

August 4, 2017 – FINAL COMMENTS

The following comments regarding the Glen Canyon Dam Adaptive Management Program, Triennial Budget and Work Plan Fiscal Years 2018-2020 are provided to the Bureau of Reclamation (Reclamation) and Grand Canyon Monitoring and Research Center (GCMRC) on behalf of the Budget Ad Hoc Group (BAHG). These comments should be considered in addition to the verbal comments made by the BAHG members during their conference calls with Reclamation and GCMRC and any inclusion of verbal comments herein should not be perceived as lessening the importance of other verbal comments that aren't included.

General Comments (note, during the August 4 BAHG call, no objections were raised with forwarding comments 1-8 below, as consensus comments from the BAHG, to Reclamation and GCMRC)

- 1) Compile the overarching science planning and implementation process in more cohesive form. Include the following key elements:
 - a) Identify and briefly describe the components of the process and diagram it (e.g., see Figure 2 of the Strategic Science Plan).
 - b) Organize the process toward achieving the requirements of the LTEMP and corresponding documents and how the projects relate to each other to achieve those requirements. Consider using a table to illustrate that information. Absent from the Budget and Workplan is an effort to evaluate progress toward achieving the LTEMP goal for Hydropower and Energy. Work with stakeholders to develop research and monitoring activities and experimental and management actions that address this goal.
 - c) Identify key resource characteristics but if they are unknown, identify a process for developing them.
 - d) Describe how to measure the status of, trends of, and experimental effects to resource characteristics.
 - e) Include the Annual Reporting Meeting as a step.
 - f) Identify how models will be developed to gain scientific understanding of drivers, linkages, and outcomes and how they will be used to forecast the impacts of management.
 - g) Identify how the scientific uncertainty of drivers, linkages, and outcomes will be resolved. Focus on the most impactful drivers.
 - h) Identify the role of the Science Advisors Program and the knowledge assessment
- 2) Consider modifying the frequency that work is implemented to achieve a 20-year perspective for the purpose of allowing greater opportunity for tradeoffs for this year's budget. For example, see Project B for an example of a 20-year perspective.
- 3) Articulate the science questions and hypotheses for each project (if not already articulated) and group them into a bulleted list and place them in a consistent section location (e.g, Section 3 *Background*).
- 4) Develop a plan for implementing monitoring and research activities for new experiments or management actions when they are needed. Include the following key elements:
 - a) Clearly identify the cost of and describe any additional work that is necessary to monitor and research the effects of new experiments or management actions. If the work is not fully known at this time then identify a not to exceed cost of the work and a process for how this work will be developed, including how the TWG will be involved, the expected participants, and a timeline of activities.

- b) Assume that new monitoring could occur in any year.
 - c) Establish a fiscal year starting minimum annual balance for the Experimental Management Fund equal to the cumulative annual cost for the new monitoring needs. At the end of the fiscal year, transfer funds in excess of this minimum balance to the Native Fish Conservation Contingency Fund.
- 5) Identify a minimum target balance for the Native Fish Conservation Contingency Fund which is necessary to implement emergency conservation needs and develop a process for using any excess funds above the minimum.
 - 6) Identify a process for using potentially available future funds if projected inflation is less than actual inflation
 - 7) Tribes are asked to participate in various projects but there may not be funds to allow for their participation. Work with tribes to resolve this issue.
 - 8) Conduct an analysis to identify the appropriate level of sampling necessary.
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