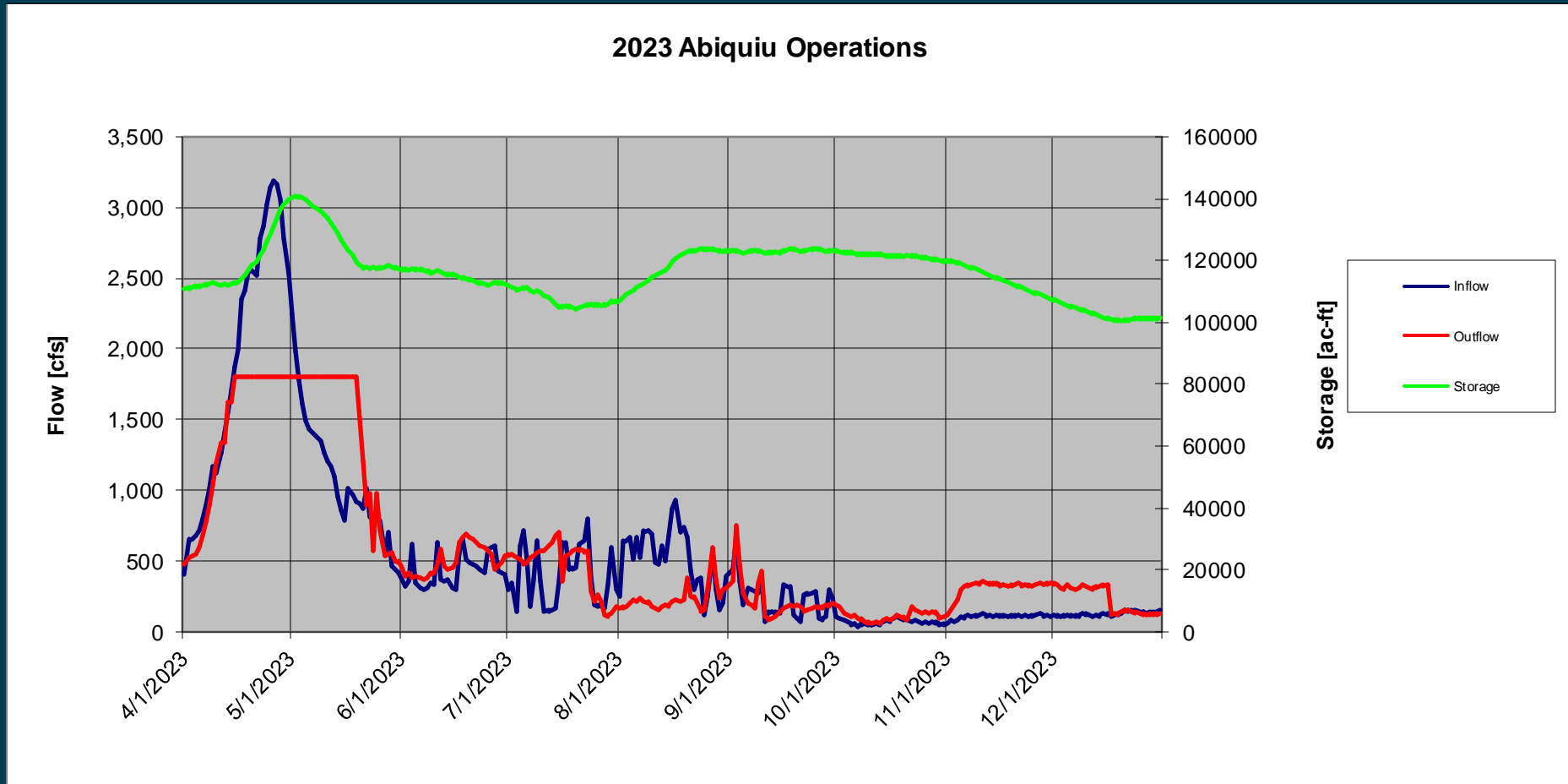
# Proposed 2022 El Vado Operations



# Abiquiu Lake

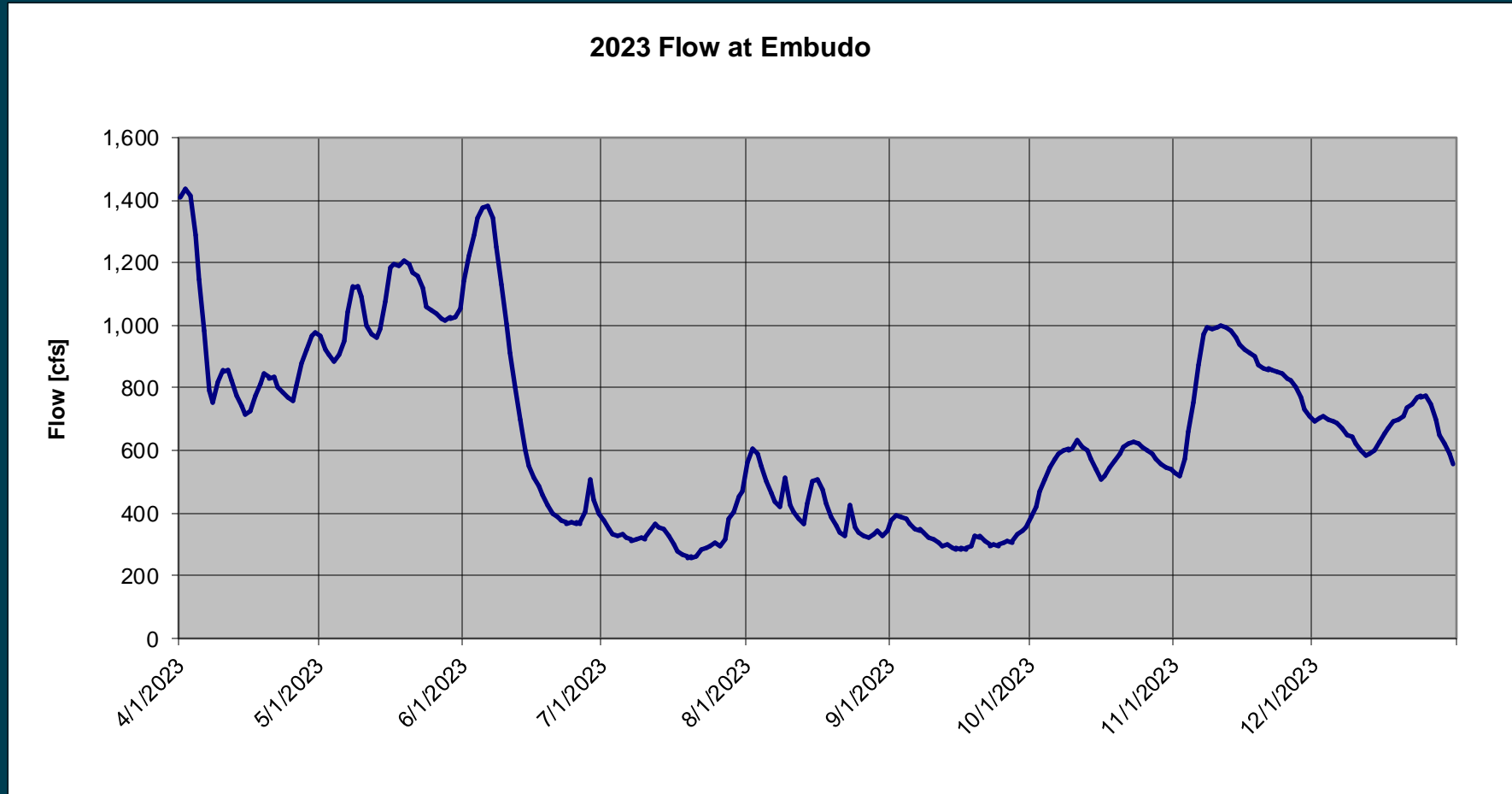


# Proposed 2022 Abiquiu Operations



# Estimated Hydrograph at Embudo

## Rio Grande main stem



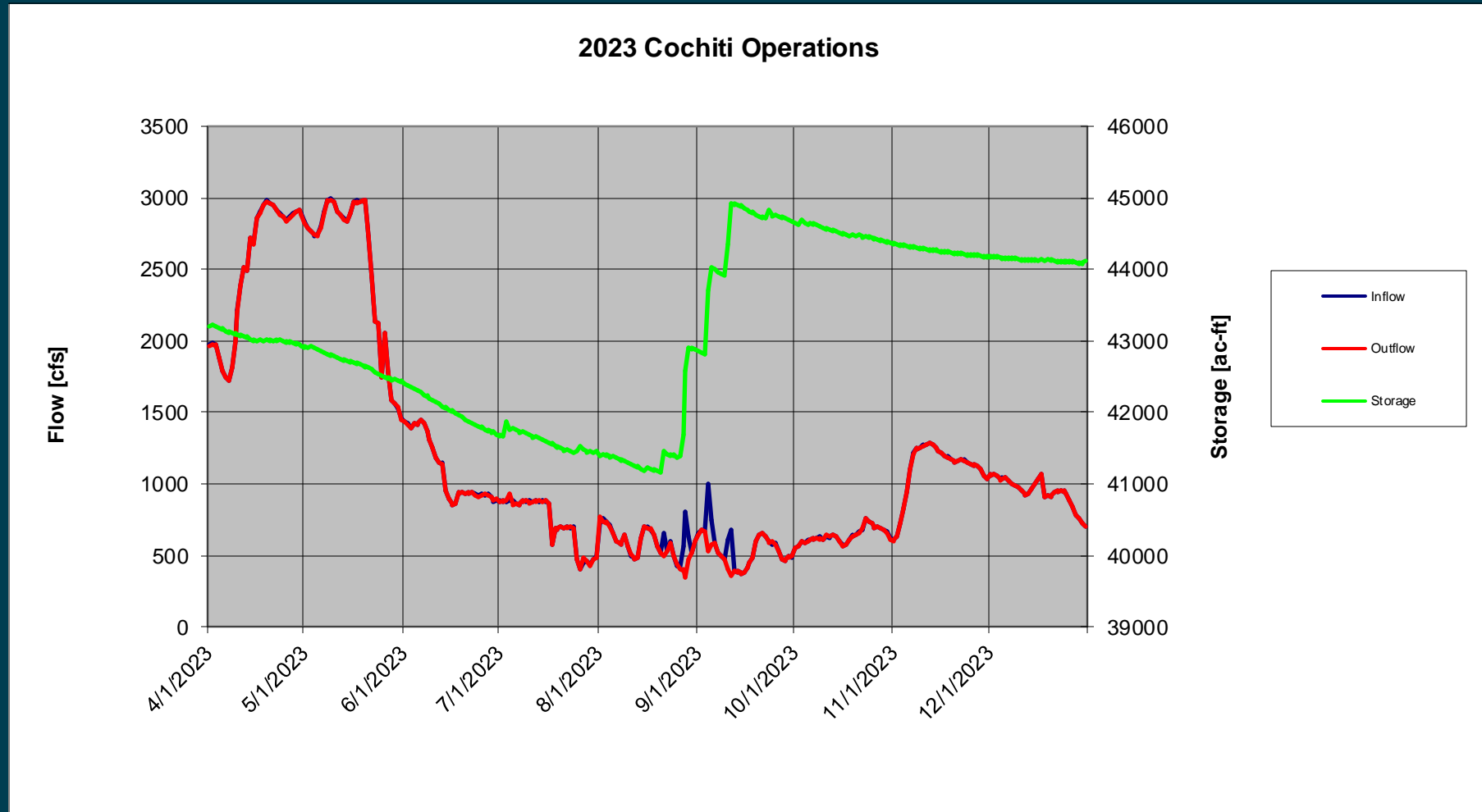


# Cochiti Lake

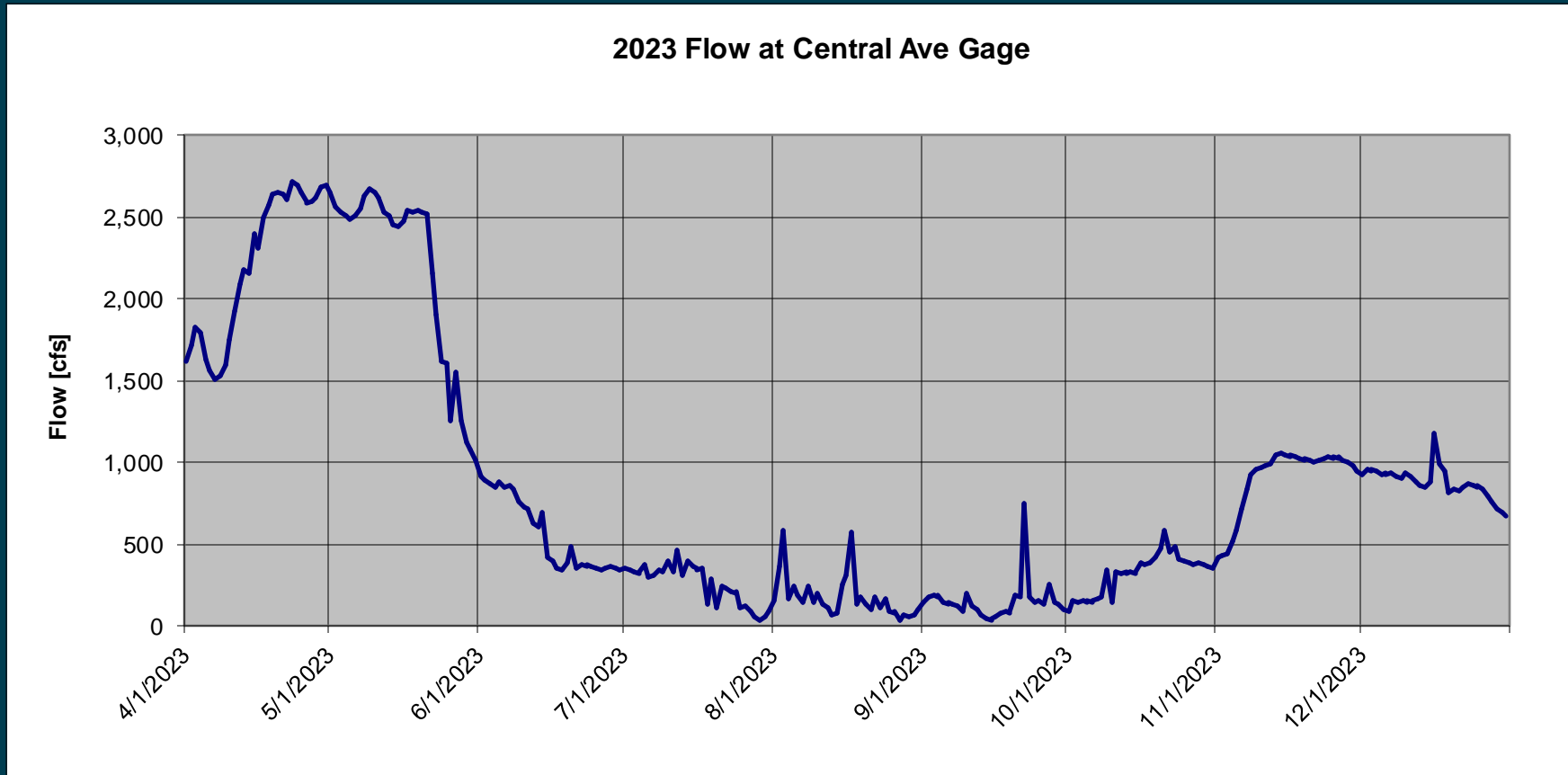




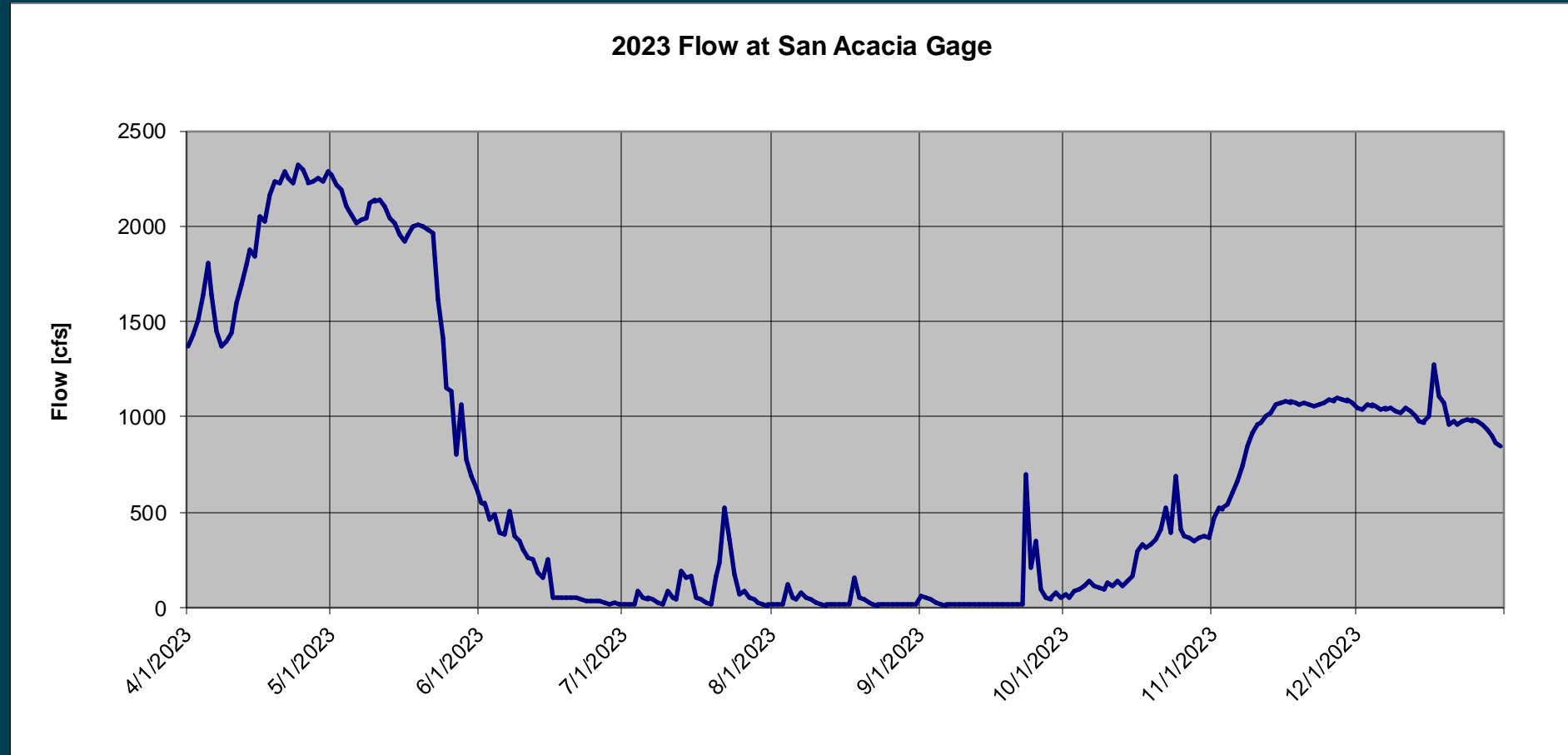
# Proposed 2023 Cochiti Operations



# Estimated Hydrograph at Central



# Estimated Hydrograph at San Acacia



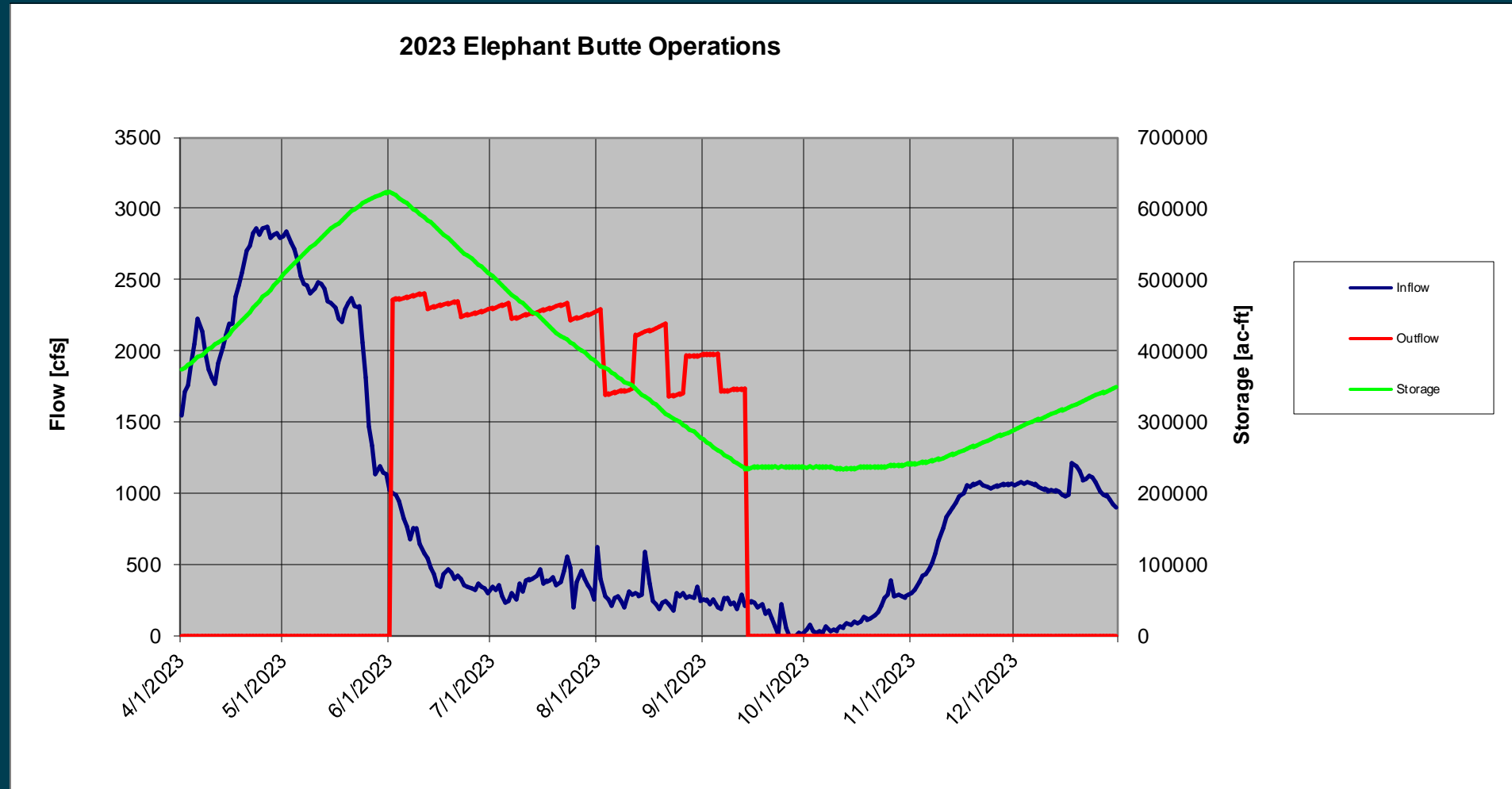
# 2023 Rio Grande Project Operations



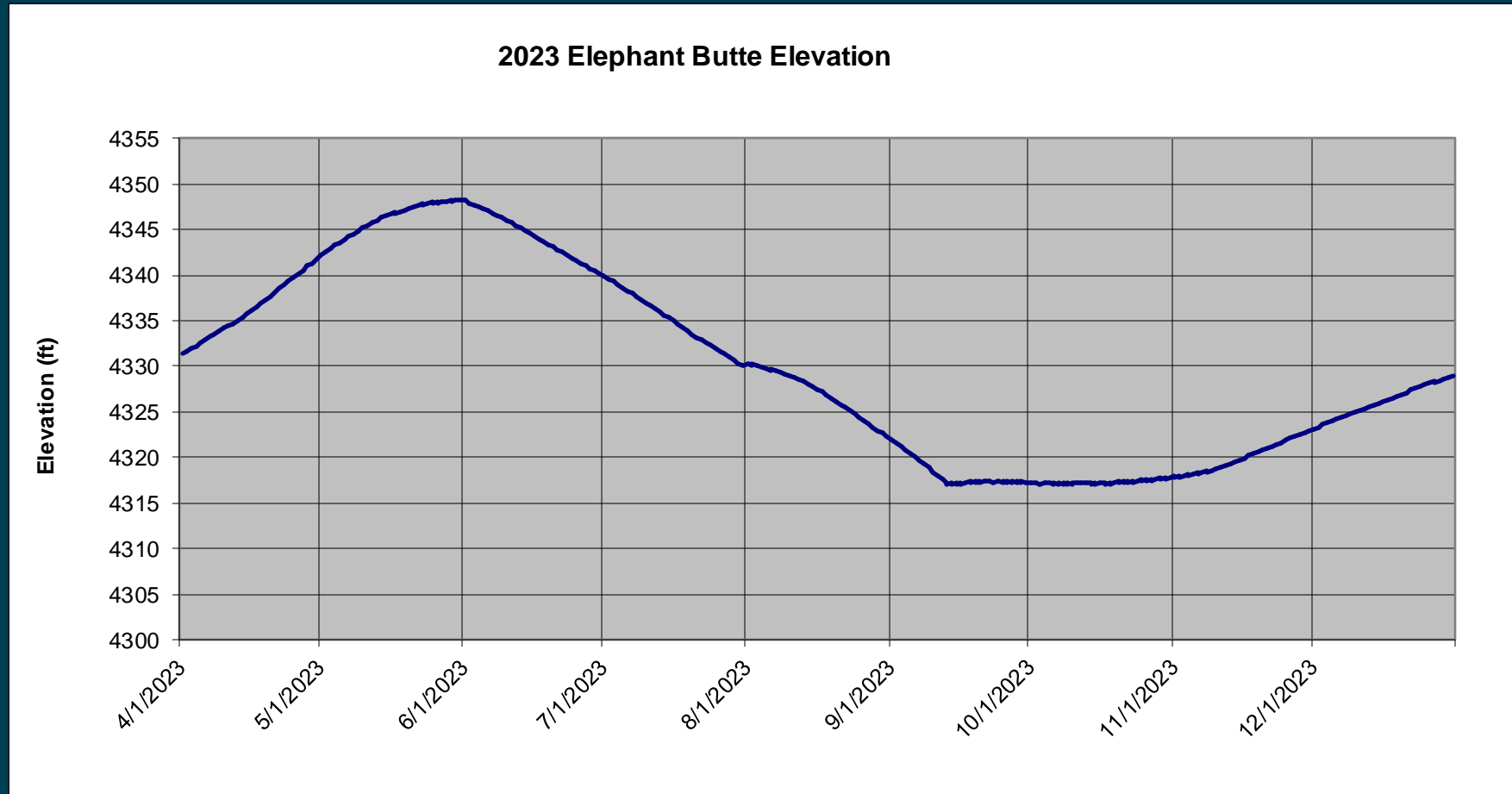
# Elephant Butte Dam



# Proposed Elephant Butte Operations



# Elephant Butte Projected Levels



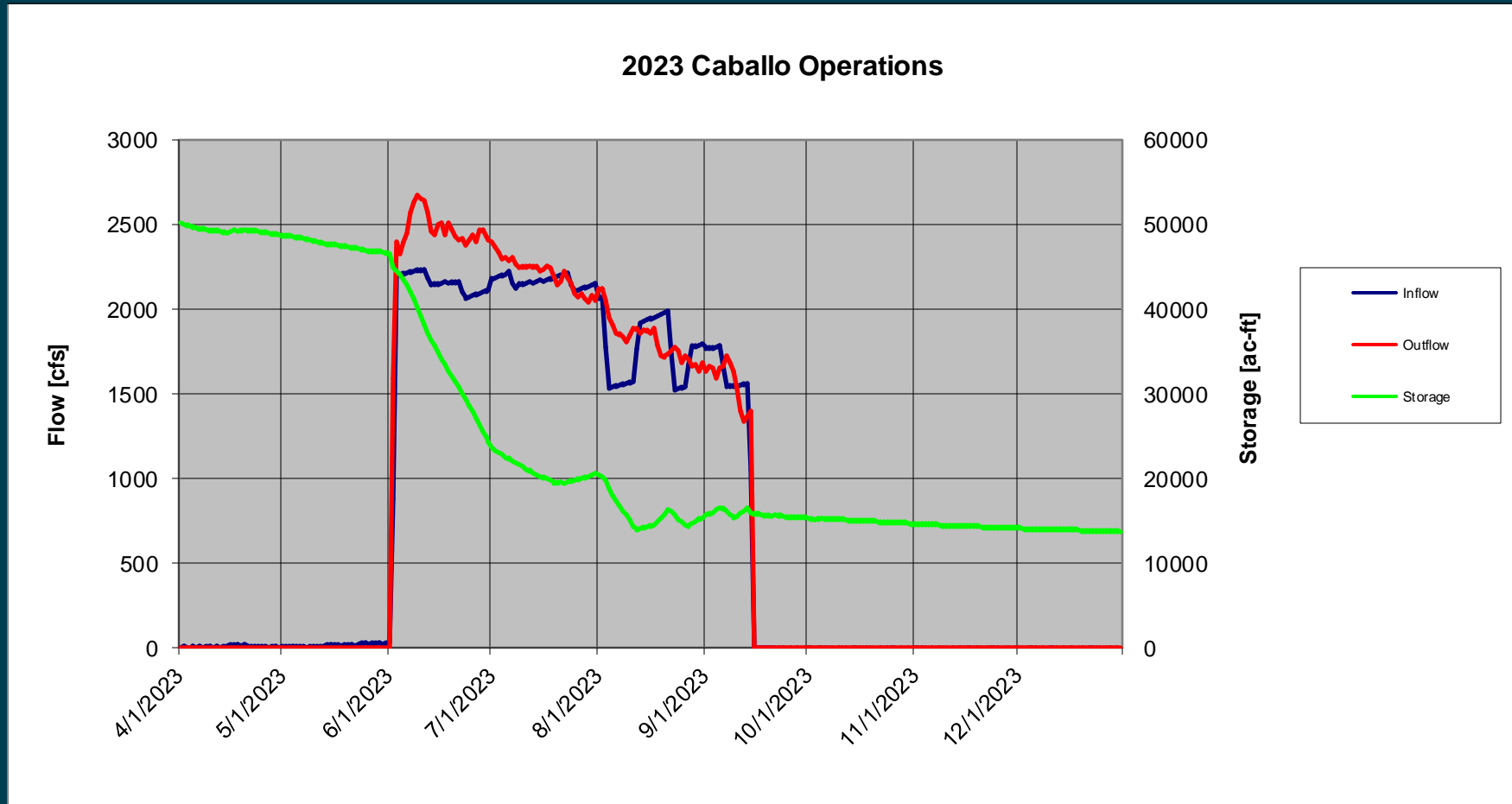


# Caballo Dam

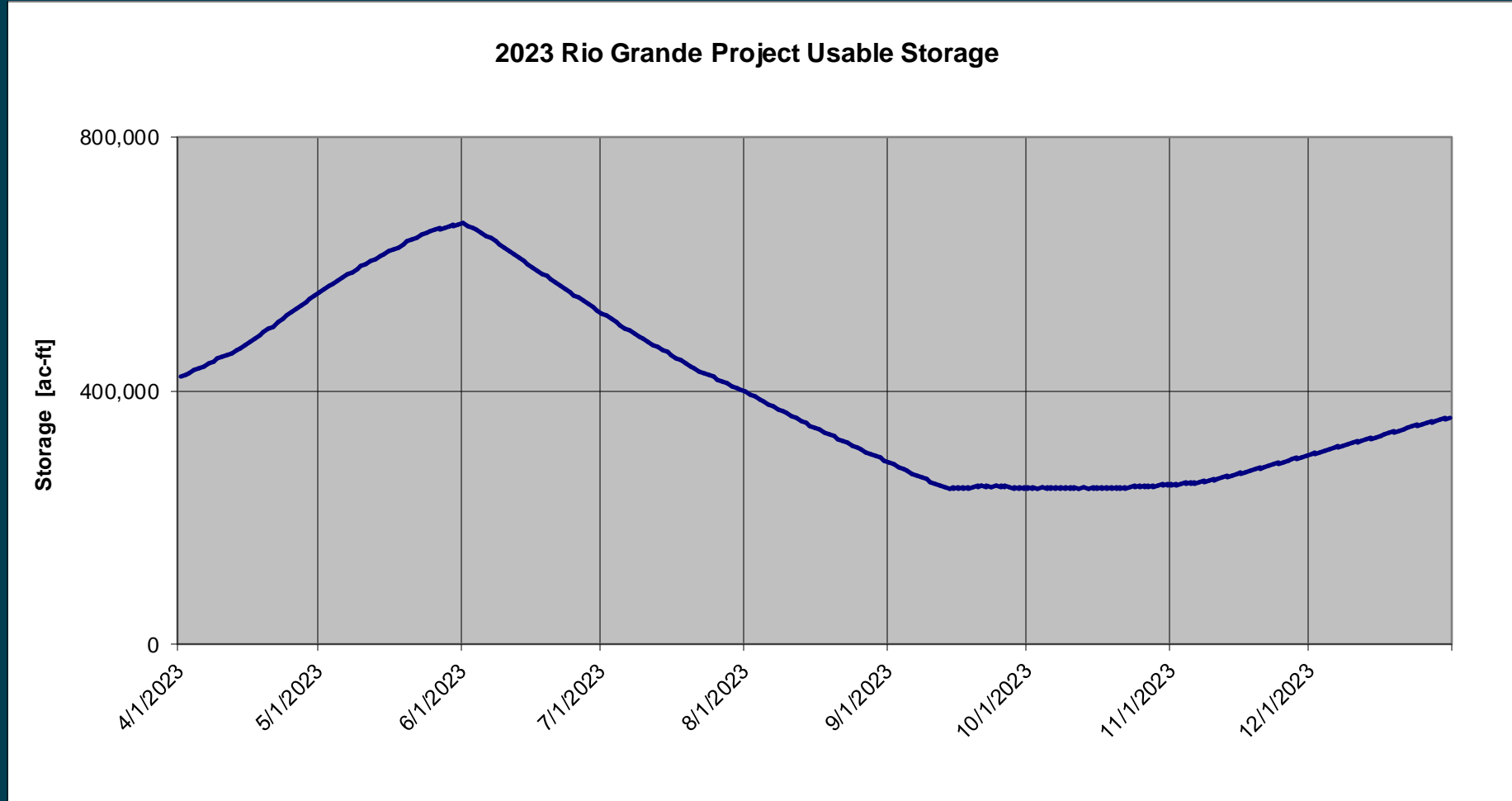




# Proposed Caballo Operations



# Article VII Restrictions: In or Out?



# Questions / Comments

[https://www.usbr.gov/uc/DocLibrary/Plans/MiddleRioGrande/20210415-MiddleRioGrandeAnnualOperatingPlan\\_508.pdf](https://www.usbr.gov/uc/DocLibrary/Plans/MiddleRioGrande/20210415-MiddleRioGrandeAnnualOperatingPlan_508.pdf)



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