



United States Department of the Interior

BUREAU OF RECLAMATION
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Memorandum

To: Chief of Staff
Office of the Assistant Secretary for Water and Science

From: Wayne G. Pullan
Chair, Glen Canyon Leadership Team
Secretary's Designee to the Adaptive Management Work Group (acting)

Subject: Notification of Decision to Not Implement a Fall 2021 High Flow Experiment at Glen Canyon Dam

On September 28, 2021, the Glen Canyon Planning/Implementation Team (PI Team) finalized its recommendation regarding a potential fall High Flow Experiment (HFE) at Glen Canyon Dam in November 2021 (Attachment - *Final Recommendation Regarding a Fall 2021 High Flow Experiment at Glen Canyon Dam, November 2021*). While the PI Team reached consensus in its opposition to a 192-hour extended duration fall HFE, members were divided in the assessment of a shorter 60-hour fall HFE. The recommendation was developed and evaluated within the adaptive management framework and provisions of the 2016 *Record of Decision for the Glen Canyon Dam Long Term Experimental and Management Plan Final Environmental Impact Statement* (LTEMP ROD) concerning annual planning for flow-based experiments.

In accordance with the LTEMP, the Department may make the decision to conduct flow-based experiments (e.g., High Flow Experiments, Bug Flows, Trout Management Flows, and Low Summer Flows) at Glen Canyon Dam if it is determined that there are no unacceptable adverse impacts on other resource conditions. LTEMP states that "Prior to implementation of any experiment, the relative effects of the experiment on the following resource areas will be evaluated and considered: (1) water quality and water delivery, (2) humpback chub, (3) sediment, (4) riparian ecosystems, (5) historic properties and traditional cultural properties, (6) Tribal concerns, (7) hydropower production and WAPA's assessment of the status of the Basin Fund, (8) the rainbow trout fishery, (9) recreation, and (10) other resources." Water Year 2021 was the fourth full year of implementing the process for annual experimental planning under the LTEMP ROD. For future experimental planning, the Department welcomes input from each Leadership Team member as to whether the current process or another process should be used to satisfy the coordination and communication requirements under the LTEMP ROD.

Traditionally Associated Tribes shall be notified at least 30 days in advance of planned experimental flows. On September 20, 2021, notification of the possible fall HFE and offer for consultation was emailed to the Tribes and Parties to the LTEMP National Historic Preservation Act Section 106 Programmatic Agreement (LTEMP PA). No requests for consultation regarding the potential fall HFE were received.

The LTEMP ROD specifies the representation requirements for planning experiments at Glen Canyon Dam and is based on past successful planning and implementation of flow-based experiments. The PI Team includes technical representatives from the Bureau of Reclamation (Reclamation), the National Park Service (NPS), the U.S. Fish and Wildlife Service (FWS), the Bureau of Indian Affairs (BIA), the U.S. Geological Survey's (USGS) Grand Canyon Monitoring and Research Center (GCMRC), Western Area Power Administration (WAPA), the Arizona Game and Fish Department (AZGFD), the seven Colorado River Basin States (States), and the Upper Colorado River Commission (UCRC). The Glen Canyon Leadership Team (Leadership Team) is made up of decision makers from these same agencies and states along with the UCRC.

The Leadership Team has reviewed and considered the PI Team's recommendation, including the assessment of key resources that may be impacted or affected by a 60-hour fall HFE. The Leadership Team met via webinar on September 29, 2021 and, consistent with the PI Team's recommendation, members were divided in their assessment of a 60-hour fall HFE.

The 2021 water year was an historically difficult year for the Western states, including tribes, fisheries, wildlife, farmers, ranchers, and communities. The Colorado River Basin is experiencing its 22nd year of drought and many years of low-runoff conditions. Following two extremely dry periods of runoff in 2020 (54% of average annual inflow) and 2021 (33% of average annual inflow), the two reservoirs (Lake Mead and Lake Powell) are at their lowest levels since they were originally filled. The Colorado River Drought Contingency Plan Authorization Act (P.L. 116-14) directs Interior to "operate Colorado River reservoirs" according to Drought Contingency Plan agreements, including the Drought Response Operations Agreement (DROA), which establishes an objective for Glen Canyon Dam operations to minimize the risk of falling below a "Target Elevation" of 3525 feet (ft). The potential effect of a HFE on the Target Elevation is an appropriate consideration when determining whether to conduct a HFE.

As a response to the hydrologic conditions and the need to protect critical levels at Lake Powell as part of the DROA, Reclamation began releasing water from upper reservoirs to Lake Powell in July under the Emergency Action provisions of DROA. These releases from upper reservoirs are to help reduce the risk of Lake Powell going below the DROA-identified Target Elevation of 3525 ft. These DROA actions will continue through the calendar year. While these actions have helped to reduce the risk for next year, it is likely that additional actions may or will be needed to protect critical levels.

The sediment triggers outlined by LTEMP ROD have been met to consider a 2021 fall HFE. Advocates for the 2021 fall HFE are concerned that the ability to implement HFEs in the future may be limited, should drought conditions continue. They also cite the much-needed sediment

resource benefits from a fall HFE given that it has been three years since the most recent HFE (fall 2018) was triggered and implemented. Implementation of a fall HFE would not impact the annual release volume from Lake Powell, which is set at 7.48 maf in WY 2022. Due to relatively low winter flows, sandbar increases would be retained through winter such that the 60-hour fall HFE would result in a net 20% increase to sandbar size in April 2022 relative to October 2021.

The majority of Leadership Team members indicated that one or more of the following concerns amount to unacceptable adverse impacts on resource areas as identified for consideration by the LTEMP ROD.

Implementation of a 60-hour fall HFE would temporarily reduce Lake Powell reservoir elevation by approximately 2 feet, which reduction is contrary to the objective of an approximately 3 feet of elevation increase made possible due to additional releases from upper basin initial units (Flaming Gorge, Navajo, and Aspinall) currently being implemented under the DROA. As a result, Leadership Team members have indicated that implementation of a fall HFE in November 2021 may result in reduced support for future drought response operations—which releases will likely be necessary to avoid the water elevation dropping below 3,525 at Lake Powell. Further, under most probable hydrology a 60-hour fall HFE is projected to result in up to 15 additional days below 3,525 ft and an annual minimum elevation 0.7 ft lower than if no HFE were to be implemented. While these impacts to reservoir elevation could be mitigated by reallocation (reducing) releases in December, January, and February rather than March, April, and May, doing so would result in a greater direct cost to the Basin Fund for purchase power. The current condition and projections for the Basin Fund have elicited unprecedented actions by WAPA and Reclamation including deferred maintenance, a proposed rate increase, elimination of certain firm supply provisions in contracts, and a one-time pursuit of appropriations for environmental program base funding. The proposed HFE would worsen the condition of the Basin fund; direct costs to the Basin Fund are estimated at \$1.30M for March, April, May reallocation and at \$3.04M for December, January, February reallocation. The majority of Leadership Team members indicated that one or more of these concerns amount to unacceptable adverse impacts.

Based on the concerns expressed by both the Leadership Team and the PI Team, the determination of unacceptable adverse impacts, and the lack of consensus to implement a 60-hour fall HFE, I concur with the determination of unacceptable adverse impacts and I have decided not to conduct a fall HFE in November 2021. We will continue to work with our partners in future HFEs and in the protection of the Grand Canyon and our most important resources.

I am grateful to both the Leadership and the Planning/Implementation Teams for their dedication and commitment to the process for annual experimental planning and for your continued support of the Glen Canyon Dam Adaptive Management Program.

For the hearing impaired please call the Federal Relay System at (800) 877-8339 (TTY).

Attachment - Final Recommendation Regarding a Fall 2021 High Flow Experiment (HFE) at
Glen Canyon Dam, November 2021

cc: Camille Calimlim Touton, Deputy Commissioner