

**Glen Canyon Dam Adaptive Management Work Group**  
**Agenda Item Information**  
**August 29-30, 2007**

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Agenda Item

Long-term Experimental Plan (LTEP) Environmental Impact Statement Update

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Action Requested

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

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Presenter

Randy Peterson, Manager, Environmental Resources Division, Upper Colorado River Region,  
Bureau of Reclamation

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Previous Action Taken

√ By AMWG:

AMWG passed the following motion by consensus in December 2006:

AMWG recommends that the Secretary of the Interior consider the following scope in developing the Long Term Experimental Plan EIS:

The alternatives should maintain the balance of benefits to all resources as described in the ROD of the Glen Canyon Dam EIS, while focusing on humpback chub and sediment resources. Insofar as they are consistent with this balance and focus, the elements of the alternatives should:

- include a range of flow events, patterns, and timing
- include non-flow experiments
- be based on credible science planning
- maximize hydropower capacity and flexibility to the extent possible
- address tribal and cultural resources.

The experiments in the plan should be of adequate (but not excessive) duration to allow the determination of actions needed to sustain and, where possible, improve key resources and the balance of benefits to all resources.

The AMWG also forwards to the Secretary for consideration, four options<sup>1</sup> and the Modified Low Fluctuating Flow regime from the Glen Canyon Dam EIS ROD, as examples of mixtures of flow and non-flow experiments that have been rigorously debated within the Glen Canyon Dam Adaptive Management Program.

<sup>1</sup>GCMRC, 2006, Assessment of the Estimated Effects of Four Experimental Options on Resources below Glen Canyon Dam, table E.1, page 3. USGS, Flagstaff.

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Relevant Science

√ N/A

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Background Information

Reclamation published an advance Notice of Intent in the *Federal Register* in November 2006 announcing its intent to prepare an EIS for an LTEP. A second Notice of Intent was published in the *Federal Register* in December 2006 describing the proposed federal action and possible alternatives, and announcing public scoping meetings. Reclamation conducted public scoping meetings on January 4 and 5, 2007, in

Phoenix and Salt Lake City, respectively. During the public scoping period, which ended February 28, 2007, Reclamation received 160 comment letters and e-mails with 651 distinct comments categorized for analysis in the Scoping Report. The Scoping Report was published on March 30, 2007. Sixteen entities (including federal agencies, state and quasi-state organizations, and tribal governments) are participating as cooperating agencies in this EIS process; weekly conference calls are occurring between Reclamation and the cooperators. Government-to-Government consultations are taking place with interested tribes.

The purpose of the LTEP is to increase understanding of the ecosystem downstream of Glen Canyon Dam and to improve and protect important downstream resources. It will identify those downstream resources that have not responded as expected in the 1996 ROD and to learn, through an ongoing program of further experimentation, which elements of current or other prospective dam operations and other management actions by Reclamation and other Department of the Interior agencies would achieve these goals.

Reclamation has worked with the cooperators to develop a range of alternatives to encompass the issues identified in the Scoping Report. The range of alternatives adopted considered recommendations and experimental options provided by the Glen Canyon Dam Adaptive Management Work Group and through information received during public scoping.

The NEPA process for this EIS will evaluate the implications and impacts of each of the alternatives on all of the purposes and benefits of Glen Canyon Dam and on downstream resources. The current schedule calls for a draft EIS to be completed in February 2008, the final EIS completed in October 2008, and a Record of Decision issued in December 2008.

## Glen Canyon Dam Long-Term Experimental Plan EIS – Matrix of Draft Alternatives

Alternatives	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	Alternative 4
<b>Elements</b>					
Water Temperature	Dependent on reservoir elevation and release volume	None <sup>1</sup>	Construction of 2-unit TCD, available for use in 2013; ecologically stable flows in September and October to warm backwaters and near-shore habitats.	Construction of 2-unit TCD, with ability to release cold water by extending depth of TCD or using river outlet tubes; available for use in 2013. Stable flows to warm backwaters and near-shore habitats during July - October period through 2012	Construction of 2-unit TCD, with ability to release cold water by extending depth of TCD or using river outlet tubes; available for use in 2013. Stable flows to warm backwaters and near-shore habitats.
Flows	Modified low fluctuating flow (1996 ROD)	Increase in fluctuations and ramp rates in most months;	Increased fluctuations and hourly downramp rates in winter, ecologically stable flows in September to October; August stable flows if triggered by potential negative humpback chub (HBC) population trends and Little Colorado River inputs.	Stable summer releases until desired future conditions for HBC are met, unless there is a large increase in warm water non-native fish.	Seasonally adjusted steady flows
Sediment Conservation	High flow releases in accordance with 1997 Glen Canyon Dam Operating Criteria	Single high flow test (~41,000 - 45,000 cfs) following tributary sediment inputs followed by analysis, evaluation, and modeling to determine future course of action.	Annual high flow tests in years in which tributary sediment inputs exceed sediment trigger; timing would be in the spring after sediment is dispersed throughout Grand Canyon.	Annual high flow tests in years in which tributary sediment inputs exceed sediment trigger; timing would be in the spring after sediment is dispersed throughout Grand Canyon.	Implement sediment augmentation. Annual high flow tests; timing would be in the spring after sediment is dispersed throughout Grand Canyon.
Other Actions	None	Continuation of cold water non-native fish control; warm water non-native fish control initiated in 2009 and continued based on monitoring; continued tributary translocation of HBC; "mini experiments".	Evaluate levels of control and efficacy of mainstem vs. tributary control; research on warm water non-native fish control initiated in 2009 and continued based on monitoring; continued tributary translocation of HBC.	Continuation of cold water non-native fish control; warm water non-native fish control initiated in 2009 and continued based on monitoring; use cold water as potential control mechanism; continued tributary translocation of HBC.	Continuation of cold water non-native fish control; warm water non-native fish control initiated in 2009 and continued based on monitoring; potential for tributary translocation of HBC based on outcome of initial experimental treatments.
Alternative Initially Developed By		WAPA	DOI Agencies	April 2007 Workshop	NGO

<sup>1</sup> Construction of a 2-unit TCD would be considered only if tributary translocation of HBC failed and warm water non-native fish control was proven successful.

This table represents the Department's current assessment of the range of alternatives to be analyzed in the EIS. Refinement and potential modification of the information presented in this description will occur as Reclamation prepares a Draft EIS, which is anticipated to be published in early 2008.