2023 ARCA ENGINEERING COMMITTEE MEETING
ARKANSAS RIVER BASIN REPORT

Garret Ross, PE, Arkansas Basin Manager
Kim Falen, Trinidad Project Manager
Jacob Williams, John Martin Project Manager
Jared Minor, Civil Works Branch Chief

6 December 2023

La Junta, CO

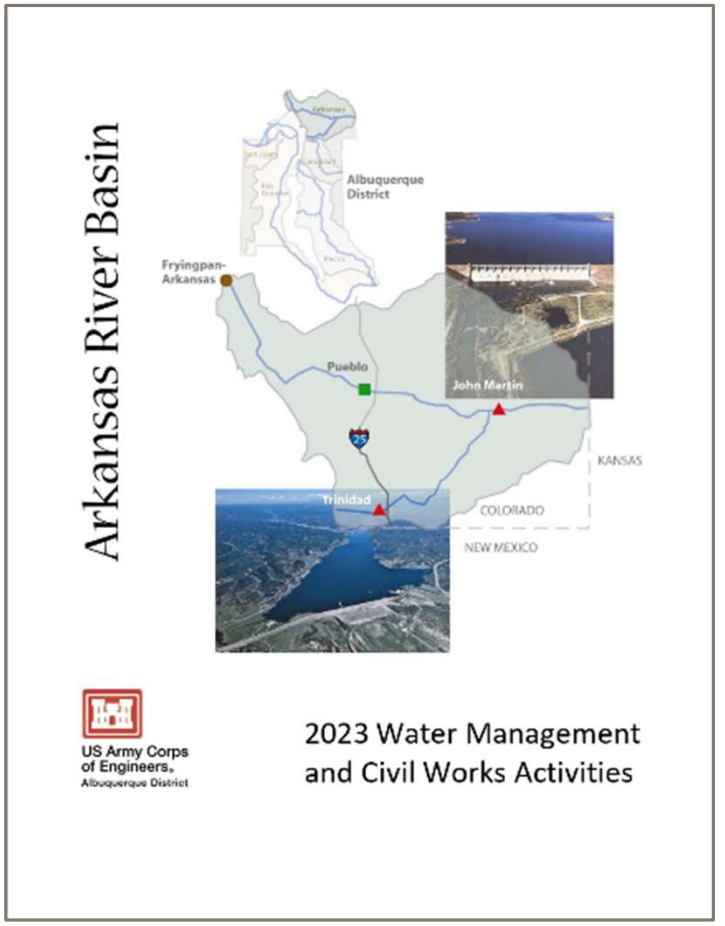
US Army Corps of Engineers®

John Martin Dam & Reservoir

Trinidad Dam & Lake

TOPICS

- Compact Year 2023 Water Management
- USACE Water Quality Monitoring
- John Martin Water Control Manual Updates
- Civil Works Project Authorizations
- Trinidad Operation and Maintenance
- John Martin Operation and Maintenance



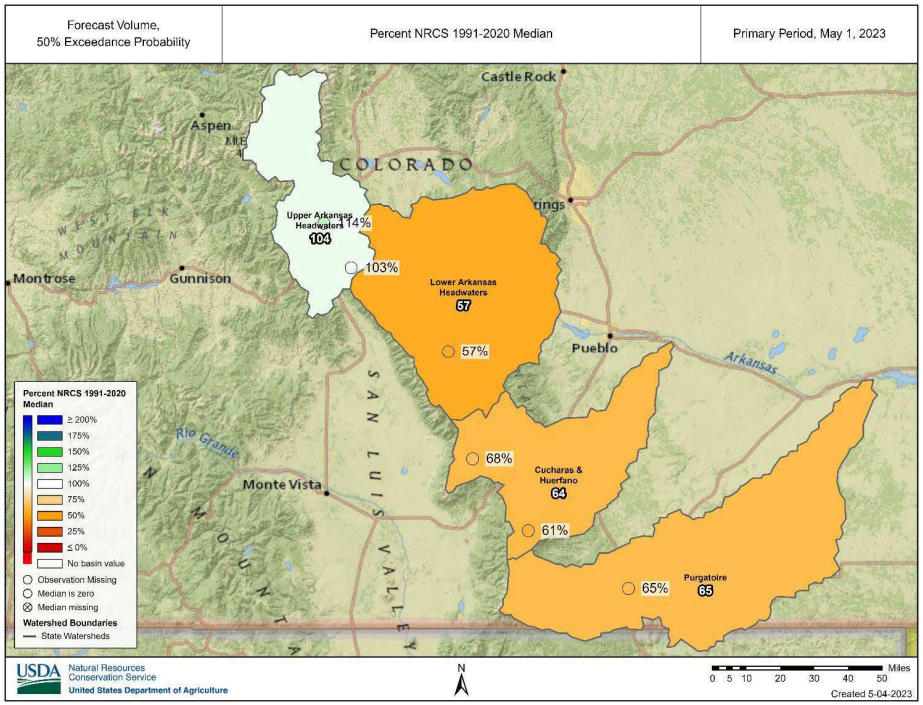
COMPACT YEAR 2023 WATER MANAGEMENT

Basin Wide Summary

Snowpack and Streamflow Forecast Volume (May 1, 2023 Forecast)

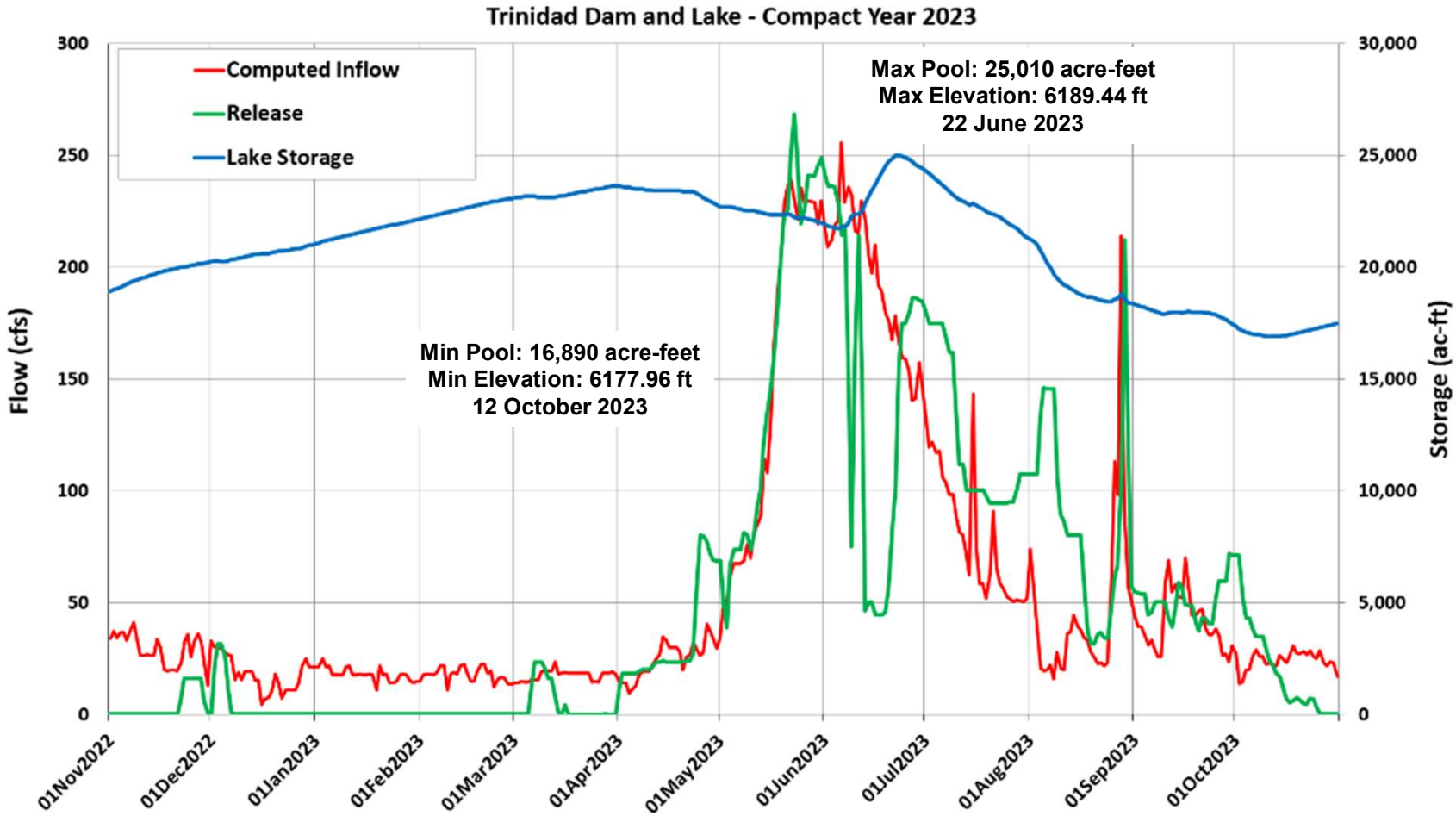
- Upper and Lower Arkansas Basin Headwaters – 104% and 57% of median
- Purgatoire River Basin Snowpack – 65% of median
- Basin Wide Average – 84% of median

Arkansas River Basin May 1st Most Probable Snowmelt Runoff Forecast (April 1 – July 31 50% Exceedance)				
Measurement Location	Snowmelt Runoff (x 1,000 Acre-Feet)		Percent of Median/Normal	
	May Forecast	Actual	May Forecast	Actual
Arkansas River above Pueblo	310	307	95%	94%
Purgatoire River at Trinidad	18.7	27.1	64%	93%
John Martin Dam and Reservoir	109	147.5	87%	117%



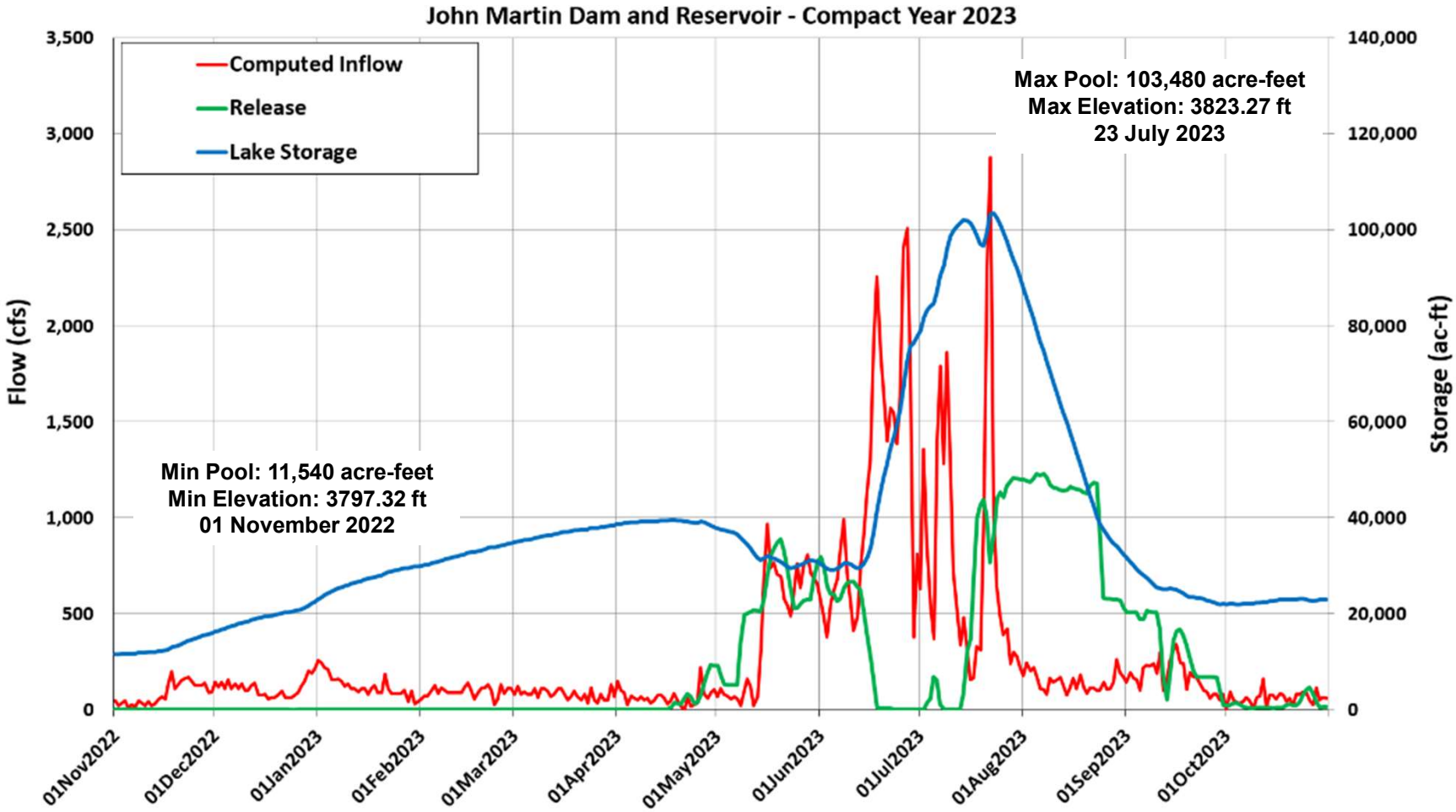
COMPACT YEAR 2023 WATER MANAGEMENT

Trinidad Dam and Lake



COMPACT YEAR 2023 WATER MANAGEMENT

John Martin Dam and Reservoir



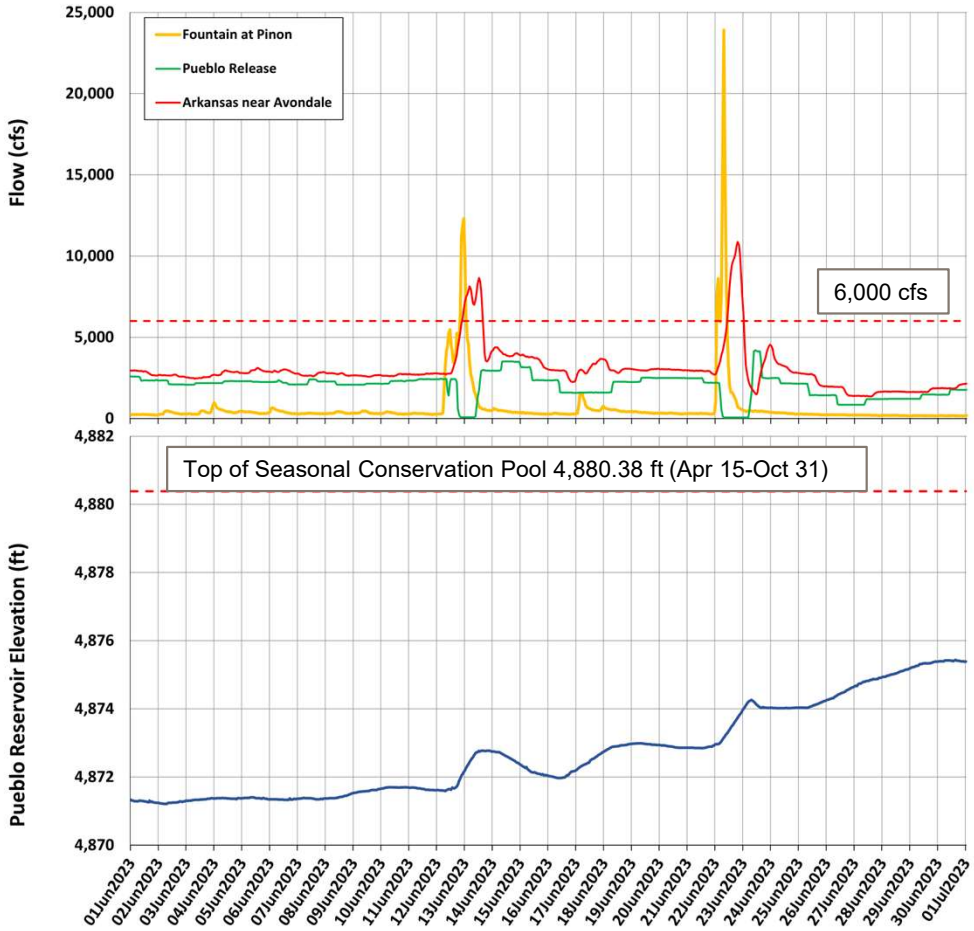
COMPACT YEAR 2023 WATER MANAGEMENT
Fountain Creek and Mainstem High Flows

USACE coordinated with Reclamation and the State of CO during Fountain Creek high flows

Pueblo Dam operated to reduce impact of Fountain Creek storm peaks

<u>June 11 – 13</u>
- 8,730 cfs Peak at Avondale, Pueblo cut
- Flow greater than 6,000 cfs for 18 hours

<u>June 22 – 23</u>
- 11,000 cfs peak at Avondale, Pueblo cut
- Flow greater than 6,000 cfs for 14 hours



ARKANSAS WATER QUALITY MONITORING

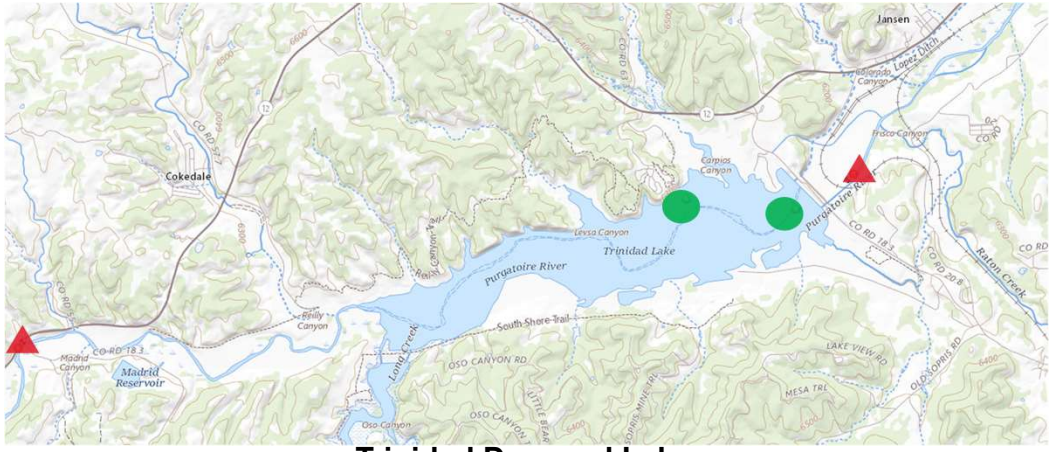
Reservoir Stations (2012 – Current)

Monthly during ice-free period

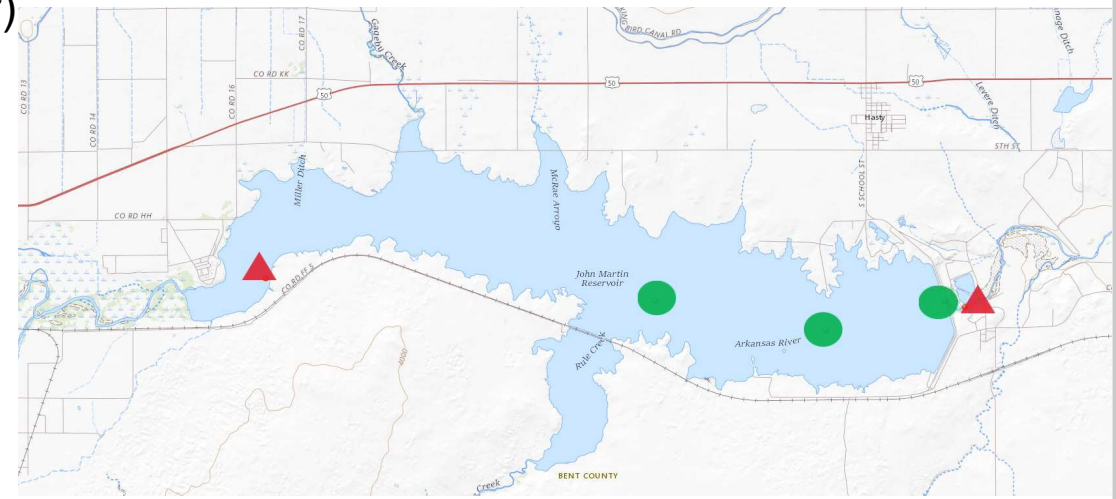
- Vertical profiles
  - Temperature
  - Dissolved oxygen
- Surface measurements
  - Turbidity
  - pH
  - Specific conductance
- Secchi depth
- Zebra and quagga mussel (June-October)

Riverine Stations (2020 – 2025)

- 15-minute interval
  - Water Temperature
  - Dissolved oxygen
  - Turbidity
  - pH
  - Specific conductance
- Monthly anions/cations and total suspended sediment



Trinidad Dam and Lake

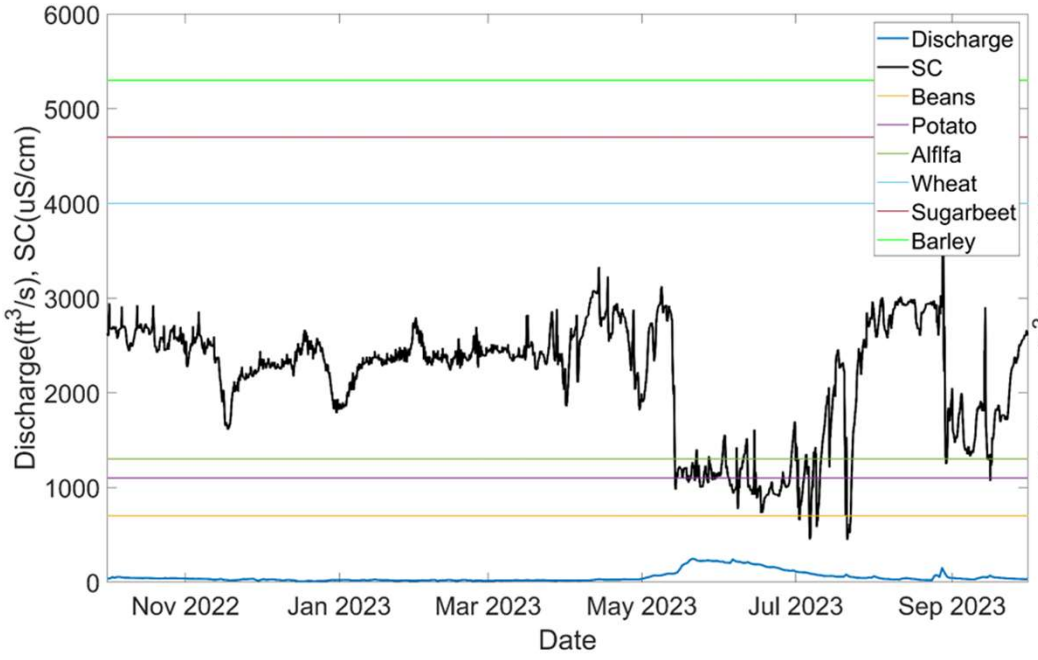


John Martin Dam and Reservoir

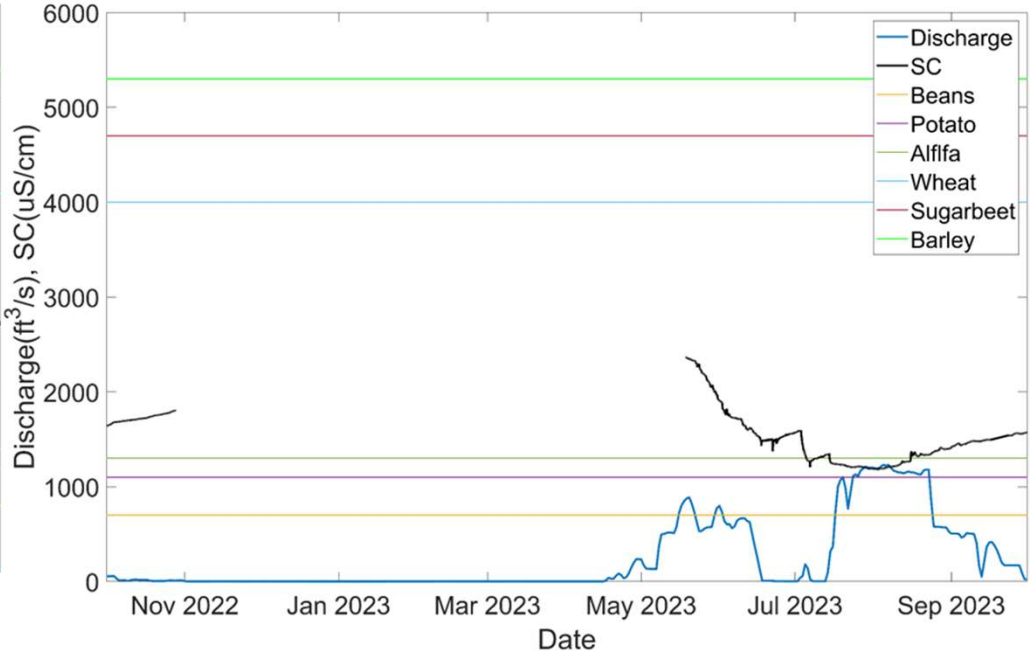
ARKANSAS WATER QUALITY MONITORING DATA

2023 Discharge, Specific Conductance, and Crop thresholds

Upstream of John Martin Reservoir



Downstream of John Martin Reservoir

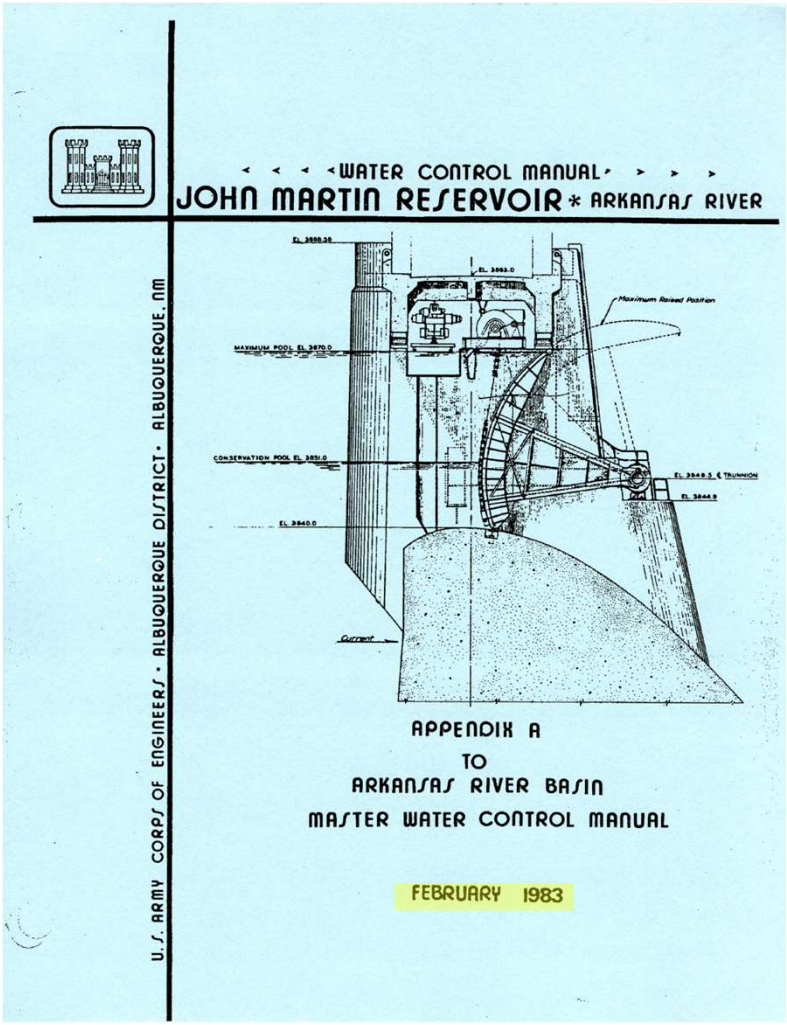


JOHN MARTIN WATER CONTROL MANUAL UPDATE

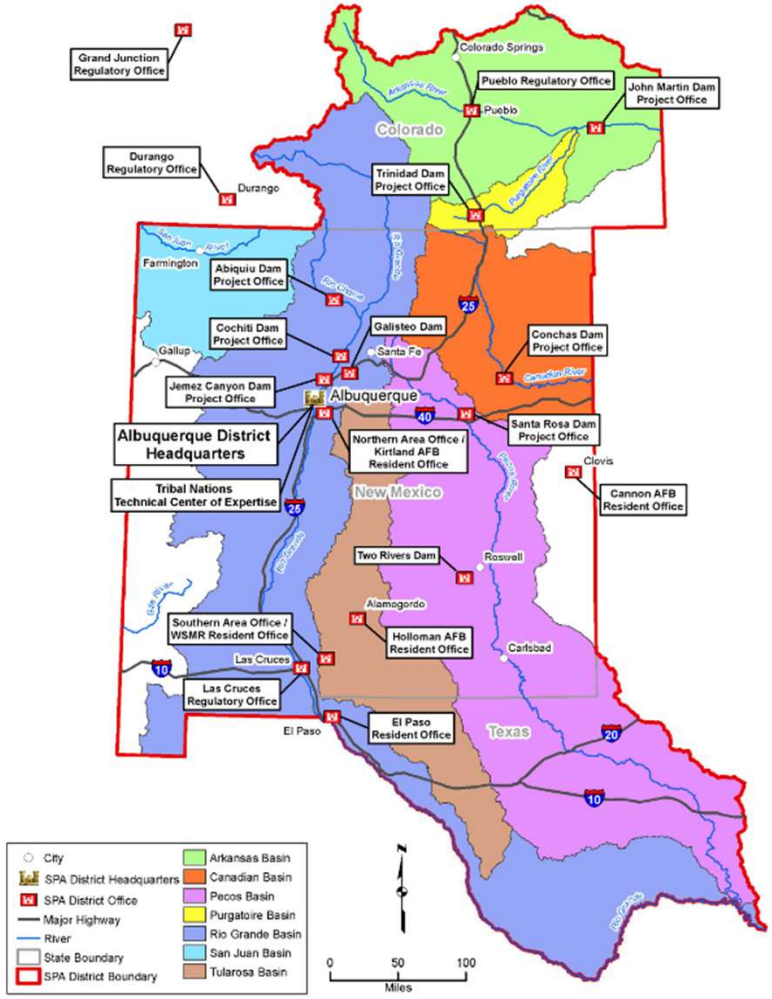
Current Status

- Thorough review of all content, with updates to:
  - Hydrology and climate data
  - Historic reservoir operations data
  - Flood Impact Analysis and Economics
  - All Exhibits, Plates, and Figures
- Update to Chapter 7 Water Control Plan to reflect how the project is actually operated for the recreation pool authorized by Public Law 89-298 (October 27, 1965)
- Project Delivery Team in place and work is progressing
- Environmental compliance review in progress
- Expected completion December 2024

Draft Water Control Plan (Chapter 7) will be provided to ARCA for review and comment



CIVIL WORKS MISSION



- **Flood Risk Management**
  - Study, Design, and Construction
- **Ecosystem Restoration**
  - Study, Design, and Construction
- **Operation and Maintenance**
  - 9 Dams
- **Environmental Infrastructure**
  - Design and Construction
- **Technical Assistance Programs**
  - Study only – FPMS and PAS

CIVIL WORKS PROJECT AUTHORIZATIONS

Project Process:
- Feasibility Study
- Design and Construction

Cost Sharing:
- Study – 50/50 after $100K
- Design/Construction – 65/35
- Section 219* – 75/25

Request Assistance:
- Send request letter to Jerre Hansbrough, P.E., Commander, USACE, Albuquerque District

Authority	Project Purpose
Section 14 (CAP): Flood Control Act of 1946, as amended	Streambank and shoreline erosion protection of public works and non-profit public services
Section 205 (CAP): Flood Control Act of 1948, as amended	Small Flood Control Projects
Section 206 (CAP): Water Resources Development Act of 1996, as amended	Aquatic Ecosystem Restoration unrelated to Corps projects
Section 208 (CAP): Flood Control Act of 1954, as amended (amends Section 2, Flood Control Act of August 28, 1937)	Removal of obstructions, clearing channels for flood control
Section 1135 (CAP): Water Resources Development Act of 1986, as amended	Project modifications to existing Corps projects or degraded by Corps projects for improvement of the environment
Section 219*: Water Resources Development Act (WRDA) of 1992, as amended *Authorized Counties: Bent, Crowley, Kiowa, Otero, Pueblo	Design and construction assistance for non-Federal water-related environmental infrastructure and resource protection and development projects, including wastewater treatment and related facilities and water supply, storage, treatment, and distribution facilities

TRINIDAD OPERATIONS AND MAINTENANCE

2023 Accomplishments

- Project Delivery Team Established for Upstream Dam Slope Riprap Project, received partial funding in FY23
- Dam crest stationing
- Completed steel repairs to tower platform bridge
- Installed tower heater
- Installed surge protector for tower elevator
- Completed arc flash inspections throughout project
- Other routine annual O&M

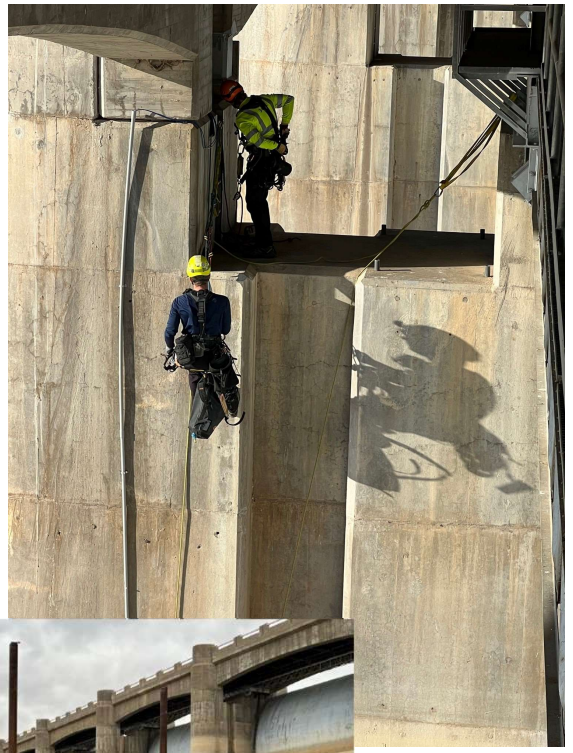
2024 Projections

- Award of Contract for Upstream Dam Slope Riprap Project, additional funding is anticipated in FY24

JOHN MARTIN OPERATIONS AND MAINTENANCE

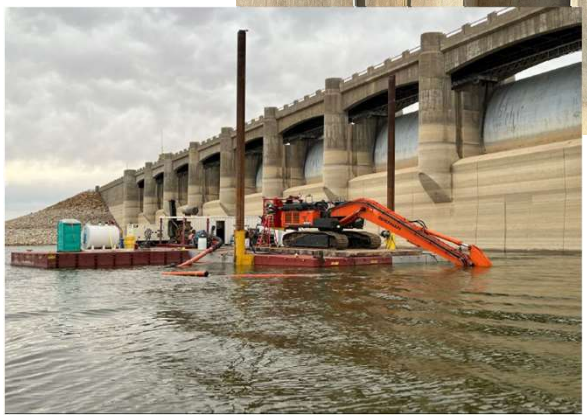
2023 Accomplishments

- Dredge, Stops, and Seals Contract awarded in April, dredging started November 10, 2023
- Work proceeding on yard and dam crane repairs
- Completed steel repairs to tower platform bridge
- Contract for sump pumps awarded in August, work scheduled to begin this month (Dec. 2023)
- Scraped, sanded and re-coated all bonnets over gates stems
- Installed corrosion barrier over piping in galleys
- Other routine annual O&M



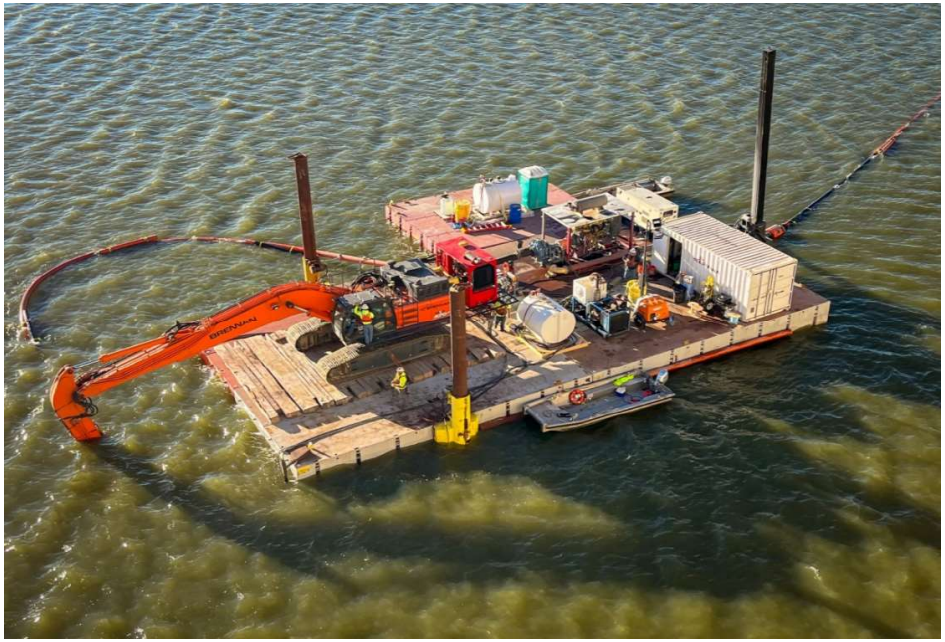
2024 Goals

- Completion of dredging and dive inspections



QUESTIONS / DISCUSSION

Water Quality Monitoring by Trinidad Project Staff



Dredging at John Martin Reservoir