



# United States Department of the Interior

BUREAU OF RECLAMATION  
Upper Colorado Regional Office  
125 South State Street, Room 8100  
Salt Lake City, UT 84138-1102

IN REPLY REFER TO:

## DECISION MEMORANDUM FOR THE SECRETARY

To: Secretary

Through: Thomas M. Iseman *Thomas M Iseman*  
Principal Deputy Assistant Secretary - Water and Science

DEC 9 2016

DEC 07 2016

From: Brent Rhees *Brent Rhees*  
Secretary's Designee, Glen Canyon Dam Adaptive Management Work Group

Subject: Report and Recommendations from the Glen Canyon Dam Adaptive Management Work Group (AMWG) Federal Advisory Committee Meetings held on February 24-25, 2016, May 25, 2016, and August 24-25, 2016

### Introduction

The AMWG is a federal advisory committee chaired by a designee of the Secretary of the Interior. The position of the Secretary's Designee is currently vacant and meetings are being chaired by the designated alternate, Upper Colorado Regional Director Brent Rhees. The AMWG provides advice and recommendations to the Secretary relative to the operation of Glen Canyon Dam and reports to the Secretary through the Secretary's designee.

Members of the AMWG are appointed by the Secretary with representation from the Colorado River basin states, tribal nations, environmental and recreational groups and power interests. The Department of the Interior (Department) is represented by the Fish and Wildlife Service (FWS), the National Park Service (NPS), the Bureau of Indian Affairs (BIA), the Bureau of Reclamation (Reclamation) and the United States Geological Survey (USGS). Western Area Power Administration (WAPA) is also represented.

### Background

The AMWG held three meetings in 2016. The first was a 2-day in-person meeting on February 24-25, 2016, in Tempe, Arizona. The second was a 3-hour webinar on May 25, 2016. The third was a 2-day in-person meeting on August 24-25, 2016, in Flagstaff, Arizona. The meetings were constructive and well attended. This memorandum contains a summary of issues discussed, actions taken, and recommendations for your consideration.

The AMWG held a 2-day in-person meeting on February 24-25, 2016 in Tempe, Arizona. The following were discussed:

Long-Term Experimental and Management Plan (LTEMP) Environmental Impact Study (EIS).

As joint leads, Reclamation and the NPS continued to work on the LTEMP EIS. On January 8, 2016 the draft EIS document was released to the public for comment and review. In addition to regular updates to the AMWG and Technical Work Group (TWG), two public meetings and two informational webinars were held in February and March to facilitate interaction with a diverse set of interest groups and members of the public. The final EIS was released on October 7, 2016 and the Record of Decision (ROD) is anticipated in late 2016.

Lees Ferry Trout Fishery Management Recommendations Report. At the AMWG August 2015 meeting, the AMWG requested the USGS Grand Canyon Monitoring and Research Center (GCMRC) provide a technical review of the Lees Ferry trout Fishery Management Recommendations Report (Recommendations), and requested the TWG to evaluate that technical review. Based on the TWG's acceptance of GCMRC's report and the request to consider trout management recommendations with caveats, the AMWG discussed and passed the following motion by consensus:

*The AMWG accepts the December 9, 2015, GCMRC Technical Memo (Memo) of the Recommendations subject to the following:*

- 1. Any actions resulting from the Recommendations must be fully consistent with the "Law of the River" and Department policy considerations.*
- 2. Recommendations that fall under the purview of water and natural resource management agencies such as Reclamation, NPS, FWS, Arizona Game and Fish Department, and AMWG Tribes will require additional evaluation among these management agencies within the Glen Canyon Dam Adaptive Management Program (AMP) for further consideration.*
- 3. Recommendations that address dam operations are expected to be considered and evaluated in light of the ongoing LTEMP EIS.*

*In addition, the AMWG directs the TWG to consider the Recommendations with the caveats above and the Memo as work plans and budgets are developed or reviewed.*

Spring High Flow Experiment (HFE). This stakeholder presentation discussed why spring HFEs are beneficial and suggested that the Secretary and the LTEMP co-leads to modify the HFE protocol in the LTEMP to allow for more frequent testing of springtime HFEs by: (1) including consideration of unused sediment supplies following fall HFEs, or (2) when a fall HFE is not conducted and sufficient sand exists on the channel bed.

Updates from the 2016, Annual Reporting Meeting. The annual reporting meeting was held January 26-27, 2016 and included updates on: the revision of the Humpback Chub Recovery Plan, Glen Canyon Dam operations during equalization releases, the HFE protocol sediment trigger, nonnative invasive species including green sunfish removal below the dam and the increase in brown trout at Lees Ferry, the review of the Lees Ferry Trout Fishery Management Recommendations and the Science Advisers workplan. Results were further discussed at the TWG April meeting.

### **May 25, 2016, Webinar:**

The May webinar/conference call focused on the following issues:

Water Year 2017 Hydrograph. In cooperation with the other federal agencies, Reclamation is developing a recommendation for the 2017 Hydrograph. The initial proposed 2017 Hydrograph for Glen Canyon Dam is the same as the 2016 Hydrograph that was unanimously approved by AMWG in August 2015. In this hydrograph, Modified Low Fluctuating Flows (MLFF) would be optimized by targeting lower August and September monthly releases in order to retain sand inputs high in the system in anticipation of a HFE.

Federal Advisory Committee Act (FACA). An overview of the FACA was presented, including information regarding laws and regulations that apply to Federal advisory committees established within the executive branch. The presentation was informative for both new and seasoned members of the AMWG Federal advisory committee.

Law of the River. This presentation provided an overview of the legal authorities that govern both the overall use of the Colorado River and the specific aspects of Colorado River activities associated with Glen Canyon Dam. More general topics included use of the Colorado River between the United States and Mexico and use between the Upper Basin and Lower Basin. Topics specific to Glen Canyon Dam operations included the role of the Colorado River Storage Project Act (CRSP) of 1956, the Colorado River Basin Project Act of 1968, and the Grand Canyon Protection Act of 1992.

Science Advisor's Program. The Science Advisors Program is considering external review of the following topics in fiscal year (FY) 2017: knowledge assessment, cultural resources in the AMP, and the draft triennial work plan for FY 2018-2020. The recently updated Science Advisor Program Charter and Protocols was discussed. Several tribal representatives expressed concern regarding the updated Charter and requested government to government consultation to discuss their concerns. Review of the Charter and Protocols will be taken up again by the AMWG after government to government consultation has been completed.

FY 2017 Budget and Work Plan. In FY 2017, GCMRC and Reclamation will be operating under the previously approved three-year (FY 2015-2017) budget and work plan for the AMP. However, each year, the TWG and AMWG review the upcoming year's work plan to make any necessary adjustments. Adjustments were made to both Reclamation's and the Grand Canyon Monitoring and Research Center's (GCMRC) budgets to reflect consumer price index (CPI) changes. The FY17 CPI was originally estimated at 3%, but at the meeting was projected to be 0%. The resulting budget shortfalls were anticipated to be offset by reduced GCMRC overhead rates, additional funding received from USGS and the Southwest Biological Science Center, and salary savings from unfilled positions. The AMWG reviewed and made a formal recommendation on the budget and work plan at its August meeting.

### **August 24-25, 2016, Meeting:**

This meeting was held in Flagstaff, Arizona. The following topics were discussed: FY 2017 Budget and Work Plan. Reclamation and the GCMRC proposed changes to their budgets based on the CPI rate. AMWG members discussed the revised budget, how possible changes may be necessary after the LTEMP ROD, and the need for coordination with tribal representatives on implementation of cultural resources budget items. The members passed the following motion by consensus:

*The AMWG recommends to the Secretary of the Interior her approval of the AMP FY17 budget as described by Reclamation and the GCMRC. AMWG also requests TWG to review the FY17 budget after issuance of the LTEMP ROD, to determine if budget or work plan changes may be needed as a result of the ROD. AMWG acknowledges that tribal representatives will work with Reclamation on the implementation of its budget items D.2.5 through D.2.8.*

Water Year 2017 Hydrograph. The AMWG discussed the proposed 2017 Hydrograph for Glen Canyon Dam and passed the following motion by consensus:

*AMWG recommends to the Secretary of the Interior for her approval, the following Water Year 2017 Hydrograph for Glen Canyon Dam.*

- *Annual Release Volumes will be determined by the 2007 Interim Guidelines and shall be reviewed and adopted through the normal annual operating plan process (in consultation with the Basin States as appropriate).*
- *Monthly Release Volumes are anticipated to shift depending upon: (1) the projected Annual Release Volume, (2) power plant capacity, and (3) the magnitude of a potential High Flow Experiment.*
- *Monthly Release Volumes may vary within the targets identified below. Any remaining monthly operational flexibility will be used for existing power production operations under the MLFF alternative selected by the 1996 ROD and contained in the 1995 FEIS and in compliance with all applicable National Environmental Policy Act compliance documents (HFE Environmental Assessment [EA], Non-native Fish Control EA, 2007 Interim Guidelines). Monthly release volumes proposed in this hydrograph will not affect operating tier determinations for Lakes Powell and Mead under the 2007 Interim Guidelines.*
- *Release objective for June is:  
600 to 650 kaf for annual releases below 9.0 maf  
800 kaf for annual releases of 9.0 maf to less than 9.5 maf  
900 kaf for annual releases of 9.5 maf to less than 10 maf  
Greater than 900 kaf for annual releases 10 maf and greater*
- *Release objective for August is:  
800 kaf for annual release below 9.0 maf  
900 kaf for annual releases of 9.0 maf to less than 10 maf*

*Greater than 900 kaf for annual releases 10 maf and greater*

- Release objective for September is:  
*600 kaf for annual releases below 9.0 maf*  
*700 kaf for annual releases of 9.0 maf to less than 10.0 maf*  
*800 kaf or greater for annual releases of 10.0 maf or greater; up to power plant capacity for high equalization releases*
- Monthly Release Volumes will generally strive to maintain 600 kaf levels in the shoulder months (spring and fall) and 800 kaf in the December/January and July/August timeframe.

*Additionally, Reclamation will continue to apply best professional judgment in conducting actual operations and in response to changing conditions throughout the water year. Such efforts will continue to be undertaken in coordination with the Department of the Interior and Department of Energy agencies and in consultation with the Basin States as appropriate, to consider changing conditions and adjust projected operations in a manner consistent with the objectives of these parameters as stated above and pursuant to the Law of the River.*

Science Advisors Program. The presentation reviewed the Science Advisor Program FY 2016 activities and presented planned activities for FY 2017. The planned activities include coordinating a review of cultural resource programs within the AMP; performing a state of knowledge review to inform the development of the next (FY2018-2020) Triennial Work Plan; and working with the AMWG, TWG, and GCMRC to develop the next (FY18-20) Triennial Work Plan.

Basin Fund and Revenue Overview. This presentation provided an overview of CRSP including: how rates are established, how customers pay for the power they receive, how the resulting revenues are used, and how the approximately \$20 million per year for environmental programs are funded. The Basin Fund is critical to CRSP, Reclamation, the seven Basin States, the Upper Colorado and San Juan River Recovery Implementation Programs, and the AMP.

Cultural Resources Perspectives from Navajo Nation. The Navajo Nation is one of five tribes that participates in the AMP. Each tribe has unique perspectives and concerns relative to the Grand Canyon. The presentation “the river of never-ending life” provided an overview of the Navajo Nation’s relationship to the Canyon and goals for their participation in the Adaptive Management Program.

GCMRC Science Presentations. Updates from GCMRC scientists included presentations on recent findings on the sandbar modeling project, aquatic foodbase of the Little Colorado River, and the science behind HFE planning.

LTEMP EIS. An update on the LTEMP EIS with a description of the preferred alternative was presented. The presentation highlighted all changes made to the preferred alternative and the text of the EIS since the release of the public draft. The anticipated timeline for Final EIS and Record of Decision were discussed.

LTEMP Science Plan. The science plan provides the strategy by which monitoring and research data in the natural and social sciences will be collected, analyzed, and provided to the Department of the Interior (DOI), its bureaus, and to the AMP during the LTEMP period. The LTEMP Science Plan describes the overall data collection, analysis, modeling, and interpretation activities to be conducted by the USGS Grand Canyon Monitoring and Research Center (GCMRC), partner agencies and its cooperators that will inform decisions about operations of Glen Canyon Dam and management of downstream resources. The specific activities will be described in GCMRC's Triennial Work Plans that will be developed during the LTEMP implementation period and will be reviewed and recommended by the AMP and approved by the Secretary of the Interior.

National Park Service 100<sup>th</sup> Anniversary. The AMWG and others recognized the 100th Anniversary of the National Park Service which occurred on August 25, 2016.

Farewell from Secretary's Designee. Ms. Jennifer Gimbel served as the Secretary's Designee from January 5, 2015 to July 8, 2016. Prior to her departure, Ms. Gimbel provided instruction to the GCMRC and Reclamation on continuity and strategic direction for the AMP. In her memorandum, Ms. Gimbel focused on the following areas:

1. Triennial Budget and Workplan Process. The AMWG should target the highest priority projects but have an appropriate balance of near- and long-term priorities and maintain the flexibility to respond to changing needs.
2. Tribal Engagement. Meaningful involvement and integration of Tribal perspectives into the AMP is critical to the continued success of the program. The next triennial workplan should also take into consideration results and recommendations from the Science Advisors, and in particular from the Science Advisors Program's evaluation of the AMP cultural program.
3. Long-Term Experimental and Management Plan (LTEMP). Integrating the LTEMP into AMP processes is a clear priority for the next triennial workplan. LTEMP builds on the science and learning that has occurred over the last 20 years and proposes an updated long-term plan for experimentation, monitoring and science on the ecosystems downstream from Glen Canyon Dam to inform dam operations and other related AMP activities.

## **Conclusion**

The AMWG endeavors to provide informed recommendations concerning the operations of Glen Canyon Dam for your endorsement. Decisions are made by a group of diverse and committed stakeholders that span the resources and values of the Grand Canyon. Their decisions are informed by leading edge science conducted by GCMRC and they are advised by the participating Department agencies.

## **Recommendation**

The AMWG brings a diverse group of stakeholders to the table that provide scientifically informed and broadly supported resource management recommendations to protect downstream

resources in the Grand Canyon. The Department agencies, my staff and I work closely with the AMWG to ensure good dialogue and informed and practical recommendations. Two recommendations from the 2016 AMWG meetings were adopted by consensus and I recommend you approve both.

The attached approval document is provided for your consideration.

cc: Principal Deputy Assistant Secretary, Water and Science  
Principal Deputy Assistant Secretary for Fish, Wildlife and Parks  
Principal Deputy Assistant Secretary for Indian Affairs  
Director, U.S. Geological Survey  
Commissioner, Bureau of Reclamation  
Director, U.S. Fish and Wildlife Service  
Director, National Park Service  
Director, Bureau of Indian Affairs

Assistant Director, Wildlife Management, Arizona Game and Fish Department,  
2221 W. Greenway Road, Phoenix, Arizona 85023-4399  
Attention: Mr. James deVos

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Attention: Mr. Chip Lewis

Department of Energy-WAPA, Western Area Power Administration,  
150 E. Social Hall Avenue, Suite 300, Salt Lake City, Utah 84111  
Attention: Ms. Lynn Jeka

The Hualapai Tribe, Hualapai Department of Cultural Resources, Historic Preservation  
Office, P.O. Box 310, Peach Springs, Arizona 86434  
Attention: Ms. Dawn Hubbs

Director, Cultural Preservation Office, The Hopi Tribe, PO Box 123,  
Kykotsmovi, Arizona 86039  
Attention: Mr. Leigh Kuwanwisiwma

National Park Service, Grand Canyon National Park, PO Box 129,  
Grand Canyon, Arizona 86023  
Attention: Ms. Christine Lehnertz

Office of the President and Vice-President, The Navajo Nation, PO Box 7440,  
Window Rock, Arizona 86515  
Attention: Mr. Perry Shirley

Pueblo of Zuni, PO Box 339, Zuni, New Mexico 87327  
Attention: Mr. Eric Bobelu

San Juan Southern Paiute Tribe, PO Box 2656, Tuba City, Arizona 86045

Southern Paiute Indian Consortium, Kaibab Paiute Indian Reservation,  
Tribal Affairs Bldg., HC 65 Box 2, Pipe Springs, Arizona 86022  
Attention: Mr. Charley Bullets

Field Supervisor, U.S. Fish and Wildlife Service, Arizona Ecological Services  
Office, 2321 W. Royal Palm Road, Suite 103, Phoenix, Arizona 85021-4951  
Attention: Mr. Steve Spangle

Arizona Department of Water Resources, 1110 W. Washington Street, Suite 310,  
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Attention: Mr. Clint Chandler

Executive Director, Colorado River Board of California, 770 Fairmont Avenue,  
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Attention: Ms. Tanya Trujillo

Upper Gunnison River Water Conservancy District, 210 West Spencer, Suite B,  
Gunnison, Colorado 81230  
Attention: Mr. John McClow

Colorado River Commission of Nevada, 555 E. Washington Avenue, Suite 3100,  
Las Vegas, Nevada 89101-1048  
Attention: Ms. Jayne Harkins

New Mexico Interstate Stream Commission, PO Box 25102,  
Santa Fe, New Mexico 87504  
Attention: Ms. Deborah Dixon

Interstate Streams Engineer, Herschler Building, 4-E, 122 W. 25<sup>th</sup> Street,  
Cheyenne, Wyoming 82002  
Attention: Mr. Steve Wolff

Director, Division of Water Resources, PO Box 146201, Salt Lake City, Utah 84114  
Attention: Mr. Eric Millis

Grand Canyon Wildlands Council, PO Box 1315, Flagstaff, Arizona 86002  
Attention: Mr. Larry Stevens

Grand Canyon River Guides, 219 8<sup>th</sup> Avenue, Salt Lake City, Utah 84103  
Attention: Mr. David Brown

National Parks Conservation Association, 307 West 200 South, Suite 5000,  
Salt Lake City UT 84101



Attention: Mr. David Nimkin

Colorado River Energy Distributors Association, 10429 S. 51<sup>st</sup> Street, Suite 230,  
Phoenix, Arizona 85044  
Attention: Ms. Leslie James

Utah Associated Municipal Power Systems, 2825 E. Cottonwood Parkway,  
Suite 200, Salt Lake City, Utah 84121  
Attention: Mr. Ted Rampton


Federation of Fly Fishers, 4510 E. Joshua Tree Lane, Paradise Valley, Arizona 85253  
Attention: Mr. John Jordan

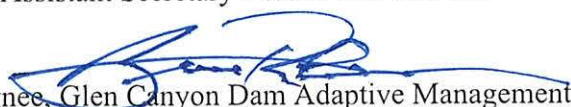
Deputy Regional Director, Upper Colorado Region, U.S. Bureau of Reclamation,  
125 S. State Street, Room 8100, Salt Lake City, Utah 84138  
Attention: Mr. Daniel Picard

Regional Director, Upper Colorado Region, U.S. Bureau of Reclamation,  
125 S. State Street, Room 8100, Salt Lake City, Utah 84138  
Attention: Mr. Brent Rhees

Adaptive Management Work Group Alternates  
Technical Work Group Members and Alternates  
(via e-mail)

**DECISION MEMORANDUM FOR THE SECRETARY**

Through: Thomas M. Iseman   
Principal Deputy Assistant Secretary - Water and Science

From: Brent Rhees   
Secretary's Designee, Glen Canyon Dam Adaptive Management Work Group

Subject: Report and Recommendations from the Glen Canyon Dam Adaptive Management Work Group (AMWG) Federal Advisory Committee Meetings held on February 24-25, 2016, May 25, 2016, and August 24-25, 2016

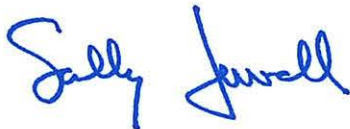
I. RECOMMENDATION

The AMWG brings a diverse group of stakeholders to the table that provide scientifically informed and broadly supported resource management recommendations to protect downstream resources in the Grand Canyon. The Department of the Interior agencies, my staff and I work closely with the AMWG to ensure good dialogue and informed and practical recommendations. Two recommendations (indicated in bold text in the report) from 2016 were adopted by consensus and I recommend you approve both. The recommendations are to:

1. Approve the final Fiscal Year (FY) 2015-17 Triennial Budget and Work Plan for implementation in FY 2017
2. Approve the Water Year 2017 Hydrograph for Glen Canyon Dam

II. SECRETARY'S DECISION

APPROVE  
 DISAPPROVE



Secretary

DEC 12 2016

Date