

# **Strategic Plan**

## **Glen Canyon Dam Adaptive Management Program**

**Approved January 17, 2002**

**by the Glen Canyon Dam Adaptive Management Work Group**

### *Technical Work Group*

The Technical Work Group is comprised of technical representatives of Adaptive Management Work Group members and operates at the direction of the Adaptive Management Work Group. The Technical Work Group's main function is to provide technical assistance to the Adaptive Management Work Group. Technical Work Group functions may include (Reclamation 1995:37):

- Developing, with the Grand Canyon Monitoring and Research Center, criteria and standards for monitoring and research programs and providing periodic reviews and updates of these;
- Developing, with the Grand Canyon Monitoring and Research Center, resource management questions (i.e., information needs);
- Reviewing and commenting on the scientific studies conducted or proposed by the program;
- Provide a forum for discussion by Technical Work Group members, external scientists, the public, and other interested persons;
- Providing information as necessary for preparing annual resource reports and other reports as required by the Adaptive Management Work Group; and
- Reviewing strategic plans, annual work plans, long-term and annual budgets, and other assignments from the Adaptive Management Work Group.

### *Grand Canyon Monitoring and Research Center*

The Grand Canyon Monitoring and Research Center was created to fulfill the mandate in the Grand Canyon Protection Act for the “establishment and implementation of a long-term monitoring and research program to ensure that Glen Canyon Dam is operated in a manner that protects the values for which the Grand Canyon National Park and the Glen Canyon National Recreation Area were created.” The Grand Canyon Monitoring and Research Center serves as the science center for the Glen Canyon Dam Adaptive Management Program. The Grand Canyon Monitoring and Research Center leads the monitoring and research of the Colorado River ecosystem and facilitates communication and information exchange between scientists and members of the Technical Work Group and Adaptive Management Work Group. Other functions of the Grand Canyon Monitoring and Research Center are:

- Advocate quality, objective science, and the use of that science in the adaptive management decision process;
- Provide scientific information about resources in the Colorado River ecosystem;
- Support the Secretary of the Interior's Designee and the Adaptive Management Work Group in a technical advisory role;
- Develop research designs and proposals for implementing (by the Grand Canyon Monitoring and Research Center or its contractors) monitoring and research activities in support of information needs;
- Coordinate review of the monitoring and research program with independent review panels;
- Coordinate, prepare, and distribute technical reports and documentation for review and as final products;
- Prepare and forward technical management recommendations and annual reports, as specified in Section 1804 of the Grand Canyon Protect Act, to the Technical Work Group;
- Manage data collected as part of the Adaptive Management Program and serve as a repository for other information about the Colorado River ecosystem;
- Administer research proposals through a competitive contract process, as appropriate;

- Develop, with the Technical Work Group, criteria and standards for monitoring and research programs; and
- Develop, with the Technical Work Group, resource management questions (i.e., information needs).
- Produce the State of the Colorado River Ecosystem Report.

### ~~*Independent Review Panels*~~

~~Independent Review Panels, as called for in the Glen Canyon Dam Environmental Impact Statement (Reclamation 1995:38), are comprised of qualified individuals not otherwise participating in the long term monitoring and research studies. The panels include peer reviewers, science advisors, and protocol evaluation panels whose primary responsibility is to assess the quality of research, monitoring, or science being conducted by the Adaptive Management Program and to make recommendations to improve it. Responsibilities of the panels include:~~

- ~~Reviewing Glen Canyon Dam Adaptive Management Program monitoring and research programs and protocols;~~
- ~~Providing reports based on their review to the Grand Canyon Monitoring and Research Center, Technical Work Group, and Adaptive Management Work Group;~~
- ~~Making recommendations and providing advice to the Adaptive Management Work Group, Technical Work Group, and Grand Canyon Monitoring and Research Center regarding science activities;~~
- ~~Assessing proposed research plans and programs, technical reports and publications, and other program accomplishments; and~~
- ~~Conducting five year reviews of Grand Canyon Monitoring and Research Center monitoring and research protocols.~~

### ~~**History of the Glen Canyon Dam Adaptive Management Program**~~

~~This strategic plan and the Glen Canyon Dam Adaptive Management Program cannot be understood without referencing key events since completion of Glen Canyon Dam in 1963. The plan and program arose from the Bureau of Reclamation's proposal to install additional generators on the bypass tubes and to rewind and uprate the existing generators at Glen Canyon Dam. This proposal resulted in the establishment of the Glen Canyon Environmental Studies that existed from 1982 through 1996.~~

### ~~*Glen Canyon Environmental Studies*~~

~~While the National Park Service, Native Americans, river runners, and scientists had noticed that some beaches were disappearing and that plant and animal life along the Colorado River were changing since Glen Canyon Dam was completed in 1963, the Glen Canyon Environmental Studies program of the Bureau of Reclamation was the first systematic effort to investigate the effects of dam operations on downstream resources. The program began in 1982 and lasted through 1996. The Glen Canyon Environmental Studies did identify a mix of positive and negative consequences of dam operations on the downstream environment. In response to substantial public concern over the findings of the Glen Canyon Environmental Studies, in 1989 the Secretary of the Interior announced that an environmental impact statement would be completed to evaluate the operation of Glen Canyon Dam. With this announcement, the Glen~~

## Annual Science Plan

Each year the Grand Canyon Monitoring and Research Center prepares a detailed science plan describing the monitoring and research activities proposed for the upcoming year. The plan is discussed with the Technical Work Group and the Technical Work Group budget ad hoc group in an effort to identify both important monitoring and research questions and relative priorities among the scientific activities. The Grand Canyon Monitoring and Research Center also consults with the Programmatic Agreement signatories to determine if there are any potential effects from the proposed monitoring or research activities delineated in the annual science plan. Final recommendation to the Secretary of the Interior rests with the Adaptive Management Work Group.

The annual science plan is critical to the evaluation of the effectiveness of actions taken to protect downstream resources. The plan must have a stable and long-term monitoring component to address long-term trends. It must also have a research component to address new questions that arise through scientific investigations. Finally, it must have the statistical rigor required to substantiate its conclusions. The annual work plan will include a report on the prior year's activities.

## Request for Proposal Process

~~The Grand Canyon Monitoring and Research Center utilizes a competitive proposal solicitation process open to government employees, public sector contractors, and universities through an open Request for Proposals process. All Adaptive Management Program monitoring and research projects are selected on the basis of their support of scientific capability and merit, submission timeliness on previous work (as evaluated through an independent, objective, and unbiased peer review process), management objectives and information needs, demonstrated capabilities of proposers, and cost effectiveness. Following the selection of proposals, appropriate procurement mechanisms (i.e., grants, contracts, and cooperative agreements) are utilized for supporting selected projects.~~

~~The Grand Canyon Monitoring and Research Center is committed to the use of peer review and has peer review guidelines that describe the processes it follows in reviewing all Grand Canyon Monitoring and Research Center proposals, programs, publications, and other products or deliverables. The guidelines will convey the unambiguous standard of scientific objectivity and credibility followed by the Adaptive Management Program.~~

~~In general, following approval by the Adaptive Management Work Group of the long-term monitoring and research strategic plan, an annual monitoring and research program will be completed and approved each year in April. After approval of the annual monitoring and research plan, Request for Proposals will be issued. Proposals will be screened by the program managers for their responsiveness to the Request for Proposals, and all qualified proposals will undergo an independent and objective scientific peer review. Awards will be made based on the results of peer review, the program manager's evaluation of project relevance, and technical contracting requirements.~~