

# Report and Recommendations to the Secretary's Designee

From the Roles Ad Hoc Group  
of the  
Glen Canyon Dam Adaptive Management Work  
Group

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## Introduction

The attendees of the Glen Canyon Dam Adaptive Management Program (GCD AMP) retreat in June 2004 identified the most urgent issue facing the adaptive management program (AMP): the clarification of roles, responsibilities, and functions of the various program components. At the August 2004 meeting of the Adaptive Management Work Group (AMWG), the Secretary's Designee formed the Roles Ad Hoc Group, and charged it to define roles, responsibilities, and functions of the AMWG, Technical Work Group (TWG), Grand Canyon Monitoring and Research Center (GCMRC), and Science Advisors (SAs). An ad hoc group composed of Randy Peterson, Secretary's Designee's representative; Norm Henderson, Chair, Technical Work Group; Jeff Lovich and Denny Fenn, representing Grand Canyon Monitoring and Research Center; and Dave Garrett, Executive Coordinator, Science Advisors, originally drafted this report, which was transmitted to the Secretary's Designee in January 2006. In December 2006 the new Secretary's Designee established a new ad hoc group to review the document. The new ad hoc group included Randy Peterson (BOR/Secretary's Designee representative), Kurt Dongoske (TWG Chair), John Hamill (Chief, GCMRC); and Dave Garrett, (Executive Coordinator, SA). This report reflects the results of that review

The main body of the report has six sections: AMWG, Secretary's Designee, TWG, GCMRC, Bureau of Reclamation (BOR or Reclamation), and Science Advisors. Statements of issue or concern are numbered and in bold-faced type. These statements were culled from the issues raised at the 2004 AMP Retreat and from members of the Roles Ad Hoc Group. A Background section sometimes precedes the recommended Resolution. If foundational documents are quoted, the quotes are in *Italics*. The Appendix contains a review of AMP foundational documents as they inform these questions. A list of References concludes the report.

## **Adaptive Management Work Group (AMWG)**

- 1. Collaboration and AMP effectiveness.** There are several indications that the level of collaboration among AMP participants have decreased since the inception of the AMP in 1996, including failure of the various AMP groups to reach consensus/agreement on a long term experimental plan, the Monitoring and Research Plan for the AMP, a beach/habitat building flow experiment in 2007, and construction of a temperature control device on Glen Canyon Dam. The Roles Ad Hoc Group believes that ineffective and possibly insufficient collaboration is an underlying cause of contention, litigation threat, diminished efficiency, and confused roles within the AMP. The purpose of the item is to address how collaboration among AMP participants could be increased, consistent with the requirements of the Federal Advisory Committee Act (FACA).

### Background

The AMWG was created in 1997 as a FACA committee to provide a formal mechanism to provide advice and recommendations to the Secretary of the Interior. In accordance with its operating procedures, the AMWG develops and approves recommendations by a two-thirds majority of the members voting. This requires some level of cooperation, but while consensus is initially attempted, consensus building is often frustrated by the fact that the AMWG can simply develop a recommendation to the Secretary with a vote. As such, the question exists as to what extent collaboration should be pursued to build consensus if a position of the stakeholders can be determined quickly with a vote. Resolution of this question needs take into account that collaborative processes are frequently expensive and time consuming, especially in resolving issues where conflict is extensive.

The Department of the Interior's (DOI) Adaptive Management Guidebook concludes that for adaptive management to work effectively stakeholders must be willing to work collaboratively in a group environment to plan specific courses of action:

Consensus on goals and objectives at the beginning of an adaptive management project sets the stage for an iterative, adaptive management cycle (Rogers and Biggs, 1999). However, consensus must continue through the life of the project. Consensus is sustained by ongoing collaboration, through which potential conflicts arising from the inevitable surprises in experiential learning can be resolved. (Lee, 1999; Holling, 1999)

Consensus is promoted by collaborative frameworks that foster mutual learning, relationship building, and the creation of a shared understanding as the basis for agreement and ultimately changed behavior. Collaborative structures are in essence negotiated agreements among stakeholders, which are embraced and sustained because they accept the outcome of a process they perceive to be participatory and fair (Knopp and Caldbeck, 1990; Lauber and Knuth, 1997).

For the purposes of this discussion, collaboration means AMP participants working together to achieve a common goal. Collaboration is generally recognized as a necessary approach to resolving complex natural resource management problems. According to Yaffee and Wondelleck (2000), collaboration leads to better decisions that are more likely to be implemented and better prepares agencies and stakeholders for future challenges. By building interpersonal and interorganizational linkages, managers are better informed and make choices about future direction that are more likely to solve the problem at hand. Programs are more likely to be implemented successfully if they are supported and owned by affected groups. Collaborative approaches have also been adopted as a means of building trust and ending policy, institutional, scientific, and legal impasses. There is a very real cost associate with these impasses. Large amounts of energy, human, and financial resources have been spent on resolving issues related to the operation of GCD without a clear sense of resolution or agreed upon direction.

The U.S Institute for Environmental Conflict Resolution (2006) recently completed an evaluation of the conditions for a successful collaborative recovery planning process for the threatened desert tortoise. Based on a review by the Roles Ad Hoc Group, many of the general conditions identified in that review for a successful collaborative process have been met for the AMP. These conditions include:

- **Does leadership support a collaborative approach?** DOI leadership supports the concept of collaboration as the preferred mean to resolve natural resource problems.
- **Is the GCD AMP a high priority?** GCD operations and conservation of resources in the Grand Canyon is a high priority for DOI and AMP stakeholders.
- **Are there adequate funding and staff resources?** The GCD AMP is one of the best funded and staffed efforts of its kind.
- **Is there a shared base of information?** A rich and broad database has been developed for the CRE; the GCMRC was established specifically to provide science support to the AMP.
- **Are solutions negotiable?** While there are certain legal and operational constraints associated with the operation of GCD, many of the important issues are negotiable within established constraints.
- **Are the parties interdependent?** The history of the issues related to GCD operations and the willingness of parties to continue to participate in the AMP clearly suggests that there is a realization that one party cannot get one's own interests met without accommodating the interests of others. This interdependence is likely to continue into the future.
- **Will there be continuing relationships?** All the parties involved in the AMP have a long-term interest in the operation of Glen Canyon Dam and the conservation of resources in the Grand Canyon.

The Committee discussed at length the differences among various adaptive management and recovery implementation programs and how program operating procedures and expectations fundamentally affect the degree of collaboration. Our analysis suggests that many of the ingredients for a successful collaborative process exist for the GCD AMP. However, there are several missing elements or issues that should be addressed to increase the effectiveness of collaboration in the AMP.

#### Resolution

a. The Secretary, in consultation with the AMP, should consider the implications of its basic structure and operating procedures and evaluate whether improved and possibly increased collaboration would be more effective in meeting the charge outlined in the 1995 Environmental Impact Statement (EIS). The Roles Ad Hoc Group believes the level of collaboration among the AMP participants and the overall effectiveness of the AMP would be improved if the following factors were addressed.

- **Establish and agree to a common mission/goal for the AMP.** By definition a collaborative process involves participants working together to achieve a common goal or solve a shared problem. The draft AMP strategic plan includes a broad vision and mission statement. The combined vision and mission statement reads as follows:

“The Grand Canyon is a homeland for some, sacred to many, and a national treasure for all. In honor of past generations, and on behalf of those of the present and future, we envision an ecosystem where the resources and natural processes are in harmony under a stewardship worthy of the Grand Canyon.

We advise the Secretary of the Interior on how best to protect, mitigate adverse impacts to, and improve the integrity of the Colorado River ecosystem (CRE) affected by Glen Canyon Dam, including natural biological diversity (emphasizing native biodiversity), traditional cultural properties’ spiritual values, and cultural, physical, and recreational resources through the operation of Glen Canyon Dam and other means.

We do so in keeping with the federal trust responsibilities to Indian tribes, in compliance with applicable federal, state, and tribal laws, including the water delivery obligations of the Law of the River, and with due consideration to the economic value of power resources.

This will be accomplished through our long-term partnership utilizing the best available scientific and other information through an adaptive ecosystem management process”

The AMP also approved 12 goals for the various physical, biological, cultural, recreation, and hydropower resources in the Colorado River ecosystem. However, several of the goals are in apparent conflict with one another (e.g., native fish protection, maintenance of a nonnative trout fishery, production of hydropower). Many stakeholders are clearly aligned with certain specific goals and have never committed to defining or achieving specific resources objectives or desired future resource conditions.

It should be noted that while the vision, mission, and goals were finalized and endorsed by the AMWG, it’s unclear whether program participants are willing to work collaboratively and compromise to achieve the mission and goals of the AMP. **As a requirement for continued participation, all participants should formally commit (through a resolution/agreement) to work collaboratively to carry out the mission and intent of the AMP.**

- **Create incentives for participants to work collaboratively to achieve common goals and desired future resources conditions.** Incentives are needed for all the involved stakeholders to genuinely want to work to make the collaborative process successful. Without incentives that meet each stakeholder’s self interest, there will not likely be enough motivation and commitment to work through difficult issues and challenges.
- **Define desired future resources conditions.** The draft AMP strategic plan recognized the importance of specifying desired conditions or targets for resources in the CRE. However, to date quantifiable targets have not been established for AMP goals including the AMWG’s priority resources (humpback chub, sediment, and cultural resources). These targets are needed to guide and focus science and management activities.
- **Develop a process for evaluating tradeoffs among conflicting or competing goals.** One of the biggest challenges of the AMP is to synthesize the large amounts of scientific and other technical information to evaluate the tradeoffs of alternative courses of action. Adequate time is needed to allow for stakeholders to understand, discuss, and/or rank options. In addition, over the past decade, there have been great advances in the development and application of a suite of decision support tools to assist scientists and managers in understanding the interrelationships, data uncertainty, and relative influence

of scientific knowledge on resource management decisions. These tools should be evaluated and tested for use in the AMP.

- **Update or develop a charter and operating procedures for all the elements of the AMP (AMWG, TWG, GCMRC, and Secretary's Designee) to reflect a more collaborative approach.** All parties need to clearly understand the mission and responsibilities of the group they serve on and the protocols or processes for how business will be conducted. Currently the mission, responsibilities, and operating protocols have not been developed for all elements of the AMP. The ones that have been developed have not been formally adopted and/or are not summarized in a single document.
- **Utilize facilitation and mediation expertise more broadly throughout the AMP.** Sophisticated process design, facilitation, and mediation expertise is needed for a collaborative process to effectively address complex controversial issues involving the many diverse interests represented on the AMP and that have a long history of conflict. Currently the AMWG utilizes a professional facilitator for all of its meetings; a professional facilitator should be similarly utilized for all TWG meetings. In addition, river trips, team building exercises, common goal setting, and social interactions should all be used to build trust and foster more effective collaboration.
- **Establish a full time Executive Coordinator/Manager for the Program.** A program as technically, politically, and structurally complex as the AMP needs a lot of care and feeding to be successful. A full time Executive Coordinator/Manager is needed to lead the Program, facilitate timely resolution of differences among parties, and ensure that those operating protocols are fairly and consistently enforced at all levels of the Program. An Executive Coordinator/Manager would also relieve the Secretary's Designee of the burden for day-to-day management of the AMP. Several models exist for this type of position which should be evaluated to determine what will best meet the needs of the AMP and the Department of the Interior. In addition, the specific duties and authorities of the position would need to be carefully defined.
- **Determine the extent collaboration or cooperation should be used in AMP processes to provide effective operational guidance for the program.** This should include a discussion of whether collaboration need only exist within the AMWG, among scientists and managers, or among all AMP groups. Our view is that the need for collaboration is greatest at the AMWG where there is a necessity to merge science, policy, and societal goals into AMP recommendations. The focus of the TWG should be on evaluating the technical merits and options for consideration by the AMWG. However, significant collaboration is still needed among TWG members and between the TWG and GCMRC to resolve scientific and technical issues contained in proposed recommendations to AMWG.
- **Is there adequate time?** Successful collaboration, especially to resolve controversial issues, takes time. Unrealistic or mandated deadlines can severely handicap the collaborative processes. There are no immediate time constraints for resolving many of the issues related to GCD operations. However, there is an urgency to address the decline of certain resources such as humpback chub and sediment, and there are firm deadlines associated with the completion of the EIS for the long term experimental plan. DOI needs to assess whether effective collaboration is possible within these time constraints.
- **Is there a balanced range of interests willing to participate?** For a collaborative process to be perceived as legitimate, it must involve a balanced range of participants

with diverse perspectives. All the major interest groups, State and Federal agencies, and Native American tribes are engaged in the AMP, however, some participate more actively than others. The effect that cultural and gender differences have on the ability of stakeholders to participate in the process in an equitable fashion needs to be investigated. In addition, some stakeholders feel disenfranchised because some interests have more representation on the group; this is especially significant when consensus is not achieved and issues get resolved by a vote.

In conclusion, one of the fundamental principles of effective collaboration is that the participants should be directly involved in designing the collaborative process. **It is proposed that the issues and recommendation above be discussed and resolved during the "AMP Effectiveness Workshop" planned for August/September 2007.**

The primary goals of the workshop are:

1. To get a commitment from all parties to work collaboratively to embrace and support a common mission and processes for the AMP.
2. To get a commitment of all AMP parties to develop and complete critical elements of an action plan over the next 5 years.

The Secretary's Designee should evaluate the outcome of the workshop, and then determine and actively pursue the most appropriate course of action.

- b. *Expectations of adaptive management in the AMP* – The 1995 EIS cites several key purposes for including adaptive management in the 1996 Record of Decision. These are (1) "...to respond to future monitoring and research findings and varying resource conditions", (2) "...to provide an organization and process for cooperative integration of dam operations, resource protection and management, and monitoring and research information", and (3) to "...ensure that the primary mandate of the [GPCA] is met through future advances in information and resource management" (Reclamation, 1995, p. 34). Success of the AMP therefore depends on accurate scientific information to determine if current dam operations and other management actions are accomplishing the protection mandates of Grand Canyon Protection Act (GCPA). The EIS expects the AMP to respond to this new information by making recommendations on these actions to the Secretary of the Interior. Success of the AMP may be judged by (1) how well the group functions in making these recommendations, (2) how well new scientific information is integrated with management decision making, and/or (3) how well the resource protection mandates of the GCPA are being met. **To clarify progress in meeting its responsibilities, the AMP should define measures of success. The DOI adaptive management guidebook can be used to assist in this effort.**



**2. ROLE, AUTHORITY, and RELATIONSHIPS. Some AMWG members do not seem to have a clear understanding of their role, in particular pertaining to giving advice and making recommendations to the Secretary of the Interior.**

Background

The AMWG Charter makes it clear that AMWG's role is to make formal recommendations to the Secretary of the Interior:

*The committee will provide advice and recommendations to the Secretary of the Interior . . .*  
(Norton, 2004, p. 1).

*The duties or roles and functions of the AMWG are in an advisory capacity only* (Norton, 2004, p. 2).

The Charter and AWMG and TWG Operating Procedures have been established to accomplish this role. The AMP attempts to function and provide recommendations by consensus, but when this is not possible, votes are taken which allow majority recommendations to be made.

Many other collaborative resource management and environmental protection groups have been established which attempt to achieve their goals through collaborative efforts (see Issue 1). Group members often have a sense of ownership in the process and the outcome, using compromise and negotiation to forge a strong group dynamic. Progress is often measured both in terms of protecting/enhancing resources and achieving individual stakeholder interests.

Resolution

The AMP must follow the role established by the Charter, making formal recommendations to the Secretary of the Interior using the processes described in the Operating Procedures. However, there is also a role for collaboration in this process.

The AMP would continue to benefit from increased collaboration as recommendations are deliberated, both on the individual level with increased respect and interaction, and on the group level with an effort to meet everyone's needs.

**3. PROCESS. The AMWG often addresses the details of the AMP, sometimes duplicating TWG efforts, instead of focusing on high-level executive issues and recommendations to the Secretary. In addition, the AMWG sometimes does not act on TWG recommendations.**

Background

The goal is to have TWG thoroughly discuss all issues that have a technical or scientific component that will come before AMWG. The AMWG should not duplicate the work of the TWG, but rely on their technical expertise and work.

At a recent AMWG meeting, TWG recommendations related to the Monitoring and Research Plan and the beach/habitat building flow were never voted on by the AMWG.

Resolution

As a general rule technical reviews and deliberation will occur at the TWG meetings. As described in Issue # 9, this will involve a thorough evaluation of the technical pros and cons of options considered, perhaps even some options that are technically or scientifically unattractive. This technical information will help AMWG understand the basis for the TWG recommendations and will serve as companion information to the AMWG evaluation of policy implications. The AMWG will rely on the TWG for technical reviews and recommendations; summaries of those technical discussions and findings will be presented to the AMWG.

During AMWG meetings, agenda items will be constructed to build on the TWG's work rather than rehashing previous TWG discussions. The AMWG would thus serve as an executive board, focusing

on policy options and tradeoffs, considering the pros and cons of each option, as recommendations are evaluated. The AMWG will consider and act on TWG recommendations before considering other options or recommendations.

#### 4. Clear timeframe planning is not apparent.

##### Resolution

A 1-year schedule will be developed for AMWG and TWG, which clearly shows all essential regular items that need to be addressed every year, plus other items that have been added by AMWG. This schedule will include the original timeframe for the tasks plus their status.

Final approval of annual plans of work and meeting schedules for the AMWG, TWG, and SAs will be developed and incorporated into the AMP Annual Work Plan (AWP) which traditionally has only contained the GCMRC Annual Plan of Work. The TWG secretary will have the responsibility to develop and update a composite annual meeting schedule and summary table of annual plans of work for all AMP entities. AMWG will approve the programs and schedule in its summer meeting.

#### 5. CLARITY and WORKLOAD CONCERNS. The AMWG believes that it gives GCMRC and TWG clear guidance when, in fact, there is often room for interpretation. The AMWG may meet too infrequently and expect too much of the TWG and GCMRC between meetings.

##### Resolution

The GCMRC Chief and TWG Chair will attend all AMWG meetings with a clear understanding of their workload and deadlines so they can respond during discussions to AMWG requests. The AMWG will focus on providing clear recommendations to DOI. As the AMWG considers recommendations or requests to the TWG or GCMRC, the TWG Chair and GCMRC Chief will review any actions that involve them to ensure the action and timeframe is clear. If possible, the GCMRC Chief or TWG Chair will determine at the meeting the feasibility of addressing the AMWG/TWG's request. Recommendations that are not addressed directly at the meeting will be reviewed by the TWG Chair and GCMRC Chief and responded to after the meeting. Conflicts in workload that cannot be resolved by the GCMRC or the TWG within current budgeting or staffing will be reported to the Secretary's Designee who will determine how best to respond to the AMWG request.

#### 6. Some AMWG members seem to believe that GCMRC works for them and that they can direct the day-to-day activities of GCMRC. Some also feel the AMWG has authority over other State and Federal agencies.

##### Background

The AMWG has no authority over any individual AMP member, including GCMRC.

*The Secretary of the Interior established the AMP with four key elements: AMWG, TWG, GCMRC, and the IRP (Independent Review Panel). The four have distinct roles, but ultimately the Secretary of the Interior is responsible for seeing that the monitoring and necessary research is done to evaluate the impacts of adjustments made to dam operations. . . . The AMWG can **recommend** [emphasis in original] studies and priorities for implementing individual studies during those reviews, preferably by consensus. . . . However, final decisions as to the management of Interior facilities and resources, what studies to implement, when, and using funds from which sources remain, by statute, with the Secretary of the Interior and the appropriate Interior agencies. (Loveless, 2000, p. 6).*

*The Congress finds and declares that . . . the function of advisory committees should be advisory only, and that all matters under their consideration should be determined, in accordance with law, by the official, agency, or officer involved. (Federal Advisory Committee Act, 1972, Section 2(b)).*

AMWG does have authority to charge subcommittees or work groups, such as the TWG, with assignments.

*The Committee may establish such work groups or subcommittees as it deems necessary for the purposes of compiling information, discussing issues, and reporting back to the AMWG. (Norton, 2004, p. 5).*

*Sub-groups will receive their charges from the AMWG. (Gabaldón, 2002, p. 5).*

#### Resolution

Individual comments, although appreciated and sometimes requested, are advisory only and do not constitute direction to GCMRC or TWG. No formal direction is given to TWG without consensus or a vote by AMWG. No formal direction is given to GCMRC without consensus or a vote by AMWG, and approval of such by the Secretary's Designee.

Consensus items and votes are clearly distinguishable from individual comments, in that the motion or consensus item is clearly articulated, the language is understood and confirmed with the group, and either votes are counted or the group is asked, usually more than once, if the language as written constitutes a consensus of everyone present. Recommendations or positions of one or even several individuals do not constitute a recommendation or decision point in the AMP, unless they are derived through the formal vote of the TWG or AMWG. Formal AMWG recommendations and/or decisions are constituted by a vote of AMWG members, and approved of the Secretary's Designee as appropriate.

Free-flowing discussion and interaction are important to the program, and informal, individual feedback to GCMRC is welcome, particularly when requested. However, GCMRC decides, as an agent of the Secretary of the Interior responsible for the AMP science program, what input to incorporate into its program, unless and until the input is an AMWG recommendation that has been accepted by the Secretary of the Interior.

This means that in order for AMWG to give direction to GCMRC, it must make a recommendation to the Secretary. See # 8 for a new process for these recommendations.

Note that when TWG is given an assignment from AMWG, the GCMRC would also usually be involved. Therefore, it elevates the level of that AMWG action.

#### **7. CONFLICT OF INTEREST. AMWG members often vote on issues or make budget recommendations where there is a potential conflict of interest.**

##### Resolution

While it would be preferable that stakeholders have no financial interest in AMWG recommendations, in a practical sense this is impossible. To comply with Federal procurement regulations, the following approach will be used:

- (1) AMWG will provide Federal agencies with broad program advice and recommendations through the organized FACA process.
- (2) After program and budget approval by the Secretary of the Interior, GCMRC will issue requests for proposals (RFPs) to solicit specific monitoring and research proposals to meet program needs (except as noted under #19.). However, limited competition and sole-source contracts may be used IF cooperators agree to (a) conduct the required work at a fair cost, (b) meet the required technical specifications, and (c) comply with independent peer review requirements.
- (3) GCMRC will fund proposals based on an independent peer review and comment process.

The Department of the Interior has recently promulgated new ethics guidelines for FACA committees, and the Charter and Operating Protocols have been modified to reflect these guidelines. In general,

these guidelines state the AMWG, TWG, or subcommittee members are prohibited in participating in specific matters in which the individual member has a direct financial interest.

### **Secretary's Designee**

- 8. PROCESS. Some AMWG members feel there is a lack of clear communication and understanding of how recommendations are relayed to the Secretary's office and how the Department of the Interior (DOI) responds to these recommendations.**

#### Background

Currently, all AMWG recommendations made to the Secretary are transmitted verbatim in a memorandum from the Secretary's Designee to the Secretary, with copies to the AMWG.

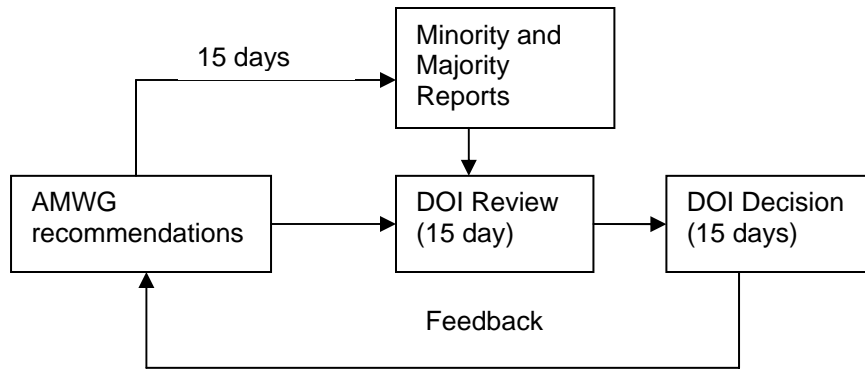
#### Resolution

Figure 1 illustrates the process that the Secretary's Designee will use to address AMWG recommendations. The Secretary's Designee will formally transmit AMWG recommendations to the Secretary within 15 days of the AMWG meeting in which the recommendations were made. Sufficient background information, including a majority and any minority reports, will be provided by the Designee to fully inform DOI staff. Specific guidelines for the development of Majority and Minority reports will be developed.

If the AMWG recommendation was unanimous, the Secretary's Designee will have the authority to speak for the Secretary and respond positively back to the AMWG. If the Designee sees potential adverse consequences, the Designee can elevate the issue to the DOI agency heads or Assistant Secretaries for formulation of a DOI response to the AMWG.

If the AMWG recommendation was not unanimous, the Secretary's Designee will convene the DOI AMWG representatives to formulate a proposed DOI position and response. If this group reaches an unanimous position on the issue, the Designee may respond to the AMWG with that position as the Secretary's decision (based on departmental review). If the DOI AMWG representatives cannot reach consensus on a recommendation, the Designee would convene representatives of the agency heads or Assistant Secretaries to determine a DOI position.

The Secretary's Designee will convey the outcome of these discussions and the final DOI decision in writing to the AMWG within 45 days of the AMWG meeting. A written status report will be provided if a final DOI decision is not reached within the 45 day process.



**Figure 1. 45 Day Process to Address AMWG Recommendations.**

## **Technical Work Group (TWG)**

- 9. TECHNICAL FOCUS. Some believe the TWG demonstrates a lack of focus on truly technical issues, and that their emphasis on policy issues impedes the effectiveness of the group.**

### Background

The foundational documents specify that the TWG's role is technical in nature:

*The Technical Work Group's main function is to provide technical assistance to the Adaptive Management Work Group (Glen Canyon Dam Adaptive Management Work Group. [Glen Canyon Dam AMWG], 2002, p. 5).*

*[TWG] would translate AMWG policy and goals into resource management objectives and establish criteria and standards for long-term monitoring and research in response to the GCPA. (Reclamation, 1995, p. 37).*

### Resolution

The primary role of the TWG is to translate AMP goals and objectives into resource management objectives, and establish general criteria and standards for long-term monitoring and research consistent with the Grand Canyon Protection Act (GCPA). They should ensure that management needs and targets for resources are clearly defined so that GCMRC can design a research, monitoring, and experimental program that meets those needs. The TWG should also:

- (1) Review progress/ accomplishments annually
- (2) Review and approve general technical guidance for the program and biennial work plan (BWP)
- (3) Review and update the MRP and BWP to ensure they are responsive to management needs

The TWG will continue to focus primarily on the scientific and technical aspects of the AMP. In addition, the TWG will serve as the interface between science and policy, and integrate science into AMWG requests and recommendations that have been approved by the Secretary. TWG will consider various alternatives for any particular decision, perhaps including some that are not technically or scientifically attractive. The TWG agenda should allow various viewpoints to be expressed and initially provide an opportunity for TWG members to gain understanding of others' viewpoints and search for common ground, which would promote consensus recommendations to be made to the AMWG. Group ranking or prioritization may help achieve this goal. If consensus is not possible, then motions would be considered. When making a recommendation to AMWG, all alternatives – including technical pros and cons – will be submitted to the AMWG for its review and consideration. Minority positions will be written and distributed by the advocates for that position, if they wish to do so.

In order to enhance the decision-making process, a simple alternatives analysis process will be developed for use by TWG and AMWG. The alternatives analysis process will consider pros and cons of a recommendation from both a technical and policy perspective. The TWG will conduct the technical analysis; the AMWG will conduct the policy analysis.

- 10. Some TWG members appear to lack technical training that would enhance their contribution toward success of the group.**

### Resolution

TWG members should have a technical background sufficient to adequately evaluate scientific proposals and make technical recommendations to the AMWG. TWG members should have relevant academic and technical qualifications and currently function in a technical capacity for the agency/entity they represent. The Secretary's Designee will communicate with AMWG members the

importance of this, and request that they appoint technically or scientifically competent individuals to the TWG.

**11. RESPONSIBILITY. Some feel that the EIS expectations that the TWG would define core questions for GCMRC to address are not being met.**

Resolution

The GCDAMP has adopted a science planning process to develop a credible, objective science program that is responsive to the goals and priority needs identified by the AMWG. Since 1996, the AMWG has used a structured process for specifying their information needs. Through a series of workshops, extensive energy has been expended to develop a hierarchy of goals, objectives, core monitoring information needs (CMINs), and research information needs (RINs). The AMWG also specified 12 goals that provide general guidance for planning, monitoring, and research efforts. However, the list of objectives grew to more than 40 and the various information needs to more than 200 complicating science planning and priority setting.

Given this complexity, the AMWG identified the need for a different approach in 2004 and identified 5 priority questions related to the 12 GCDAMP goals that were to be used to focus science activities. In 2005, to further focus science planning efforts, the GCMRC initiated two Knowledge Assessment Workshops that identified areas of scientific uncertainty and specified strategic science questions related to the five priority questions. These questions now form the basis for the Strategic Science Plan (SSP) and Monitoring and Research Plan (MRP) that were adopted by the AMWG in December 2005. To respond to concerns raised by the AMWG, GCMRC is developing a crosswalk table to show the relationship between the various information needs (INs) and the proposed strategic science questions. The SSP and MRP will be updated based on this analysis to ensure that high priority INs are addressed.

**12. TWG often appears as an unnecessary intermediary in the AMP process. The role of TWG is therefore unclear.**

Background

While the AMWG is always free to bring up issues on its own, it mostly serves as a board of directors for the AMP, charting its general direction and leaving technical details to be worked out between the TWG and GCMRC. Therefore, it is imperative that there is a highly functional TWG.

As specified in the foundational documents, any issue addressed by TWG must be approved by AMWG in advance.

*The Technical Work Group . . . operates at the direction of the Adaptive Management Work Group. (Glen Canyon Dam AMWG, 2002, p. 5).*

*Sub-groups [e.g., TWG] 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. (Gabaldón, 2002, p. 5).*

*The TWG shall perform those tasks charged to them by the AMWG. Additional responsibilities of the TWG are to develop criteria and standards for monitoring and research programs; provide periodic reviews and updates; develop resource management questions for the design of monitoring and research by the Grand Canyon Monitoring and Research Center, and provide information, as necessary, for preparing annual resource reports and other reports, as required, for the AMWG. (Johnson, 2001, p. 1).*

*The TWG's responsibility is similarly limited, but even more so; it is to carry out only specific assignments within the scope of the AMWG's responsibility, as directed by the AMWG.* (Loveless, 2000, p. 3).

The Operation of Glen Canyon Dam: Final Environmental Impact Statement (FEIS) (Reclamation, 1995, p. 37) specifies the following additional responsibilities for TWG:

- *Develop criteria and standards for monitoring and research programs within 3 months of the formation of the group and provide periodic reviews and updates*
- *Develop resource management questions for the design of monitoring and research by the center*
- *Provide information as necessary for preparing annual resource reports and other reports as required for AMWG*

The AMP Strategic Plan (Glen Canyon Dam AMWG, 2002, p. 5) adds the following TWG responsibilities:

- *Reviewing and commenting on the scientific studies conducted or proposed by the program;*
- *Provide [sic] a forum for discussion by Technical Work Group members, external scientists, the public, and other interested persons;*
- *Reviewing strategic plans, annual work plans, long-term and annual budgets, and other assignments from the Adaptive Management Work Group.*

#### Resolution

AMWG members will ensure an effective TWG by placing representatives on the TWG who can speak for and represent them on the scientific and technical aspects of the AMP.

The TWG will focus its work on assignments from AMWG and the responsibilities outlined in the FEIS and the AMP Strategic Plan. In addition, the TWG will be proactive in identifying issues that it should address, and present to AMWG its proposed work plan for approval on an annual basis.

### **13. Many TWG members are unwilling or unable to fully participate in work efforts required to meet deadlines and commitments.**

#### Background

In order to operate effectively, the TWG must include stakeholder representatives who are willing and able to participate in the AMP process. This participation includes participation in TWG votes, attendance of meetings, participation in ad hoc groups, and providing timely reviews of documents.

#### Resolution

The AMWG and the TWG Chair will be sensitive to the time commitments required of TWG members when making assignments or establishing new ad hoc committees. Assignments will be clearly defined and the scope limited based on an estimated workload that most TWG members can realistically accommodate.

AMWG members will only nominate TWG members who have adequate time and the inclination to fully participate. Lack of full participation is the failure to participate in TWG votes, attend two sequential scheduled TWG meetings, failure to join and work with at least one ad hoc group each year, or to provide timely review of documents. Annually the Secretary's Designee will consult with the TWG Chair on the effectiveness of the TWG, including the level of member participation.

The Secretary's Designee will formally notify AMWG and TWG members of this new requirement.



- 14. TWG is sometimes unwilling to make decisions or give recommendations to AMWG, resulting in unconsolidated recommendations to GCMRC representing individual, and often diametrically opposed, views of stakeholders.**

Resolution

Individual comments, although sometimes requested from an ad hoc group or from GCMRC, are advisory and do not constitute direction to GCMRC. As noted above, the GCMRC ultimately answers to the Secretary of the Interior, not to the TWG or the AMWG. Direction to individual GCMRC staff members from individual TWG members is not encouraged, and GCMRC is not obligated to respond to these communications. TWG members instead are encouraged to bring concerns to TWG meetings or the appropriate ad hoc group meeting for discussion and resolution as a group.

In order to help the decision-making process, TWG will follow its Operating Procedures (Johnson, 2001) for consensus building and voting. All TWG recommendations to the AMWG will be acted on by a role call vote. Prior to the TWG role call vote, the TWG Chair will ensure that all TWG members are aware that a roll call vote is pending, that the TWG membership understands the language of the motion before them, and that the TWG is ready for the vote. In all other deliberations of the TWG, consensus is the preferred option, but a vote can be taken when consensus is not possible.

Finally, by developing and publicizing the meeting schedule as discussed under Issues #4, the timeline for decision-making will be clear.

- 15. COMMUNICATION. It appears that many TWG members do not have regular interaction with their AMWG members, creating information gaps and confusion.**

Resolution

Both AMWG and TWG members will be reminded by the Secretary's Designee that they have the responsibility to communicate thoroughly with each other on AMP issues. AMWG and TWG members are expected to confer before and after each TWG meeting. This will help to ensure that, as much as possible, the TWG members are in accord with their AMWG members when they present their agency's technical or scientific concerns and needs at the TWG meeting. In addition, AMWG members will be fully informed as to TWG discussions and actions before the next AMWG meeting. This will make it more likely that the issues are resolved at the TWG level, where the members meet more often, and that technical or scientific concerns of all AMWG members are aired and resolved at TWG meetings, and thus will not need to be revisited at the AMWG meeting.

## Grand Canyon Monitoring and Research Center (GCMRC)

- 16. COMMITTEE PARTICIPATION:** Some members of the AMP have expressed concern that in recent months the GCMRC has not been as active in all ad hoc work groups as in the past. They see this as a lack of cooperation by GCMRC and feel that such actions are unacceptable and potentially damaging to the AMP program. GCMRC, on the other hand, has been facing a heavy workload from the November experimental flow, core monitoring plan, and strategic science plan development, FY 06 budget development, SCORE report preparation, ongoing science program administration, and a variety of ad hoc committee meetings. GCMRC is the only AMP element that is expected to serve on every ad hoc committee appointed by the TWG or the AMWG. While the GCMRC recognizes that it must be an active participant on these ad hoc committees, the situation has at times put overwhelming pressure on GCMRC staff due to workload issues. Perhaps the past 2 years have been unusual in having so many ad hoc groups working at once, but if this has become the norm for the AMP, then a more strategic and controlled approach to program workload must be taken. GCMRC does, in fact, want to be a full partner with the AMP participants, but these participants must also be sensitive to GCMRC time limitations.

### Resolution

A common understanding of and sensitivity to the workload issue is vital to an efficient and effective AMP process. The 1-year schedule referred to in Issue #4, which shows the essential items that the AMP must do each year, will assist in managing and planning for the GCMRC workload. Any additional task will involve a decision as to whether it can be done in the timeframe requested by AMWG.

In addition, the process described in Issue #5, which allows the GCMRC to resolve concerns about their workload, will ameliorate this problem.

As noted above, when TWG is given an assignment from AMWG, the GCMRC would also usually be involved. Therefore, it elevates the level of that AMWG action to a recommendation to the Secretary.

- 17. DELIVERABLES.** GCMRC has a history of being late on assignments or not delivering enough products.

### Resolution

GCMRC efforts will focus on the most important work products. These may include fieldwork, contracting, budget, SCORE reports, and AMWG/TWG mailings. In the short term, they may also include the core monitoring plan, the experimental flows plan, and the strategic science plan. GCMRC will perform a careful definition of their responsibilities and priorities in the Monitoring and Research Plan and Biennial Work Plan which will be brought to the AMWG for review and recommendation to the Secretary. This can set some parameters and limits for work accepted by the Center.

Parallel with the annual/biennial work plan, GCMRC will develop a completion schedule for each of the major products for which it is responsible. TWG will review, provide input, and recommend a schedule to the AMWG. If completed products cannot be prepared within the needed timeframe, GCMRC will report to the Secretary's Designee the reasons for the delay and suggest a revised completion schedule. The Secretary's Designee can affirm the GCMRC suggestion, make a different decision, or consult with TWG, AMWG, or other entities. The Secretary's Designee will inform the TWG and AMWG of the decision made.

- 18. When assigning work to GCMRC, the AMP needs to be more realistic in setting deadlines and should more carefully consider the work capacity and timeframe involved. In addition, from time to time, clarity of assignment is an issue, when GCMRC feels they have delivered a**

**product on time and AMWG or TWG may say they are late because the product is not what they thought they requested.**

Resolution

See Issue #4 for a description of a 1-year schedule that will be developed to assist in better timeframe planning by all groups in the AMP.

See Issue #5 for a description of a new process designed to ensure directions are clear and workload is considered before an assignment is accepted.

Remember that all direction to GCMRC is made as a recommendation to the Secretary.

- 19. RELATIONSHIPS and COMMUNICATION. Some feel the GCMRC does not want to be responsive to the needs of the AMP. There are no clearly defined limits of flexibility on GCMRC's management of science projects without going back to AMWG or DOI for approval. Some AMP members feel that GCMRC appears to have made unilateral changes in approved documents, work plans, and budgets without communicating with AMWG, which has reduced the level of trust between AMP members and GCMRC.**

Background

It is imperative to the success of the AMP that a positive, affirmative, and accountable relationship exists between GCMRC and the AMWG. If issues of trust have arisen, it is vital that solutions be found that will restore that trust. One of the challenges presented in this regard is the fact that the AMWG only meets three times per year and therefore cannot always address issues quickly. GCMRC has operated under the paradigm that its budget is approved by AMWG in advance, mostly based on GCMRC cost estimates, especially for new projects or projects that are renegotiated on an annual basis. Sometimes these estimates later prove to be accurate, while at other times they prove to be too high or too low. Whenever this happens, GCMRC makes adjustments in its annual program to cover shortfalls or to absorb surplus funds. These changes often result in individual projects at the bottom of the year's priority list either being postponed until next year (and those funds used to cover cost overruns on other higher priority projects) or being conducted on a larger scale than originally proposed (using funds freed up by lower than expected costs on higher priority projects), if such an action is scientifically justifiable. One can see how GCMRC might perceive this as constituting the normal and routine program adjustments needed to meet financial constraints when implementing the approved annual work plan. However, one can also see how the AMWG might perceive such actions as constituting unilateral and unauthorized changes by GCMRC to approved budgets and research plans.

Resolution

The GCMRC will give periodic updates on its operations and budget to the Secretary's Designee, AMWG, and TWG including an annual accomplishment report, approved budget amounts, actual costs, and the amount over or under budget. The annual/ biennial work plan will include contingency projects that will be funded if surplus funds arise. It will also identify projects that will be deferred if cost overruns or other priorities emerge. GCMRC has the latitude to make budget adjustments to accomplish work specified in the AWP up to 5 percent of its total budget. These adjustments will be reported to the TWG at each TWG meeting. No new projects will be implemented by GCMRC or BOR without first consulting with the TWG co-chairs and the Secretary's Designee. The Secretary's Designee will determine whether consultation with the AMWG is needed.

- 20. CONTRACTING. The AMWG is concerned that GCMRC has drifted in recent years from full compliance with the original and long-standing agreement that it use an open, competitive process to award research contracts or to enter into cooperative or interagency agreements for scientific work in support of the AMP. GCMRC acknowledges that competitive procedures were not used in the recent mechanical removal and experimental high flow studies due to time and logistical constraints arising from the time it took to complete the environmental compliance in juxtaposition with when work had to be underway in the field. This was not**

**intended to be a repudiation or abandonment of the long-term agreement to openly compete much of the scientific work of the AMP.**

#### Background

The foundational documents provide some direction, and some flexibility, to GCMRC with regard to contracting:

*The following specific duties would be assigned to the Monitoring and Research Center:...Administer research proposals through a competitive contract process, as appropriate (Reclamation, 1995, p. 37).*

*The Center . . . shall be composed of a small staff of administrative and scientific personnel, who will be detailed from other Department bureaus. The research program is proposed to be conducted through an open call proposal and (or) contract process, including a competitive request for proposals, with Federal and state agencies, universities, the private sector, and Native American tribes which will result in the selection of research projects based on scientific merit and cost. Required elements of the monitoring program may be proposed as an on-going responsibility of the USGS after an open decision-making process (Deputy Assistant Secretary for Water and Science, 1995, p. 2).*

*The GCMRC shall be composed of an appropriately sized staff of administrative and scientific personnel with relevant scientific and technical expertise. . . . Monitoring and research activities conducted by GCMRC will be implemented primarily through a competitive request for proposals with Federal and state agencies, universities, the private sector, and Native American tribes. The successful proposals shall be selected on the basis of advice provided by an independent external scientific peer-review (Schaefer, 2000, p. 2).*

*Other functions of the Grand Canyon Monitoring and Research Center are . . . 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; . . . (Glen Canyon Dam AMWG, 2002, p. 5).*

*Bob Snow (Washington Solicitor's Office) . . . reviewed his understanding of the concerns . . . [to wit,] if the procurement requirements had changed from using different entities to do work in the Grand Canyon towards a concentration of research being done by GCMRC. Bob said the Department has an opportunity to either avail itself of its in-house resources or ask external groups, cooperators, etc., to take on those tasks. The fact that there is an ongoing FACA process does not change the fundamental nature of being able to task USGS within their organic statutory authority to take on certain studies (Glen Canyon Dam AMWG, 2004, p. 10).*

The use of contractors versus in-house staff by GCMRC is clarified in the Strategic Science Plan that was approved by the AMWG on December 5, 2006:

*Contractors and cooperators will be utilized to conduct a large measure of the field work and work collaboratively with GCMRC on data analysis, synthesis, and publication. GCMRC scientists will be engaged in the implementation of field research and monitoring when in-house staff with the appropriate expertise is available and their use is cost effective. In every case the USGS will hold its own proposals to the same level of rigorous outside peer review as all others.*

Several land and resources management agencies including National Park Service (NPS), Fish and Wildlife Service (FWS), Arizona Game and Fish Department (AZGFD), and the Tribes have statutory or regulatory responsibilities for long term management of resources in the Grand Canyon. In addition, USGS, the parent organization of GCMRC, includes many leading experts in river science. Collectively, these agencies/entities have technical skills and capabilities that can assist in conducting some of the work being recommended by the AMP. Currently, these entities are an integral part of several resource monitoring efforts, including monitoring of humpback chub and other

native fishes, rainbow trout and other nonnative fishes, hydrology and sediment, archaeological resources, and traditional cultural properties. Having these agencies/entities as active partners in the AMP science program helps meet their statutory responsibilities and facilitates the integration of the scientific information into management processes and decisions. The services of these agencies and entities are generally secured through interagency and cooperative agreements, rather than through competitive RFPs.

No matter whom carries out the work of the AMP, Protocol Evaluation Panels (PEPs) are used to provide an independent scientific perspective on the efficacy of all major elements of the science program, including the scope, objectives, methods, past performance, and recommended future direction of science projects. PEP reviews are used to help design new research programs and to evaluate the ongoing work of established projects. In addition, peer reviews of proposals and deliverables provide independent review of specific AMP scientific efforts to ensure high scientific quality.

#### Resolution

The purpose of open competition through RFPs is to promote cost effectiveness, expanded breadth of ideas, optimal scientific design, and highest levels of scientific expertise. However, this process takes more time, effort, and cost to achieve these objectives. The scientific protocols as described above will contribute to accomplishing many of the same scientific objectives.

The most cost effective mechanisms will be used to accomplish work. In general, GCMRC and BOR will prepare RFPs and use an open, competitive process for awarding funding for new research projects or new initiatives (e.g., food base monitoring and research). For other projects, limited competition, and sole-source contracts in accordance with Federal Acquisition Regulations may be used IF cooperators agree to (a) conduct the required work at a fair cost, verified through market research, (b) meet the required technical specifications as determined by GCMRC and implement PEP and SA recommendations accepted by the AMWG and approved by the Secretary, and (c) comply with independent peer review requirements established by GCMRC. Annual evaluations will ensure cooperators are meeting these requirements. GCMRC scientists may conduct field research and monitoring under the same conditions, particularly in time-sensitive cases where a formal RFP or other competitive contracting mechanism would not be practicable. In every case, the USGS will hold its own proposals to the same level of rigorous outside peer review as all others. GCMRC and BOR will annually report to AMWG on how much, by percentage, of their science was contracted through open competitive process and how much was accomplished through each of the other mechanisms (sole source contract, interagency agreement, performed in-house, etc.).

- 21. COMPLIANCE. There is an open question about whether and/or to what degree GCMRC's science activities are having adverse impacts on cultural and natural resources of the Colorado River ecosystem. This question has raised the expectation that USGS should be involved in developing and be a signatory to environmental compliance documents covering science activities. However, USGS policy restricts agency involvement in policy issues (such as National Environmental Protection Act (NEPA) compliance documents), believing that this protects the agency's ability to function as an impartial science provider.**

#### Resolution

GCMRC will use Tribal and NPS Research Permit processes to ensure that any negative impacts from AMP-related research activities are monitored, documented, and addressed in a timely fashion. These processes address NEPA, Endangered Species Act (ESA), and National Historic Protection Act (NHPA) compliance, among others, and the resultant permits can include conditions, restrictions, and mitigation as needed. Such requirements will be considered by DOI when deciding whether to proceed with the proposed actions.

- 22. PROTOCOL EVALUATION PANELS. Some AMP members believe that fear of causing conflict or ill will is a factor influencing the quality of feedback from the Protocol Evaluation Panels**

**(PEPs). Therefore, this feedback is not always as clear and definitive as the AMP desires and needs. AMP members want to ensure that the charge to each PEP clearly spells out what is desired and expected from the PEP panel.**

#### Resolution

As part of the Core Monitoring Evaluation process outlined in the MRP, a TWG information needs workshop will occur prior to each PEP which will provide more specific guidance from stakeholders on what needs should be addressed by the PEP.

It is the responsibility of GCMRC to develop the charge to an upcoming PEP. Once the PEP charge and informational documents have been drafted, they will be sent by GCMRC to the Secretary's Designee, the SAs, the TWG Chair, and the BOR Program Manager for review and comment before they are finalized and presented to the PEP Chair. The reviewers will evaluate the documents for completeness and clarity, and return their comments, if any, to GCMRC within 15 days of receipt. GCMRC will finalize the documents and distribute them to the Secretary's Designee, the SAs, the TWG Chair, and the BOR Program Manager.

PEP reports will provide majority or consensus views of the panel members. Where consensus is not reached, minority views will be documented in the report.

- 23. SCIENCE PERFORMED BY OTHER AGENCIES: From time to time, it has been suggested that science support should be obtained through other science organizations. In addition, some AMP stakeholders perform research, monitoring, or management activities that could have an impact, positive or negative, on the AMP and its work, and these activities are not always known to AMWG or the GCMRC.**

#### Background

AMP foundational documents specify that GCMRC is the selected provider and coordinator of research for the AMP. The EIS defines the authority and responsibility for conduct of research by the AMP as follows:

*All adaptive management research programs would be coordinated through the Center (Reclamation, 1995, p. 36).*

Authorities and responsibilities for GCMRC are also documented in the AMP Strategic Plan:

*The Grand Canyon Monitoring and Research Center serves as the science center for the Glen Canyon Dam Adaptive Management Program (Glen Canyon Dam AMWG, 2002, p. 5).*

*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 (Glen Canyon Dam AMWG, 2002, p. 5).*

Expanded science and management activities are being implemented by AMP, as well as by its member agencies, tribes, and other cooperators. Knowledge by all parties of these various activities is important to effectively manage the AMP.

#### Resolution

GCMRC has approved protocols and procedures for responding to AMP science information needs through its own staff and by contracting with entities external to AMP. If AMWG wishes to advance certain areas of the program more rapidly, it should identify those priorities to the Secretary's Designee. If approved by the Secretary's Designee, GCMRC will develop a plan to resolve those concerns in the next 12-month period, perhaps through an accelerated timeline of contracted work with external entities.

With regard to science or management activities performed by other agencies and not contracted by GCMRC, it would be to the benefit of the AMP and the other programs if all information about science and management activities in the CRE were shared. Therefore, AMP stakeholders are invited and encouraged to notify the GCMRC Chief of all such activities, and to share this information to the benefit of the programs. Information about these activities will be incorporated into the AMP work plan and budget development process.

## **Bureau of Reclamation (BOR)**

- 24. COMMUNICATION.** The Bureau of Reclamation needs to collaborate and coordinate more closely with GCMRC, especially in developing TWG and AMWG agendas, formulating multi-year budget proposals, and tracking financial expenditures and transfers. The Bureau also needs to be open and available to all AMP stakeholders and groups.

### Resolution

The solution to this problem is in part addressed by the schedule discussed under #3. This schedule of meetings and tasks will be distributed to AMWG members, with a request to add additional needed agenda items and recommendations to the Secretary.

In addition, agendas will be formulated to meet the intent of the AMP strategic plans, including the AMWG Strategic Plan, the GCMRC Strategic Science Plan, the Monitoring and Research Plan, the biennial work plan, and other approved planning and operational documents. To facilitate productive AMWG discussions, specific input for AMWG agendas will be solicited sufficiently in advance to allow complete staff work by the TWG and GCMRC. In addition, the TWG Chair and GCMRC Chief will be involved in the AMWG agenda development process, and AMWG will follow its operating procedures for developing the agenda, which involves asking AMWG members for additions to the agenda. Finally, AMWG agendas will be developed to provide sufficient time for careful consideration of workload impacts, option evaluations, and conflict resolution.

For TWG agendas, TWG members will be asked at the end of each meeting for suggestions of agenda items for future meetings. In addition, TWG members are encouraged to request agenda items at any time via e-mail to the TWG Chair or Co-chair. Finally, TWG members can suggest agenda items at the beginning of a TWG meeting when the agenda is reviewed.

- 25. PROGRAMMATIC AGREEMENT.** Cultural properties or resources, particularly archaeological sites, are affected by numerous factors including dam operations, dam existence, visitor impacts, and natural wind and water erosion. It is difficult or impossible to determine the various causes of individual site erosion to assign responsibility for mitigation or treatment. With respect to determining treatments for adverse effects, it is unclear who makes the decision, what criteria are used in making that decision, and how treatments will be funded. It is also unclear how the Programmatic Agreement (PA) signatories and the AMWG interact and with what respective responsibility.

### Background

The foundational documents provide some guidance on these issues.

*Long-term monitoring and research associated with cultural resources would be carried out in accordance with the approved Programmatic Agreement on Cultural Resources (attachment 5). All provisions as agreed upon by the consulting parties would be implemented through the Monitoring and Remedial Action Plan and the Historic Preservation Plan. Activities outlined in these documents would be coordinated through the [monitoring and research] center to ensure integration with other facets of the long-term monitoring and research program (Reclamation, 1995, pp. 36-37).*

*Monitoring and Protection of Cultural Resources: Cultural sites in Glen and Grand Canyons include prehistoric and historic sites and Native American traditional use and sacred sites. Some of these sites may erode in the future under any EIS alternative, including the no action alternative. Reclamation and the National Park Service, in consultation with Native American Tribes, will develop and implement a long-term monitoring program for these sites. Any necessary mitigation will be carried out according to a programmatic agreement written in compliance with the National Historic Preservation Act. This agreement is included as Attachment 5 in the final EIS (Reclamation, 1996, p. 11).*



*In regards to the consultation requirements under NHPA, the action federal agencies and affected tribes have signed a programmatic agreement (PA) document and hold periodic meetings. Parties not signatory to the PA are welcome to attend and comment. Here too, however, the ultimate decision on how to proceed rests with the Secretary of the Interior and the federal agencies delegated the responsibility for management of the resources (Loveless, 2000, p. 8).*

Roles and responsibilities of BOR, NPS, and GCMRC in carrying out the AMP's Cultural Resources Monitoring and Research Program are specified in an agreement entered into in January 2006 (Appendix B).

#### Resolution

DOI agencies will participate in the AMP's Cultural Resources Monitoring and Research Program in accordance with the roles and responsibilities specified in the agreement shown in Appendix A.

The PA signatories comprise a group separate from the AMP that has the ability to define its own course of action with respect to National Historic Preservation Act (NHPA) requirements. The final decisions regarding NHPA requirements rest with Reclamation, after following the dispute resolution process of the PA, if needed. However, funding for these responsibilities is contained within the AMP, whether funded by power revenues or by other sources, and the AMWG has the responsibility to make recommendations to the Secretary, including the annual budget if so desired. Therefore, the AMWG has no authority to override PA decisions, but can make recommendations to the Secretary counter to PA conclusions that could, in turn, affect Reclamation's decisions in the PA forum.

It is clear that the PA signatories must work closely with the AMP groups in developing the products required by the PA, especially in out-year budget planning. Reclamation must make sure that the views of both PA signatories and AMWG recommendations are considered in reaching final decisions in the PA forum and that these decisions are consistent with DOI positions. It should be the intent of each of these groups to work collaboratively to accomplish the purposes of both the PA and the Grand Canyon Protection Act (GCPA).

Reclamation and the NPS are working closely and collaboratively to meet their NHPA obligations. They are exploring the concept of conjoining their Section 106 responsibilities (Reclamation for effects of dam operations and NPS for effects of permitting visitor use) and of adopting a "no fault" approach to treating sites in the Colorado River ecosystem that are subject to effects from dam operations and visitor use. This approach would use a combination of NPS appropriations, NPS fee funds, and power revenues to finance treatment for these sites. The accomplishment of this effort is intended to meet both the specific requirements of the PA and the general requirements of the NHPA and GCPA.

## Science Advisors (SAs)

- 26. CLARITY. Some believe that the Science Advisors (SAs) do not always forward clear critiques, review comments, and recommendations because they may not want to offend GCMRC and contract scientists. However, the lack of clarity causes difficulty among managers in resolving a course of action.**

### Background

The Science Advisors have recognized a trade-off between the number of reviews that are possible each year, and the depth and specificity of those reviews. They have agreed to respond to the AMP by producing many reviews, but those reviews will, of necessity, be less detailed – and perhaps less clear – than if there were fewer reviews requested.

### Resolution

The SAs' Executive Director will articulate specific review charges for the SAs that respond to concerns of AMP groups. The SAs' Executive Director will also work with the SAs to create review comments and critiques that explicitly respond to concerns expressed by and review requests of the AMP.

- 27. FOLLOW THROUGH. The SAs conduct many reviews over a 2-year period. However, no tracking exists to determine if the AMP responds to these reviews with changes in ongoing programs.**

### Resolution

The SAs' Executive Director and the SAs will annually report to the AMP the level of implementation of SA proposals and recommendations. The GCMRC Chief and TWG Chair will review and confirm this report before distribution.

- 28. PROTECTING SA INDEPENDENCE. The SAs are authorized to provide ongoing advisory and review functions to the AMP. These activities must be accomplished without conflict of interest or bias on the part of the SAs.**

### Resolution

The SAs' Executive Director and the SAs will specify in their annual report to the AMP any issues or concerns relating to their independence. The GCMRC Chief, the TWG Chair, and the Secretary's Designee will review the SA comments in draft and have the opportunity to provide their own perspectives on SA independence in the annual report.

- 29. AMP REVIEW. Concern exists over timely completion of the overall AMP review. The SAs have had to delay the AMP review to respond to overall science planning needs of the AMP. This science planning need is considered the SAs' highest priority in FY 2005 and part of FY 2006.**

### Resolution

The overall AMP review, although delayed for 6 months, will be complete by the end of FY 2007. All reviews originally planned for FY 2005 and 2006 will be complete by the close of FY 2007. The GCMRC, the TWG, the SAs, and the Secretary's Designee approved these new completion dates. The SAs and the SA Executive Director will continue to follow explicit GCDAMP protocols in rescheduling AMWG assigned reviews.

## **APPENDIX A**

**Glen Canyon Dam Adaptive Management Program (AMP)  
Cultural Resource Monitoring and Research Program Agreement  
Among  
Bureau of Reclamation (BOR), Upper Colorado Region  
National Park Service (NPS), Grand Canyon National Park  
Geological Survey, Grand Canyon Monitoring and Research Center (GCMRC)**

**Agreement Goals:**

- Address National Historic Preservation Act (NHPA) and Grand Canyon Protection Action (GCPA) information needs and management responsibilities.
- Answer core monitoring and research questions.
- Integrate BOR, NPS, GCMRC, and tribal monitoring and research efforts.

**Roles and Responsibilities:**

- BOR is responsible for evaluating and treating sites affected by dam operations through Sec. 106 of the NHPA. BOR develops the compliance monitoring and research (for treatment) questions in order to meet its requirements with NHPA Sec. 106.
- NPS is responsible for evaluating and treating sites affected by visitor use through Sec. 106 of the NHPA. The NPS develops compliance monitoring and research questions in order to meet its requirements with NHPA Sec. 106 and 110. Because of the inherent overlap between the BOR and NPS programs, the NPS may implement 106 monitoring programs for both BOR/AMP and NPS.
- To assist the DOI agencies, the Cultural Resources Ad Hoc Group of the Technical Work Group (TWG) will provide technical work plan recommendations to the Science Planning Group, which will then work with GCMRC to develop budget and program proposals for TWG consideration. The Programmatic Agreement (PA) signatories are responsible for reviewing and making recommendations to the respective agencies on monitoring and research questions and treatment.
- GCMRC provides the AMP scientifically credible information for addressing NHPA and GCPA issues within the Colorado River ecosystem for dam operations and visitor use. The GCMRC utilizes the monitoring and research questions defined by BOR and NPS for their NHPA compliance, and the AMP for its GCPA responsibilities to formulate a scientifically credible monitoring and research program.
- Tribes have cultural affiliation to Grand Canyon, have a significant interest in the management process, and have a fundamental responsibility in helping define management actions.

**Agreement Objectives:**

- Describe the process for modifying current monitoring and research programs.
- Describe how monitoring and research programs are administered.
- Coordinate and integrate activities among Tribes, NPS, BOR and GCMRC.

**Glen Canyon Dam AMP Cultural Resource Program Components** (see Figure 1)

GCMRC, NPS, BOR, the tribes, and other participants in an expanded Cultural Resources Ad Hoc Group will meet annually to define integrated monitoring and research tasks for inclusion in the work plan and budget for the cultural program. In total, this integrated cultural program is intended to meet the statutory compliance requirements of each of the relevant DOI agencies. Proposed program activities will be reviewed annually by the PA signatories and TWG and revised by the participants if necessary before it goes to the AMWG for approval. The program is reviewed periodically by the GCMRC Science Advisory Board (SAB).

**Administration and Oversight (Implementation)**

- Each agency has responsibility for program activities that it funds. In the case of AMP-funded activities, GCMRC will implement PEP-review and peer review comments to improve scientific monitoring and research activities.
- Logistics and field efforts are coordinated.
- Data sharing agreements are developed (security and confidentiality).
- Disputes are resolved.
- Duplication and redundancy (sites monitored, variables measured, etc.) are avoided.
- Efforts are documented in annual reports from each agency; a program annual report is compiled by GCMRC.
- Program reviews by TWG, PA Signatories, and SAB are coordinated by GCMRC.
- The parties to this agreement will establish a steering committee to coordinate the cultural resource program activities among DOI agencies. Any of the signatories may call a meeting to discuss aspects of this program.

**Approval:**

\_\_\_\_\_  
 Randall Peterson, Manager  
 Environmental Resources Division  
 Upper Colorado Region, BOR

\_\_\_\_\_  
 Date

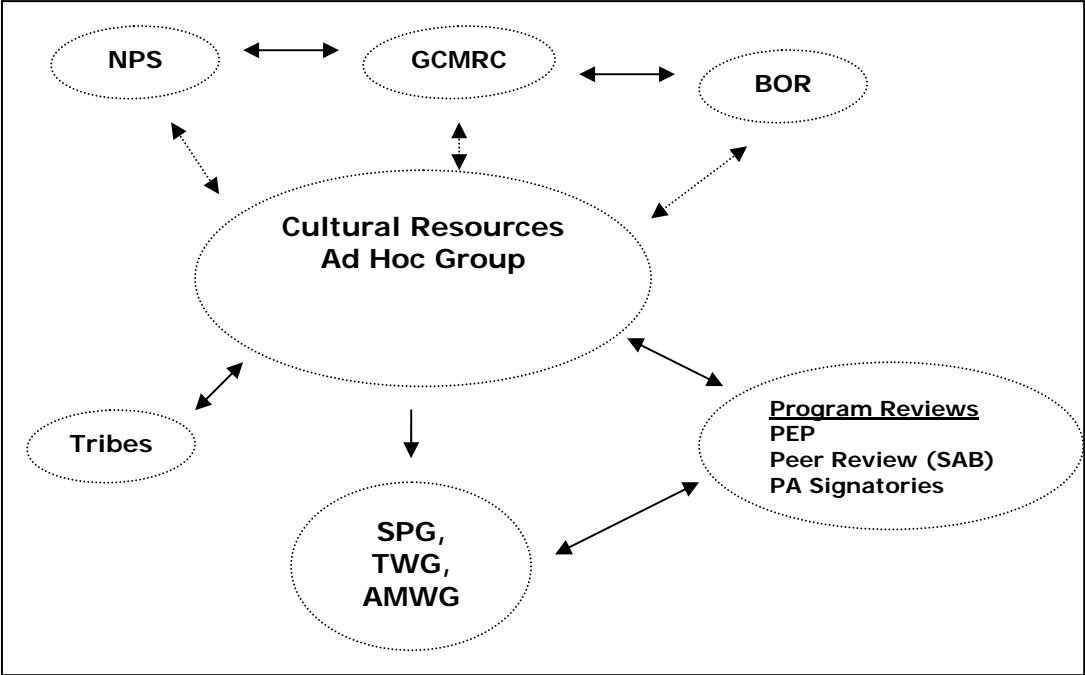
\_\_\_\_\_  
 Jeffrey Cross, Director  
 Grand Canyon Science Center  
 Grand Canyon National Park, NPS

\_\_\_\_\_  
 Date

\_\_\_\_\_  
 John Hamill, Chief  
 Grand Canyon Monitoring and Research Center

\_\_\_\_\_  
 Date

Figure 1. Glen Canyon Dam AMP Cultural Resource Program Components and Relationships.



## APPENDIX B

### FOUNDATIONAL DOCUMENT REVIEW

This appendix is the result of a review by the Roles Ad Hoc Group of several foundational documents to determine if they gave direction on issues of roles, responsibilities, and function. The documents are in the list of references on the last page of this report.

Each question asked is in bold face type. When one of the documents addressed one of the questions, it is cited and quoted below the appropriate question. Words in Italics indicate a direct quote.

#### **A. What is the relationship between AMWG and TWG? How do they interact? How should they?**

- ❑ Strategic Plan: *“The Technical Work Group . . . operates at the direction of the Adaptive Management Work Group”* (Glen Canyon Dam AMWG, 2002, p. 5).
- ❑ Strategic Plan and FEIS: A graphic shows a hierarchy with AMWG above TWG. Undefined arrows indicate a two-way flow of something between the two entities (Glen Canyon Dam AMWG, 2002, p. 3; Reclamation, 1995, p. 36).
- ❑ FEIS: *The AMWG would be . . . supported by a . . . technical work group* (Reclamation, 1995, p. 36).
- ❑ AMWG Charter: *The Committee may establish such workgroups or subcommittees as it deems necessary for the purposes of compiling information, discussing issues, and reporting back to the AMWG* (Norton, 2004, p. 5).
- ❑ AMWG Operating Procedures: *Sub-groups [e.g., TWG] 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* (Gabaldón, 2002, p. 5).
- ❑ TWG Operating Procedures: *Recommendations to the . . . AMWG will be summarized in report form, will contain relevant background material on the issues, and will include a brief summary of previous discussions related to the issue (e.g., ad hoc group or TWG discussions). Requests for actions associated with a briefing document will be posed as a specific written recommendation that can be approved as written, approved with modification, or not approved* (Johnson, 2001, pp. 4-5).

#### **B. Is there a distinction between the “policy” role of AMWG and the “technical” role of TWG? If so, please articulate it. Is that the way it should be?**

- ❑ FEIS: *[TWG] would translate AMWG policy and goals into resource management objectives and establish criteria and standards for long-term monitoring and research in response to the GCPA* (Reclamation, 1995, p. 37).
- ❑ Strategic Plan (see also Reclamation, 1995, p. 36): Responsibilities of AMWG.
  - *Provides the framework for Glen Canyon Dam Adaptive Management Program policy, goals, direction, and priorities;*
  - *Develops recommendations to the Secretary of the Interior for modifying operating criteria and other resource management actions, policies, or procedures;*
  - *Facilitates coordination and input from interested parties;*

- *Reviews and forwards the annual report to the Secretary of the Interior and his/her designee on current and projected year operations;*
  - *Reviews and forwards annual budget proposals; and*
  - *Ensures coordination of operating criteria changes in the Annual Operating Plan for Colorado River Reservoirs and other ongoing activities (Glen Canyon Dam AMWG, 2002, p. 4).*
- *Strategic Plan: 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 (Glen Canyon Dam AMWG, 2002, p. 5).*

**C. Does AMWG have a responsibility to provide clear direction to TWG?**

- *AMWG Operating Procedures: Sub-groups [e.g., TWG] will receive their charges from the AMWG (Gabaldón, 2002, p. 5).*
- *AMWG Operating Procedures: 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 (Gabaldón, 2002, p. 4).*

**D. Does TWG have any responsibilities beyond responding to the AMWG? If yes, what are they? What should they be?**

- *Strategic Plan: The Technical Work Group . . . operates at the direction of the Adaptive Management Work Group (Glen Canyon Dam AMWG, 2002, p. 5).*
- *AMWG Operating Procedures: Sub-groups shall report only to the AMWG (Gabaldón, 2002, p. 5).*
- *TWG Operating Procedures: The TWG shall perform those tasks charged to them by the AMWG. Additional responsibilities of the TWG are to develop criteria and standards for monitoring and research programs; provide periodic reviews and updates; develop resource management questions for the design of monitoring and research by the Grand Canyon Monitoring and Research Center, and provide information, as necessary, for preparing annual resource reports and other reports, as required, for the AMWG (Johnson, 2001, p. 1).*
- *AMWG Charter: The Committee may establish such workgroups or subcommittees as it deems necessary for the purposes of compiling information, discussing issues, and reporting back to the AMWG (Norton, 2004, p. 5).*

- ❑ AMWG Operating Procedures: *Sub-groups [e.g., TWG] 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 (Gabaldón, 2002, p. 5).*
- ❑ Guidance Document: *The TWG's responsibility is similarly limited, but even more so; it is to carry out only specific assignments within the scope of the AMWG's responsibility, as directed by the AMWG (Loveless, 2000, p. 3).*

**E. What is the relationship between AMWG and GCMRC? What should it be? How does information flow? Does AMWG have authority over GCMRC? Is guidance given to GCMRC from AMWG general or specific?**

- ❑ Strategic Plan: The graphic shows a hierarchy with AMWG above GCMRC. It also shows an undefined double arrow that may indicate two-way flow of something (Glen Canyon Dam AMWG, 2002, p. 3).
- ❑ FEIS: *The AMWG would be . . . supported by a monitoring and research center (Reclamation, 1995, p. 36).*
- ❑ FEIS: *To support the designee and the AMWG, it is recommended that the Secretary establish a research center . . . The center would be responsible for developing the annual monitoring and research plan, managing all adaptive management research programs, and managing all data collected as part of those programs. All adaptive management research programs would be coordinated through the center (Reclamation, 1995, p. 36).*
- ❑ FEIS: *The following specific duties would be assigned to the Monitoring and Research Center:*
  - *Develop research designs and proposals for implementing monitoring and research identified by the AMWG**. . . (Reclamation, 1995, p. 37).*
- ❑ Guidance Document: *The Secretary of the Interior established the AMP with four key elements: AMWG, TWG, GCMRC, and the IRP (Independent Review Panel). The four have distinct roles, but ultimately the Secretary of the Interior is responsible for seeing that the monitoring and necessary research is done to evaluate the impacts of adjustments made to dam operations. . . . The AMWG can **recommend** [emphasis in original] studies and priorities for implementing individual studies during those reviews, preferably by consensus. In doing so, all members of the AMWG are assumed to be equal in importance when voting on recommendations, including federal agencies. However, final decisions as to the management of Interior facilities and resources, what studies to implement, when, and using funds from which sources remain, by statute, with the Secretary of the Interior and the appropriate Interior agencies (Loveless, 2000, p. 6).*
- ❑ AMWG Charter: *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 of the Record of Decision.*
  - c. *Recommend the framework for the AMP policy, goals, and direction.*
  - d. *Define and 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 the Grand Canyon National Park and Glen Canyon National Recreation Area were established. . .

- e. *Review and provide input on the report required in Section 1804 (c)(2) of the Act to the Secretary, the Congress, and the Governors of the Colorado River Basin States. The report will include discussion of 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 determine the status of resources and whether the AMP Strategic Plan goals and objectives are being met. If necessary, develop recommendations for modifying the GCDEIS ROD, associated operating criteria, and other resource management actions pursuant to the Grand Canyon Protection Act.*
- g. *Facilitate input and coordination of information from stakeholders to the Secretary to assist in meeting consultation requirements under Section 1804 (c)(3) and 1805 (c) of the Act.*
- h. *Monitor and report on compliance of all program activities with applicable laws, permitting requirements, and the Act (Norton, 2004, p. 2).*
- *Memorandum from the Acting Assistant Secretary for Water and Science, March 31, 2000: A DOI Managers Committee composed of the Assistant Secretary for Water and Science or his/her designee, the Director of the U.S. Geological Survey or his/her designee, the Commissioner of the Bureau of Reclamation or his/her designee and the Director of the National Park Service or his/her designee shall provide policy and programmatic guidance to the GCMRC Chief. . . . The Managers Committee shall review the policies and protocols contained in this directive that govern the operations of the GCMRC at least every five years (Schaefer, 2000, p. 3).*

**F. What is the relationship between TWG and the SAs? What should it be? How does information flow?**

- *Strategic Plan: Responsibilities of the [independent review] 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 (Glen Canyon Dam AMWG, 2002, p. 6).*
- *FEIS: Responsibilities of this [independent] review panel would include:*
  - *Annual review of the monitoring and research program*
  - *Technical advice as requested by the center or AMWG*
  - *Five-year review of monitoring and research protocols (Reclamation, 1995, p. 38).*
- *Strategic Plan and FEIS: The graphic shows a hierarchy with GCMRC at an equal level to TWG, both below AMWG, and with a double arrow between the GCMRC and TWG.*

- The arrow is undefined but seems to indicate two-way flow of something (Glen Canyon Dam AMWG, 2002, p. 3; Reclamation, 1995, p. 36).
- Science Advisors Operating Protocols: *...the Scientific [sic] Advisors will be asked not only to evaluate “. . . whether the best methods are used . . .” but also to evaluate “. . . whether the best questions are being asked”* (Garrett, 2004, p. 2). It appears to be part of the TWG’s responsibility to develop the questions: *Developing, with the Grand Canyon Monitoring and Research Center, resource management questions (i.e., information needs)*(Glen Canyon Dam AMWG, 2002, p.5).
  - Science Advisors Operating Protocols: *The Scientific [sic] Advisors will provide technical advice and scientific oversight, upon request, in writing to the AMWG, the GCMRC, and/or the Secretary; with copies to the TWG* (Garrett, 2004, p. 3).
  - Science Advisors Operating Protocols: The protocols specify that AMWG will approve a 24-month schedule of reviews by the Science Advisors every year. They go on to say, *This does not preclude review requests from GCD AMP parties after AMWG approval of the Science Advisors Annual Program of Work* (Garrett, 2004, p. 4).
  - Science Advisors Operating Protocols: Several roles for TWG leaders are outlined, as follows:
    - *The Science Advisors or Executive Secretary are to present to the Secretary’s Designee, AMWG Chair, GCMRC Chief and TWG Chair 30 days prior to the AMWG budget meeting a verbal and written annual report of accomplishments including specific documentation of all formal activities of the Advisors . . .* (Garrett, 2004, p. 5).
    - *The Chief of the GCMRC, TWG Chair, and Executive Secretary of the Science Advisors are responsible for providing all necessary inputs to the Chair of the AMWG 30 days prior to the annual budget meeting to permit development of the new Science Advisors charge* (Garrett, 2004, p. 4).
    - *Science Advisor review requests identified after the annual review program is approved by AMWG, will be provided to the GCMRC Chief, who will request the review from the Executive Secretary. The Executive Secretary is to notice immediately the AMWG Chair (Secretary Designee), the TWG Chair, the TWG Budget Committee Chair, and the GCMRC Chief of the objectives of the review request, its potential Science Advisor time requirement, and its potential impact on the AMWG approved Annual Review Program. Should issue(s) exist regarding the review with the TWG Chair, TWG Budget Chair or GCMRC Chief, a conference call is to be held immediately to resolve the issue(s). If the issue(s) cannot be resolved, the Secretary’s Designee is to be consulted by the group, to decide if the review should be conducted* (Garrett, 2004, pp. 4-5).

**G. What is the role of GCMRC in the Adaptive Management Program? Specifically, is GCMRC the sole source of scientific research for the program?**

- FEIS: *All adaptive management research programs would be coordinated through the center* (Reclamation, 1995, p. 36).
- Strategic Plan: *The Grand Canyon Monitoring and Research Center serves as the science center for the Glen Canyon Dam Adaptive Management Program* (Glen Canyon Dam AMWG, 2002, p. 5).
- Strategic Plan: *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 (Glen Canyon AMWG, 2002, p. 5).*
- *Strategic Plan: 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 (Glen Canyon Dam AMWG, 2002, p. 5).*

**H. Is the role of AMWG executive and advisory, or more that of a Board of Directors? Specifically, into how much detail should the AMWG delve in developing its recommendations? Is this related to how much detail the TWG and GCMRC address in their recommendations to AMWG?**

- *Strategic Plan: Responsibilities of AMWG:*
- *Provides the framework for Glen Canyon Dam Adaptive Management Program policy, goals, direction, and priorities;*
  - *Develops recommendations to the Secretary of the Interior for modifying operating criteria and other resource management actions, policies, or procedures;*
  - *Facilitates coordination and input from interested parties;*
  - *Reviews and forwards the annual report to the Secretary of the Interior and his/her designee on current and projected year operations;*
  - *Reviews and forwards annual budget proposals; and*
  - *Ensures coordination of operating criteria changes in the Annual Operating Plan for Colorado River Reservoirs and other ongoing activities (Glen Canyon Dam AMWG, 2002, pp. 3-4).*
- *AMWG Charter: 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 of the Record of Decision.*
  - c. *Recommend the framework for the AMP policy, goals, and direction.*
  - d. *Define and 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 the Grand Canyon National Park and Glen Canyon National Recreation Area were established. . .*
  - e. *Review and provide input on the report required in Section 1804 (c)(2) of the Act to the Secretary, the Congress, and the Governors of the Colorado River Basin States.*

*The report will include discussion of 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 determine the status of resources and whether the AMP Strategic Plan goals and objectives are being met. If necessary, develop recommendations for modifying the GCDEIS ROD, associated operating criteria, and other resource management actions pursuant to the Grand Canyon Protection Act.*
- g. *Facilitate input and coordination of information from stakeholders to the Secretary to assist in meeting consultation requirements under Section 1804 (c)(3) and 1805 (c) of the Act.*
- h. *Monitor and report on compliance of all program activities with applicable laws, permitting requirements, and the Act (Norton, 2004, p. 2).*
- *FEIS: The following specific duties would be assigned to the Monitoring and Research Center:*
  - *Develop research designs and proposals for implementing monitoring and research identified by the AMWG . . . (Reclamation, 1995, p. 37).*
- *AMWG Charter: The AMWG will facilitate the AMP, recommend suitable monitoring and research programs, and make recommendations to the Secretary (Norton, 2004, p. 1).*
- *Federal Advisory Committee Act The Congress further finds and declares that . . . the function of advisory committees should be advisory only, and that all matters under their consideration should be determined, in accordance with law, by the official, agency, or officer involved (Federal Advisory Committee Act, 1972, Section 2(b)).*
- *FACA Regulations (41 CFR Part 102-3.95):*

*Agencies are encouraged to apply the following principles to the management of their advisory committees:*

  - (a) Provide adequate support. Before establishing an advisory committee, agencies should identify requirements and assure that adequate resources are available to support anticipated activities. Considerations related to support include office space, necessary supplies and equipment, Federal staff support, and access to key decisionmakers.*
  - (b) Focus on mission. Advisory committee members and staff should be fully aware of the advisory committee's mission, limitations, if any, on its duties, and the agency's goals and objectives. In general, the more specific an advisory committee's tasks and the more focused its activities are, the higher the likelihood will be that the advisory committee will fulfill its mission.*
  - (c) Follow plans and procedures. Advisory committee members and their agency sponsors should work together to assure that a plan and necessary procedures covering implementation are in place to support an advisory committee's mission. In particular, agencies should be clear regarding what functions an advisory committee can perform legally and those that it cannot perform.*
  - (d) Practice openness. In addition to achieving the minimum standards of public access established by the Act and this part, agencies should seek to be as inclusive as possible. For example, agencies may wish to explore the use of the Internet to post advisory committee information and seek broader input from the public.*
  - (e) Seek feedback. Agencies continually should seek feedback from advisory committee members and the public regarding the effectiveness of the advisory committee's activities. At regular intervals, agencies should communicate to the members how their advice has affected agency programs and decision making (Federal Register, 2001, pp. 37740-37741).*

**I. What are the technical expectations of TWG? Is the TWG confined to technical issues, or is it also to address the political and policy issues of the program? Should there be a technical requirement for TWG membership?**

- Strategic Plan: *The Technical Work Group is comprised of technical representatives of Adaptive Management Work Group members . . . (Glen Canyon Dam AMWG, 2002, p. 5).*
- Strategic Plan: *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 (Glen Canyon Dam AMWG, 2002, p. 5).*
- TWG Operating Procedures: *The TWG shall perform those tasks charged to them by the AMWG (Johnson, 2001, p.1).*

**J. How are work products completed? Is there a typical or normal way that work product development flows through the four entities? If so, what is it? Is that the way it should be? How, if at all, does AMWG/TWG/GCMRC/SAs assist the other three in doing their work?**

- FEIS: *[TWG] would translate AMWG policy and goals into resource management objectives and establish criteria and standards for long-term monitoring and research in response to the GCPA. These would then be used by the [monitoring and research] center in developing appropriate monitoring and research (Reclamation, 1995, p. 37).*
- FEIS: *The following specific duties would be assigned to the Monitoring and Research Center:*
  - *Develop research designs and proposals for implementing monitoring and research identified by the AMWG . . . (Reclamation, 1995, p. 37).*
- TWG Operating Procedures: *Recommendations to the . . . AMWG will be summarized in report form, will contain relevant background material on the issues, and will include a brief summary of previous discussions related to the issue (e.g., ad hoc group or TWG discussion). Requests for actions associated with a briefing document will be posed as a specific written recommendation that can be approved as written, approved with modification, or not approved (Johnson, 2001, pp. 4-5).*
- TWG responsibilities, per Strategic Plan (the first, second, and fifth bullets are also in Reclamation, 1995, p. 37, with slight changes):

- *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 (Glen Canyon Dam AMWG, 2002, p. 5).*
- GCMRC responsibilities, per Strategic Plan:
- *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 (Glen Canyon Dam AMWG, 2002, pp. 5-6).*
- AMWG responsibilities, per Strategic Plan:
- *Provides the framework for Glen Canyon Dam Adaptive Management Program policy, goals, direction, and priorities;*
  - *Develops recommendations to the Secretary of the Interior for modifying operating criteria and other resource management actions, policies, or procedures;*

- *Facilitates coordination and input from interested parties;*
  - *Reviews and forwards the annual report to the Secretary of the Interior and his/her designee on current and projected year operations;*
  - *Reviews and forwards annual budget proposals; and*
  - *Ensures coordination of operating criteria changes in the Annual Operating Plan for Colorado River Reservoirs and other ongoing activities. (Glen Canyon Dam AMWG 2002, p. 4).*
- Memorandum from the Acting Assistant Secretary for Water and Science, March 31, 2000: *The annual budget for funds provided through the Bureau of Reclamation for activities of the GCMRC shall be proposed by the GCMRC Chief with the concurrence of the Director of the USGS and the Commissioner of the Bureau of Reclamation, and after consultation with the Adaptive Management Work Group (Schaefer, 2000, p. 3).*

**K. For GCMRC, please address conducting synthesis vs. collecting data, and contracting out vs. self-performing.**

- FEIS: *The center would be responsible for developing the annual monitoring and research plan, managing all adaptive management research programs, and managing all data collected as part of those programs. All adaptive management research programs would be coordinated through the center (Reclamation, 1995, p. 36).*
- Memorandum from Deputy Assistant Secretary for Water and Science, November 9, 1995: *The Center, co-located with the USGS facility in Flagstaff, Arizona, shall be composed of a small staff of administrative and scientific personnel, who will be detailed from other Department bureaus. The research program is proposed to be conducted through an open call proposal and (or) contract process, including a competitive request for proposals, with Federal and state agencies, universities, the private sector, and Native American tribes which will result in the selection of research projects based on scientific merit and cost. Required elements of the monitoring program may be proposed as an on-going responsibility of the USGS after an open decision-making process (Deputy Assistant Secretary for Water and Science, 1995, p. 2).*
- Memorandum from the Acting Assistant Secretary for Water and Science, March 31, 2000: *The GCMRC shall be composed of an appropriately sized staff of administrative and scientific personnel with relevant scientific and technical expertise. The staff shall be composed of permanent, term, and temporary employees, as appropriate; program staff shall be employees or contractors of the USGS. In addition, the GCMRC may use post-doctoral appointments and detailees to complete its staffing needs.*
- Monitoring and research activities conducted by GCMRC will be implemented primarily through a competitive request for proposals with Federal and state agencies, universities, the private sector and Native American tribes. The successful proposals shall be selected on the basis of advice provided by an independent external scientific peer-review (Schaefer, 2000, p. 2).*
- Strategic Plan, GCMRC responsibilities: *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; . . . (Glen Canyon Dam AMWG, 2002, p. 5).*
- FEIS: *To support the designee and the AMWG, it is recommended that the Secretary establish a research center . . . with a small permanent staff in Flagstaff, Arizona (Reclamation, 1995, p. 36).*
- Minutes, October 2004 AMWG meeting: *Bob Snow (Washington Solicitor's Office) was brought into the meeting via speakerphone. Bob reviewed his understanding of the*

concerns brought up by Bruce Taubert at the April 2004 AMWG meeting. In that meeting Bruce questioned if the procurement requirements had changed from using different entities to do work in the Grand Canyon towards a concentration of research being done by GCMRC. Bob said the Department has an opportunity to either avail itself of its in-house resources or ask external groups, cooperators, etc., to take on those tasks. The fact that there is an ongoing FACA process does not change the fundamental nature of being able to task USGS within their organic statutory authority to take on certain studies. Once and if the Dept. chooses non-Federal entities to take on that research, then a number of procedural regulatory and statutory provisions apply, such as the Federal Acquisition Regulations (FAR), etc., but they haven't been able to find anything that would indicate that the mere existence of a FACA committee pursuant to a charter would change the Secretary's ability to task research internally. They also haven't seen anything that gives rise to a conflict of interest and so the fundamental conclusion is that this is not a conflict of interest set of issues. Bob said he hasn't gone over to the Government Services Administration (GSA) or the Department of Justice to see if the same issues are being treated differently elsewhere within the Executive Branch (Glen Canyon Dam AMWG, 2004, p. 10).

- FACA Regulations (41 CFR Part 102-3, Appendix A to Subpart C)

*Key Points and Principles: IV. Agency heads are responsible for ensuring that the interests and affiliations of advisory committee members are reviewed for conformance with applicable conflict of interest statutes and other Federal ethics rules.*

*Section: 102-3.105(h)*

*Questions:*

- 1. Are all advisory committee members subject to conflict of interest statutes and other Federal ethics rules?*
- 2. Who should be consulted for guidance on the proper application of Federal ethics rules to advisory committee members?*

*Guidance:*

*A. The answer to question 1 is no. Whether an advisory committee member is subject to Federal ethics rules is dependent on the member's status. The determination of a member's status on an advisory committee is largely a personnel classification matter for the appointing agency. Most advisory committee members will serve either as a "representative" or a "special Government employee" (SGE), based on the role the member will play. In general, SGEs are covered by regulations issued by the U. S. Office of Government Ethics (OGE) and certain conflict of interest statutes, while representatives are not subject to these ethics requirements.*

*B. The answer to question 2 is the agency's Designated Agency Ethics Official (DAEO), who should be consulted prior to appointing members to an advisory committee in order to apply Federal ethics rules properly (Federal Register, 2001, p. 37744).*

- FEIS: *The follow specific duties would be assigned to the Monitoring and Research Center:*
  - *Develop research designs and proposals for implementing monitoring and research identified by the AMWG*
  - *Manage all monitoring and research on resources affected by dam operations*
  - *Manage and maintain the GCES information data base, monitoring and research programs, and other data sources as appropriate*
  - *Administer research proposals through a competitive contract process, as appropriate*



- *Coordinate, prepare, and distribute technical reports and documentation for review and as final products*
- *Coordinate review of the monitoring and research program with the independent review panel(s)*
- *Prepare and forward technical management recommendations and annual reports, as specified in section 1804, to the AMWG (Reclamation, 1995, p. 37)*

**L. What is the relationship of the AMWG/TWG/GCMRC/SAs with the Programmatic Agreement and its signatories? What should it be?**

- *FEIS: Long-term monitoring and research associated with cultural resources would be carried out in accordance with the approved Programmatic Agreement on Cultural Resources (attachment 5). All provisions as agreed upon by the consulting parties would be implemented through the Monitoring and Remedial Action Plan and the Historic Preservation Plan. Activities outlined in these documents would be coordinated through the [monitoring and research] center to ensure integration with other facets of the long-term monitoring and research program (Reclamation, 1995, pp. 36-37).*
- *Record of Decision: Monitoring and Protection of Cultural Resources: Cultural sites in Glen and Grand Canyons include prehistoric and historic sites and Native American traditional use and sacred sites. Some of these sites may erode in the future under any EIS alternative, including the no action alternative. Reclamation and the National Park Service, in consultation with Native American Tribes, will develop and implement a long-term monitoring program for these sites. Any necessary mitigation will be carried out according to a programmatic agreement written in compliance with the National Historic Preservation Act. This agreement is included as Attachment 5 in the final EIS (Reclamation, 1996, p. 11).*
- *Guidance Document: In regards to the consultation requirements under NHPA, the action federal agencies and affected tribes have signed a programmatic agreement (PA) document and hold periodic meetings. Parties not signatory to the PA are welcome to attend and comment. Here too, however, the ultimate decision on how to proceed rests with the Secretary of the Interior and the federal agencies delegated the responsibility for management of the resources (Loveless, 2000, p. 8).*

**M. How are formal recommendations of the AMWG formally transmitted to the Secretary of the Interior? How do responses to these recommendations occur?**

- **FACA Regulations (41 CFR Part 102-3.120):**

*Sec. 102-3.120 What are the responsibilities and functions of a Designated Federal Officer (DFO)?*

*The agency head or, in the case of an independent Presidential advisory committee, the Secretariat, must designate a Federal officer or employee who must be either full-time or permanent part-time, to be the DFO for each advisory committee and its subcommittees, who must:*

- (a) Approve or call the meeting of the advisory committee or subcommittee;*
- (b) Approve the agenda, except that this requirement does not apply to a Presidential advisory committee;*
- (c) Attend the meetings;*
- (d) Adjourn any meeting when he or she determines it to be in the public interest; and*
- (e) Chair the meeting when so directed by the agency head (Federal Register, 2001, p. 37741).*

□ FACA Regulations (41 CFR Part 102-3.95):

*Agencies are encouraged to apply the following principles to the management of their advisory committees:*

*...  
(e) Seek feedback. Agencies continually should seek feedback from advisory committee members and the public regarding the effectiveness of the advisory committee's activities. At regular intervals, agencies should communicate to the members how their advice has affected agency programs and decision making (Federal Register, 2001, p. 37740-37741).*

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