

RESOURCE AND ENGINEERING PLANNING COMMITTEE

MINUTES

June 6, 2024

A meeting of the Resource and Engineering Planning Committee was held on Thursday, June 6, 2024, at 10:00 a.m. at the District Office, 31717 United Avenue, Pueblo, Colorado and via Zoom virtual meeting.

Chairman Curtis Mitchell announced a quorum was present.

COMMITTEE MEMBERS PRESENT:

Curtis Mitchell – Chairman, Seth Clayton– Vice Chairman, Andy Colosimo, Tom Goodwin, and Leann Noga

COMMITTEE MEMBERS ABSENT AND EXCUSED:

Pat Edelman and Bill Long

OTHERS PRESENT:

Brandan Scott, Colorado Springs Utilities; Mike Holmberg, Bureau of Reclamation; Garrett Markus, Chris Woodka, Gordon Dillan, Stephanie Shipley and Margie Medina, Southeastern Colorado Water Conservancy District (District) staff.

Zoom Participants: Dallas May District Director (on until 10:30 a.m.); Andy Klakuluk, USGS; Patty Rivas, and Peter Levish District staff.

APPROVAL OF MINUTES:

Chairman Mitchell asked for approval of the April 4, 2024, Resource and Engineering Planning Committee minutes and if there were any corrections or additions. Tom Goodwin moved, seconded by Seth Clayton, to approve the minutes. Motion passed unanimously.

PRESENTATIONS:

JAMES W. BRODERICK HYDROPOWER PLANT UPDATE

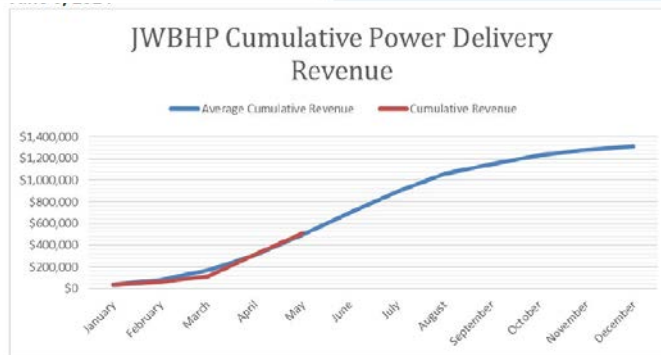
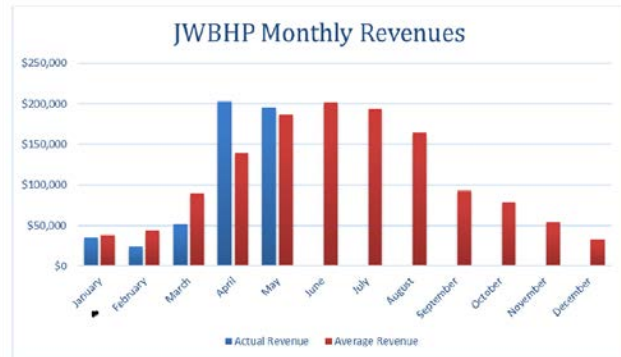
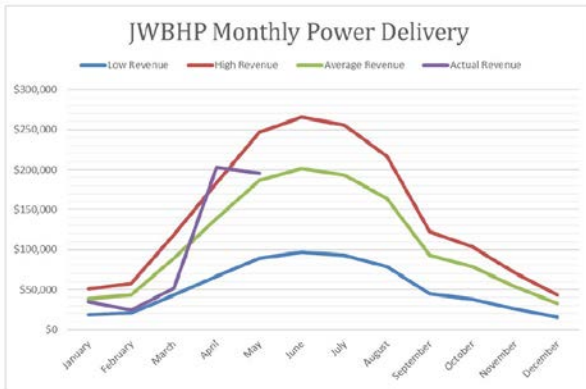
Garrett Markus updated the Committee on the James W. Broderick Hydropower Plant (JWBHP) starting with the current operations for the month of May 2024.

Table 1 - JWBHP Operations Dashboard

	THIS MONTH	LAST MONTH	YEAR TO DATE
Power Generation (MWhrs)	3,922	3,579	9,945
Scheduled Power (MWhrs)	3,720	3,861	9,693
Revenue	\$195,598	\$203,011	\$509,658
% Of Average Generation	105%	146%	102%

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PUEBLO RESERVOIR RECOVERY OF STORAGE UPDATE

The District began a Pueblo Reservoir Recovery of Storage Study (Study) in 2020. The firm of Mott-MacDonald (Consultants) completed Phase I of the Study in October 2020, and Phase II, Task 1 in September 2021.

As next steps, the Consultants recommended updated bathymetric and topographic surveys, refined storage capacity estimates, and a hydrology and geomorphology assessment of the area upstream of Pueblo Reservoir.

Staff provided an assessment of when loss of storage becomes critical in May 2022.

Reclamation approved \$1 million in funding as extraordinary maintenance for further studies of Recovery of Storage in May 2022. A Project Management Plan for Phase III was developed that included new surveys of Pueblo Reservoir to determine sediment loss and an assessment of upstream sediment risks. A contract with Reclamation and a new contract with Mott MacDonald for the risk assessment portion of the Phase III work, were approved by the Board in May 2023.

The Resource and Engineering Planning Committee and Board of Directors reviewed the results of the Phase III study in April 2024.

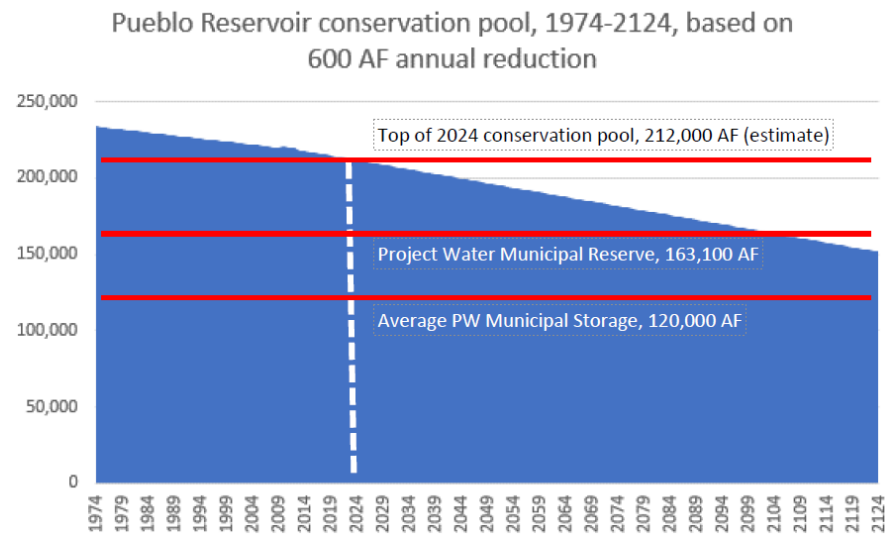
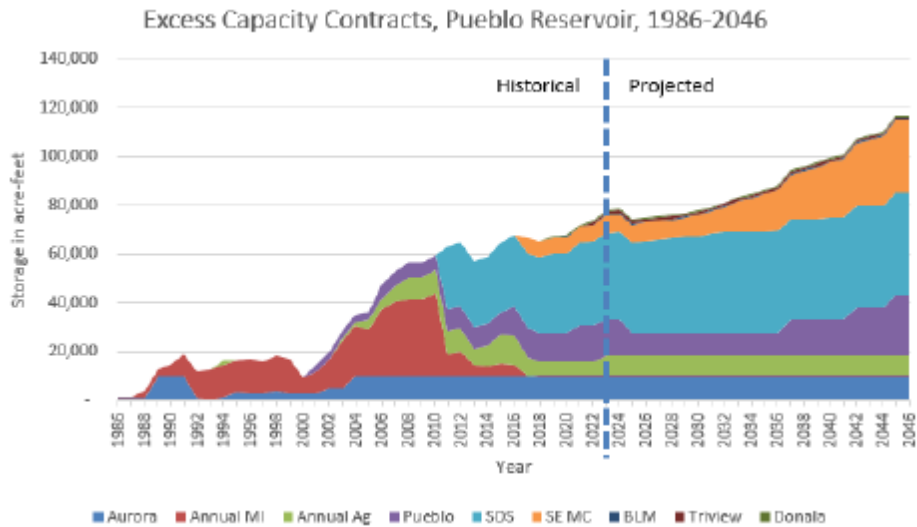
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Pueblo Reservoir Sedimentation Studies: More Use, Less Storage Sedimentation in Pueblo Reservoir is occurring at a rate of 500-1,000 acre-feet per year and will begin to have critical impacts in the next 30 years if left unchecked. Conservation storage in Pueblo Reservoir could be reduced by 15,000-30,000 acre-feet in addition to the estimated loss of more than 25,000 acre-feet to date.

Application of data revealed, in Phases I, II and III of the Recovery of Storage study by Mott MacDonald, that the loss of space in the conservation pool will affect Excess Capacity contracts by the year 2052. This has the potential to reduce revenue for both the Enterprise and Reclamation, as 40-year contracts begin the renewal process in the year 2046.

The chart below illustrates the potential increased use of major Excess Capacity contracts during that period. These are the maximum storage levels under present-day contracts. Actual use of Excess Capacity has hovered between 30,000-60,000 acre-feet annually since 2015.



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If no action is taken, Fryingpan-Arkansas Project water will begin to be affected by reduced storage in the year 2052, when sedimentation could claim an additional 20,000-40,000 acre-feet. This would lower the total space in the reservoir (with flood protection limits) to at least 184,000 acre-feet, which is less than the current conservation pool. At most, conservation storage would be reduced to 149,000 acre-feet, which is less than the 163,100 acre-feet set aside for municipal storage of Project Water.

Chris Woodka updated the Committee on the recovery of storage next steps.

Why is recovery of storage critical?

- Rate of sedimentation is 800,000-1.6 million cubic yards annually, or loss of 500-1,000 acre-feet per year.
- It will start impacting Excess Capacity Contracts as soon as 2052. The 40-year contracts begin renewal in 2046.
- The use of Excess Capacity Contracts provides revenue for Fry-Ark Project activities, particularly the Arkansas Valley Conduit repayment.
- Fry-Ark Project storage space becomes an issue as soon as 2092.

Pueblo Reservoir longitudinal profiles showing original, 1993 and 2012 comparison graph, was provided showing percentage of total sediment located within dept designation. No further studies have been done after 2012. Lidar images from 1974, 1993 and 2012 showing postprocessed surfaces developed by Mott MacDonald. Excess Capacity Contracts shown by table and graph the historical and projected storage space effects all the way to 2045. Pueblo Reservoir conservation pool graph from 1974-2124 based on 600 AF annual reduction.

Mike Holmberg with the Bureau of Reclamation was invited to update the committee on how the \$1,000,000 has been used and future funding.

Recommendations for the future study are:

1. Key tributaries identified, recommendations for future study, shown was USGS sediment concentrations
2. Sustainability measures within reservoir, downstream discharge options
 - a. Targeted injection dredging, a methodology currently under development at Tuttle Creek Reservoir and match incoming to outgoing concentration.
 - b. Turbid density current venting, assessed as alternative during Phase I
3. Dam raise feasibility, summary of Phase I analysis
 - a. PSOP completed August 1999

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- b. Mott MacDonald Phase I Alternatives Analysis (2020)
 - i. Escalated PSOP cost to Q1 2020 Dollars
 - ii. Assessed dam raises to increase from 25,000 – 75,000 AF
- c. Proposed future work, dam raise feasibility study

Next Steps & recommendations:

- Process USBR Survey Data Once Available - Update storage capacity loss estimates developed in Phase II
- Conduct Sustainability Measure Analysis & Design on Selected Watersheds -Feasibility (10%) level designs for projects to reduce sedimentation of Pueblo Reservoir.
- Conduct Dam Raise Feasibility Analysis - Operating Pool Raise Feasibility Report (Including costs, environmental mapping, conceptual designs).

ACTION ITEMS:

RECOMMENDATION FOR APPROVAL OF THE ENERGY IMBALANCE MARKET PARTICIPATION SERVICES AGREEMENT BETWEEN COLORADO SPRINGS UTILITIES AND THE SECWCD ACTING BY AND THROUGH ITS ACTIVITY ENTERPRISE

Garrett Makus provided a PowerPoint presentation recommending for approval for the Energy Imbalance Market Participation services agreement between Colorado Springs Utilities (Utilities) and the SECWCD acting by its Water Activity Enterprise. The James W. Broderick Hydropower Plant facility generates electricity from water releases through the Pueblo Dam North Outlet Works. Electricity generated is scheduled and based on the anticipated flow releases through the Facility and delivered to the Facility's power purchasers Fort Carson Army Base and the City of Fountain. Operations of the Facility try to minimize the differences, or imbalance, between the scheduled energy and the actual energy generated.

Utilities, an owner and operator of an electric transmission and distribution system, also referred to as a Power System, performs various functions such as managing energy schedules and deliveries in the efficient provision of electric service to its end users. Utilities has functioned as the Facility's scheduling agent since operations began at the Facility in May 2019.

The Southwest Power Pool ("SPP") operates the Western Energy Imbalance Service ("WEIS") market pursuant to its tariff, which tariff was approved by the Federal Energy Regulatory Commission. The SPP WEIS market enables intra-hour non-firm transmission service for all generating resources located inside the SPP WEIS market footprint to reliably minimize differences between the scheduled and the actual delivery of energy to a load, as well as the associated cost of the mismatches. Utilities joined the SPP WEIS market on August 31, 2022.

The electric utilities in the Public Service Company of Colorado ("PSCO") balancing authority area ("BAA") joined the SPP WEIS market on April 1, 2023, at which time the Enterprise's

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Facility became a generating resource located inside the SPP WEIS market footprint and, as such, began to be impacted by the market's rules and regulations. The effect of the PSCo BAA joining the SPP WEIS is that SPP incurs energy imbalance costs associated with the Facility, which costs, pursuant to the market's rules and regulations, are then passed through to PSCo (in its capacity as the balancing authority) and, in turn, become the responsibility of the Enterprise.

The energy imbalance costs attributed to the Facility can be limited if the Facility's operations are actively managed and the Facility is also registered as a settlement location. The Enterprise has determined that Utilities should perform the function of energy imbalance manager of the Facility; and Utilities is willing and able to perform the function of energy imbalance manager pursuant to the terms of this Agreement.

Garrett Markus introduced Brandon Scott with Colorado Springs Utilities and mentioned that CS-U expertise has been helpful with the management of the James W. Broderick Hydropower Plant to aid in management of the energy imbalance at the plant.

Seth Clayton moved, seconded by Tom Goodwin that the Resource and Engineering Planning Committee recommends to the Southeastern Colorado Activity Enterprise Board that the Board approve an Energy Imbalance Market Participation Services Agreement between Colorado Springs Utilities and Southeastern Colorado Water Conservancy District acting by and through its Water Activity Enterprise. Motion passed unanimously.

RECOMMENATION FOR APPROVAL OF THE AGREEMENT FOR MAINTENANCE SERVICES BETWEEN RIVERSIDE INC. AND THE SOUTHEASTERN COLORADO WATER ACTIVITY ENTERPRISE

Riverside Inc. has been providing routine maintenance services for the hydro turbines and generators since the facility began operations in 2019. Riverside was a part of the original construction team that installed the hydropower equipment. This renewed contract is for continued maintenance services through the end of 2026.

Tom Goodwin moved, seconded by Andy Colosimo that the Resource and Engineering Planning Committee recommends to the Southeastern Colorado Activity Enterprise Board that the Board approve the Agreement for Maintenance Services between Riverside Inc. and the Southeastern Colorado Water Activity Enterprise. Motion passed unanimously.

INFORMATION ITEMS:

None

OTHER BUSINESS

None

NEXT MEETING

August 1, 2024, at 10 a.m.

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ADJOURN

Vice-Chairman Clayton adjourned the meeting at 10:55 a.m. Chairman Mitchell excused himself from the meeting at 10:30 a.m. to attend another meeting asking Vice-Chair Clayton to take over.

Respectfully submitted,

Garrett J. Markus, P.E.

Water Resources Principal Engineer