PROSPECTUS

A REVIEW OF THE GLEN CANYON DAM ADAPTIVE MANAGEMENT PROGRAM (GCD AMP)

BY

GCD AMP SCIENCE ADVISORS

PROBLEM STATEMENT

The Glen Canyon Dam Adaptive Management Program has been in existence since 1996. The Grand Canyon Protection Act of 1990 called for establishment of a program of management and science that would best insure the protection and enhancement of resources for which the Grand Canyon National Park was established. The Environmental Impact Statement for implementation of appropriate programs to support the Act called for establishment of a unique Glen Canyon Dam Adaptive Management Program (GCD AMP). The program is to develop and implement appropriate management, science and review strategies for resource enhancement, protection and use.

The GCD AMP was designed with four critical administrative components to insure appropriate knowledge development, review, recommendation, and approval for application.

- Secretary of Interior Designee
- Federal Advisory Committee: Adaptive Management Work Group (AMWG)
- Research Center: Grand Canyon Monitoring and Research Center
- Independent Review Panel: National Research Council, GCD AMP Science Advisors, review panels.

Review of the Adaptive Management Program and its various components was determined to be a critical ongoing need of the AMP and is administratively associated with three general review groups.

The National Research Council(NRC): The NRC has been utilized at approximately five year intervals to conduct general assessments of overall accomplishment of the GCD AMP as referenced against directions established in legislation, the GDC AMP EIS and executive directives.

The GDC AMP Science Advisors: Science Advisors (SAs) were established to provide rigorous external independent assessments of ongoing science planning and implementation as guided by management needs, and evaluations of general effectiveness of the AMP. As advisors, the focus of reviews is to formulate and recommend more effective science and management approaches.

Review Panels are needed for independent review of GCMRC manuscripts, study plans, protocols, etc. These are obtained from Ad Hoc review panels.

For the past eight years two of the three groups have contributed to various reviews of different activities of the AMP. Most of these reviews have centered on the activities of the Science Center and its effectiveness. The SAs have operated since 2000, and have contributed primarily to reviews of science plans, and science program implementation.

The Science Advisor GCD AMP Review Objectives

In 2004 the AMWG requested the Science Advisors conduct a general review of the AMP, with focus on how to improve overall effectiveness of the program. Under this broad charge the SAs will conduct a brief but comprehensive review. The general objectives of the review are to assess the following.

- Mission and Goal Clarity
- Issues of Roles and Responsibility
- General Organizational Effectiveness
- Process of Management, Science, Reporting, Reviews
- Productivity of Management, Science, Reporting, Reviews

These general objectives are comprehensive in nature but are not sufficiently focused to respond to specific concerns of members of the Adaptive Management Work Group. To provide greater focus, the Science Advisors have developed a list of specific questions that are being used to capture the full scope of the review objectives.

Scope of Review

Seven general areas of review inquiry are being pursued as follows:

- Mission/Goal/Objectives
- Leadership
- Organization

- Budget
- Communication
- Process
- Outcomes

Within each of these general areas of evaluation a list of questions are being developed to define the full scope of the review as follows:

MISSION/GOAL/OBJECTIVES

- What functions are appropriate for each GCD AMP program component i.e., AMWG, TWG, GCMRC, SAs and how can performance on functions be best evaluated?
- Are Goals/Objectives clear and appropriately articulated from managers to scientists/technical specialists?
- Are processes for specifying managers questions/needs effective, i.e., are they clear to both managers and scientists?

LEADERSHIP

- How can leadership in AMWG/TWG/GCMRC/IRP best solicit progress and problem solution?
- What personal leadership qualities and organization structure are necessary to be proactive on needed solutions? How can leadership in AMWG/TWG/GCMRC/SAs best solicit progress and problem solution?
- What personal leadership qualities are necessary to be proactive on needed solutions in AMWG, TWG, GCMRC and SAs?
- What organization structure might improve operations of the AMWG, TWG, GCMRC and SAs?

ORGANIZATION

- Are the roles/responsibilities for each AMP area a (i.e., AMWG, TWG, GCMRC, SA) effectively defined operationally and are they understood and agreed to?
- Are defined components and specified roles/responsibilities, the best organizational approach for Adaptive Management Program?
- Is there unnecessary duplication/overlap of components, functions, and

roles, etc. that are inhibiting progress in the AMP?

- Have changes in organizational structure of GCMRC over time reduced its capability to respond effectively to AMWG/TWG?
- What single structure change in each of AMP program area would likely yield net overall improvement?

PROCESS

- What are the best approaches to ecological integration within GCMRC, and organizational integration within GCD AMP?
- How well does the AMP determine life cycles, especially termination of projects and programs?
- How adaptive is the adaptive management program, given law, policy, working relationships and budget constraints?
- What is the probable appropriate mix of experiments, management, monitoring, modeling and synthesis in the GCD AMP, and should significant shifts be made?
- Are there gaps in the current research, management and monitoring program? If so, what are they, and how can they be corrected?
- Are scientists and technical specialists of GCMRC/TWG collaborating with other groups to leverage research dollars, and make best use of technology?
- How can GCMRC/TWG stay more current with science methods and technology?

BUDGET

- Is the budget process working well? If not why?
- What primary improvements are needed in the current budget process, i.e., planning, prioritization etc.?
- Is the best budget planning and decision process being used (i.e., AMWG/Ad Hoc Committee/TWG/GCMRC/AMWG)?
- Will the projected budget opportunities for FY 2005-2010 support the level of program activity deemed critical by AMWG?
- What budget strategies not currently engaged would be helpful to GCD AMP?

COMMUNICATION

- How well are the GCD AMP needs for improvement (i.e., from protocol panel SAs, AMP groups and other entities) being communicated, evaluated, embraced, implemented by necessary parties, i.e., Secretary's Designee, AMWG, TWG, GCMRC, SAs?
- Is there appropriate understanding and acceptance of roles and responsibilities by all entities in GCD AMP, i.e., Secretary's Designee, AMWG, TWG, GCMRC, SAs etc.?
- Are the management, technical, science recommendations of the TWG communicated well to AMWG and acted on appropriately?
- Are the management, and technical, and science and budget requests/directions etc., provided by AMWG appropriate and responded to by TWG/GCMRC/SAs appropriately?

RESULTS

- What are the key indicators for measuring results, progress and success in each AMP area? Who should evaluate success/progress?

Additional questions may be developed in February and the existing questions will be refined. These questions will then form the primary basis for inquiry and evaluation. The SAs will formulate cost effective methods to create a general response to each question given the resources available in FY 2005. The goal of the assessment is to be able to clearly identify those areas of greatest concern to AMWG, TWG, GCMRC and the Secretary's Designee and provides recommendations for improvement. The goal is not to provide an exhaustive inquiry of each question, which lies beyond the budget for the review.

The scope of the inquiry is limited by both time and budget. The AMWG has requested draft input on findings in its FY 2005 summer meeting, July/August 2005. The final report by the SAs will be delivered in October 2005 at the end of the fiscal year, and a presentation will be made at the AMWG winter meeting. Each SA will spend approximately nine working days on this charge in FY 2005. This will include two three day workshops.

REVIEW PROCEDURE

One SA meeting in 2004 was used to develop the general scope and procedures for this review. The scope is accomplished by responding to the objectives and questions addressed above. Development of data/information for the assessment will be accomplished through three types of inquiry.

- Review of existing data/information from GCD AMP reports/memos/plans, etc.
- Inquiry of program administrators (primary agencies, but also tribes, businesses, science groups, etc.) for specific science/management program data and information. This will include science/management project and budget data.
- Inquiry of AMWG/TWG/GCMRC/review panels/contract scientists/ etc. for specific information on all AMP activities related to the above objectives/questions.

Much of the inquiry will be accomplished through e-mail and phone contacts with individuals involved in the GCD AMP. Within the limits of the budget, some personal interviews will occur to develop information on specific questions.

In several areas of inquiry the SAs will involve other science specialists, not associated with the GCD AMP. Specifically, this will occur in areas of adaptive management, budgeting, collaborative process, science integration modeling and sample designs. These specialists will assist in clarifying problems and developing recommendations.

SCHEDULE

The following schedule exists for the GCD AMP Review. The schedule is revised from a FY 2004 draft to accommodate FY 2005 program time schedules of the AMWG, TWG, GCMRC and Secretary's Design.

January, 2005	Develop and review prospectus, schedules, time constraints; Review questions
February, 2005	Finalize review questions, prospectus, review and writing assignments, schedules, establish teams, develop data and information. SA conference calls.
March/April/May, 2005	Develop information on question set. Develop data matrices. Interview GCD AMP individuals/groups. SA meeting in April to evaluate data.
May/ June, 2005	June meeting of SAs to develop draft of findings/recommendations.

July/August, 2005	Presentation of draft report to AMWG summer meeting.
September, 2005	Final revisions of draft report.
October, 2005	Final report; presentation and discussion. Fall river science workshop on findings and recommendations to AMWG/TWG/GCMRC/Secretary's Designee.

DELIVERABLES

Three deliverables are proposed for the GCD AMP Review Project.

- July/August, 2005. Draft of key preliminary findings including brief summary document, and presentation to AMWG.
- October, 2005. Final report, power point and river trip workshop on recommendations by SAs with GCD AMP groups.
- The final report will provide a general assessment of all review questions, with a detailed evaluation of questions deemed critical by AMWG, GCMRC, TWG and Secretary's Designee, and recommendation for change.