



Glen Canyon

Adaptive Management Work Group Meeting

Wednesday, August 24, 2016
9:30 a.m. – 5:30 p.m.

Thursday, Thursday 25, 2016
8:30 a.m. – 3 p.m.

Meeting Location	Sleeping Room Information
Little America Hotel Flagstaff 2515 E. Butler Avenue Flagstaff AZ 86004	Little America Hotel Flagstaff 2515 E. Butler Avenue Flagstaff AZ 86004 Tel: 1-800-352-4386 Rate: \$124 + tax (14.27%) Check in time: 4 p.m. Check out time: 12 noon Cancellation Policy = 48 hours

**Glen Canyon Dam Adaptive Management Work Group Meeting
August 24-25, 2016**

Meeting Packet Order

Tabs	Documents
	<ul style="list-style-type: none"> • Meeting Information Page • Meeting Packet Order • Federal Register Notice • WebEx Participant Information
Agenda	<ul style="list-style-type: none"> • Agenda for August 24-25, 2016, Meeting
Draft Minutes / Action Items	<ul style="list-style-type: none"> • Draft Minutes from May 25, 2016, Meeting
Budget	<ul style="list-style-type: none"> • AIF: Fiscal Year (FY17) Budget and Work Plan
TWG Report	<ul style="list-style-type: none"> • AIF: Technical Work Group (TWG) Report: Triennial Budget Process Development
Hydrology & Hydrograph	<ul style="list-style-type: none"> • AIF: Basin Hydrology, Operations, and 2017 Hydrograph
Science Advisors	<ul style="list-style-type: none"> • AIF: Science Advisors Charter and Protocols Government to Government Consultations Update • AIF: Science Advisors Program—2016 Accomplishments and 2017 Plans
Science Updates	<ul style="list-style-type: none"> • AIF: Grand Canyon Monitoring and Research Center Science Updates • Science behind High Flow Experiment Planning: From Chasing Storms in the Paria River to Serving Data on the Web • AIF: Sandbar Modeling Project Update • AIF: Aquatic Foodbase of the Little Colorado River
Basin Fund	<ul style="list-style-type: none"> • AIF: Basin Fund and Revenue Overview
Federal Liaison Report	<ul style="list-style-type: none"> • AIF: Federal – Tribal Liaison Report
Stakeholder's Perspective	<ul style="list-style-type: none"> • AIF: Stakeholder's Perspective: The River of Never-Ending Life—Cultural Resources from Navajo
LTEMP	<ul style="list-style-type: none"> • AIF: Long-Term Experimental Management Plan (LTEMP) Environmental Impact Statement (EIS) Update and Science Plan
Miscellaneous	<ul style="list-style-type: none"> • AMWG Committee Membership List & AMWG Membership (by entity) • Memo from PDAS Jennifer Gimbel to Scott VanderKooi (GCMRC) and Katrina Grantz (USBR) dated July 8, 2016, Subject: Glen Canyon Dam Adaptive Management Program Continuity and Strategic Director • AMWG Ground Rules • AMWG Charter • AMWG Operating Procedures

authorities. Consistent with Executive Order 13547, each NOC member will, as described in the *Final Recommendations*, and to the fullest extent consistent with applicable law, comply with those regional plans certified by the NOC.

The Federal members of the MidA RPB administer a wide range of statutes and programs affecting the marine environment in the Mid-Atlantic. These Federal departments and agencies carry out actions under Federal laws involving a wide range of regulatory responsibilities and non-regulatory missions and management activities throughout the Nation's waterways and the ocean. These activities include managing and developing marine transportation systems, national security and homeland defense activities, regulating ocean discharges, siting energy facilities, permitting sand removal and beach re-nourishment, managing national parks and national wildlife refuges, regulating commercial and recreational fishing, and managing activities affecting threatened and endangered species and migratory birds.

The specific manner and mechanism a Federal agency uses to implement the final Mid-Atlantic Ocean Action Plan will depend on that agency's mission, authorities, and activities in the marine environment. The Federal members of the MidA RPB will publicly describe the administrative mechanisms they will use to implement the Plan when the MidA RPB submits the Plan to the NOC for review and concurrence.

If the NOC concurs (*i.e.*, certifies) that the Plan is consistent with Executive Order 13547, the *Final Recommendations*, and the Handbook, each Federal MidA RPB member will incorporate the final Plan into their planning processes and internal agency documents, and use the Plan to guide and inform their decisions and actions, consistent with applicable law. Federal MidA RPB members with regulatory responsibilities will incorporate the final Plan into their pre-planning, planning, and permitting to guide and inform Federal agency internal and external permitting decisions, environmental compliance, resource management plans, and other actions taken pursuant to existing statutory and regulatory authorities. These agencies will ensure their scientists, managers, decision-makers, and analysts use the Mid-Atlantic Regional Ocean Action Plan to guide and inform their actions to the fullest extent possible under existing statutory and regulatory authorities. As noted throughout the *Final Recommendations*, the Mid-Atlantic Ocean Action Plan will not

create new authorities, regulations, or Federal agency missions. All Federal activities will continue to be managed under existing statutory and regulatory authorities.

IV. Conclusion

Through Executive Order 13547, Stewardship of the Ocean, Our Coasts, and the Great Lakes, President Obama established a National Ocean Policy to ensure the protection, maintenance, and restoration of the health of ocean, coastal, and Great Lakes ecosystems and resources; enhance the sustainability of ocean and coastal economies; preserve our maritime heritage; support sustainable uses and access; provide for adaptive management of ocean and coastal resources to enhance our understanding of and capacity to respond to climate change and ocean acidification; and coordinate ocean policy with our national security and foreign policy interests.

The MidA RPB anticipates the Mid-Atlantic Regional Ocean Action Plan will increase the sharing of information and data across resource managers, stakeholders, and the public; enhance decision-making through collaboration and coordination among Federal, state, and tribal governments; and provide for an improved information and data system that characterizes human activities and natural resources in Mid-Atlantic waters from the coast to 200 nautical miles offshore. This informational overlay, along with the best practices for improved coordination, will improve the context for decisions affecting the resources and coastal and ocean waters of the Mid-Atlantic region.

Authority: Executive Order 13547, "Stewardship of the Ocean, Our Coasts and the Great Lakes" (July 19, 2010).

Dated: June 22, 2016.

Kristen J. Sarri,
Principal Deputy Assistant Secretary Policy, Management and Budget.

[FR Doc. 2016-15588 Filed 7-5-16; 8:45 am]

BILLING CODE 4310-MR-P

DEPARTMENT OF THE INTERIOR

Bureau of Reclamation

[RR04073000, XXXR4081X3, RX.05940913.7000000]

Notice of Public Meeting for the Glen Canyon Dam Adaptive Management Work Group

AGENCY: Bureau of Reclamation, Interior.

ACTION: Notice.

SUMMARY: The Glen Canyon Dam Adaptive Management Work Group (AMWG) makes recommendations to the Secretary of the Interior concerning Glen Canyon Dam operations and other management actions to protect resources downstream of Glen Canyon Dam, consistent with the Grand Canyon Protection Act. The AMWG meets two to three times a year.

DATES: The meeting will be held on Wednesday, August 24, 2016, from approximately 9:30 a.m. to approximately 5:30 p.m.; and Thursday, August 25, 2016, from approximately 8:30 a.m. to approximately 3 p.m.

ADDRESSES: The meeting will be held at the Little America Hotel, 2515 E. Butler Avenue, Flagstaff, Arizona 86004.

FOR FURTHER INFORMATION CONTACT: Katrina Grantz, Bureau of Reclamation, telephone (801) 524-3635; facsimile (801) 524-3807; email at kgrantz@usbr.gov.

SUPPLEMENTARY INFORMATION: The Glen Canyon Dam Adaptive Management Program (GCDAMP) was implemented as a result of the Record of Decision on the Operation of Glen Canyon Dam Final Environmental Impact Statement to comply with consultation requirements of the Grand Canyon Protection Act (Pub. L. 102-575) of 1992. The GCDAMP includes a Federal advisory committee, the AMWG, a technical work group (TWG), a Grand Canyon Monitoring and Research Center, and independent review panels. The TWG is a subcommittee of the AMWG and provides technical advice and recommendations to the AMWG.

Agenda: The primary purpose of the meeting will be to approve the Fiscal Year 2017 Budget and Work Plan, and to approve the Water Year 2017 Hydrograph operation for Glen Canyon Dam. The AMWG will receive updates on: (1) The Long-Term Experimental and Management Plan Environmental Impact Statement, (2) current basin hydrology, (3) reports from the Glen Canyon Dam Tribal and Federal Liaisons, (4) presentation on power generation in the West, and (5) science results from Grand Canyon Monitoring and Research Center staff. The AMWG will also address other administrative and resource issues pertaining to the GCDAMP.

To view a copy of the agenda and documents related to the above meeting, please visit Reclamation's Web site at <http://www.usbr.gov/uc/rm/amp/amwg/mtgs/16aug24>. Time will be allowed at the meeting for any individual or organization wishing to make formal oral comments. To allow for full consideration of information by the

AMWG members, written notice must be provided to Katrina Grantz, Bureau of Reclamation, Upper Colorado Regional Office, 125 South State Street, Room 8100, Salt Lake City, Utah 84138; telephone (801) 524-3635; facsimile (801) 524-3807; email at kgrantz@usbr.gov, at least five (5) days prior to the meeting. Any written comments received will be provided to the AMWG members.

Public Disclosure of Comments

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Dated: June 23, 2016.

Katrina Grantz,
Chief, Adaptive Management Group,
Environmental Resources Division, Upper
Colorado Regional Office.

[FR Doc. 2016-15960 Filed 7-5-16; 8:45 am]

BILLING CODE 4332-90-P

DEPARTMENT OF THE INTERIOR

Office of Surface Mining Reclamation and Enforcement

[S1D1S SS08011000 SX066A0067F
167S180110; S2D2D SS08011000 SX066A00
33F 16XS501520]

Notice of Proposed Information Collection; Request for Comments for 1029-0030

AGENCY: Office of Surface Mining Reclamation and Enforcement, Interior.
ACTION: Notice and request for comments.

SUMMARY: In compliance with the Paperwork Reduction Act of 1995, the Office of Surface Mining Reclamation and Enforcement (OSMRE) is announcing its intention to request approval for the collections of information for State Processes for Designating Areas Unsuitable for Surface Coal Mining Operations. The information collection request describes the nature of the information collection and its expected burden and cost.
DATES: Comments on the proposed information collection must be received by September 6, 2016, to be assured of consideration.

ADDRESSES: Comments may be mailed to John A. Trelease, Office of Surface

Mining Reclamation and Enforcement, 1951 Constitution Ave, NW., Room 203—SIB, Washington, DC 20240. Comments may also be submitted electronically to jtrelease@osmre.gov.

FOR FURTHER INFORMATION CONTACT: To receive a copy of the information collection request contact John Trelease, at (202) 208-2783 or by email at jtrelease@osmre.gov.

SUPPLEMENTARY INFORMATION: Office of Management and Budget (OMB) regulations at 5 CFR part 1320, which implementing provisions of the Paperwork Reduction Act of 1995 (Pub. L. 104-13), require that interested members of the public and affected agencies have an opportunity to comment on information collection and recordkeeping activities [see 5 CFR 1320.8 (d)]. This notice identifies an information collection that OSMRE will be submitting to OMB for extension. This collection is contained in 30 CFR part 764.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control number for this collection of information is 1029-0030 and is displayed at 30 CFR 764.10.

OSMRE has revised burden estimates, where appropriate, to reflect current reporting levels or adjustments based on reestimates of burden or respondents. OSMRE will request a 3-year term of approval for these information collection activities.

Comments are invited on: (1) The need for the collection of information for the performance of the functions of the agency; (2) the accuracy of the agency's burden estimates; (3) ways to enhance the quality, utility and clarity of the information collections; and (4) ways to minimize the information collection burden on respondents, such as use of automated means of collection of the information. A summary of the public comments will accompany OSMRE's submission of the information collection request to OMB.

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

This notice provides the public with 60 days in which to comment on the

following information collection activity:

Title: 30 CFR part 764—State Processes for Designating Areas Unsuitable for Surface Coal Mining Operations.

OMB Control Number: 1029-0030.

Summary: This part implements the requirement of section 522 of the Surface Mining Control and Reclamation Act of 1977 (SMCRA), Public Law 95-87, which provides authority for citizens to petition States to designate lands unsuitable for surface coal mining operations, or to terminate such designation. The regulatory authority uses the information to identify, locate, compare and evaluate the area requested to be designated as unsuitable, or terminate the designation, for surface coal mining operations.

Bureau Form Number: None.

Frequency of Collection: Once.

Description of Respondents:

Individuals, groups or businesses that petition the States, and the State regulatory authorities that must process the petitions.

Total Annual Respondents: 4.

Total Annual Burden Hours: 1,000 hours for individuals or groups, and 4,000 for State regulatory authorities.

Total Annual Non-wage Costs: \$400

Dated: June 30, 2016.

John A. Trelease,

Acting Chief, Division of Regulatory Support.

[FR Doc. 2016-15957 Filed 7-5-16; 8:45 am]

BILLING CODE 4310-05-P

DEPARTMENT OF THE INTERIOR

Office of Surface Mining Reclamation and Enforcement

[S1D1S SS08011000 SX066A0067F
167S180110; S2D2D SS08011000 SX066A00
33F 16XS501520]

Notice of Proposed Information Collection; Request for Comments for 1029-0049

AGENCY: Office of Surface Mining Reclamation and Enforcement, Interior.
ACTION: Notice and request for comments.

SUMMARY: In compliance with the Paperwork Reduction Act of 1995, the Office of Surface Mining Reclamation and Enforcement (OSMRE) is announcing its intention to request renewed approval for the collection of information for OSMRE's Special Permanent Program Performance Standards—Operations in Alluvial Valley Floors.

DATES: Comments on the proposed information collection must be received

WEBEX INFORMATION

August 24-25, 2016

AMWG Meeting Wednesday, August 24, 2016		
Participant Information: https://ucbor-events.webex.com/ucbor-events/onstage/g.php?MTID=e51d8decfbcfaf9a585a46eebdc861750	877-913-4721	3330168
AMWG Meeting Thursday, August 25, 2016		
Participant Information: https://ucbor-events.webex.com/ucbor-events/onstage/g.php?MTID=eb0e5737636fcca798a5654597d6b3650	877-913-4721	3330168

Agenda

Glen Canyon Dam Adaptive Management Program
Adaptive Management Work Group Meeting, August 24-25, 2016
 Little America Flagstaff, 2515 E. Butler Avenue, Flagstaff, AZ 86004, 800.352-4386

Wednesday, August 24, 2016

Webinar Information: <https://ucbor-events.webex.com/ucbor-events/onstage/g.php?MTID=e51d8decfbcfaf9a585a46eebdc861750>

Phone: 877-913-4721 Passcode: 3330168

D R A F T A G E N D A

START TIME ¹ (Duration)	Wednesday, August 24, 2016 Topic and Presenter and Purpose ²	Materials/ Tabs
9:30 (1:00)	<p>Welcome and Administrative: Brent Rhees, Regional Director, Bureau of Reclamation and Secretary's Designee's Alternate</p> <ul style="list-style-type: none"> ▪ Determination of Quorum (13 members) ▪ Department of Interior Update ▪ Approval of May 25, 2016 Meeting Minutes ▪ Action Item Tracking Report ▪ Progress on Nominations and Reappointments ▪ Update: AMWG Charter ▪ Introduction of Seth Shanahan, new TWG Chair (FY17) ▪ Introductions: group exercise 	<p>Agenda</p> <p>Meeting Minutes/ Action Items</p>
10:30 (1:00)	<p>FY 2017 Budget and Work Plan: Katrina Grantz, Bureau of Reclamation; Scott VanderKooi, Grand Canyon Monitoring and Research Center; Vineetha Kartha, Technical Work Group (TWG) Chair</p> <ul style="list-style-type: none"> ▪ Presentation (30 minutes) ▪ Q&A, discussion, and action (30 minutes) <p><u>Motion Recommended by the TWG:</u> AMWG recommends to the Secretary of the Interior her approval of the GCDAMP FY17 budget as described in the two tables (attached to the Agenda Item Form) from the Bureau of Reclamation and the Grand Canyon Monitoring and Research Center. 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 the Bureau of Reclamation on the implementation of its budget items D.2.5 through D.2.8.</p>	<p>Budget</p>
11:30 (:45)	<p>Technical Work Group Report—Triennial Budget Process Development: Vineetha Kartha, TWG Chair</p> <ul style="list-style-type: none"> ▪ Presentation (15 minutes) ▪ Q&A, discussion, and action (30 minutes) 	<p>TWG Report</p>
12:15 (1:30)	LUNCH	

START TIME ¹ (Duration)	Wednesday, August 24, 2016 Topic and Presenter and Purpose ²	Materials/ Tabs
1:45 (:45)	<p>Basin Hydrology and Water Year 2017 Hydrograph: Paul Davidson, Bureau of Reclamation; Vineetha Kartha, TWG Chair</p> <ul style="list-style-type: none"> ▪ Presentation (30 minutes) ▪ Q&A, discussion, and action (15 minutes) <p><u>Motion Recommended by the TWG: Please see page 2 of the Agenda Item Form.</u></p>	Basin Hydrology & Hydrograph
2:30 (:15)	<p>Science Advisors Charter and Protocols Government-to-Government Consultations Update: Katrina Grantz, Bureau of Reclamation</p> <ul style="list-style-type: none"> ▪ Presentation (10 minutes) ▪ Q&A, discussion (5 minutes) 	Science Advisors
2:45 (:45)	<p>Science Advisors Program—2016 Accomplishments and 2017 Plans: David Braun, GCDAMP Science Advisors</p> <ul style="list-style-type: none"> ▪ Presentation (20 minutes) ▪ Q&A, discussion (25 minutes) 	Science Advisors
3:30 (:15)	BREAK	
3:45 (1:00)	<p>GCMRC Science Updates: Paul Grams and Scott VanderKooi, Grand Canyon Monitoring and Research Center</p> <ul style="list-style-type: none"> ▪ Presentation (45 minutes) ▪ Questions, responses, and discussion (15 minutes) 	Science Updates
4:45 (:15)	Public Comment	
5:00	<p>ADJOURN FOR THE DAY Please fill out evaluation form if you will not return tomorrow.</p>	

¹ Every effort will be made to adhere to the schedule and agenda, but on occasion, for unforeseen reasons, some modifications may occur.

² Action may be by consensus or a vote; and either may be a recommendation to the Secretary of the Interior or feedback to presenter(s) or to subordinate groups.

Glen Canyon Dam Adaptive Management Program
Adaptive Management Work Group Meeting, August 24-25, 2016
 Little America Flagstaff, 2515 E. Butler Avenue, Flagstaff, AZ 86004, 800.352-4386

Thursday, August 25, 2016

Webinar Information: <https://ucbor-events.webex.com/ucbor-events/onstage/g.php?MTID=e945c56b7c64072f355cdd9c6d03b7de7>

Phone: 877-913-4721 Passcode: 3330168

D R A F T A G E N D A

START TIME ¹ (Duration)	Thursday, August 25, 2016 Topic, Presenter, and Purpose ²	Materials/ Tabs
8:30 (:10)	Welcome and Administrative: Brent Rhees, Regional Director, Bureau of Reclamation and Secretary's Designee's Alternate <ul style="list-style-type: none"> ▪ Introductions and Determination of Quorum (13 members) 	Agenda
8:40 (:45)	Basin Fund and Revenue Overview: Lynn Jeka, Western Area Power Administration <ul style="list-style-type: none"> ▪ Presentation (30 minutes) ▪ Questions, responses, and discussion (15 minutes) 	Basin Fund
9:25 (:30)	Federal -Tribal Liaison Report: Dr. Sarah Rinkevich, Federal Tribal Liaison for the Glen Canyon Dam Adaptive Management Program <ul style="list-style-type: none"> ▪ Presentation (20 minutes) ▪ Q&A, discussion (10 minutes) 	Federal Liaison Report
9:55 (:15)	BREAK	
10:10 (:30)	Stakeholder's Perspective: The River of Never-Ending Life—Cultural Resources from Navajo: Melinda Arviso-Ciocco, AMWG Alternate, Navajo Nation <ul style="list-style-type: none"> ▪ Presentation (20 minutes) ▪ Q&A, discussion (10 minutes) 	Stakeholder's Perspective
10:40 (1:00)	GCMRC Science Presentations <ul style="list-style-type: none"> ▪ Sandbar Modeling Project Update: Erich R. Mueller, Research Hydrologist, U.S. Geological Survey, GCMRC ▪ Aquatic Foodbase of the Little Colorado River: Jeff Muehlbauer, USGS Research Ecologist ▪ Science behind High Flow Experiment Planning: David Topping, Research Hydrologist, U.S. Geological Survey, GCMRC <ul style="list-style-type: none"> ○ Presentation (15 minutes each) ○ Q&A, discussion (5 minutes each) 	Science Updates

START TIME ¹ (Duration)	Thursday, August 25, 2016 Topic, Presenter, and Purpose ²	Materials/ Tabs
11:40 (1:30)	LUNCH	
1:10 (1:30)	Long-Term Experimental Management Plan (LTEMP) Environmental Impact Statement (EIS) Update and Science Plan: Katrina Grantz, Bureau of Reclamation; Rob Billerbeck, National Park Service; Scott VanderKooi, Grand Canyon Monitoring and Research <ul style="list-style-type: none"> ▪ LTEMP EIS update (30 minutes) ▪ Q&A and discussion (15 minutes) ▪ Science Plan presentation (30 minutes) ▪ Q&A and discussion (15 minutes) 	LTEMP
2:40 (:10)	Public Comment	
2:50 (:10)	Wrap-up: Brent Rhees, Regional Director, Bureau of Reclamation and Secretary's Designee's Alternate <ul style="list-style-type: none"> ▪ Please fill out the meeting evaluation sheet at your place. ▪ Next AMWG meeting dates: <ul style="list-style-type: none"> ○ February 15-16, 2017 (NOTE: THIS IS A CHANGE) ○ May 24, 2017 (webinar) ○ August 30-31, 2017 	
3:00	ADJOURN	

¹ Every effort will be made to adhere to the schedule and agenda, but on occasion, for unforeseen reasons, some modifications may occur.

² Action may be by consensus or a vote; and either may be a recommendation to the Secretary of the Interior or feedback to presenter(s) or to subordinate groups.

**Draft Minutes/
Action Items**

**Glen Canyon Dam Adaptive Management Work Group Meeting
May 25, 2016**

Summary of Actions Taken

The AMWG reached consensus on the following actions during this meeting:

- AMWG approves the minutes of February 24-25, 2016, meeting.

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**May 25, 2016**

**Start Time: 9 a.m. (MDT)**

**Conducting:** Jennifer Gimbel, DOI, Principal Deputy Assistant Secretary for Water and Science

**Facilitator:** Mary Orton, The Mary Orton Company, LLC

**Committee Members/Alternates:**

Melinda Arviso-Ciocco, Navajo Nation  
Jan Balsom, National Park Service (GRCA)  
Eric Bobelu, Pueblo of Zuni  
Chris Cantrell, Arizona Game & Fish Department  
Kerry Christensen, Hualapai Tribe  
Kevin Dahl, National Parks Conservation Assoc.  
Jayne Harkins, State of Nevada  
Chris Harris, State of California  
Leslie James, CREDA

Sam Jansen, Grand Canyon River Guides  
Lynn Jeka, Western Area Power Administration  
John Jordan, Int'l Federation of Fly Fishers & TU  
Vineetha Kartha, State of Arizona  
Daniel Picard, U.S. Bureau of Reclamation  
Steve Spangle, U.S. Fish and Wildlife Service  
Larry Stevens, Grand Canyon Wildlands Council  
Steve Wolff, State of Wyoming

**Committee Members Absent:**

Charley Bulletts, Southern Paiute Consortium  
Tom Buschatzke, State of Arizona  
James deVos, Arizona Game and Fish Department  
Deborah Dixon, State of New Mexico  
Dawn Hubbs, Hualapai Tribe  
Leigh Kuwanwisiwma, Hopi Tribe  
Ora Marek-Martinez, Navajo Nation

John McClow, State of Colorado  
Eric Millis, State of Utah  
David Nimkin, National Parks Conservation Assoc.  
Don Ostler, State of Wyoming  
Ted Rampton, UAMPS  
Tanya Trujillo, State of California  
VACANT, San Juan Southern Paiute Tribe

**USGS/Grand Canyon Monitoring and Research Center**

Helen Fairley, Program Manager

Scott VanderKooi, Chief, GCMRC

**Interested Persons, TWG Members, and Alternates:**

Steven Anderson, U.S. Geological Survey  
Adam Arellano, WAPA  
Tara Ashby, U.S. Bureau of Reclamation  
Rob Billerbeck, National Park Service  
David Braun, Sound Science LLC  
Dan Bunk, U.S. Bureau of Reclamation  
Kathleen Callister, U.S. Bureau of Reclamation  
Shane Capron, WAPA/TWG Vice Chair •  
Bill Chada, U.S. Bureau of Reclamation  
Rick Clayton, U.S. Bureau of Reclamation  
Marianne Crawford, U.S. Bureau of Reclamation  
Winkie Crook, Hualapai Tribe  
Paul Davidson, U.S. Bureau of Reclamation  
Kurt Dongoske, Pueblo of Zuni  
Craig Ellsworth, WAPA  
Katrina Grantz, U.S. Bureau of Reclamation  
Jessica Gwinn, U.S. Fish & Wildlife Service  
John Hamill, Int'l Federation of Fly Fishers & TU  
Paul Harms, State of New Mexico  
Jeffrey Inwood, Arizona Dept. of Water Resources  
Lisa Meyer, WAPA

Jill Nagode, U.S. Bureau of Reclamation  
Jessica Neuwerth, State of California  
Brent Rhees, U.S. Bureau of Reclamation  
Sarah Rinkevich, DOI Federal Tribal Liaison  
Peggy Roefer, State of Nevada (CRC)  
Monica Richards, Tri-State  
Marty Rozelle, The Mary Orton Company, LLC  
Kendra Russell, U.S. Bureau of Reclamation  
Sarah Ryker, DOI/Water and Science  
Brian Sadler, Western Area Power Administration  
Randy Seaholm, State of Colorado  
Seth Shanahan, State of Nevada (SNWA)  
Angela Slaughter, State of Nevada (CRC)  
Rodney Smith, DOI/Solicitor's Office  
Rosemary Sucec, NPS (GLCA)  
Justin Tade, DOI/Solicitor's Office  
Shana Tighi, U.S. Bureau of Reclamation  
Jason Tucker, U.S. Bureau of Reclamation  
Warren Turkett, State of Nevada (CRC)  
Kathy Tyer (WAPA)

**Recorder:** Linda Whetton, Reclamation

**Welcome and Administrative.** Ms. Gimbel, Secretary's Designee, welcomed the members and general public.

- Introductions were made and a quorum was determined to be present.
- Approval of February 24-25, 2016, Meeting Minutes. Motion proposed by Mr. Wolff, seconded by Mr. Harris. The minutes were approved by consensus.
- Action Item Tracking Report (**Attachment 1**).
- Update on Recruitments: GCMRC Deputy Chief - Mr. VanderKooi. The position will be re-advertized in early June.
- LTEMP Update – Ms. Grantz. The Draft EIS was published on January 8 and the public period comment closed on May 9. Approximately 3,000 comments were received and most were generally supportive of the Preferred Alternative but some with caveats related to the Low Summer Steady Flows experiment and potential impacts to hydropower. The goal is to have a Final EIS by August 30 and a Record of Decision by September 30.
- Progress on Nominations and Reappointments: Mr. Uberuaga will retire at the end of the month; his alternate Ms. Jan Balsom has stepped in. Mr. Kowalski (alternate) terminated from the State of Colorado. Ms. Jessica Gwinn was appointed the TWG alternate for USFWS and Mr. Jeffrey Inwood as the TWG alternate for the State of Arizona on a temporary basis.

**Basin Hydrology and WY 2017 Hydrograph** (**Attachment 2**) – Mr. Davidson. Basin snowpack peaked at 94% on April 2<sup>nd</sup> 2016. The current forecast for April to July most probable unregulated inflow is 5.5 maf (77%). The forecast ranges from a minimum probable of 3.85 maf (54%) and maximum probable of 7.65 maf (107%). The water year 2016 operating tier for Lake Powell was set in August 2015 as the upper elevation balancing tier. Lake Powell is currently projected to release 9.0 maf. In water year 2016, Reclamation is using the approved 2016 hydrograph.

**GCD Maintenance Schedule.** For 2016, five to seven units are expected to be available at any time and Reclamation anticipates having enough capacity to meet the scheduled releases for 2016. For 2017, one unit is anticipated to be down for maintenance with seven units available for a potential November 2016 HFE.

**WY2017 Proposed Hydrograph.** The proposed water year 2017 hydrograph is the same as the approved water year 2016 hydrograph which targets lower August and September release, reallocating water from those months to other equal value months for hydropower, mainly December and January, and avoids shifting water to June. The 2017 projected annual releases are: minimum probable at 8.23 maf, most probable at 9.0 maf, and maximum probable at 11.91 maf. The current water year 2017 hydrograph proposal is:

| <b>Annual Release Volume</b> | <b>June</b>       | <b>August</b>   | <b>September</b> |
|------------------------------|-------------------|-----------------|------------------|
| Less than 9.0 maf            | 600 kaf – 650 kaf | 800 kaf         | 600 kaf          |
| 9.0 maf – less than 9.5 maf  | 800 kaf           | 900 kaf         | 700 kaf          |
| 9.5 maf – less than 10 maf   | 900 kaf           | 900 kaf         | 700 kaf          |
| 10 maf and greater           | 900 kaf or more   | 900 kaf or more | 800 kaf or more  |

**Federal Advisory Committee Act Overview: FACA 101 – Managing People and Process**

(**Attachment 3**) – Ms. Jill Nagode. As follow-up to the AMP Assessment Report presented at the last meeting, Ms. Nagode presented an overview of the Federal Advisory Committee Act (FACA) of 1972, focusing on how the statute requires that Federal advisory committees such as the AMWG be organized, and the committees' role, purview, and processes. The Department of the Interior has 112 Federal advisory committees including the AMWG, which was established in 1997 and is renewed every two years.

Ms. Nagode also explained Departmental roles and contacts for FACA processes. The Department's Committee Management Officer, Margaret Triebisch, coordinates with GSA and general counsel. Ms. Nagode serves as BOR's Federal Group Officer and is responsible for working between all the committees. She coordinates closely on nominating AMWG members and alternates and updating

members' resumes. The Designated Federal Official (Jennifer Gimbel) works closely with the Secretary's Designee (also Jennifer Gimbel), who makes recommendations to the Secretary of the Interior.

**Law of the River (Attachment 4)** – Mr. Rod Smith. As follow-up to the AMP Assessment Report presented at the last meeting, Mr. Smith presented an overview of the Law of the River including the 1922 Colorado River Compact and interactions with water use, moving water in the Upper and Lower Basins and Mexico, tribal water rights, and Glen Canyon Dam operations.

Mr. Smith gave an overview of the Long-Range Operating Criteria (LROC) and related criteria for moving water between Lake Powell and Lake Mead. He also touched on the 2007 Interim Guidelines, the CRSP Act of 1956, and the Grand Canyon Protection Act of 1992.

**Science Advisors: Charter, Protocols, and FY17 External Review Topics (Attachment 5)** – Dr. David Braun. The executive coordinator of the Science Advisor Program is establishing a work plan to guide future efforts. A proposed activity for FY2017 is an external review panel to look at best practices for incorporating Native American traditional knowledge into the AMP.

**Comments:**

- *The Hualapai Tribe will be requesting formal government-to-government consultation on the makeup of the pane on incorporating traditional knowledges. In a conversation with Charley Bullets (Southern Paiute Consortium), Ms. Rinkevich said they also desire govt-to-govt consultation with Reclamation.*
- *The Pueblo of Zuni will also submit a request for govt-to-govt consultation. Reclamation requested the request in writing. The Department appreciates the opportunity to talk with the tribes.*

Ms. Gimbel suggested the tribes edit the Charter to include words that would meet their needs.

**FY 2017 Budget and Work Plan** – Mr. Capron. He noted the budget process table previously approved is being updated again. Following the April TWG meeting, input was sought from other ad hoc groups and will be discussed on a future BAHG call. The BAHG will develop a recommendation for the TWG that they'll consider in June and the TWG will make a recommendation to the AMWG at its August meeting.

**Bureau of Reclamation FY17 Budget (Attachment 6a)** – Ms. Katrina Grantz. In the FY15 budget, Reclamation prepared the budget using a 3% CPI rate. The CPI for 2015 came in at 1.7% rate so there was a reduction between what was originally planned for and the final amount. The FY16 was prepared using a 3% CPI rate but will probably end up around 0%. Based on internal discussions, future budgets will be prepared using 0% to allow for additional funds if the CPI rate comes in higher.

**GCMRC FY2017 Proposed Budget (Attachment 6b)** – Mr. Scott VanderKooi. The FY17 budget is proposed to be \$9,286,900 with \$186,000 from other Reclamation funding. Their overhead rates were projected to go up in anticipation of GCMRC moving into a new facility. Construction on the new facility should start in 2017 with occupancy in 2018. Recognizing there were shortfalls in the FY16 and FY17 budgets, they made the decision to budget in a shortfall. With the delay in the building of the new facility, the overhead rates have declined which help make up for the shortfall.

**AMWG Next Steps** - Ms. Jennifer Gimbel thanked everyone for their participation. Upcoming items for the AMWG August meeting will include approval of: 1) the FY17 Budget and Workplan, 2) Water Year 2017 Hydrograph, and 3) Science Advisor Charter, Protocols and 2017 Work Plan. Additional agenda items need to be sent to Linda Whetton by June 1.

Since the AMWG August meeting will be held in August in Flagstaff, GCMRC will be hosting a river style cookout at their boathouse on Wednesday, August 24. More details to follow.

**Public Comment:** None

**Adjourned:** 11:41 a.m.

**Remaining 2016 Meetings:**

- June 14-15, 2016 – TWG Meeting/WebEx in Salt Lake City UT
- Aug 24-25, 2016 – AMWG meeting in Flagstaff, Arizona

AMWG Meetings in 2017:

- February 15-16, 2017 (Phoenix, AZ)
- May 24, 2017 (webinar)
- August 30-31, 2017 (Flagstaff, AZ)

Respectfully submitted,

Linda Whetton  
Bureau of Reclamation  
Upper Colorado Region

## Key to Glen Canyon Dam Adaptive Management Program Acronyms

|                                                   |                                                                  |
|---------------------------------------------------|------------------------------------------------------------------|
| ADWR – Arizona Dept. of Water Resources           | HMF – Habitat Maintenance Flow                                   |
| AF – Acre Feet                                    | HPP – Historic Preservation Plan                                 |
| AGFD – Arizona Game and Fish Department           | IG – Interim Guidelines                                          |
| AIF – Agenda Information Form                     | INs – Information Needs                                          |
| AMP – Adaptive Management Program                 | KA – Knowledge Assessment (workshop)                             |
| AMWG – Adaptive Management Work Group             | KAS – Kanab Ambersnail (endangered native snail)                 |
| AOP – Annual Operating Plan                       | LCR – Little Colorado River                                      |
| ASMR – Age-Structure Mark Recapture               | LCRMCP – Lower Colorado River Multi-Species Conservation Program |
| BA – Biological Assessment                        | LTEMP – Long-Term Experimental and Management Plan               |
| BAHG – Budget Ad Hoc Group                        | LTEP – Long Term Experimental Plan                               |
| BCOM – Biological Conservation Measure            | MAF – Million Acre Feet                                          |
| BE – Biological Evaluation                        | MA – Management Action                                           |
| BHBF – Beach/Habitat-Building Flow                | MATA – Multi-Attribute Trade-Off Analysis                        |
| BHMF – Beach/Habitat Maintenance Flow             | MLFF – Modified Low Fluctuating Flow                             |
| BIA – Bureau of Indian Affairs                    | MO – Management Objective                                        |
| BO – Biological Opinion                           | MRP – Monitoring and Research Plan                               |
| BOR – Bureau of Reclamation                       | NAU – Northern Arizona University (Flagstaff, AZ)                |
| BWP – Budget and Work Plan                        | NEPA – National Environmental Policy Act                         |
| CAHG – Charter Ad Hoc Group                       | NHPA – National Historic Preservation Act                        |
| CAP – Central Arizona Project                     | NNFC – Non-native Fish Control                                   |
| GCT – Grand Canyon Trust                          | NOI – Notice of Intent                                           |
| CESU – Cooperative Ecosystems Studies Unit        | NPCA – National Parks Conservation Association                   |
| cfs – cubic feet per second                       | NPS – National Park Service                                      |
| CFMP – Comprehensive Fisheries Management Plan    | NRC – National Research Council                                  |
| CMINS – Core Monitoring Information Needs         | O&M – Operations & Maintenance (Reclamation Funding)             |
| CMP – Core Monitoring Plan                        | PA – Programmatic Agreement                                      |
| CPI – Consumer Price Index                        | PBR – Paria to Badger Creek Reach                                |
| CRBC – Colorado River Board of California         | PEP – Protocol Evaluation Panel                                  |
| CRAHG – Cultural Resources Ad Hoc Group           | POAHG – Public Outreach Ad Hoc Group                             |
| CRCN – Colorado River Commission of Nevada        | Powerplant Capacity = 31,000 cfs                                 |
| CRE – Colorado River Ecosystem                    | R&D – Research and Development                                   |
| CREDA – Colorado River Energy Distributors Assn.  | RBT – Rainbow Trout                                              |
| CRSP – Colorado River Storage Project             | RFP – Request for Proposal                                       |
| CWCB – Colorado Water Conservation Board          | RINs – Research Information Needs                                |
| DAHG – Desired Future Conditions Ad Hoc Group     | ROD Flows – Record of Decision Flows                             |
| DASA – Data Acquisition, Storage, and Analysis    | RPA – Reasonable and Prudent Alternative                         |
| DBMS – Data Base Management System                | SA – Science Advisors                                            |
| DOE – Department of Energy                        | Secretary – Secretary of the Interior                            |
| DOI – Department of the Interior                  | SCORE – State of the Colorado River Ecosystem                    |
| DOIFF – Department of the Interior Federal Family | SHPO – State Historic Preservation Office                        |
| EA – Environmental Assessment                     | SOW – Statement of Work                                          |
| EIS – Environmental Impact Statement              | SPAHG – Strategic Plan Ad Hoc Group                              |
| ESA – Endangered Species Act                      | SPG – Science Planning Group                                     |
| FACA – Federal Advisory Committee Act             | SSQs – Strategic Science Questions                               |
| FEIS – Final Environmental Impact Statement       | SWCA – Steven W. Carothers Associates                            |
| FRN – Federal Register Notice                     | TCD – Temperature Control Device                                 |
| FWS – United States Fish & Wildlife Service       | TCP – Traditional Cultural Property                              |
| FY – Fiscal Year (October 1 – September 30)       | TEK – Traditional Ecological Knowledge                           |
| GCD – Glen Canyon Dam                             | TES – Threatened and Endangered Species                          |
| GCES – Glen Canyon Environmental Studies          | TMC – Taxa of Management Concern                                 |
| GCT – Grand Canyon Trust                          | TMF – Trout Management Flows                                     |
| GCMRC – Grand Canyon Monitoring & Research Center | TWG – Technical Work Group                                       |
| GCNP – Grand Canyon National Park                 | UCRC – Upper Colorado River Commission                           |
| GCNRA – Glen Canyon Nat'l Recreation Area         | UDWR – Utah Division of Water Resources                          |
| GCPA – Grand Canyon Protection Act                | USBR – United States Bureau of Reclamation                       |
| GLCA – Glen Canyon Nat'l Recreation Area          | USFWS – United States Fish & Wildlife Service                    |
| GRCA – Grand Canyon National Park                 | USGS – United States Geological Survey                           |
| GCRG – Grand Canyon River Guides                  | WAPA – Western Area Power Administration                         |
| GCWC – Grand Canyon Wildlands Council             | WY – Water Year                                                  |
| HBC – Humpback Chub (endangered native fish)      |                                                                  |
| HFE – High Flow Experiment                        |                                                                  |



**GLEN CANYON DAM ADAPTIVE MANAGEMENT WORK GROUP  
ACTION ITEM TRACKING REPORT**

Updated: May 29, 2016

Note: Items marked “Closed” will be removed from the next iteration of the report.

| ITEM No. / DATE  | ACTION ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ASSIGNED To / DUE DATE  | STATUS |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------|
| Item 2006.Dec.02 | <p>Secretary’s Designee Limbaugh directed the Roles AHG to address Dr. Garrett's recommendations:</p> <ol style="list-style-type: none"> <li>1. Develop improved methods and/or procedures for managers to establish and articulate priorities for specific 3-5 year time intervals.</li> <li>2. Develop improved methods for managers and scientists to permit effective tradeoff assessments.</li> <li>3. Develop more effective scientist/managers collaborative working procedures.</li> <li>4. Implement methods to monitor and improve the adaptive management process.</li> <li>5. Implement methods to define future conditions for the CRE resources of concern.</li> </ol> <p><b>2/19/14 Update:</b> This will remain open as some items may evolve as the LTEMP EIS nears completion and have a better idea of where the science priorities are going as a result of the new long-term plan.</p> | Roles Ad Hoc Group      | Open   |
| Item 2012.Aug.01 | <p>Glen Knowles will work with Anne Castle to compare the 2004 AMWG/TWG priorities and the Secretary’s Designee’s priorities as established in 2011. The Secretary’s Designee will report to AMWG on the results of this comparison.</p> <p><b>2/19/14 Update:</b> The science plan for the LTEMP EIS will establish the science priorities looking forward and is an independent process from the AMWG. Upon completion of the LTEMP, the AMWG would reconsider science priorities to integrate with the LTEMP and a possible referral to the TWG.</p>                                                                                                                                                                                                                                                                                                                                                     | G. Knowles<br>A. Castle | Open   |



**Budget**



**Glen Canyon Dam Adaptive Management Work Group  
Agenda Item Form  
August 24-25, 2016**

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Agenda Item

Fiscal Year (FY) 2017 Budget and Work Plan

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Purpose of Agenda Item

To send a recommendation to the Secretary of the Interior regarding the FY 2017 Glen Canyon Dam Adaptive Management Program (GCDAMP) budget and work plan.

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Action Requested

Motion requested. The following proposed motion is based on the recommendation from the Technical Work Group (TWG). However, no motion is presumed to be made unless and until an AMWG member makes the motion in accordance with the AMWG Operating Procedures.

AMWG recommends to the Secretary of the Interior her approval of the GCDAMP FY 2017 budget as described in the two tables (attached) from the Bureau of Reclamation and the Grand Canyon Monitoring and Research Center. AMWG also requests TWG to further review the FY 2017 budget after issuance of the Long-Term Experimental and Management Plan Record of Decision (ROD); to determine if budget and/or work plan changes may be needed as a result of the ROD. AMWG acknowledges that tribal representatives will work with the Bureau of Reclamation on the implementation of its budget items D.2.5 through D.2.8.

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Presenters

Katrina Grantz, Adaptive Management Group Chief, Bureau of Reclamation, Upper Colorado Region

Vineetha Kartha, AMWG alternate from Arizona and TWG Chair

Scott VanderKooi, Chief, Grand Canyon Monitoring and Research Center (GCMRC)

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Previous Action Taken

- ✓ **June 14, 2016** – TWG passed the following motion by consensus:  
TWG recommends that the AMWG recommend to the Secretary of the Interior her approval of the GCDAMP FY 2017 budget as described in the two tables (attached) from the Bureau of Reclamation and the Grand Canyon Monitoring and Research Center. TWG further requests that AMWG give TWG the opportunity to further review the FY 2017 budget after issuance of the LTEMP ROD, to determine if budget and/or work plan changes may be needed as a result of the ROD. Further, tribal representatives will work with the Bureau of Reclamation on the implementation of its budget items D.2.5 through D.2.8.
- ✓ **September 29, 2014** – Secretary Jewell approved the FY 2015-17 Triennial Budget and Work Plan.
- ✓ **August 28, 2014** – AMWG Motion: AMWG recommends the FY 2015-17 Triennial Budget and Work Plan from the Bureau of Reclamation and the Grand Canyon Monitoring and Research

Center, as presented to the AMWG at their meeting August 27-28, 2014, to the Secretary of the Interior for approval. Motion passed by consensus.

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Relevant Science and Background Information

- Final FY 2015-17 Budget and Work Plan (approved by the AMWG on August 28, 2014):  
[http://www.usbr.gov/uc/rm/amp/amwg/mtgs/14aug27/Attach\\_06f.pdf](http://www.usbr.gov/uc/rm/amp/amwg/mtgs/14aug27/Attach_06f.pdf)
- Report and Recommendations Memo from Secretary's Designee Anne Castle to DOI Secretary Sally Jewell (dated Sept. 29, 2014):  
[http://www.usbr.gov/uc/rm/amp/amwg/mtgs/14aug27/Attach\\_11.pdf](http://www.usbr.gov/uc/rm/amp/amwg/mtgs/14aug27/Attach_11.pdf)

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Summary of Presentation and Background Information

While the GCDAMP FY 2015-17 Triennial Budget and Work Plan (TWP) was recommended by the AMWG and approved by the Secretary in 2014, the AMWG is still required to provide a recommendation on a budget to the Secretary of the Interior every year to be consistent with the Federal budget process and the approved GCDAMP budget process (2010).

The TWG Budget Ad Hoc Group (BAHG) is tasked to initiate this activity and to make a recommendation to the full TWG. The BAHG, chaired by Shane Capron, requested input on the FY 2017 budget from the full TWG. Those items were discussed at two conference calls. The BAHG report (consisting of notes from the two calls) describes the details of each comment or issue as well as the resolution of that issue. The BAHG was able to resolve all issues, except for a few that needed further discussion or that involved use of the bypass tubes at Glen Canyon Dam. The latter was seen as out of the scope for the FY 2017 budget discussion and was moved to Reclamation for their consideration and input to TWG at its October meeting.

On June 14, 2016 the full TWG considered the recommendation from the BAHG and agreed to recommend the FY 2017 budget to AMWG as it was presented by Reclamation and GCMRC.

The only changes to the budget for FY 2017 from that which was approved in 2014 involve Consumer Price Index (CPI), which allows the GCDAMP budget to increase with inflation, and overhead rates.

The budget was originally developed with a projected CPI of 3.0%. In October 2014, CPI was actualized at 1.7%. The original estimate of the FY 2015 budget at projected CPI of 3.0% of \$10,892,444 was reduced to the actual CPI of 1.7%, \$10,754,967. In October 2015, CPI was actualized at 0%. The original estimate of the FY 2016 budget at projected CPI of 3.0% of \$11,219,217 has been reduced to the actual CPI of 0%, \$10,754,967. To take a conservative approach to funding in FY 2017, Reclamation and GCMRC are projecting a CPI of 0%. This results in a projected budget of \$10,754,967 versus the original estimate of \$11,555,794 at a CPI of 3%.

USGS overhead rates for FY 2015, 2016, and 2017 have been revised downward, due to lower than anticipated lease costs. GSA, on behalf of USGS, has renegotiated lease rates with the City of Flagstaff for current facilities until the new USGS building is constructed and occupied. The FY 2015 and 2016 rates decreased from the initial estimates of 15.6% and 21.3% to approximately 13.6% and 11.9%. The FY 2017 rate was estimated to be 27.4%, but is now projected to be about

12%. Reclamation and GCMRC will discuss the effects of changes in the CPI and USGS overhead rates on the budget, as well as any other potential changes for FY 2017.

| <b>Reclamation - Adaptive Management Program Budget Summary</b> |                                                                                    | 2017<br>(assumes 0% CPI) |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------|
| <b>A</b>                                                        | <b>Adaptive Management Work Group</b>                                              | <b>\$ 375,000</b>        |
| A.1                                                             | AMWG Reclamation Personnel Costs (Labor & Burden)                                  | \$ 194,000               |
| A.2                                                             | AMWG Member Travel Reimbursement                                                   | \$ 15,000                |
| A.3                                                             | AMWG Reclamation Travel                                                            | \$ 16,000                |
| A.4                                                             | AMWG Facilitation Contract                                                         | \$ 79,000                |
| A.5                                                             | Public Outreach (POAHG Expenses - Labor, Burden & Travel)                          | \$ 62,000                |
| A.6                                                             | AMWG Other                                                                         | \$ 9,000                 |
| <b>B</b>                                                        | <b>Technical Working Group</b>                                                     | <b>\$ 169,000</b>        |
| B.1                                                             | TWG Reclamation Personnel Costs (Labor & Burden)                                   | \$ 96,000                |
| B.2                                                             | TWG Member Travel Reimbursement                                                    | \$ 23,000                |
| B.3                                                             | TWG Reclamation Travel                                                             | \$ 16,000                |
| B.4                                                             | TWG Chair Reimbursement/Facilitation                                               | \$ 32,000                |
| B.5                                                             | TWG Other                                                                          | \$ 2,000                 |
| <b>C</b>                                                        | <b>Reclamation Administration</b>                                                  | <b>\$ 783,000</b>        |
| C.1                                                             | Administrative Support for NPS Permitting                                          | \$ 134,000               |
| C.2                                                             | Contract Administration                                                            | \$ 45,000                |
| C.3                                                             | Science Advisor Contract (FY16 contract includes carryover from FY15)              | \$ 74,000                |
| C.4                                                             | Experimental Carryover Funds                                                       | \$ 530,000               |
| C.5                                                             | Installation of Acoustic Flow Meters                                               | \$ -                     |
| C.6                                                             | Native Fish Conservation Contingency Fund Balance                                  | \$ 1,595,000             |
| <b>D</b>                                                        | <b>Cultural Resources</b>                                                          | <b>\$ 753,000</b>        |
| D.1                                                             | Cultural Resources Program Management                                              | \$ 133,000               |
| D.2                                                             | Cultural Resources Work Plan                                                       | \$ 460,000               |
|                                                                 | <i>D.2.1 Long-term Monitoring Program for Terrestrial and Submerged CR</i>         | \$ 104,000               |
|                                                                 | <i>D.2.2 Zuni Associative Values (FY16 contract includes carryover from FY15)</i>  | \$ -                     |
|                                                                 | <i>D.2.3 Funds to Support USGS4</i>                                                | \$ 173,000               |
|                                                                 | <i>D.2.4 TEK Ecological Restoration Project</i>                                    | \$ 96,000                |
|                                                                 | <i>D.2.5 Tribal Synthesis</i>                                                      | \$ 48,000                |
|                                                                 | <i>D.2.6 Annual Integrated River Trip: An Exchange of Values and World-Views</i>   | \$ 29,000                |
|                                                                 | <i>D.2.7 Nonnative Fish Removal Consultation</i>                                   | \$ 10,000                |
|                                                                 | <i>D.2.8 Tribal Preparation of Paperwork for DOE of Grand Canyon to NR</i>         | \$ -                     |
| D.3                                                             | Integrated Tribal Resources Monitoring                                             | \$ 160,000               |
|                                                                 | <b>Reclamation Power Revenue Costs - Total</b>                                     | <b>\$ 3,675,000</b>      |
|                                                                 | <b>Reclamation Power Revenue Costs - w/o carryover</b>                             | <b>\$ 2,080,000</b>      |
| D.4                                                             | Tribal Participation in the GCDAMP (5 tribes at \$95,000) - (Appropriated funding) | \$ 475,000               |
|                                                                 | <b>Reclamation Program Costs - Total (includes appropriated funding)</b>           | <b>\$ 4,150,000</b>      |
|                                                                 | <b>Reclamation Program Costs - w/o carryover (includes appropriated funding)</b>   | <b>\$ 2,555,000</b>      |

## Grand Canyon Monitoring and Research Center FY 2017 Project Budgets

| Project Number | Project Title                                                                                 | FY 2017 Requirements<br>(with revised overhead) |
|----------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------|
| 2              | Stream Flow, Water Quality, and Sediment Transport                                            | \$1,412,000                                     |
| 3              | Sandbars and Sediment Storage Dynamics                                                        | \$1,325,000                                     |
| 4              | Connectivity Along the Fluvial-Aeolian-Hillslope Continuum                                    | \$530,000                                       |
| 5              | Food Base Monitoring and Research                                                             | \$528,000                                       |
| 6              | Mainstem Colorado River Humpback Chub Aggregations and Fish Community Dynamics                | \$688,000                                       |
| 7              | Humpback Chub in and around the Little Colorado River                                         | \$1,254,000                                     |
| 8              | Experimental Actions to Increase Abundance and Distribution of Native Fishes                  | \$278,000                                       |
| 9              | Rainbow Trout in Glen and Marble Canyons                                                      | \$536,000                                       |
| 10             | Mapping and Assessment of Aquatic Habitats below Glen Canyon Dam                              | \$117,000                                       |
| 11             | Riparian Vegetation Studies                                                                   | \$460,000                                       |
| 12             | Dam-Related Effects on the Distribution and Abundance of Selected Culturally-Important Plants | \$ -                                            |
| 13             | Socio-economic Monitoring and Research                                                        | \$335,000                                       |
| 14             | Geographic Information Systems, Services, and Support                                         | \$224,000                                       |
| 15             | Administration and Support                                                                    | \$1,373,000                                     |
| <b>Total</b>   |                                                                                               | <b>\$9,060,000</b>                              |

### FY 2017 Budget (Amounts rounded to nearest \$1,000)

|                                                                       |                    |
|-----------------------------------------------------------------------|--------------------|
| FY 2017 Projects @ 100%<br>(with 12% overhead*)                       | \$9,060,000        |
| Fisheries Monitoring:<br>Juvenile Chub Monitoring<br>(JCM)/Lees Ferry | \$246,000          |
| <b>Total FY 2017 Costs</b>                                            | <b>\$9,306,000</b> |

|                                  |                    |
|----------------------------------|--------------------|
| FY 2017 AMP<br>Funding @ 0% CPI  | \$8,672,000        |
| FY 2017 Cultural<br>Funding      | \$173,000          |
| <b>Total FY 2017<br/>Funding</b> | <b>\$8,845,000</b> |

|                                           |                                                    |
|-------------------------------------------|----------------------------------------------------|
| Projected FY 2017<br>Long/(Short)         | \$8,845,000 minus<br>\$9,306,000 =<br>(\$461,000)* |
| Projected FY 2015-16<br>Carryover Funding | \$652,000*                                         |
| Projected FY 2015-17<br>Long/Short        | \$191,000*                                         |

\*Preliminary & subject to change

# **TWG Report**



**Glen Canyon Dam Adaptive Management Work Group  
Agenda Item Form  
August 24-25, 2016**

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Agenda Item

Technical Work Group (TWG) Report: Triennial Budget Process Development

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Purpose of Agenda Item

To provide an update to AMWG members on the development of the Glen Canyon Dam Adaptive Management Program (GCDAMP) Triennial Budget Process guidance document.

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Action Requested

Information item only; we will answer questions but no action is requested.

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Presenter

Vineetha Kartha, AMWG alternate from Arizona and TWG Chair

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Previous Action Taken

- AMWG approved the GCDAMP Biennial Budget Process on May 6, 2010: [Attach 02b](#)
- Memo from Anne Castle directing TWG and AMWG to update the 2010 GCDAMP Biennial Budget Process to a triennial budget process, dated May 17, 2014 and is attached: [http://www.usbr.gov/uc/rm/amp/amwg/mtgs/14may27/Attach\\_02b.pdf](http://www.usbr.gov/uc/rm/amp/amwg/mtgs/14may27/Attach_02b.pdf)

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Relevant Science

N/A

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Summary of Presentation

In May 2014, the Secretary's Designee directed GCMRC and Reclamation to create a three-year budget and work plan for the GCDAMP for FY15-17, and to work with the AMWG and TWG to create a new process for development of future three-year budget and work plans. While the GCDAMP FY15-17 Triennial Budget and Work Plan (TWP) was completed and approved by the Secretary, the three-year budget process guidance is still in development. As a part of approving the three-year budget process, the TWG at its June 15<sup>th</sup> meeting discussed the budget process. This presentation will outline the budget process and the TWG discussion on the budget process.

**Background**

In 2004, AMWG approved a two-year rolling budget process that helped to provide structure for budget development (see the attached 2010 budget process for details). However, it was a very complicated process that was never fully implemented, and on May 6, 2010, the AMWG directed TWG to develop a non-rolling two-year budget process and to implement that during the 2010-2011 fiscal years.

The goal was to reduce the effort expended on budget development while improving the effectiveness of the Grand Canyon Monitoring and Research Center (GCMRC), TWG, and AMWG. Under the 2010 guidance, the GCDAMP would develop a two-year budget the first year of the process. Then, in the

second year the GCDAMP would revisit only year two of the budget and make relatively minor corrections to allow for changes in projects or potential important new starts not envisioned during the development of the two-year budget. The benefit was that substantial effort was saved in year two of the budget process allowing for time and effort to be used on other endeavors of interest to the GCDAMP. The major components of the process included:

- Two-year budget spreadsheets, work plans, and hydrographs.
- Modifications of the year two budget based on specific criteria.
- Fiscal reporting, including expenditures for the previous fiscal year (mid-year and end end-of year reports).
- Project progress reports, including an annual reporting meeting in January.
- Utilization of the TWG Budget Ad Hoc Group (BAHG) to interface with the Bureau of Reclamation (Reclamation) and GCMRC in developing a draft biennial work plan and hydrograph, and to help the TWG develop budget recommendations for AMWG consideration.

While moving from a single year budget to a biennial budget was a big step forward, many Department of Interior representatives and GCDAMP stakeholders felt that there remained room for improvement. In an effort to improve the efficiency of the GCDAMP and to target limited resources to the highest priorities, it was decided that the GCDAMP needed a budget and workplan that would be even more flexible and resilient. Inefficiencies in the biennial process were discussed at the February 2014 AMWG meeting, as follows. The budget is adopted on a fiscal year basis, meaning that it starts on October 1. The first year's fieldwork typically begins the following summer, and the second fiscal year of the biennial budget begins before the first field season has ended. The biennial process called for the program to begin development of the next biennial work plan during the early part of the second fiscal year, but at that point, the results of the first year's data collection efforts are only just becoming available and have not been subject to much interpretation. As structured in the biennial process, the development of a two-year work plan and budget was not well informed by the most recent science because of the overlap between the timing of field work, the time it takes to process and analyze data, and the time frames of fiscal years and the budget development process.

As a result, the Secretary's Designee in a May 2014 memo directed GCMRC and Reclamation to create a three-year budget and work plan for the GCDAMP for FY 2015-17, and to work with the AMWG and TWG to update the GCDAMP Biennial Budget Process to a three-year, or triennial, budget and work plan.

### **Recent Activities**

While the GCDAMP FY 2015-17 Triennial Budget and Work Plan was completed and approved by the Secretary, the three-year budget process guidance is still in development. The BAHG will provide a recommendation to the TWG, and the TWG will offer a recommendation to the AMWG on this subject, in the coming year.

At its June 15, 2016 meeting, TWG discussed the budget process and heard the following comments from stakeholders regarding guiding documents, budget timeframe, prioritization, and environmental compliance.



# United States Department of the Interior

OFFICE OF THE SECRETARY  
Washington, DC 20240

**MAY 07 2014**

## MEMORANDUM

To: Jack Schmidt,  
Chief, USGS Grand Canyon Monitoring and Research Center  
Glen Knowles,  
Chief, Adaptive Management Group, Reclamation, Upper Colorado Region

From: Anne J. Castle, Secretary's Designee, Assistant Secretary for Water and Science

Subject: Glen Canyon Dam Adaptive Management Program Triennial Budget and Work Plan

This memo provides the strategic direction for the development of the Glen Canyon Dam Adaptive Management Program (GCDAMP) work plan and associated budget, consistent with the priorities of the Secretary of the Interior on ensuring healthy watersheds and sustainable, secure water supplies and with the directives of the Grand Canyon Protection Act. Since development of the last biennial budget and work plan, we have had many conversations about the Adaptive Management Program. The goal of these conversations has been to improve the effectiveness of the GCDAMP. Moving from a single year budget to a biennial budget was a step forward, but the Interior representatives and many GCDAMP stakeholders believe there remains room for improvement based on what we have learned during the last few years. In an era of shrinking federal budgets, we must target our limited resources to the highest priorities, stay sufficiently nimble to respond to changing needs, and make sure that we are funding those activities that continue to address critical questions. We also need to ensure that the impressive collective knowledge, judgment, and experience of the members of the Adaptive Management Work Group (AMWG) are put to the most valuable use.

The GCDAMP needs a budget and work plan process that is flexible and resilient, that maintains the adaptive management focus of the GCDAMP, and that continues efforts to transition from a concentration on large-scale experimental science to increased focus on applied science to inform management actions. In 2010, we adopted a two-year non-rolling process for review of the Grand Canyon Monitoring and Research Center (GCMRC) and Bureau of Reclamation work plan and budget, partly in order to reduce the amount of time spent by the AMWG stakeholders (as well as GCMRC) on detail-level budget issues. Similarly, as recommended by the Institute for Environmental Conflict Resolution, we have refined the role of the AMWG to better utilize the AMWG's expertise and leadership by focusing discussions on policy consultation and more substantive, less-detailed review of individual elements of the budget and work plan. Most AMWG members and interested parties agree that the GCDAMP has been well served by these efforts to "get out of the weeds" on budget issues. By working with the Secretary to delineate more specifically the issues on which the AMWG's advice is requested and focus the agenda on

those science and policy priorities, the AMWG has become more effective at meeting its charge to advise the Secretary on how best to operate Glen Canyon Dam.

There is still room for improvement. As we discussed at our February 2014 AMWG meeting, there are inefficiencies in the biennial process. The budget is adopted on a fiscal year basis, meaning that it starts on October 1. The first year's field work typically begins the following summer, and the second fiscal year of the biennial budget begins before the first field season has ended. The existing schedule calls for the program to begin development of the next biennial work plan during the early part of the second fiscal year, but, at that point, the results of the first year's data collection effort are only just becoming available and have not been subject to much interpretation. Under Dr. Jack Schmidt's leadership, the budget development process is inclusive and transparent, which has been applauded by AMWG and TWG members, but it still requires considerable time and resources. As currently structured, this detailed process for development of the two-year work plan and budget is not well informed by the most recent science because of the overlap between the timing of field work, the time it takes to process and analyze data, and the time frames of fiscal years and the budget development process.

I believe we can improve on our efforts to make the GCDAMP and AMWG more effective by further refining the time GCMRC, Reclamation, the AMWG, and the Technical Work Group (TWG) spend in the budget development process by creating a work plan with a three-year scientific vision on which the annual budgets are based. Nevertheless, a three-year budget process must also recognize that scientific learning and funding availability may require mid-course adjustments.

Accordingly, I am directing GCMRC and Reclamation to develop a three-year scientific work plan and associated budgets for the GCDAMP for fiscal years 2015-2017 and to work with the AMWG and TWG to prepare a triennial budget development timeline and process that can be used in the future. This proposed timeline and process will reflect the priorities and transitions described above. The timeline will also provide target dates for mid-course review of the work plan and budget.

I recognize that it will be a challenge to develop both a three-year budget and work plan as well as a process for the development of future work plans, and I thank you in advance for the effort required. This concept is consistent with the process and planning document that the AMWG approved on May 6, 2010 (when the biennial process was first adopted), which was explicitly intended "to reduce the effort currently expended on the budget process while maintaining a high-quality adaptive management program." By further focusing this process, we will make even more effective use of AMWG, TWG, and Budget Ad Hoc Group (BAHG) members' time. The draft FY 2015-2017 budget and work plan (DBWP) will be developed by GCMRC and Reclamation based on input received from the TWG and Interior agencies and will be organized around the four Desired Future Conditions: Colorado River Ecosystem, Cultural Resources, Recreation, and Hydropower. Reclamation and GCMRC will also consider the recommendations TWG provided following its April 2014 meeting. The DBWP must also be responsive to the outcomes of the LTEMP EIS and be able to provide monitoring and research support for the experimental framework established by the LTEMP. Thus, work plan

development may necessitate modifications late in the process to address LTEMP monitoring and research needs associated with the expected completion of LTEMP later this year.

In my March 31, 2011, memorandum to GCMRC regarding science planning, I identified three main science priorities: science relevant to compliance with the Endangered Species Act, particularly relative to native fish and humpback chub; science informing our compliance with the Grand Canyon Protection Act, especially the sediment resource; and science on non-native fish control and the recreational trout fishery. Our understanding of these issues and the interactions among them has continued to evolve, and these priority issues will be fully analyzed in the LTEMP EIS. Thus, the need for this science continues.

As I also noted in my memorandum, however, it is expected that our concerns about other resources might increase in response to development of Desired Future Conditions and other recommendations. At the time of my 2011 memorandum, it did not appear that there were significant science questions related to cultural resources, although those resources were identified as a high priority for resource management. Subsequently, there have been advancements in understanding about how cultural and archaeological sites are linked to modern river processes and the role of Traditional Ecological Knowledge (TEK) in contributing to scientific understanding and river operations, and the FY13/14 biennial science plan included a research project to help understand that issue. These issues should also be considered priorities.

While LTEMP will address these issues and others, I think these four issues (the three described in my 2011 memo and the evolving issue related to cultural/archaeological resources as linked to modern river processes) are the primary areas where GCMRC should concentrate its scientific resources. It is also important to reiterate that these priorities do not preclude other issues for scientific investigation where such investigation has widespread support and furthers the purposes of the Adaptive Management Program. Additionally, long-term monitoring of core ecosystem components must continue. The challenge of Work Plan development is to develop a robust scientific program within the relevant budget constraints.

Pending development of the triennial timeline and process described above, I suggest the following procedure for moving forward this year: Reclamation and GCMRC will distribute the DBWP to the Budget Ad Hoc Group (BAHG) and TWG prior to their respective meetings in spring 2014. Reclamation and GCMRC will respond to input from the BAHG and TWG in the materials submitted to the TWG at its June meeting. The TWG will provide a budget recommendation to the AMWG for its August meeting that includes the revised triennial budget and work plan development process created by TWG. The Science Advisors will have an opportunity to review the DBWP and the TWG budget process revisions prior to the June TWG meeting and will present its review of these materials at the meeting. The TWG will consider the revised FY2015-2017 work plan and budget materials at its June meeting. That process will allow for any TWG recommendations to the AMWG on significant unresolved issues to be considered at the August AMWG meeting.

This revised work plan process invests the BAHG and TWG with significant responsibility for working closely with GCMRC and Reclamation to resolve detailed or complex issues. The goal

remains to elevate to the AMWG only science and policy issues related to the work plan and budget and avoid detailed discussion of specific line items at the AMWG level.

I greatly appreciate the work that Reclamation and GCMRC have done to improve the process, as well as the thoughtful comments of many AMWG and TWG members on this subject. We all share the goal of utilizing the time and expertise of the AMWG as efficiently as possible for the benefit of the entire Adaptive Management Program. I believe these changes move us in a positive direction, and will make the program more effective.

# Hydrology



**Glen Canyon Dam Adaptive Management Work Group  
Agenda Item Form  
August 24-25, 2016**

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Agenda Item

Basin Hydrology and Water Year (WY) 2017 Hydrograph

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Purpose of Agenda Item

To send a recommended WY 2017 Glen Canyon Dam hydrograph to the Secretary of the Interior.

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Action Requested

Motion requested. The motion (see page 2) is recommended by TWG. However, no motion is officially made unless and until an AMWG member makes the motion in accordance with the AMWG Operating Procedures.

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Presenters

Paul Davidson, Hydraulic Engineer, Bureau of Reclamation, Upper Colorado Region  
Vineetha Kartha, State of Arizona AMWG Alternate and Technical Work Group Chair

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Previous Action Taken

- ✓ **June 14, 2016:** TWG passed the WY 2017 Hydrograph motion by consensus.
- ✓ **August 27, 2015:** At its August 2015 meeting, the AMWG passed a motion to recommend to the Secretary of the Interior her approval of the DOI-DOE Proposed Hydrograph for WY 2016. Previous year hydrographs (water years 2012, 2013, 2014 and 2015) were also recommended by the TWG and the AMWG and approved by the Secretary of the Interior

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Relevant Science

The TWG has been presented with a proposal for the WY 2017 Hydrograph and operational scenarios based on the range of current projected hydrology. The anticipated range of conditions and objectives for 2017 remain similar to previous years, therefore, the targeted approach adopted as the 2012, 2013, 2014, 2015, and 2016 Hydrographs is recommended again for the WY 2017 Hydrograph.

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Summary of Presentation and Background Information

**Basin Hydrology**

The first portion of the presentation is intended to provide pertinent information to AMWG members on current water supply and forecasted hydrologic conditions within the Upper Colorado River Basin. The presentation will focus on projected reservoir conditions and operations at Lake Powell/Glen Canyon Dam for the remainder of WY 2016 and provide an outlook for WY 2017.

**WY 2016 Hydrograph**

The second portion of the presentation will cover the potential range of annual release volumes from Lake Powell in WY 2017 and the proposed WY 2017 Hydrograph, which is unchanged from that which was recommended and approved for WY 2016. Vineetha Kartha, TWG Chair, will provide a brief summary of the TWG deliberation and motion.

**Motion requested:** The following proposed motion is based on the recommendation from the TWG. However, no motion is presumed to be made unless and until an AMWG member makes the motion in accordance with the AMWG Operating Procedures.

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 Modified Low Fluctuating Flow (MLFF) alternative selected by the 1996 ROD and contained in the 1995 FEIS and in compliance with all applicable NEPA compliance documents (HFE EA, NNFC 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 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, the Bureau of 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 DOI/DOE 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



**Glen Canyon Dam Adaptive Management Work Group  
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Agenda Item

Science Advisors Charter and Protocols Government to Government Consultations Update

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Purpose of Agenda Item

To update the AMWG on the progress of the requests from Tribes for government to government consultation regarding the Science Advisors Program's Charter and Protocol.

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Action Requested

Information item only; we will answer questions but no action is requested.

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Presenter

Katrina Grantz, Chief, Adaptive Management Group, Upper Colorado Region, Bureau of Reclamation

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Previous Action Taken

N/A

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Relevant Science

N/A

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Summary of Presentation and Background Information

At the May 2016 AMWG webinar several Tribal representatives expressed concern about the Science Advisors' charter and protocols, the consideration of Tribal perspectives in the program's independent review panels, and the planning process for a review of the cultural resources programs within the GCDAMP. During the webinar, several Tribal representatives asked for government to government consultation with Reclamation and indicated they would be sending a letter of request. Reclamation received letters requesting government to government consultation from the Navajo Nation and the Pueblo of Zuni regarding their expressed concerns on this topic. Reclamation consulted with the Navajo Nation on July 26, 2016 and the Pueblo of Zuni on July 27, 2016 in response to these requests. Other Tribal representatives have verbally expressed that they may be requesting government to government consultation on this matter as well, but that it would be at a later date.

The revisions to the Science Advisors charter and protocol remain in draft form; comments and suggestions on the draft are still being accepted. Until the updated charter and protocol has been approved, the Science Advisors Program will continue to operate under the existing protocol and charter. In particular, pending AMWG approval of the FY17 Science Advisors Program's Budget and Workplan, a review of cultural resources program within the GCDAMP is proposed for FY17.

## Science Advisors Charter and Protocols Update, continued

Tribal involvement is critical to the success of this review from the initial planning stages, through the criteria and selection of panel members, to the implementation and final reporting. Reclamation is committed to the meaningful involvement of Tribal perspectives in this review.

**Glen Canyon Dam Adaptive Management Work Group**  
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Agenda Item

Science Advisors Program—2016 Accomplishments and 2017 Plans

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Purpose of Agenda Item

To provide an update to AMWG members regarding Science Advisors Program FY 2016 activities and plans for FY 2017

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Action Requested

Feedback requested from AMWG members.

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Presenter

David Braun, Executive Coordinator for the Glen Canyon Dam Adaptive Management Program (GCDAMP) Science Advisors Program

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Previous Action Taken

By Bureau of Reclamation: As a result of a competitive bid process, Reclamation chose Dr. David Braun of Sound Science LLC in 2015 as the Executive Coordinator for the GCDAMP Science Advisors Program. The Executive Coordinator acts as a contractor to Reclamation to manage the Science Advisors Program, and carries out these responsibilities under the terms of specific Task Orders authorized by Reclamation. Reclamation has so far authorized four Task Orders for specific work to be undertaken by the Executive Coordinator beginning in August 2015 and continuing through FY 2016.

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Relevant Science

N/A

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Summary of Presentation and Background Information

Science Advisors Program (SAP) Executive Coordinator Activities in FY 2016

- Completed review of all documents that establish the SAP mission and protocols, including the original (2000) Charter, subsequent AMWG-approved amendments, and Reclamation contract terms. Compiled a proposed revised Science Advisor Program Charter and Protocols and submitted it for TWG Steering Committee and then full TWG review, which was to be followed by AMWG review. However, during the TWG review and May 2016 AMWG webinar, GCDAMP participating Tribes expressed concerns about how Native American perspectives could be included in SAP external reviews. Action on the proposed revised charter and protocols has been suspended while Reclamation responds to requests from Tribes for government to government consultation.

- Collaborated with the GCMRC to develop and implement a Protocol Evaluation Panel (PEP) focused on the GCDAMP fisheries monitoring and research program. A report on the PEP from the GCMRC Chief is also on the agenda for this AMWG meeting.
- Made significant progress reconstituting the Science Advisor Program (SAP) archives, with assistance from the GCMRC. The archives had become scattered through changes in GCMRC administration and the departure of previous SAP Executive Coordinator.
- Developed SAP work plan and budget for FY 2017 for incorporation into the Reclamation FY2017 work plan and budget, after extensive and detailed consultation with TWG and AMWG members and with the GCMRC and Reclamation.

#### Science Advisors Program (SAP) Plans for FY 2017

The Executive Coordinator developed the SAP FY 2017 work plan through close consultation with the TWG, the GCMRC, and Reclamation, with additional advice from AMWG members and the office of the Secretary's Designee. Previously, SAP work plans and budgets were submitted as part of the GCMRC work plans and budgets after review by the GCMRC Chief. With the change in administration of the SAP from the USGS to Reclamation, SAP work plans and budgets are included within Reclamation work plans and budgets. The tasks proposed for the SAP for FY 2017 are:

- Coordinate and contribute to an assessment of the 'State of Knowledge' for all bodies of knowledge used by the AMWG and Secretary to guide their adaptive management decision making for the GCDAMP. The assessment will be carried out in conjunction with the Annual Reporting effort and TWG review of LTEMP Science Plan, to inform development of the next (FY18-20) Triennial Work Plan. Planning for this undertaking by the SAP Executive Coordinator, GCMRC, and TWG Steering Committee has already started.
- In close consultation with the Tribes and GCDAMP Tribal Liaison, plan and begin implementing a review of programs within the GCDAMP concerning cultural resources. The planning for this review was put on hold while Reclamation responds to requests from Tribes for government to government consultation on the Science Advisors Program integration of Native American perspectives. Reclamation will give the AMWG an update on the consultations.
- Complete reconstituting SAP archives and updating the GCDAMP Wiki site accordingly.
- Work with the AMWG, TWG, and GCMRC to develop the next (FY18-20) Triennial Work Plan, to ensure it incorporates a robust program of external SAP contributions to the GCDAMP.

# Science Updates



**Glen Canyon Dam Adaptive Management Work Group**  
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Agenda Item

Grand Canyon Monitoring and Research Center Science Updates

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Purpose of Agenda Item

Bring AMWG members current with the latest research and selected monitoring results from GCMRC

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Action Requested

Information item only; we will answer questions but no action is requested.

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Presenters

Paul Grams, Research Hydrologist, Grand Canyon Monitoring and Research Center  
Joel Sankey, Research Geologist, Grand Canyon Monitoring and Research Center  
Scott VanderKooi, Chief, Grand Canyon Monitoring and Research Center

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Previous Action Taken

N/A

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Relevant Science

N/A

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Summary of Presentation and Background Information

Sand inputs to date and sandbar update: Between December 1, 2015, and July 1, 2016, the sand storage in upper Marble Canyon decreased by approximately 700,000 metric tons (mt) (-640,000 to -760,000 mt), while the sand storage in lower Marble Canyon decreased by approximately 110,000 mt (-32,000 to -190,000 mt) and sand storage in eastern Grand Canyon increased by approximately 110,000 mt (-24,000 to 190,000 mt). Sand storage has decreased in Marble Canyon because erosion resulting from normal dam operations has not been replaced by inputs from the Paria River or other tributaries. Rates of erosion were highest during winter and summer when fluctuations peaked at 18,000 to 20,000 ft<sup>3</sup>/s. Only about 1,300 metric tons of sand has been delivered by the Paria River since June 1, 2016.

Between December 1, 2015, and March 2, 2016 (the date of the last download at RM166), sand storage in east central Grand Canyon (RM87-RM166) decreased by 180,000 mt (-120,000 to -230,000 mt), and sand storage in west central Grand Canyon (RM166-RM225) increased slightly by 92,000 mt (31,000 to 150,000 mt). The sand budgets for east and west central Grand Canyon will be updated through September 1, 2016, following downloads during the upcoming river trip.

Between December 1, 2015, and June 16, 2016, approximately 740,000 mt of sand (710,000 to 780,000 mt) were transported past Diamond Creek (RM225) into western Grand Canyon and the Lake Mead Delta. In summary, there was net erosion in upper Marble Canyon, lower Marble Canyon, and east central Grand Canyon. There was net deposition in eastern Grand Canyon and west central Grand Canyon.

These data are available for inspection at [http://www.gcmrc.gov/discharge\\_qw\\_sediment/reaches/GCDAMP/](http://www.gcmrc.gov/discharge_qw_sediment/reaches/GCDAMP/).

GCMRC has been monitoring riparian vegetation with multispectral imagery as well as lidar remote sensing data acquired periodically with overflights of Glen, Marble and Grand Canyons. Riparian vegetation has increased in area since completion of Glen Canyon Dam, and analysis of data acquired during the most recent overflight in 2013 shows that vegetation has continued to increase at elevations as low as below 24,000 CFS. Elevated base flows promote the expansion of riparian vegetation onto bare sand habitat and short pulses of high flow, such as controlled floods, do not keep vegetation from expanding onto bare sand habitat. Tamarisk is an invasive riparian shrub that occupies the most area of all riparian vegetation species in the canyons. The tamarisk shrub is preyed upon by the Tamarisk Beetle which has been in this region since 2009. The methods GCMRC uses to monitor changes in tamarisk vegetation associated with the beetle using remote sensing data will be described. The canopy cover of green, healthy tamarisk shrubs decreased from 2009 to 2013 and this decreased the amount of leaf biomass on the shrubs and increased the amount of leaf biomass shed to the floodplain.

Rainbow trout densities remain highest in Glen Canyon and the upstream third of Marble Canyon and lowest downstream of the confluence with the Little Colorado River. Abundance of rainbow trout in all these reaches remains low and at levels even lower than those observed in 2015. Trout densities downstream of the Little Colorado River confluence remain below trigger levels identified in the 2011 USFWS Biological Opinion on nonnative fish control. Mark-recapture efforts in Glen Canyon again show little movement of rainbow trout. On average, marked rainbow trout were recaptured just upstream (0.09 km) of their initial release locations. Unlike in 2013-2015, little evidence of rainbow trout reproduction was detected at sites downstream from Lees Ferry in 2016. Catches of brown trout upstream of Lees Ferry were considerably higher in January and April 2016 in comparison to the same months in 2015. Brown trout catches near the confluence of the Little Colorado River remained low, similar to observations in 2014 and 2015.

Trout removal using electrofishing occurred in the mainstem Colorado River near the confluence with Bright Angel Creek in early February, 2016. This experimental action is being conducted in collaboration with Grand Canyon National Park, consistent with the NPS Comprehensive Fisheries Management Plan and related compliance documents. The removal effort was scheduled for February 2016 to avoid conflicts with a potential November 2015 High Flow Experiment (which did not occur) and associated logistical constraints. Unlike previous efforts in late 2013 and early 2014, turbidity of the river was low for most of the trip which likely increased capture probabilities. Despite these conditions, very few trout were harvested and catches of native fish, including 2 humpback chub, outnumbered nonnatives. All harvested fish were cleaned, vacuum sealed in bags, and frozen for human consumption.

Juvenile humpback chub catches in the mainstem near the Little Colorado River in July were similar to those observed in July 2013, 2014, and 2015. Population estimates generated by the USFWS for

sub-adult (150-199 mm) and adult (> 200 mm) humpback chub in the Little Colorado River were still depressed compared to the highs witnessed in recent years, especially for sub-adults. Spring humpback chub population estimates in the Little Colorado River were 749 (95% CI, 589 to 909) sub-adult fish, and 3,974 (95% CI, 3,360 to 4,589) adult fish. It is unknown at this time if this represents a real decline in the abundance of adult humpback chub, however, there were relatively small cohorts of age 0 chub produced in 2013 and 2014. A similar decline in adults (although not as pronounced) occurred in 2011, thought to be caused by a small cohort of age 0 chub produced in 2009.



**Glen Canyon Dam Adaptive Management Work Group  
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Agenda Item

Science Behind High Flow Experiment Planning: From Chasing Storms in the Paria River Basin to Serving Data on the Web

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Purpose of Agenda Item

The purpose of this agenda item is to review the scientific activities required to plan and implement High Flow Experiments

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Action Requested

Information item only; we will answer questions but no action is requested.

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Presenter

David Topping, Research Hydrologist, U.S. Geological Survey, Grand Canyon Monitoring and Research Center

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Previous Action Taken

N/A

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Relevant Science

N/A

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Summary of Presentation and Background Information

This presentation will describe the steps required in the field, the laboratory, and on the web which are provided by GCMRC in support of planning for High Flow Experiments (HFE). In addition, this presentation will describe how the sediment-transport data served on the web are used as input to the model used to design HFE hydrographs, and how these data are also used to evaluate the model predictions and HFE response. An update on the current sediment status in Marble Canyon will also be provided.



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Agenda Item

Sandbar Modeling Project Update

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Purpose of Agenda Item

Provide update on recent findings of sandbar-related research including the variability of eddy sandbar response during two decades of controlled flooding along the Colorado River in Marble Canyon and Grand Canyon

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Action Requested

Information item only; we will answer questions but no action is requested.

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Presenters

Erich R. Mueller, Research Hydrologist, U.S. Geological Survey, GCMRC

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Previous Action Taken

N/A

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Relevant Science

N/A

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Summary of Presentation and Background Information

Repeat topographic measurements from 45 eddy sandbars throughout the Marble Canyon and Grand Canyon has demonstrated that high-flow experiments (HFEs) cause deposition of sand and increase average bar size. However, the magnitude of sandbar deposition has varied from eddy to eddy, even over short distances where flow and suspended-sediment properties were similar. We have characterized temporal trends in sandbar size and sediment storage as a function of flow, channel, and vegetation characteristics that reflect the hydraulic environment. The variability in response between sites reflects, in part, the geomorphic setting of individual fan-eddy complexes. This variability also corresponds to the degree of vegetation establishment since the 1980s when most sandbars were cleared of vegetation. Sandbars in narrow eddies are less-vegetated, water surface elevation (stage) changes rapidly with discharge, and sandbars are more dynamic. In wider settings, where stage change during floods is less, HFE deposits have become stabilized by vegetation and increased in elevation. Bar-building during floods has decreased through time at these sites. Measurements 10 months after floods in 2012, 2013, and 2014 show that average sandbar volumes may increase when floods are more frequent, especially on the high-elevation parts of bars. This likely reflects decreased erosion between HFEs at narrow, dynamic sites and continued deposition on stabilized parts of bars at wider, lower energy sites. Ideally, a geomorphic-grouping framework can be used to assess whether the long-term monitoring sites are representative and to anticipate long-term sandbar change along the 400 km river corridor.



**Glen Canyon Dam Adaptive Management Work Group  
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Agenda Item

Aquatic Foodbase of the Little Colorado River

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Purpose of Agenda Item

This will be a scientific presentation about an ongoing research project on the food resources available to the largest population of endangered humpback chub in the Colorado River Basin.

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Action Requested

Information item only; we will answer questions but no action is requested.

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Presenter

Jeff Muehlbauer, USGS Research Ecologist

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Previous Action Taken

N/A

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Relevant Science

N/A

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Summary of Presentation and Background Information

The Little Colorado River (LCR) provides critical spawning and juvenile rearing habitat for the largest remaining population of endangered humpback chub in the Colorado River Basin. Yet surprisingly little is known about the condition of the aquatic foodbase of invertebrates in the LCR that provide food for chub and other fish species. For the past three years, our group has been sampling the aquatic invertebrate community of the LCR, four times per year, throughout its entire 21-km, perennial reach. This presentation will focus on the results of this effort, especially the pronounced seasonal and spatial patterns in aquatic invertebrate density and availability throughout the LCR. Specifically, we found that invertebrate availability peaked in spring and was otherwise low throughout the remainder of the year. We also found that light availability, as influenced both by canyon shading and turbidity, exerted a strong spatial control on invertebrate densities. These results may provide insight into chub behaviors and distributions throughout the LCR in both time and space.



**Basin Fund**



**Glen Canyon Dam Adaptive Management Work Group  
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Agenda Item

Basin Fund and Revenue Overview

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Purpose of Agenda Item

To share crucial information about the Colorado River Storage Project (CRSP) system and Glen Canyon Dam from a hydropower production point of view.

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Action Requested

Information item only; we will answer questions but no action is requested.

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Presenter

Lynn Jeka, Senior VP and Colorado River Storage Project Manager, Western Area  
Power Administration, Department of Energy

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Previous Action Taken

N/A

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Relevant Science

N/A

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Summary of Presentation and Background Information

This informational presentation will provide an overview of CRSP. You will have an opportunity to learn about how we establish the rates our 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. In addition, you'll learn how the Basin Fund is operated and why it is critical to CRSP, Reclamation, the seven Basin States, the Upper Colorado and San Juan River Recovery Implementation Programs, and the Glen Canyon Adaptive Management Program.

Congress created the Colorado River Storage Project (CRSP) through the CRSP Act of 1956 (Act of April 11, 1956, ch. 203, 70 Stat. 105). The Act authorized the Secretary of the Interior to construct, operate, and maintain the Colorado River Storage Project and participating projects. In the same Act, Congress authorized a separate fund in the Treasury of the United States to be known as the Upper Colorado River Basin Fund (referred to as the Basin Fund).

60 years later the Western Area Power Administration's CRSP Management Center works collaboratively in partnership with the Bureau of Reclamation (Reclamation) to generate and market power from the Colorado River Storage Project, Collbran, Seedskadee, Dolores and Rio Grande

Basin Fund and Revenue Overview, continued

projects (marketed together as the Salt Lake City Area Integrated Projects) and deliver this power to Firm Electric Service customers.

With a total investment of \$2.375 billion, 11 power plants, 24 generating units, and 2,325 miles of transmission lines CRSP and Reclamation provide clean, reliable, wholesale electric service to 130 wholesale customers in the west including 53 Native American tribes. Our service territory spans Arizona, New Mexico, Nevada, Colorado, Utah, Texas and Wyoming.

# **Federal Liaison Report**



**Glen Canyon Dam Adaptive Management Work Group  
Agenda Item Information  
August 23-25, 2016**

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Agenda Item

Federal -Tribal Liaison Report

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Action Requested

Information item only; we will answer questions but no action is requested.

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Presenter

Dr. Sarah E. Rinkevich, Federal-Tribal Liaison for the Glen Canyon Dam Adaptive Management Program

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Previous Action Taken

N/A

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Relevant Science

N/A

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Summary of Presentation and Background Information

Sarah Rinkevich will report on Federal-Tribal Liaison's activities from February through August 2016. These activities included coordination meetings with the Grand Canyon Monitoring and Research Center and attending meetings of the Glen Canyon Dam Adaptive Management Work Group and Technical Work Group. In addition, the Liaison report will include achievements made, and continuing challenges with regard to incorporating Tribal perspectives and knowledge into the AMP.



# **Stakeholder's Perspective**



**Glen Canyon Dam Adaptive Management Work Group  
Agenda Item Form  
August 24-25, 2016**

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Agenda Item

Stakeholder's Perspective: The River of Never-Ending Life—Cultural Resources from Navajo

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Purpose of Agenda Item

To explain why the Navajo Nation is an AMWG member, what they hope to achieve at the AMWG table, and what is important to Navajo about the Glen Canyon Dam Adaptive Management Program.

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Action Requested

Information item only; we will answer questions but no action is requested.

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Presenter

Melinda Arviso-Ciocco, AMWG Alternate and Navajo Cultural Specialist, Traditional Culture Program, Navajo Nation Historic Preservation Department

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Previous Action Taken

N/A

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Relevant Science

N/A

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Summary of Presentation and Background Information

The Navajo Nation is one of five tribes that participates in the Glen Canyon Dam Adaptive Management Program. Each tribe has unique perspectives and concerns relative to the Grand Canyon. Ms. Arviso-Ciocco will discuss the Navajo Nation's relationship to the Canyon and goals for their participation in the AMP.



**LTEMP**



**Glen Canyon Dam Adaptive Management Work Group**  
**Agenda Item Form**  
**August 24-25, 2016**

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Agenda Item

Long-Term Experimental Management Plan (LTEMP) Environmental Impact Statement (EIS)  
Update and Science Plan

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Purpose of Agenda Item

To provide an update on, and an opportunity to ask questions about, the LTEMP EIS and its associated science plan.

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Action Requested

Information item only. We will answer questions; no action is requested.

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Presenters

Rob Billerbeck, Colorado River Coordinator, National Park Service  
Katrina Grantz, Chief, Adaptive Management Group, Upper Colorado River Region, Bureau of Reclamation  
Scott VanderKooi, Chief, Grand Canyon Monitoring and Research Center

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Previous Action Taken

June 29, 2015: The Cooperating Agency Draft EIS, Volume 1 was released.  
July 31, 2015: The Cooperating Agency Draft EIS Appendices, Volume 2, was released.  
January 8, 2016: The Public Draft EIS (DEIS) was released for comment, with a deadline of April 7, 2016. This was later extended to May 9.  
February 16-March 1, 2016: Two public meetings and two webinars were held to take comments and answer questions on the DEIS.  
May 9, 2016: Public comment period on the DEIS was closed.

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Relevant Science

The full text of the LTEMP DEIS is available here: <http://ltempeis.anl.gov/documents/draft-eis/>.

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Summary of Presentation and Background Information

**LTEMP EIS Update**

Rob Billerbeck and Katrina Grantz will present an overview of the LTEMP EIS with a description of the preferred alternative. The presentation will highlight all changes made to the preferred alternative and the text of the EIS since the release of the public draft. The presentation will also briefly describe the general types of comments received on the draft EIS and describe how these comments were addressed. The next steps for the Endangered Species Act consultation (Biological Assessment and Biological Opinion), National Historic Preservation Act Section 106 compliance

LTEMP EIS Update and Science Plan, continued

(Programmatic Agreement), and anticipated timeline for Final EIS and Record of Decision will also be discussed.

### **LTEMP Science Plan**

Scott VanderKooi will provide an overview of the 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 Glen Canyon Dam Adaptive Management Program (GCDAMP) during the LTEMP period. The LTEMP Science Plan describes the overall data collection, analysis, modeling, and interpretation activities to be conducted by the U.S. Geological Survey 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 GCDAMP and approved by the Secretary of the Interior.

**Miscellaneous**



# Glen Canyon Dam Adaptive Management Work Group Committee Membership List

(Updated: August 16, 2016)

## Secretary's Designee:

**VACANT**

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## Recreational Interests

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## Other Stakeholders

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## Glen Canyon Dam Adaptive Management Work Group Membership

(U:\gcamp\AMWG\3\_Membership by entity.doc)

Updated: August 16, 2016

Secretary's Designee: **VACANT**

Alternate to the Secretary's Designee: Upper Colorado Region Director (Brent Rhees)

|                                           | AMWG Member           | Appointed | AMWG Alternate                         | Affiliation                                     |
|-------------------------------------------|-----------------------|-----------|----------------------------------------|-------------------------------------------------|
| <b>Federal Agencies</b>                   |                       |           |                                        |                                                 |
| 1                                         | Charles "Chip" Lewis  | 8/6/13    | Garry Cantley                          | Bureau of Indian Affairs                        |
| 2                                         | Daniel Picard         | 7/10/15   | Kathleen Callister                     | Bureau of Reclamation                           |
| 3                                         | <b>VACANT</b>         | 2/16/12   | Jan Balsom                             | NPS – Grand Canyon National Park                |
| 4                                         | Steve Spangle         | 1/4/13    | Kirk Young                             | U.S. Fish and Wildlife Service                  |
| <b>Indian Tribes</b>                      |                       |           |                                        |                                                 |
| 5                                         | Dawn Hubbs            | 2/16/16   | Kerry Christensen                      | Hualapai Tribe                                  |
| 6                                         | Leigh J. Kuwanwisiwma | 6/27/1997 | Mike Yeatts                            | Hopi Tribe                                      |
| 7                                         | <b>VACANT</b>         |           | Melinda Arviso-Ciocco<br>Timothy Begay | Navajo Nation                                   |
| 8                                         | Eric Bobelu           | 2/16/16   | Carleton Bowekaty                      | Pueblo of Zuni                                  |
| 9                                         | Charley Bullets       | 12/4/06   | Meghann Olson                          | Southern Paiute Consortium                      |
| <b>Seven Basin States</b>                 |                       |           |                                        |                                                 |
| 10                                        | Tom Buschatzke        | 11/19/12  | Vineetha Kartha                        | State of Arizona (ADWR)                         |
| 11                                        | Tanya Trujillo        | 7/25/14   | Christopher Harris                     | State of California (CRB of California)         |
| 12                                        | John McCLOW           | 12/19/13  | <b>VACANT</b>                          | State of Colorado (CWCB)                        |
| 13                                        | Jayne Harkins         | 12/27/11  | Warren Turkett                         | State of Nevada (CRC of Nevada)                 |
| 14                                        | Deborah Dixon         | 11/10/15  | Don Ostler                             | State of New Mexico (Interstate Stream Comm.)   |
| 15                                        | Steve Wolff           | 2/3/2015  | Don Ostler                             | State of Wyoming (State Engineer's Office)      |
| 16                                        | Eric Millis           | 2/3/2015  | Robert King                            | State of Utah (UDWR)                            |
| <b>Environmental Groups</b>               |                       |           |                                        |                                                 |
| 17                                        | Larry Stevens         | 12/4/06   | <b>VACANT</b>                          | Grand Canyon Wildlands Council                  |
| 18                                        | David Nimkin          | 12/13/13  | Kevin Dahl                             | National Parks Conservation Association         |
| <b>Recreation Interests</b>               |                       |           |                                        |                                                 |
| 19                                        | David Brown           | 7/14/16   | Ben Reeder                             | Grand Canyon River Guides                       |
| 20                                        | John Jordan           | 8/20/14   | John Hamill                            | Federation of Fly Fishers/Trout Unlimited       |
| <b>Federal Power Purchase Contractors</b> |                       |           |                                        |                                                 |
| 21                                        | Ted Rampton           | 6/27/1997 | Clifford Barrett                       | Utah Associated Municipal Power Systems         |
| 22                                        | Leslie James          | 7/30/1998 | Ed Gerak                               | Colorado River Energy Distributor's Association |
| <b>Other Stakeholders</b>                 |                       |           |                                        |                                                 |
| 23                                        | Lynn Jeka             | 3/25/13   | Brian Sadler                           | DOE - Western Area Power Administration         |
| 24                                        | Jim deVos             | 4/15/14   | Chris Cantrell                         | Arizona Game and Fish Department                |
| 25                                        | <b>VACANT</b>         |           |                                        | San Juan Southern Paiute Tribe                  |





# United States Department of the Interior

OFFICE OF THE SECRETARY  
Washington, DC 20240

JUL 18 2016

## MEMORANDUM

To: Scott VanderKooi,  
Chief, USGS Grand Canyon Monitoring and Research Center (GCMRC)  
Katrina Grantz,  
Chief, Adaptive Management Group, Reclamation, Upper Colorado Region

From: Jennifer Gimbel, Secretary's Designee, Principal Deputy Assistant Secretary for Water and Science

Subject: Glen Canyon Dam Adaptive Management Program Continuity and Strategic Direction

This memo provides strategic direction to the Glen Canyon Dam Adaptive Management Program (GCDAMP), consistent with the priorities of the Secretary of the Interior and with the Grand Canyon Protection Act. I am providing this guidance to ensure continuity and continued successes within the GCDAMP in anticipation of a new Administration and a change in leadership within the Department of the Interior (Interior) in early 2017. Given the central role of the GCDAMP in meeting our obligations and commitments under the laws governing Glen Canyon Dam operations and related activities, it will be important to maintain workplan development and implementation, and timely exchanges with the Adaptive Management Work Group (AMWG) federal advisory committee, during these transitions.

This memo highlights several issues important to the success of the GCDAMP: (1) a continued commitment to effective adaptive management and efficient administrative practices through the triennial workplan and budget process, focusing on high-priority monitoring and science while retaining the flexibility to adapt to evolving conditions and science; (2) enhancing Tribal involvement and integration with the GCDAMP; (3) integration of the Long-Term Experimental and Management Plan into GCDAMP processes; and (4) further incorporation of input from the Science Advisors Program.

### (1) Triennial workplan and budget process

Over the last several years, the new process developed for establishing the GCDAMP's annual workplan, budget, and hydrograph has allowed the program to increase its focus on significant questions and has streamlined the budget process. The new process allows for consultation with basin stakeholders, and supports the AMWG's annual recommendations to the Secretary on dam operations.

The current GCDAMP workplan (FY2015-2017) was the first to be developed for a three-year timespan. The intent of the triennial workplan was to improve program efficiency and effectiveness by reducing the time and effort spent on the budget process and to allow time for

The current GCDAMP workplan (FY2015-2017) was the first to be developed for a three-year timespan. The intent of the triennial workplan was to improve program efficiency and effectiveness by reducing the time and effort spent on the budget process and to allow time for ongoing science from the current workplan to progress sufficiently to inform the next workplan. It was also recognized that mid-course adjustments might be needed to accommodate new scientific information or to adjust to the availability of funding. Although not without its challenges, I believe the development and implementation of the FY2015-17 GCDAMP workplan has been a success. Benefits realized include, as hoped, a more efficient process for the AMWG and its Technical Work Group and Budget Ad Hoc Group, as well as for GCMRC and its cooperating agencies and organizations; and more time at AMWG meetings to learn about issues relevant to the GCDAMP and its role in providing recommendations to the Secretary.

Building on this first triennial workplan, it is important to ensure that in future workplans the GCDAMP continues to target its limited resources to the highest priority projects, with an appropriate balance of near- and long-term priorities; while maintaining the flexibility to respond to changing needs. Specific adjustments based on this first triennial workplan experience include using more conservative budget projections based on recent performance of the Consumer Price Index, and identifying funding for all work included in the workplan to avoid shortfalls. In addition, under the first triennial workplan, mid-course changes were considered and in some cases implemented for several projects. Clarifying the procedures and justifications to propose and make mid-course changes to projects will help ensure consistency in adapting future triennial workplans to emerging science and operational considerations.

As you develop the next triennial workplan and budget, I ask that you continue to work with the AMWG to bring greater efficiency and consistency to the process.

## (2) Tribal engagement

Meaningful involvement and integration of Tribal perspectives into the GCDAMP is critical to the continued success of the program. In addition to considering input received from Tribal representatives on the AMWG, the next triennial workplan should also take into consideration results and recommendations from the Science Advisors Program, and in particular from the Science Advisors Program's evaluation of the GCDAMP cultural program. To that end, I ask that the GCDAMP/Science Advisors Program explore ways to co-produce with Tribes a useful definition of what cultural resources require attention, and what approaches to evaluation will be meaningful. This joint effort should ensure that Tribes' input strongly shapes the parameters for the proposed evaluation of the cultural program. I also ask that you establish more regular interactions with Interior's Joint Tribal Liaison(s). Fully staffing those positions is a priority for the Office of the Assistant Secretary for Water and Science.

## (3) Long-Term Experimental and Management Plan (LTEMP)

Integrating the LTEMP into GCDAMP processes is a clear priority for the next triennial workplan. The ongoing LTEMP process 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. Accordingly, Interior, through the Bureau of Reclamation (Reclamation) and the National Park Service, has worked with interested stakeholders through the development of the LTEMP environmental impact statement (EIS). The draft EIS was released in January 2016 and the final EIS and subsequent Record of Decision (ROD) are anticipated in late 2016. We anticipate that implementation of the LTEMP ROD will provide a framework for adaptively managing Glen Canyon Dam and downstream resources over the next 20 years. The preferred alternative identified in the draft LTEMP EIS contemplates a timeline for experimental actions, and a science plan to identify research and monitoring needed to support implementation. While much of this research and monitoring is ongoing and is incorporated in the current triennial workplan and budget, the next phase of planning must be responsive to the anticipated final decision.

Past direction from the Secretary's Designee to the GCMRC identified four high-level priorities for long-term monitoring and science focused on native fish, sediment resources, non-native fish control and recreational fishing, and cultural resources and Traditional Ecological Knowledge. I continue to believe that these priorities should guide future planning, with minor modification as follows:

- Science in support of Endangered Species Act compliance with an emphasis on humpback chub, razorback sucker, and other native fish as well as the resources that support them throughout the Colorado River Ecosystem.
- Science in support of compliance with the Grand Canyon Protection Act, in particular sediment resources.
- Science relating cultural and archaeological sites to modern river processes, as well as the role of traditional knowledges in contributing to scientific understanding and river operations.
- Science on non-native fish (population dynamics, control measures, and the recreational trout fishery) and potentially invasive aquatic species.

These priorities provide focus, but do not preclude other scientific investigation where such investigation has widespread support and furthers the purposes of the GCDAMP.

Our understanding of these issues and the interactions among them has continued to evolve, and these issues have been rigorously analyzed in the draft LTEMP EIS. These topics should continue to be evaluated, in particular to support science and monitoring for LTEMP and with the overlay of changing climate, declining reservoir levels, and the threat of invasive non-native species. The GCMRC has developed an initial high-level science plan in support of the LTEMP. The next GCDAMP workplan needs to provide the details required for implementation of the new ROD. It should also identify the means to collect, analyze, and report information required to support decision-making by Interior leadership and agency resource managers.

#### (4) Science Advisors Program

In 2015, administration of the GCDAMP Science Advisors Program was transferred from GCMRC to Reclamation and the Science Advisors Program is now gaining momentum. The

Science Advisors Program provides independent, external review of GCDAMP activities in order to provide recommendations to the AMWG and the GCMRC regarding monitoring, priorities, integration, and management of natural, cultural, and recreational resources affected by Glen Canyon Dam operations. The Science Advisors Program's role is purely advisory; the AMWG reviews all products of the Science Advisors Program.

For the Science Advisors Program overall, I ask that you maintain a broad definition of "science advisors" as subject matter experts in all of the major relevant topics, including not only natural sciences and engineering but also socioeconomic expertise and traditional knowledges. I leave it to the Science Advisors Executive Coordinator to make the final determination of what expertise is required for each review undertaken by the Science Advisors Program.

Over the next years, priorities for the Science Advisors Program should include reviewing the GCDAMP cultural resources program and working with Tribal members to identify how Tribal perspectives and traditional knowledges can be better integrated into the GCDAMP. The Science Advisors Program should also identify GCDAMP knowledge gaps to help guide the development of the next triennial budget and workplan, and help organize and implement protocol evaluation panels with GCMRC as needed.

In closing, I greatly appreciate what Reclamation, GCMRC, your sister Interior bureaus, your partners, and your external advisors through the AMWG have accomplished in implementing the first triennial workplan, and in further developing the AMWG as a forthright and collegial community. I urge the GCDAMP to continue in your efforts, and in maintaining communication with the AMWG on workplan development and implementation during the upcoming leadership transitions.

I am confident that your follow-through in the areas described above will continue to strengthen and make the Adaptive Management Program more efficient, effective, and responsive.

Glen Canyon Dam  
Adaptive Management Work Group

GROUND RULES

1. Arrive on time.
2. Commit to full participation.
3. Do homework before class begins.
4. Take private meetings outside.
5. Wait to be recognized before speaking.
6. Show respect for others
7. Be concise.
8. Stick to the topic.
9. Save new business for the appointed time.
10. Help keep the meeting on schedule.



## U.S. Department of the Interior

### Glen Canyon Dam Adaptive Management Work Group

#### CHARTER

1. **Committee's Official Designation.** Glen Canyon Dam Adaptive Management Work Group (AMWG).
2. **Authority.** The Grand Canyon Protection Act (Act) of October 30, 1992, Public Law 102-575, Sections 1802, 1804, and 1805; Federal Advisory Committee Act, as amended, 5 U.S.C. Appendix 2.
3. **Objectives and Scope of Activities.** The Glen Canyon Dam Adaptive Management Program (AMP) provides for monitoring the results of the operating criteria and plans adopted by the Secretary of the Interior (Secretary), and for research and studies to suggest appropriate changes to those plans and operating criteria.

The AMP includes the AMWG. The AMWG will provide advice and recommendations to the Secretary relative to the operation of Glen Canyon Dam. The Secretary's Designee is the Assistant Secretary for Water and Science who will serve as the Chair and the Designated Federal Officer (DFO) to the AMWG. The AMWG will recommend suitable monitoring and research programs and make recommendations to the Secretary. The AMWG may recommend research and monitoring proposals outside the Act which complement the AMP process, but such proposals will be funded separately, and shall not deter from the focus of the Act.

Under Section 1802(a) of the Act, "[t]he Secretary shall operate Glen Canyon Dam in accordance with the additional criteria and operating plans specified in Section 1804 [of the Act] and exercise other authorities under existing law in such a manner as to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established, including but not limited to, natural and cultural resources and visitor use." Under Section 1802(b) of the Act, "[t]he Secretary shall implement this section [of the Act] in a manner fully consistent with and subject to the Colorado River Compact, the Upper Colorado River Basin Compact, the Water Treaty of 1944 with Mexico, the decree of the Supreme Court in *Arizona v. California*, and the provisions of the Colorado River Storage Project Act of 1956 and the Colorado River Basin Project Act of 1968 that govern allocation, appropriation, development, and exportation of the waters of the Colorado River basin."

4. **Description of Duties.** The duties or roles and functions of the AMWG are in an advisory capacity only. They are to:
    - a. Establish AMWG operating procedures.
    - b. Advise the Secretary in meeting environmental and cultural commitments including those contained in the Glen Canyon Dam Environmental Impact Statement Record of Decision (GCDEIS ROD) and subsequent related decisions.
-

- c. Recommend the framework for the AMP policy, goals, and direction.
  - d. Recommend resource management objectives for development and implementation of a long-term monitoring plan, and any necessary research and studies required to determine the effect of the operation of Glen Canyon Dam on the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established, including but not limited to, natural and cultural resources, and visitor use.
  - e. Review and provide input on the report identified in Section 1804(c)(2) of the Act to the Secretary, the Congress, and the Governors of the Colorado River Basin States. This annual report includes discussion on dam operations, the operation of the AMP, status of resources, and measures taken to protect, mitigate, and improve the resources defined in the Act.
  - f. Annually review long-term monitoring data to provide advice on the status of resources and whether the Desired Future Conditions and AMP Strategic Plan goals and objectives are being met.
  - g. Monitor and report on all program activities undertaken to comply with applicable laws, including permitting requirements.
5. **Agency or Official to Whom the Committee Reports.** The AMWG reports to the Secretary through the Secretary's Designee.
  6. **Support.** The logistical and support services for the meetings of the AMWG will be provided by the Bureau of Reclamation.
  7. **Estimated Annual Operating Costs and Staff Years.** The estimated annual operating costs associated with supporting the AMWG's functions are \$600,000, including all direct and indirect expenses. It is estimated that five FTE's will be required to support the AMWG.
  8. **Designated Federal Officer.** The DFO is the Assistant Secretary for Water and Science who is a full-time Federal employee appointed in accordance with Agency procedures. The DFO or designee will approve or call all AMWG and subcommittee meetings, prepare and approve all meeting agendas, attend all AMWG and subcommittee meetings, adjourn any meetings when the DFO determines adjournment to be in the public interest and chair meetings when directed to do so by the Secretary. The DFO will facilitate input and coordination of information from the AMWG to the Secretary to ensure that advice and recommendations are communicated in accordance with FACA. This will be accomplished by a memorandum annually or more often, if appropriate, from the DFO and the Secretary.
  9. **Estimated Number and Frequency of Meetings.** The AMWG is expected to meet approximately twice a year, and at such other times as designated by the DFO.
  10. **Duration.** Continuing.

11. **Termination.** The AMWG will terminate 2 years from the date the charter is filed, unless prior to that date, it is renewed in accordance with the provisions of Section 14 of the FACA. The AMWG will not meet or take any action without a valid current charter.
12. **Membership and Designation.** Members and alternate members of the AMWG appointed by the Secretary will be comprised of, but not limited to, the following:
  - a. Secretary's Designee, who will serve as Chairperson for the AMWG.
  - b. One representative each from the following entities:
    - (1) The Secretary of Energy (Western Area Power Administration)
    - (2) Arizona Game and Fish Department
    - (3) Hopi Tribe
    - (4) Hualapai Tribe
    - (5) Navajo Nation
    - (6) San Juan Southern Paiute Tribe
    - (7) Southern Paiute Consortium
    - (8) Pueblo of Zuni
  - c. One representative each from the Governors from the seven basin States:
    - (1) Arizona
    - (2) California
    - (3) Colorado
    - (4) Nevada
    - (5) New Mexico
    - (6) Utah
    - (7) Wyoming
  - d. Representatives each from the general public as follows:
    - (1) Two from environmental organizations
    - (2) Two from the recreation industry
    - (3) Two from contractors who purchase Federal power from Glen Canyon Powerplant
  - e. One representative from each of the following DOI agencies as ex-officio non-voting members:
    - (1) Bureau of Reclamation
    - (2) Bureau of Indian Affairs
    - (3) U.S. Fish and Wildlife Service
    - (4) National Park Service

Members will be appointed to the AMWG by the Secretary, with input and recommendations from the above-referenced agencies, States, tribes, contractors for Federal power from Glen Canyon Dam, environmental organizations, and other stakeholders.

Each member may also recommend an alternate member for appointment by the Secretary. Members and alternates of the AMWG will be appointed for a 4-year term

Members of the AMWG serve without compensation, except that the DFO, in his or her sole discretion, may choose to allow compensation for the Technical Work Group subcommittee chairperson according to applicable authorities. While away from their homes or regular places of business, members engaged in AMWG or subcommittee business approved by the DFO may be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in Government service under Section 5703 of Title 5 of the United States Code.

A vacancy on the AMWG will be filled in the same manner in which the original appointment was made.

13. **Ethics Responsibility.** No AMWG member, alternate member, or subcommittee member will participate in any specific party matter including a lease, license, permit, contract, claim, agreement, or related litigation with the Department in which the member has a direct financial interest.
14. **Subcommittees.** Subject to the DFO's approval, subcommittees may be formed for the purpose of compiling information or conducting research. However, such subcommittees must act only under the direction of the DFO and must report their recommendations to the full AMWG for consideration. The AMWG Chair will appoint subcommittee members. Subcommittees must not provide advice or work products directly to the Agency. Subcommittees will meet as necessary to accomplish their assignments, subject to the approval of the DFO and the availability of resources.
15. **Recordkeeping.** The records of the AMWG, and formally and informally established subcommittees of the AMWG, shall be handled in accordance with General Records Schedule 26, Item 2 and other approved Agency records disposition schedule. These records shall be available for public inspection and copying, subject to the Freedom of Information Act, 5 U.S.C. 552.

  
Secretary of the Interior

AUG 24 2015  
Date Signed

AUG 24 2015  
Date Filed

February 9, 2011

GLEN CANYON DAM  
ADAPTIVE MANAGEMENT WORK GROUP  
OPERATING PROCEDURES

FOREWARD

The Grand Canyon Protection Act (Act) of October 30, 1992, (Public Law 102-575) directs the Secretary of the Interior (Secretary) to “establish and implement long-term monitoring programs and activities that will ensure that Glen Canyon Dam is operated in a manner consistent with that of section 1802” of the Act. “The monitoring programs and activities shall be established and implemented in consultation with the Secretary of Energy; the Governors of the States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming; Indian tribes; and the general public, including representatives of academic and scientific communities, environmental organizations, the recreation industry, and contractors for the purchase of Federal power produced at Glen Canyon Dam.” In order to comply with the consultation requirement of the Act, the Glen Canyon Dam EIS recommended formation of a Federal Advisory Committee. To fulfill this recommendation, the Glen Canyon Dam Adaptive Management Work Group (AMWG) was established. The AMWG Charter imposes the following criteria: (1) the AMWG shall operate under the Federal Advisory Committee Act (Public Law 92-463); (2) the Chairperson shall be designated by the Secretary; (3) the Secretary’s Designee, shall also serve as the Designated Federal Official under the Federal Advisory Committee Act; (4) the Bureau of Reclamation will provide the necessary support in taking accurate minutes of each meeting; and (5) the AMWG shall continue in operation until terminated or renewed by the Secretary of the Interior under the Federal Advisory Committee Act.

OPERATION

1. Meetings. The AMWG is expected to meet semiannually. The Secretary’s Designee may call additional meetings as deemed appropriate. A minimum of one meeting will be held annually. All meetings shall be announced by notice in the Federal Register and by news release to local newspapers.

Thirteen members must be present (either in person or on the telephone) at any meeting of the AMWG to constitute a quorum.

Robert’s Rules of Order will be generally followed, except some flexibility will be allowed as needs dictate.

The Bureau of Reclamation is responsible for arranging meetings and for other duties associated with operation of the AMWG. They will arrange for meeting location, provide staff for the Designee, prepare minutes and Federal Register Notices, and other operational requirements of the AMWG.

Meetings of the AMWG will generally be held in Phoenix, Arizona, to allow for better travel accessibility for the members as well as provide greater opportunity for the public to attend. However, the Secretary's Designee may decide upon a different location as he/she deems appropriate.

The AMWG may make recommendations to the Secretary of the Interior in response to future legislation or appropriations that may affect or impact the Glen Canyon Dam Adaptive Management Program. This may be accomplished when an AMWG member requests to the Chair, an issue to be addressed either at a regular meeting of the AMWG, at a special meeting or during a conference call. AMWG members will discuss the issue and if appropriate, make recommendations on the issue to the Secretary of the Interior in a timely manner. When any other potentially controversial topics are identified by any AMWG member, they should notify the Chair so that this procedure can be implemented.

2. Chairperson. The Chairperson will be the Secretary's Designee, who will preside over the meetings of the AMWG. In the absence of the Chairperson, a senior level Interior representative will act as Chairperson for the AMWG. The Chairperson or designated alternate must be present before a meeting of the AMWG may convene. The Chairperson or his/her alternate is authorized to adjourn an AMWG meeting at any time.

The Secretary's Designee will also be responsible for sending a formal summary report after each Advisory Committee meeting directly to the Secretary of the Interior with copies of subject summary report to be provided to all AMWG members.

3. Members. Membership shall follow the guidelines in the AMWG Charter. Members of the AMWG will be designated by the Secretary of the Interior. They shall serve for a term of four years. Members may be re-designated to serve for more than one term.

4. Alternate Committee Members. Each AMWG member may designate an alternate to serve for the same term as the member. Alternates must be identified to the Chairperson in writing. Alternates must meet the same qualifications as the member. Alternates will have authority to participate in AMWG business, including quorum and voting privileges. A list of members and alternates shall be maintained and made available to AMWG members.

5. Agenda. At least 30 days prior to any meeting of the AMWG, a draft of the proposed agenda and related information will be sent to the group members. Members shall review the agenda and return comments and proposed agenda items to the Designee within two weeks of the agenda mailing date. The final agenda will be sent to the members 15 days prior to the meeting. The Secretary's Designee shall approve the agendas.

6. Voting. The maker of a motion must clearly and concisely state and explain his or her motion. Motions may be made verbally or submitted in writing in advance of the meeting. Notice of motions to be made by any member of the AMWG should be announced in the Federal Register and presented on the agenda. Any motions proposed by any member in meetings must

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be related to an agenda topic, and will be considered only if a simple majority of members present agree to hear it. After a motion there should be presentations by staff followed by a discussion and a call for questions. The public will be given opportunity to comment during the question period as allowed by the Chairperson. Any member of the public who has asked to address the AMWG, shall have a minimum of two minutes to comment. The Chairperson can limit the total time allowed to the public for comments. Comments shall address the motion and not be repetitive to presentations, group discussions or other comments previously presented. The motion must be fully documented for the minutes and restated clearly by the Chairperson before a vote is taken.

The group should attempt to seek consensus but, in the event that consensus is not possible, a vote should be taken. Voting shall be by verbal indication or by raised hand. Approval of a motion requires a 60 percent majority of members present and voting. The views of any dissenting member or minority group shall be briefly incorporated into the information transmitted to the Secretary along with the majority recommendation. In addition, at his/her discretion, the Secretary's Designee may ask any individual at the meeting for the rationale related to their vote. Voting shall occur only with the formal meetings of the group.

7. Minutes. Detailed minutes of each meeting will be kept. The minutes will contain a record of persons present and a description of pertinent matters discussed, conclusions reached, and actions taken on motions. Minutes shall be limited to approximately 5-15 pages. The corrections and adoption of the minutes will be by vote of the AMWG at the next subsequent meeting. The Secretary's Designee shall approve all minutes. The Bureau of Reclamation is responsible for recording and disseminating minutes to AMWG members, generally within two weeks of the subject meeting, but in no event longer than 30 days.

9. Public Involvement. No later than 15 days prior to each meeting of the AMWG, a notice will be published in the Federal Register. Meetings will be open to the public and advertised in local newspapers. Interested persons may appear in person, or file written statements to the AMWG. Public comments can be on any issue related to operation of the Glen Canyon Dam. A specific time for public comment will be identified in the agenda. Advance approval for oral participation may be prescribed, and speaking time may be limited. Minutes of the AMWG meetings and copies of reports submitted to the AMWG will be maintained for public review at the Bureau of Reclamation's Upper Colorado Regional Office in Salt Lake City, Utah, and at the Library of Congress in Washington, D.C. They will also be posted to the Bureau of Reclamation web site ([www.uc.usbr.gov/amp](http://www.uc.usbr.gov/amp)).

10. Payment of Travel. While engaged in the performance of official business at AMWG and AMWG sub-group meetings (regular, ad hoc, and Protocol Evaluation Panel meetings) away from home or their regular places of business, all AMWG members or AMWG sub-group members shall, upon request, be reimbursed for travel expenses in accordance with current Federal Travel Regulations. Alternates representing the official committee member may also receive compensation for travel expenses.

11. Open/Closed Meetings. If any member proposes discussion of a sensitive issue felt to require a closed session, he or she should so state in a proposal submitted to AMWG members in sufficient time to include it in the agenda published in the Federal Register Notice announcing the next meeting. A closed executive session may be held during a regular meeting, but should be used rarely. Any sensitive cultural issues will require consultation with Native Americans prior to meeting.

Telephone conference meetings must have a notice in the Federal Register 15 days prior to the call. There must be adequate opportunity for the general public to listen to the conference call.

The AMWG may conduct business outside of formal meetings through telephone polls conducted by the Chairperson or his/her designee. In emergency situations, telephone polls can be requested by the AMWG member to act on clearly defined written motions for AMWG approval. Following approval by the Chairperson, a telephone poll will be conducted within seven working days. During a telephone poll, all members will be contacted and requested to vote. Approval of a motion requires 60 percent majority of all members voting. The Chairperson is responsible for documenting in writing how each member voted and distributing the record to all AMWG members.

12. Reports and Record Keeping. The Annual Report (AR) required by the Grand Canyon Protection Act shall be reviewed by the AMWG. The State of the Natural and Cultural Resources in the Colorado River Ecosystem report developed by the Grand Canyon Monitoring and Research Center will be attached to the AR and shall contain information on the condition of the resources impacted by the operation of Glen Canyon Dam. The AR shall be concise, containing critical resource issues and recommendations to the Secretary on future dam operations.

Bureau of Reclamation staff will supply GSA the required information to complete the summary report for Federal Advisory Committees.

13. Committee Expenses and Cost Accounting. An accounting of the expenses for operation of the AMWG shall be maintained by Reclamation. Expenses and other information will be submitted to GSA as required by FACA. Committee expenses are limited to approximately \$500,000 annually.

## SUB-GROUPS

1. Formation. The AMWG may form sub-groups in order to facilitate the mission of the AMWG as identified in the Act and the AMWG Charter. Sub-groups will be formed for completion of specific tasks or for specified periods of time. Sub-group members will be named by the members of the AMWG for their own organization, or by the Secretary's Designee. Effort shall be made to keep sub-groups small. Sub-groups will be formed or dissolved by a vote of the AMWG.

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2. Requirements. Sub-groups may choose their chairperson from among the AMWG named sub-group members. The chairperson of any sub-group may convene group meetings at his or her discretion. Sub-groups may develop their own operating procedures. One standing sub-group of the AMWG will be the Glen Canyon Dam Technical Work Group (TWG). The TWG membership shall consist of one representative from each organization represented in the AMWG, with the exception that two members from the National Park Service representing the Grand Canyon National Park and the Glen Canyon Recreational Area, and one representative from the US Geological Survey. All sub-groups will elect their own officers. Names of all sub-group members will be announced to the AMWG at regular meetings and will be attached to the minutes. Sub-group members may designate alternates.

3. Charge. Sub-groups will receive their charges from the AMWG. Sub-groups will work only on issues assigned them by the AMWG. They will not be empowered to follow other issues on their own. They are encouraged to submit issues to the AMWG they feel worthy of consideration and discussion, but the AMWG must approve work on all new issues. The AMWG may require the sub-groups to develop plans and direct them to come to a consensus or majority opinion at their discretion. Sub-groups shall determine their own operating procedures, which must be reduced to writing and included with the AMWG and sub-group records.

4. Reporting. Sub-groups will report at least annually to the AMWG at the request of the Chairperson. Sub-groups shall report only to the AMWG. They shall provide information as necessary for preparing annual resource reports and other reports as required for the AMWG.

5. Ad Hoc Groups. Ad hoc groups may be created by the Secretary's Designee or as a subcomponent of a sub-group. These groups may meet to discuss assignments from the AMWG or sub-group. Ad hoc meetings will not require Federal Register notices. Minutes are recommended but not required. Ad hoc groups shall report to the AMWG or the main body of the sub-group, depending upon which gives the assignment.

Adopted by vote of the AMWG on February 9, 2011, in Phoenix, Arizona.

Approved: \_\_\_\_\_

Chairperson



Aug. 19, 2011  
Date

