

October 17, 2019

To: Glen Canyon Leadership Team for Implementation of Experiments under the Long Term Experimental and Management Plan

From: Glen Canyon Dam Technical Planning / Implementation Team

Re: Insufficient Sediment to Trigger Implementation of a Fall 2019 High Flow Experiment at Glen Canyon Dam

The purpose of this memorandum is to transmit technical information regarding a potential 2019 fall high flow experiment (HFE) at Glen Canyon Dam to the Glen Canyon Leadership Team and to the Department of the Interior (Department) in accordance with the Long-Term Experimental and Management Plan (LTEMP) Record of Decision (ROD). The Glen Canyon Dam Technical Planning / Implementation Team (Technical Team) includes technical representatives from the National Park Service (NPS), the U.S. Fish and Wildlife Service (FWS), the Bureau of Indian Affairs (BIA), the U.S. Geological Survey (USGS) Grand Canyon Monitoring and Research Center (GCMRC), the Bureau of Reclamation (Reclamation), Western Area Power Administration (WAPA), the Arizona Game and Fish Department (AGFD), the seven Colorado River Basin States (States), and the Upper Colorado River Commission (UCRC).

In accordance with the LTEMP ROD, “The Bureau of Reclamation (Reclamation) will be prepared to conduct an HFE if resource conditions are suitable, there is sufficient sediment input or projected annual release to trigger an HFE, and DOI determines conditions are suitable for proceeding” (C-2, LTEMP 2016). On October 3, 2019, Reclamation and GCMRC determined that there is not sufficient sediment to support implementing an HFE at Glen Canyon Dam during the fall 2019 planning window. This determination is based on the best available sediment and streamflow data and sand budget modeling to date. The determination that no HFE has been triggered this fall is made in accordance with the process for sediment-related experiments described in the Glen Canyon Dam LTEMP ROD (2016).

LTEMP Process for Implementing Experiments

Under the LTEMP, the Department may conduct flow-based experiments (HFEs, Bug Flows, Trout Management Flows, and Low Summer Flows) at Glen Canyon Dam when resource conditions warrant and if it is determined that there will not be unacceptable adverse impacts on other resources. This process entails outreach to Glen Canyon Dam Adaptive Management Program (GCDAMP) partners through regular meetings and additional notification to Tribes inviting consultation. The process also entails coordination with the Technical Team to plan for the possible experiment, evaluate the status of resources, and make a technical recommendation regarding whether to conduct an experiment. The Technical Team presents its recommendation to the Glen Canyon Leadership Team, which makes a recommendation to the Department.

During HFE implementation windows, Reclamation’s Upper Colorado Region Public Affairs Office in coordination with NPS and USGS public affairs and the Department work to develop

and implement an appropriate communication plan. Those plans will vary based on whether an HFE is recommended, current hydrology, and other considerations.

In the fall 2019 HFE planning window, the Technical Team met on September 26, 2019 and October 3, 2019 to consider the best available information regarding a potential HFE. As the sediment trigger was not met, no technical recommendation-making process was initiated.

LTEMP HFE Protocol

As described in the LTEMP ROD, HFEs are experimental in nature and are designed to achieve a better understanding of whether, how, and when to incorporate high releases into future dam operations in a manner that maintains or improves beaches, sandbars, and associated habitat. The purpose of HFEs is to learn, through adaptive management, how to better conserve the limited sand supply to the Colorado River below Glen Canyon Dam for ecological, recreational, and cultural purposes; and to meet DOI obligations under the Grand Canyon Protection Act (1992). The LTEMP HFE Protocol establishes a decision-making framework consisting of three components: (1) planning and budgeting, (2) modeling, and (3) decision and implementation. It also provides the framework and process for implementing high flow releases from Glen Canyon Dam when sediment and other resource conditions warrant. Under the LTEMP HFE Protocol, sediment-triggered HFEs may be conducted in the fall (October to November, beginning in 2017) and spring (March to April, beginning in 2020). Cumulative sand input from the side canyons during the fall and spring windows is evaluated in a sand budget model to determine whether the sediment trigger has been met. HFEs are only considered when they will not result in net erosion to the riverbed and sandbars in Marble Canyon.

HFE Sand Budget Model & Results

The LTEMP HFE Protocol uses models of sand inflow from the Paria River and forecasted hydrologic data to determine whether suitable sediment and hydrology conditions exist for a high-flow experimental release. “If the model run concludes that enough sediment is not available to achieve a positive sand mass balance, the next lower magnitude or duration sediment-triggered HFE is evaluated by the model. This is repeated until a sediment-triggered HFE scenario is reached that can be implemented with the available sediment or it is determined that a sediment-triggered HFE cannot be implemented” (C-4, LTEMP 2016).

The October 9, 2019 sand budget model run predicted final cumulative sand load estimates for the lower and upper bounds were, respectively, -2,684 metric tons and -5,595 metric tons. The model results indicate that implementation of a 2019 fall HFE would result in net erosion to the riverbed and sandbars in Marble Canyon for the accounting period.

Consultation

On September 23, 2019, a 30-day advance notification and offer for consultation was emailed to the Tribes and Parties to the LTEMP cultural Programmatic Agreement of the potential for an HFE beginning November 5, 2019. As of October 11, 2019, Reclamation has not received any requests for consultation on the potential experiment. A follow-up notification will be sent electronically to the Programmatic Agreement signatories, including Tribes, following the Department’s notification regarding the potential HFE.