LTEMP Experiments Update

TWG Meeting December 11, 2025

LTEMP Experiments

"The overall approach attempts to strike a balance between identifying specific experiments and providing flexibility to implement those experiments when resource conditions are appropriate."

"...rather than proposing a prescriptive approach to experimentation, an adaptive management-based approach that is responsive and flexible will be used to adapt to changing environmental and resource conditions..."

--2016 LTEMP ROD, p. B-9

LTEMP Process for Experiments

- Annual Reporting and TWG meetings
- Notification and Consultation to Tribes & PA Parties
- Implementation / Planning Team Recommendation
- DOI decision

1.4 COMMUNICATION AND CONSULTATION PROCESS FOR ALTERNATIVE D

To determine whether conditions are suitable for implementing or discontinuing experimental treatments or management actions, the DOI will schedule implementation/planning meetings or calls with the DOI bureaus (USGS, NPS, FWS, BIA, and Reclamation), WAPA, AZGFD, and one liaison from each Basin State and from the UCRC, as needed or requested by the participants. The implementation/planning group will strive to develop a consensus recommendation to bring forth to the DOI regarding resource issues as detailed at the beginning of this section, as well as including WAPA's assessment of the status of the Basin Fund. The Secretary of the Interior will consider the consensus recommendations of the implementation/planning group, but retains sole discretion to decide how best to accomplish operations and experiments in any given year pursuant to the ROD and other binding obligations.

Potential LTEMP Flow Experiments

- **Sediment** (High Flow Experiments)
  - Spring HFE
  - Proactive spring HFE
  - Fall HFE
  - Fall HFE extended duration (up to 250 hr)

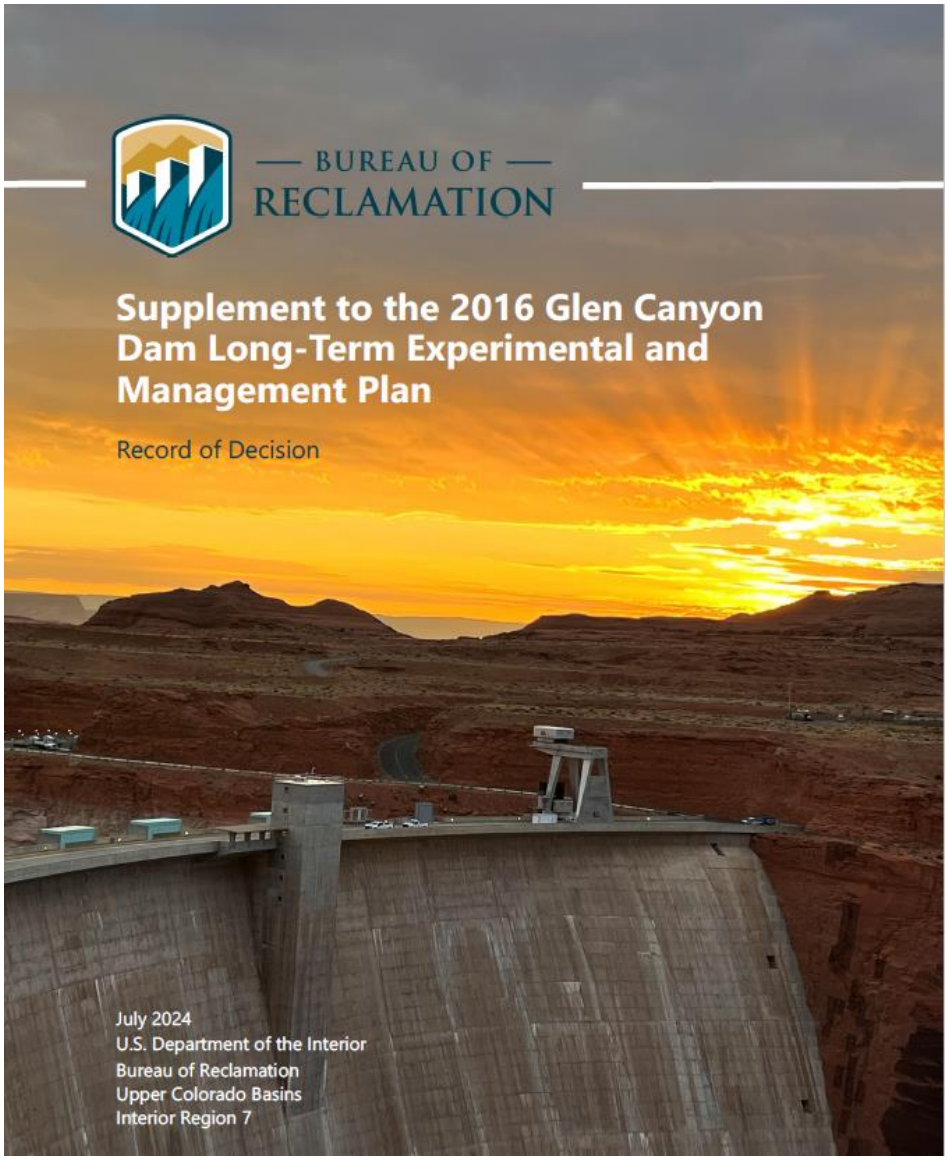
- **Aquatic Resource**
  - Macroinvertebrate Flow
  - Trout Management Flows
  - Low summer flows (2nd ten years of LTEMP)

- **LTEMP SEIS**
  - Smallmouth Bass Flows
  - HFE protocol revision

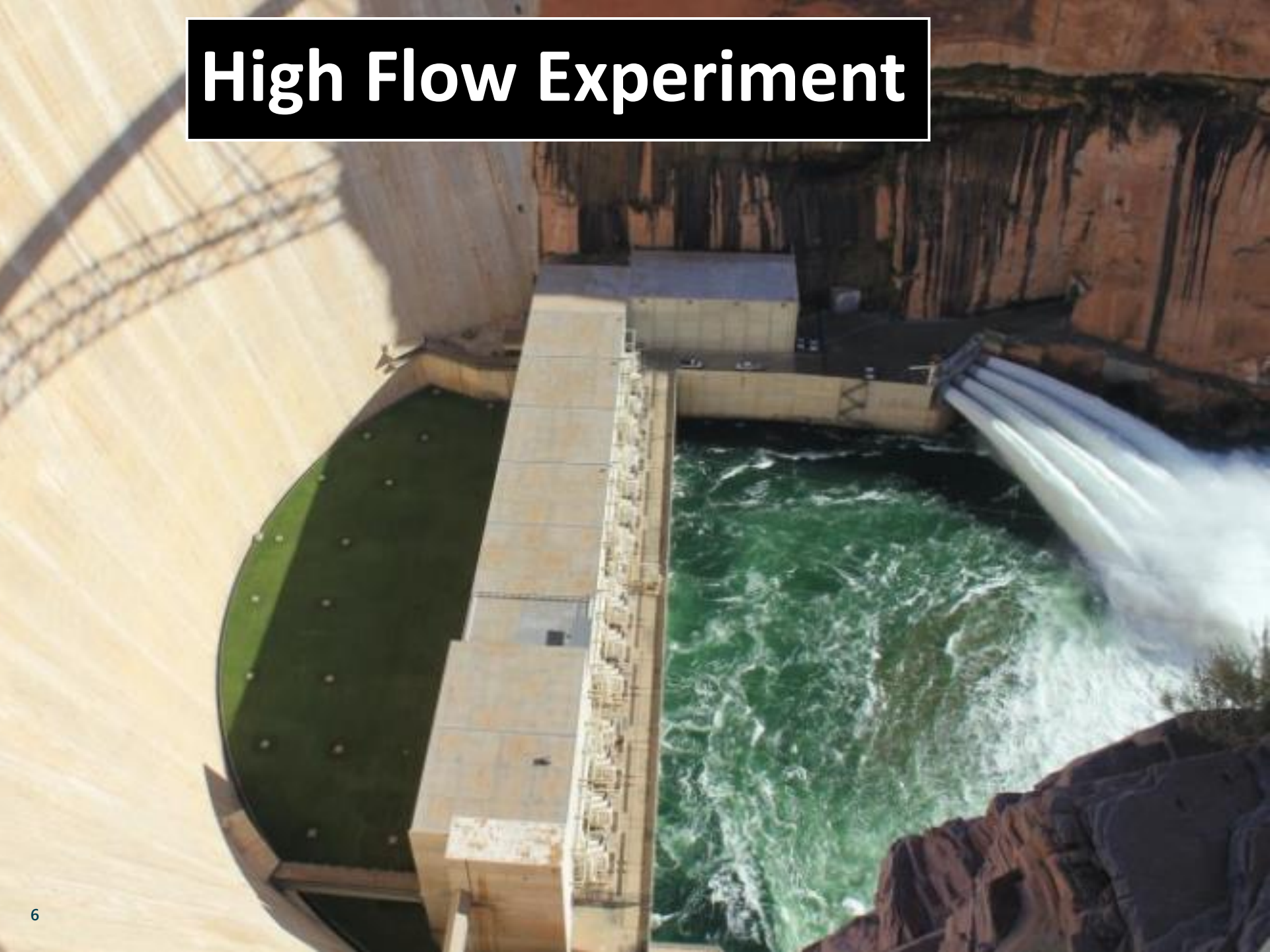
Smallmouth Bass Flows

Record of Decision

- Operational Flows (2024-2027)
  - Cool mix is the preferred alternative for 2024
  - Cool Mix Alternative and the other alternatives possible in 2025-2027 (if needed).
- 2024
  - Cool Mix
  - RM 61
  - July 9-November 18
- 2025
  - Cool Mix
  - RM 30
  - August 3 – October 20



High Flow Experiment



LTEMP SEIS ROD Language

- "Planning for HFE releases will follow the planning and implementation process described in Section 7 of the 2016 LTEMP ROD, including close monitoring of all experimental treatments for unacceptable adverse impacts on important resources. Sand budget models will be run throughout the fall to determine whether sufficient sediment is available to conduct an HFE release. If sufficient sediment is available in the fall, the planning and implementation team may recommend conducting the fall HFE release or deferring implementation to the spring implementation window. Prior to the spring implementation window, the planning and implementation process will again be used to provide a recommendation on the duration, magnitude, and timing of the spring HFE release. If the HFE release is conducted, sediment accounting will restart on July 1. If, through the planning and implementation process, the recommendation is not to conduct an HFE release despite sufficient sediment, the remaining mass balance at the end of June will be carried into the new accounting period."

Historical HFEs

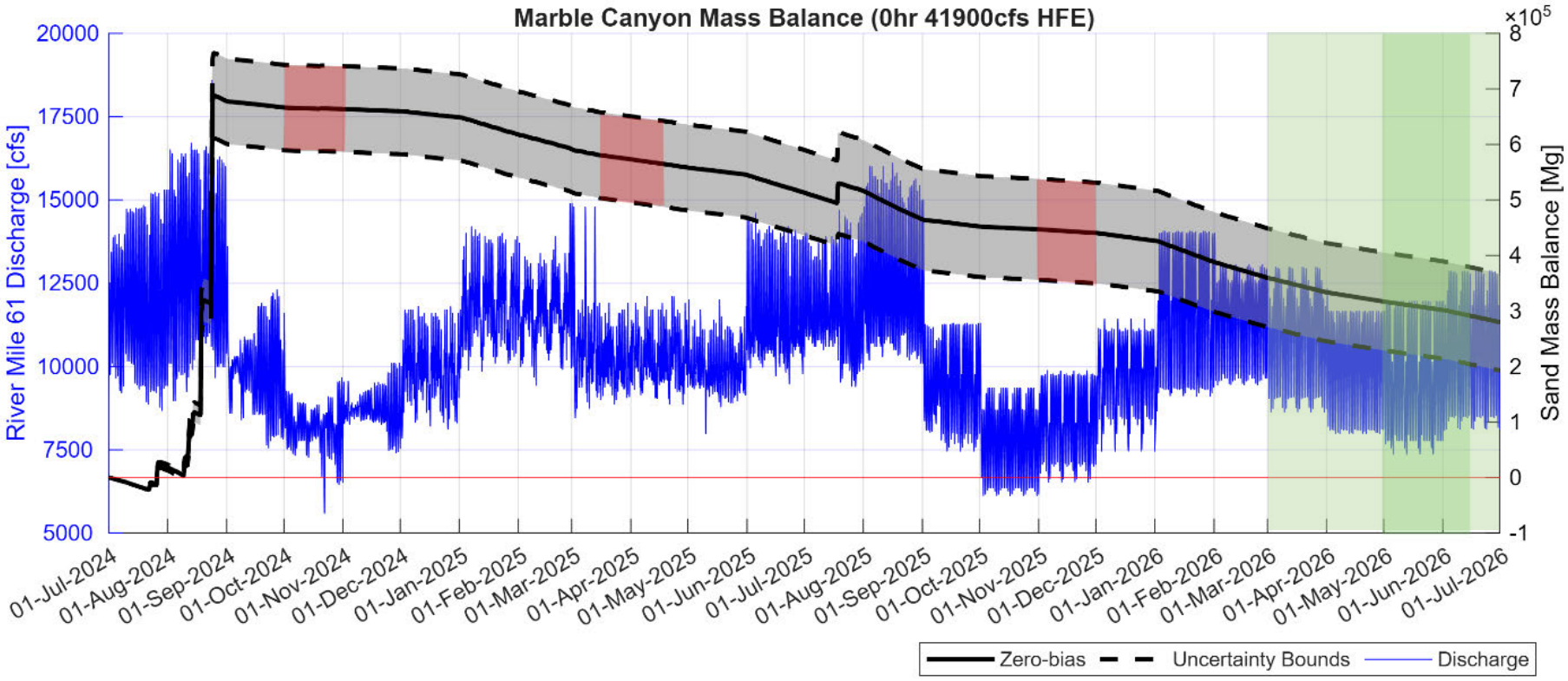
TABLE 1 | High-flow experiments (HFEs) implemented from March 1996 to April 2023.

Start date of HFE peak at Lees Ferry	Peak discharge[a] (ft^3/s)	Duration[a] (h)	Marble Canyon sand mass balance[b] (Mg)			Paria River sand input[b] (Mg)
March 26, 1996	45,000	182	—		—	3,80,000
November 4, 1997	30,800	40	—		—	1,700,000
May 2, 2000	30,500	72	—		—	920,000
September 5, 2000	31,000	72	—		—	3700
November 21, 2004	41,700	79	570,000	±	130,000	620,000
March 6, 2008	42,800	80	480,000	±	170,000	860,000
November 19, 2012	44,500	85	710,000	±	120,000	690,000
November 11, 2013	37,000	99	2,000,000	±	320,000	1,900,000
November 10, 2014	38,000	104	1,300,000	±	200,000	1,200,000
November 7, 2016	36,500	99	640,000	±	160,000	840,000
November 5, 2018	39,500	65	560,000	±	150,000	750,000
April 24, 2023	40,000	78	1,700,000	±	290,000	1,700,000

[a]Duration computed as period of discharge at or above power plant capacity (this is the period at the indicated peak discharge for the 1997 and 2000 events and the period above 892 m^3/s for all other events). Peak discharge and duration for Lees Ferry gage from U.S. Geological Survey (2024a).
[b]The mass balance and Paria River sand inputs reflect the sand supplied to Marble Canyon during the preceding thunderstorm season and are computed for the period from July 1 to the beginning of the ramp up to the HFE peak (1–2 days before the start of the HFE peak at Lees Ferry). Marble Canyon sand mass balance and Paria River sand input from U.S. Geological Survey (2024a) and for 1996 only, from Topping et al. (2010).

Grams, Paul E., et al. "Implementation of controlled floods for sediment management on the Colorado River in Grand Canyon under aridification." *River Research and Applications* 41.2 (2025): 334-348.

Past Deferments and Future Potential

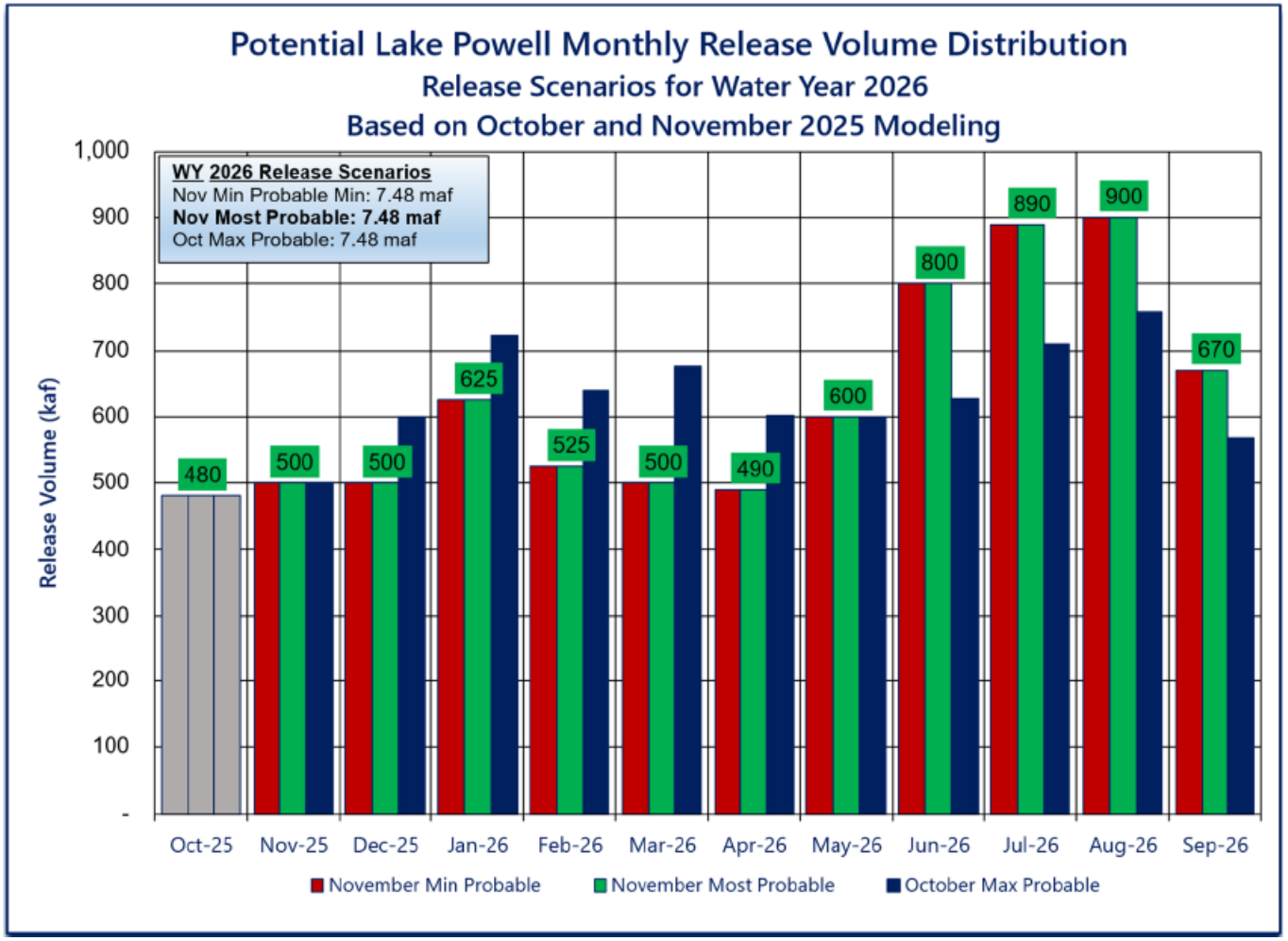


Fall 2025 HFE Timeline

- HFE Timeline
  - Early Sept – Weekly PI tech team meetings began
  - Sept 17 – Notification to tribes
  - Sept 18 – Initial Draft of tech report (40,000 cfs for 22-hrs)
  - Sept 28 – Units 3 and 4 outage (33,000 cfs for 27-hrs)
  - Sept 30 - AMWG/TWG webinar
  - Oct 14 – Final PI technical report and Tech team recommendation
  - Oct 16 – PI Leadership Team Recommendation
  - Nov 12 – Possible implementation
  - No HFE Conducted

Looking to the Future - HFE

- There is sufficient sediment for a spring HFE
- PI team will start discussions in January

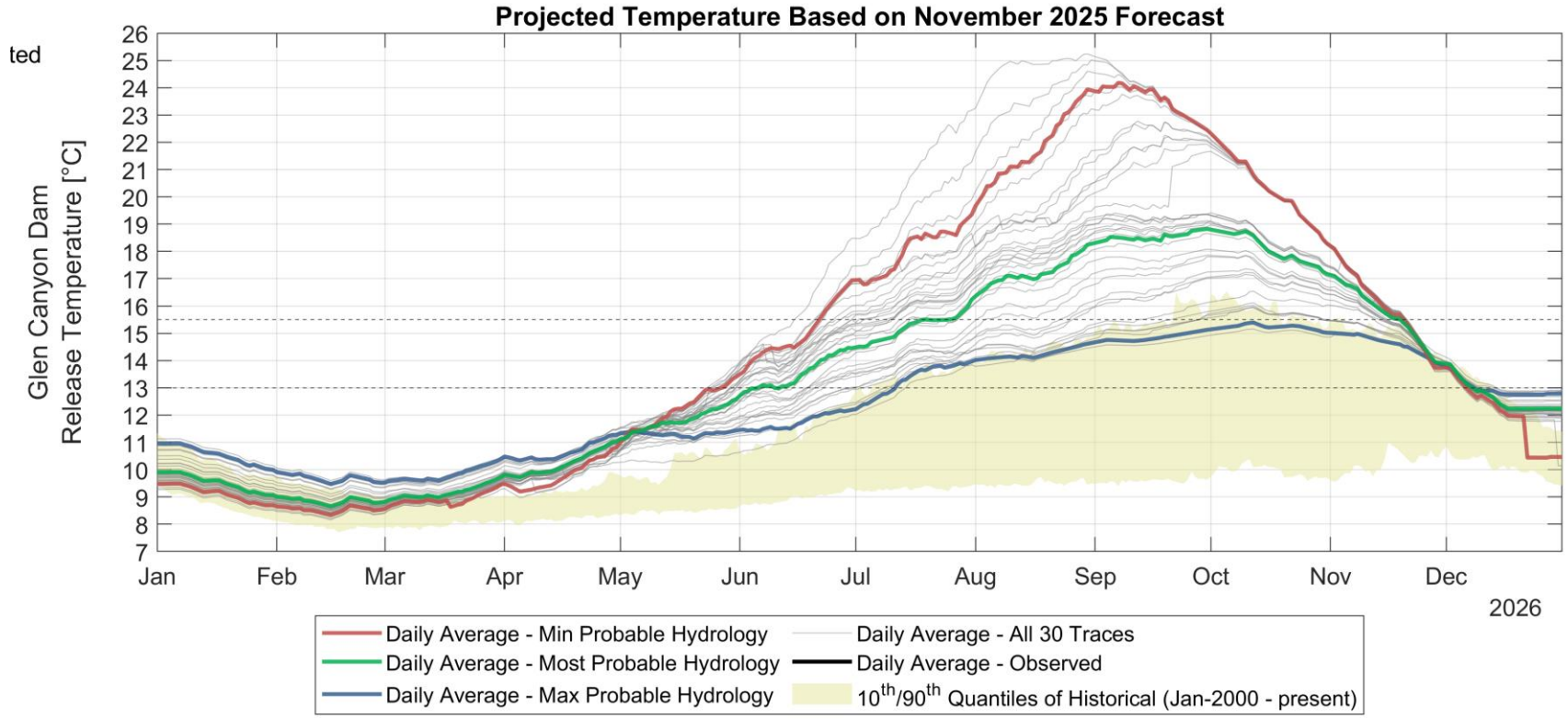


Unit Number	Oct 2025	Nov 2025	Dec 2025	Jan 2026	Feb 2026	Mar 2026	Apr 2026	May 2026	Jun 2026	Jul 2026	Aug 2026	Sep 2026
1												
2												
3												
4												
5												
6												
7												
8												
Units Available	6	6*	8	8	6	6	7	8	8	8	8	6
Penstock Capacity (cfs)	18,700	18,600*	25,200	18,200	18,000	17,800	17,800	21,600	25,700	25,700	18,600	18,500
Penstock Capacity (kaf/month)	1,190	1,110	1,550	1,450	1,030	1,110	1,310	1,440	1,530	1,580	1,550	1,100
Max (kaf) [1]	480	500	500	625	525	500	490	600	800	890	900	670
Most (kaf) [1]	480	500	500	625	525	500	490	600	800	890	900	670
Min (kaf) [1]	480	500	600	723	639	675	601	599	628	709	758	568
										(updated 11-12-2025)		

AB1

Looking to the Future – SMB Flows

- PI team will start discussions in January



Glen Canyon Dam Release Temperature (*Eppehimer et al, 2024 model)

* https://doi.org/10.1101/2024.01.23.576966

Questions?