

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 (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 subsequent meeting of the Adaptive Management Work Group (AMWG) in August, the Roles Ad Hoc Group was formed and charged to define roles, responsibilities, and functions of the AMWG, Technical Work Group (TWG), Grand Canyon Monitoring and Research Center (GCMRC), and Science Advisors (SAs).

The Roles Ad Hoc Group consisted of a representative of the Secretary's Designee to represent AMWG, the Chair of the TWG, the Chief of GCMRC, and the Executive Coordinator of the SAs.

The first Roles Ad Hoc Group completed its report in January 2006. Twice since then, the Ad Hoc Group has been asked to review and revise the report, in part because of comments received from AMP participants, and in part because of changing personnel at the helms of the AMWG, TWG, and GCMRC.

Because of wide dissemination of the draft reports to AMP participants, many of the suggestions in it have been informally adopted. Either because of better understanding of the foundational documents or because of improved communication and relationships, some of the issues in the report are no longer as much of a problem as they once were. These include:

- #1, AMWG role, authority, and relationships
- #6, Assignments to TWG and requests to GCMRC
- #7, AMWG authority over agencies
- #11, Secretary's responses to AMWG recommendations
- #13, TWG defining core questions
- #17, TWG decision making
- #19, GCMRC participation in Ad Hoc Groups
- #20, GCMRC focus and deliverables
- #21, GCMRC workload
- #22, GCMRC budget latitude and accountability
- #27, Reclamation collaboration and coordination
- #29, Clarity of Science Advisors' comments

The report begins with a Compilation of Recommendations related to the 32 issues identified and addressed in the report. The main body of the report has six sections: AMWG, Secretary's Designee, TWG, GCMRC, Bureau of Reclamation (Reclamation), and SAs. 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.

The recommendations presented in the report have been based in large part on foundational documents, including the Grand Canyon Protection Act, the Glen Canyon Dam Environmental Impact Statement (GCDEIS) and Record of Decision (ROD), and many other documents. Quotes from foundational documents throughout the report are in *Italics*. The Appendix contains a review of AMP foundational documents as they inform these issues.

A list of References concludes the report.

Compilation of Recommendations

For each issue presented in the report, there is also presented a recommendation or set of recommendations. This compilation puts a brief description of all the recommendations into one section. For more information about the recommendation, including background information, please refer to the associated issue number.

Adaptive Management Work Group (AMWG)

1. AMWG role, authority, and relationships.
The AMWG 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.
2. Collaboration
 - Beginning in FY09, hold regular (annual or biennial) workshops/retreats to build trust among AMP participants and to address internal operations, roles, and effectiveness.
 - Ensure that all parties clearly understand the interests of every other party.
 - Discuss whether there is a balanced range of interests willing and able to participate, and if not, how to ensure it.
 - Identify incentives that might be needed in order to encourage the parties to work collaboratively to achieve common goals.
 - Determine the kinds of activities that should be used to build trust and foster collaboration.
 - Training on how to improve collaborative processes within the AMP.
 - Establish a full time Executive Coordinator/Manager for the Program.
 - Utilize facilitation and mediation expertise more broadly throughout the AMP.
 - The Secretary's Designee will emphasize the development of consensus for motions proposed by AMWG members.
 - Develop a process for evaluating tradeoffs among conflicting or competing goals.
3. AMWG distinction from TWG.
As a rule, technical reviews and deliberation will occur at the TWG meetings. This technical analysis will help AMWG understand the basis for the TWG recommendations and will serve as companion information to the AMWG evaluation of policy implications.

For each AMWG agenda item for which there is a TWG recommendation, the TWG chair or designee will present a summary of the TWG's work and its recommendation before discussion or action by AMWG.

4. Acting on TWG recommendations.
The AMWG will discuss and consider all TWG recommendations.
5. Planning and scheduling work.
A 1-year schedule will be developed for AMWG and TWG by the chairs of each group, which clearly shows all essential regular items that need to be addressed every year, plus other items that have been added by AMWG.
6. Assignments to TWG and requests to GCMRC.
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. 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.
7. AMWG authority over agencies.
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. 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.

8. AMWG decision making.

After a motion is made and seconded, AMWG members will modify the motion as needed through discussion in order to attempt to attain consensus. If consensus is not possible, a roll call vote will be taken. Abstentions do not block consensus recommendations, and if a roll call vote is taken and everyone who voted cast an affirmative vote, the vote will be considered unanimous even if there were abstentions.

9. Conflicts of interest.

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 or Reclamation will issue requests for proposals (RFPs) to solicit specific monitoring and research proposals to meet program needs. However, in some cases, limited competition and sole-source contracts may be used. (See Issue #22 for more detail.)
- (3) GCMRC will fund proposals based on an independent peer review and comment process.

10. Measures of success.

In order to measure whether progress is being made toward achieving management objectives, the AMWG will recommend to the Secretary targets (desired future conditions) for the management objectives in the AMP strategic plan. These targets, needed to guide and focus science and management activities as well as to measure success in the program, will be incorporated into the AMWG strategic plan.

Secretary's Designee

11. Secretary's responses to AMWG recommendations.

The Secretary's Designee will formally transmit AMWG recommendations to the Secretary within 15 working days of the AMWG meeting in which the recommendations were made. If the Designee sees potential adverse consequences, the Designee can elevate the issue to the DOI agency heads, regional directors, or Assistant Secretaries for formulation of a DOI response to the AMWG.

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

Technical Work Group (TWG)

12. TWG's technical focus.

The TWG will continue to focus primarily on the scientific and technical aspects of the AMP, potentially including social and economic considerations if so directed by AMWG. 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), the FEIS, and the ROD. The TWG should also:

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

When making a recommendation to AMWG, all alternatives that were considered – including technical pros and cons – will be submitted to the AMWG for its review and consideration. Minority positions will be given to AMWG by the advocates for that position, if they wish to do so.

13. TWG technical qualifications.
TWG members should have a technical background sufficient to adequately evaluate scientific proposals and make technical recommendations to the AMWG.
14. TWG defining core questions.
The core questions have been defined. AMWG in 2004 identified five priority questions related to the 12 GCDAMP goals that were to be used to focus science activities. In 2005, 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.
15. TWG role.
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.
16. Participation by TWG members.
AMWG members will nominate TWG members who have adequate time and the inclination to fully participate. Full participation is defined as participation in TWG votes, attendance at TWG meetings, participation as an active member of Ad Hoc Groups (attending meetings, taking on work assignments, reviewing documents in a timely manner, etc), and providing timely review of documents as requested.
17. TWG decision making.
TWG members' comments on GCMRC products are documented, responded to, and provided back to TWG with a revised document for review and approval. If GCMRC disagrees with a comment, or believes it is a policy comment, they will provide this rationale to TWG in the response to comments table. As described above, disagreements with GCMRC must be voiced at the TWG and then rise to the AMWG for resolution via the Secretary's Designee, if necessary. TWG will provide the necessary technical background information to AMWG for resolution.

In all its deliberations, the TWG will attempt to reach consensus. A roll call vote will be taken when consensus is not possible. Abstentions do not block consensus or unanimous vote.
18. Communication between TWG and AMWG members.
AMWG and TWG members are expected to confer before and after each TWG meeting.

Grand Canyon Monitoring and Research Center (GCMRC)

19. GCMRC participation in Ad Hoc Groups.
GCMRC will participate in all AMWG, TWG, and Ad Hoc Committee meetings. In the event this is not possible, GCMRC will so communicate to the Chair of the relevant committee in advance of the meeting.
20. GCMRC focus and deliverables.
GCMRC efforts will focus on the most important work products. GCMRC will develop a report for each project in the BWP at the end of each fiscal year. This report will document accomplishments and expenditures, as well as shortfalls, with recommendations for change.
21. GCMRC workload.
See Issue #5 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 #6 for a description of a new process designed to ensure directions are clear and workload is considered before an assignment is accepted.
22. GCMRC budget latitude and accountability.

The GCMRC will give periodic updates on its operations and budget, including an annual accomplishments report, semi-annual budget reports, and reports on projects that have been deferred or significantly delayed. The BWP will include contingency projects that will be funded if surplus funds arise. GCMRC has the latitude to make budget adjustments of up to 5 percent of its total budget to accomplish work specified in the BWP. No new AMP projects will be implemented by GCMRC or Reclamation without first consulting with the TWG chair and vice-chair and the Secretary's Designee. The Secretary's Designee will determine whether consultation with the AMWG is needed.

23. Contracting.

The most cost effective mechanisms will be used to accomplish work. In general, GCMRC and Reclamation will prepare RFPs and use an open, competitive process for awarding funding for new research projects or new initiatives. For other projects, limited competition, and sole-source contracts in accordance with Federal Acquisition Regulations may be used. 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.

GCMRC and Reclamation 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.

24. GCMRC compliance.

GCMRC will address NEPA, Endangered Species Act (ESA), and National Historic Protection Act (NHPA) compliance, and NPS/Tribal research permitting processes, 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.

25. Protocol Evaluation Panels.

A TWG information needs workshop will occur prior to each PEP which will provide 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, with input from the Secretary's Designee, the SAs, the TWG Chair, and the Reclamation 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.

26. Science performed by other agencies.

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.

Bureau of Reclamation (Reclamation)

27. Reclamation collaboration and coordination.

AMWG agendas will be formulated to meet the intent of the AMP strategic plans 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.

AMWG members, the TWG Chair, and the GCMRC Chief will be involved in the AMWG agenda development process. The Secretary's Designee makes the final decision on the AMWG agenda.

The TWG Chair and Vice-Chair, the Executive Coordinator of the Science Advisors, and the Chief or Deputy Chief of GCMRC will work cooperatively to develop the TWG agenda.

28. Programmatic agreement.

Reclamation must make sure that the views of both PA signatories and AMWG recommendations are considered in reaching final decisions in the PA forum. It should be the intent of each of these groups to work collaboratively to accomplish the purposes of the PA, the Grand Canyon Protection Act (GCPA), the FEIS, and the ROD.

Science Advisors (SAs)

29. Clarity of Science Advisors comments.

The SAs maintain their independence from GCMRC to ensure their reviews are objective and unbiased. The SAs do not maintain regular contact with GCMRC scientists. All review comments, no matter how critical, are documented in the SAs formal report.

30. Tracking responses to Science Advisors' reviews.

The SA Executive Coordinator and GCMRC Chief will summarize for TWG the SA review recommendations and changes made by GCMRC to respond to the SA review(s). In addition, the SA Executive Coordinator in his/her annual program report to TWG and AMWG will summarize key changes in science plans/programs that were made in response to SA reviews. All SAs' comments will be posted on the GCMRC website on a separate page to be developed in FY09.

31. Science Advisor independence.

- The SA Executive Coordinator position is competed nationally as a senior scientist position to the general science community. The position award is based on high quality science ability and accomplishment.
- The eight-discipline Science Advisors are recruited nationally from a pool of hundreds of senior scientists. Appointments are proposed by the GCMRC Chief and approved by the AMWG based on the highest quality science credentials.
- The SA protocols and operating procedures specify explicit criteria to assure independence and eliminate bias and conflict from the SA group and its review process.
- All SAs must sign and adhere to explicit USGS requirements addressing conflict of interest and independence

32. Science Advisors' review of the AMP.

The SAs review of the AMP was completed in January 2007 and reported to the TWG in April 2007. The report will be presented to the AMWG upon request.

Adaptive Management Work Group (AMWG)

1. AMWG 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 . . .
(Kempthorne, 2008, p. 1).

The duties or roles and functions of the AMWG are in an advisory capacity only (Kempthorne, 2008, p. 2).

The Charter and AMWG and TWG Operating Procedures have been established to accomplish this role.

Recommendation

The AMWG 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.

2. Collaboration

Background

Many important decisions made by the AMWG are decided upon with a split vote, with a significant minority voting against the majority. This is not completely avoidable or damaging – there will be times when consensus will not be possible. The Roles Ad Hoc Group believes that the AMP would benefit from an increased level of collaboration.

Why collaboration?

According to Yaffee and Wondolleck (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 inter-organizational linkages, managers are better informed and their choices about future direction are more likely to solve the problem at hand. Programs are more likely to be implemented successfully if they are supported by stakeholders. Collaborative approaches have also been adopted as a means of building trust and ending policy, institutional, scientific, and legal impasses.

Adaptive Management: The U.S. Department of Interior Technical Guide 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” (Williams, et al., 2007, p 15) with an emphasis on consensus decision-making:

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 the potential conflicts arising in experiential learning can be resolved (Lee, 1999; and Holling, 1999) (Williams, et al., 2007, p. 15).

Successful consensus building, especially to resolve controversial issues, can involve significant time and operation costs. However, decisions that are supported by all AMP stakeholders can save time in the end by having implementable and durable recommendations to the Secretary.

What is collaboration?

The Ad Hoc Group adopted the following definition of collaboration (Folger, et al., 2001): behaviors that are intended to satisfy one's own concerns, combined with behaviors that are intended to satisfy the concerns of the others in the group. This means that members of a collaborative group advocate strongly for their own interests, as well as attempt to find solutions that will address the interests of the other group members.¹

Collaboration is consistent with Foundational Documents.

An emphasis on collaboration is consistent with the Vision and Mission statement of the AMP, which AMWG recommended to the Secretary of the Interior on January 17, 2002. The Vision and Mission Statement says, in part, that the work of the program “**will be accomplished through our long-term partnership.**”

Collaboration is also consistent with Principle 7 of the AMP, recommended to the Secretary of the Interior by AMWG on January 17, 2002, which says,

“Because management actions to achieve a goal may benefit one resource or value and adversely affect another, those action alternatives that benefit all resources and values will be pursued first. When this is not possible, actions that have a neutral impact, or as a last resort, actions that minimize negative impacts on other resources, will be pursued consistent with the Glen Canyon Dam Environmental Impact Statement and the Record of Decision.”

Recommendation

- **Beginning in FY09, hold regular (annual or biennial) workshops/retreats to build trust among AMP participants and to address internal operations, roles, and effectiveness.** At the AMP's first retreat in 2004, the attendees defined the internal issues that they most wanted to address: clarification of roles, responsibilities, and interactions among the various parts of the AMP (AMWG, TWG, GCMRC, and Science Advisors). The FY09 retreat or workshop should continue the improvement of internal operations by focusing on the issues that resonate the most with the attendees. These may include some or all of the following topics:
 - **Ensure that all parties clearly understand the interests of every other party.** If collaboration involves making sure that every party's interests are served, then everyone involved must understand the other parties' interests.
 - **Discuss whether there is a balanced range of interests willing and able to participate, and if not, how to ensure it.** For a collaborative process to be perceived as legitimate, it must involve a balanced range of participants with diverse perspectives. Some AMWG members are able to (or choose to) participate more actively than others do. Are there impediments to active participation that could be addressed? In addition, some stakeholders feel disenfranchised

¹ Folger, et al., described five styles of conflict behavior, as follows (page 69):

1. A **competing** style is high in assertiveness and low in cooperativeness: the party places great emphasis on his or her own concerns and ignores those of others. This orientation represents a desire to defeat the other . . .
2. An **accommodating** style is unassertive and cooperative: the person gives in to others at the cost of his or her own concerns. . . . Those who follow [this orientation] attempt to avoid conflict for the sake of maintaining the relationship. . . .
3. An **avoiding** style is unassertive and uncooperative: the person simply withdraws and refuses to deal with the conflict. . . .
4. A **collaborating** style is high in both assertiveness and cooperation: the person works to attain a solution that will meet the needs of both people. In this orientation, full satisfaction for all is sought.
5. A **compromising** style is intermediate in both assertiveness and cooperativeness: both people give up some and “split the difference” to reach an agreement. In this orientation, both are expected to give up something and keep something.

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. Finally, the effect of cultural and gender differences on the ability of stakeholders to participate in the process in an equitable fashion needs to be investigated.

- **Identify incentives that might be needed in order to encourage the parties to work collaboratively to achieve common goals.** Parties should be expected to serve their interests as best they can. Some may feel that their interests are better served away from the AMWG table, e.g., at Congress or in the courts. An open discussion of what it would take for all parties to believe their interests would be best served at AMWG might engender some ideas of incentives.
- **Determine the kinds of activities that should be used to build trust and foster collaboration.** These could include river trips, team building exercises, common goal setting, and social interactions.
- **Training on how to improve collaborative processes within the AMP.** The following items could be a part of the training:
 - Learn how other groups have successfully worked together collaboratively, despite significant differences in world-view and opinion.
 - Discuss whether they are willing to adopt collaboration as a way to work together.
 - Discuss and agree on how to maintain a collaborative environment when consensus cannot be achieved.

The operating procedures for the various entities should be updated as needed to reflect the results of the workshop/training.

- **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 focused attention 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 that could be evaluated to determine what would 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.
- **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 TWG meetings.
- **The Secretary's Designee will emphasize the development of consensus for motions proposed by AMWG members.** A consensus decision means that the interests of all the members of the AMWG were taken into account. If consensus is emphasized, it will encourage AMWG members to look for ways to address all those interests. To put this into effect, the Secretary's Designee will ask parties that disagree on a motion to resolve their differences before or during the meeting. In addition, all action items will be scheduled for the first day of the meeting, allowing time for stakeholders to resolve any remaining differences either over lunch or between the first and second days of the meeting. (Alternatively, longer meetings could be scheduled to allow much of this negotiation and discussion to occur during the meeting instead of before.)
- **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 stakeholders to understand, discuss, and/or rank options. In addition, over the past decade,

3. AMWG distinction from TWG

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.

Background

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

Recommendation

As a rule, technical reviews and deliberation will occur at the TWG meetings. As described in Issue #11, this will involve an evaluation of the technical pros and cons of reasonable options. This technical analysis will help AMWG understand the basis for the TWG recommendations and will serve as companion information to the AMWG evaluation of policy implications.

For each AMWG agenda item for which there is a TWG recommendation, the TWG chair or designee will present a summary of the TWG's work and its recommendation before discussion or action by AMWG.

AMWG members should be adequately briefed by their TWG members before each AMWG meeting as described in Issue #17. This will allow AMWG to rely on the TWG for technical reviews and recommendations, and focus on policy options and tradeoffs as recommendations are evaluated.

4. Acting on TWG recommendations

Occasionally AMWG has not acted upon a TWG recommendation. If the AMWG does not consider the work done by the TWG, it undermines TWG members' motivation and ability to spend the time needed to do its work well.

Recommendation

The AMWG will discuss and consider all TWG recommendations.

5. Planning and scheduling work

Clear timeframe planning is not apparent.

A 1-year schedule will be developed for AMWG and TWG by the chairs of each group, 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 the status of each task.

Final approval of annual plans of work and meeting schedules for the AMWG, TWG, and SAs will be developed and incorporated into the AMP Biennial Work Plan (BWP), which traditionally has only contained the GCMRC Annual Plan of Work. Reclamation 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.

6. Assignments to TWG and requests to GCMRC

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.

Recommendation

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 and TWG Chair will determine at the meeting the feasibility of addressing the AMWG'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.

7. AMWG authority over agencies

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 AMWG may have workgroups or subgroups that the Committee and the Secretary's Designee deems [sic] necessary for the purpose of compiling information or conducting research. (Kempthorne, 2008, p. 4).

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

Recommendation

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.

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 Issue # 10 for a new process for these recommendations.

Note that when TWG is given an assignment from AMWG, the GCMRC would also usually be involved. In these cases, an AMWG recommendation to the Secretary may be required to obtain GCMRC involvement. Actions by AMWG such as an assignment to TWG that would not include GCMRC involvement, or establishment of an Ad Hoc Group, would not need a recommendation to the Secretary.

8. AMWG decision making

The AMWG operating procedures require attempting consensus before going to a vote. After a motion is made and seconded, AMWG members will modify the motion as needed through discussion in order to attain consensus.

The Secretary's Designee will eventually test if consensus has been attained by asking the group if there is any objection to consensus on the motion. If there is none, the motion will be recorded as adopted by consensus. If there is an objection to consensus, the Secretary's Designee will either ask that the group continue to attempt to attain consensus, or will call for a vote. The vote will be by roll call.

According to Robert's Rules of Order, a member who abstains has chosen not to vote, and abstentions do not affect the outcome of the vote (except that they reduce the number of persons voting on that particular motion, which reduces the number of votes needed to reach the 2/3 supermajority). Thus, abstentions do not block consensus recommendations, and if a roll call vote is taken and everyone who voted cast an affirmative vote, the vote will be considered unanimous even if there were abstentions.

9. Conflicts of interest

AMWG members often vote on issues or make budget recommendations where there is a potential conflict of interest.

Recommendation

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

- (4) AMWG will provide Federal agencies with broad program advice and recommendations through the organized FACA process.
- (5) After program and budget approval by the Secretary of the Interior, GCMRC or Reclamation will issue requests for proposals (RFPs) to solicit specific monitoring and research proposals to meet program needs. However, in some cases, limited competition and sole-source contracts may be used. (See Issue #22 for more detail.)
- (6) 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.

10. Measures of success

To clarify progress in meeting its responsibilities, the AMP will define measures of success. *Adaptive Management: The U.S. Department of Interior Technical Guide* (Williams, et al., 2007) suggests using the following four criteria for measuring success in an adaptive management program:

- A. Stakeholders are actively involved and committed to the process.
- B. Progress is made toward achieving management objectives.
- C. Results from monitoring and assessment are used to adjust and improve management decisions.
- D. Implementation is consistent with applicable laws.

In order to measure whether progress is being made toward achieving management objectives (B above), the AMWG will recommend to the Secretary targets (desired future conditions) for the management objectives in the AMP strategic plan. These targets, needed to guide and focus science and management activities as well as to measure success in the program, will be incorporated into the AMWG strategic plan.

Secretary's Designee

11. Secretary's responses to AMWG recommendations

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.

Recommendation

The Secretary's Designee will formally transmit AMWG recommendations to the Secretary within 15 working days of the AMWG meeting in which the recommendations were made. Sufficient background information, including any majority and/or minority reports, will be provided by the Designee to fully inform DOI staff. Reclamation will develop guidelines for the development of Majority and Minority reports, in consultation with the AMWG.

If the AMWG recommendation was by consensus or unanimous vote, 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 refer the issue to the DOI Assistant Secretaries or Bureaus for formulation of a DOI response to the AMWG.

If the AMWG recommendation was not unanimous, the Secretary's Designee will consult with the appropriate DOI agencies and/or Assistant Secretaries to formulate the DOI response.

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

Technical Work Group (TWG)

12. TWG's 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. (Department of the Interior, 1995, p. 37).

Recommendation

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), the FEIS, and the ROD. The TWG should also:

- (1) Review progress/ accomplishments annually
- (2) Providing general technical guidance for the program and 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, potentially including social and economic considerations if so directed by AMWG. 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. 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 that were considered – including technical pros and cons – will be submitted to the AMWG for its review and consideration. Minority positions will be given to AMWG 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.

13. TWG technical qualifications

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

Recommendation

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.

14. TWG defining core questions

Some feel the EIS expectation that the TWG define core questions for GCMRC to address is not being met.

Recommendation

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 five 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 has developed a crosswalk table to show the relationship between the various information needs (INs) and the proposed strategic science questions. The SSP and MRP were updated based on this analysis and both documents were approved by the AMWG.

15. TWG role

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

Background

AMWG primarily provides general direction and leaves 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) (Department of the Interior, 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.*

Recommendation

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.

16. Participation by TWG members

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.

Recommendation

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 nominate TWG members who have adequate time and the inclination to fully participate. Full participation is defined as participation in TWG votes, attendance at TWG meetings, participation as an active member of Ad Hoc Groups (attending meetings, taking on work assignments, reviewing documents in a timely manner, etc), and providing timely review of documents as requested. 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.

17. TWG decision making

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.

Recommendation

GCMRC and the TWG have developed a process for soliciting and responding to comments from the TWG members on various GCMRC products (e.g., MRP, BWP, various science plans, etc). TWG comments are documented, responded to, and then provided back to TWG with a revised document for review and approval. This two-step process involves first, comments from individuals, and then full TWG consideration of those comments while developing a recommendation to AMWG. This has proven to be an effective approach. However, GCMRC is not bound to incorporate all of the individual comments and must make scientific judgments on the merit of each one. If GCMRC disagrees with a comment, or believes it is a policy comment, they will provide this rationale to TWG in the response to comments table. As described above, disagreements with GCMRC must be voiced at the TWG and then rise to the AMWG for resolution via the Secretary's Designee, if necessary. TWG will provide the necessary technical background information to AMWG for resolution. Opposing views often embody policy decisions and thus are best dealt with by AMWG, utilizing the technical information available to inform those policy decisions.

In order to help the decision-making process, TWG will follow its Operating Procedures (Johnson, 2001) for consensus building and voting. In all its deliberations, the TWG will attempt to reach consensus. A roll call vote will be taken when consensus is not possible. Prior to the 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. Abstentions do not block consensus or unanimous vote.

18. Communication between TWG and AMWG members

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

Recommendation

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. This will also make it more likely that technical issues, including those important to AMWG members, will be resolved at TWG instead of having to be addressed at AMWG.

Grand Canyon Monitoring and Research Center (GCMRC)

19. GCMRC participation in Ad Hoc Groups

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. 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.

Recommendation

As a general rule, GCMRC will participate in all AMWG, TWG, and Ad Hoc Committee meetings, as appropriate. In the event this is not possible, GCMRC will so communicate to the Chair of the relevant committee in advance of the meeting.

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 #5, 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 #6, 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, an AMWG action to a recommendation to the Secretary may be needed to secure GCMRC involvement.

20. GCMRC focus and deliverables

GCMRC has a history of being late on assignments or not delivering enough products.

Recommendation

GCMRC efforts will focus on the most important work products. These may include fieldwork, contracting, budget, SCORE reports, and AMWG/TWG briefings. GCMRC's activities and deliverables are defined in the MRP and BWP. GCMRC will develop a report for each project in the BWP at the end of each fiscal year. This report will document accomplishments and expenditures, as well as shortfalls, with recommendations for change.

21. GCMRC workload

When requesting or recommending GCMRC take on a task, the AMP needs to be 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.

Recommendation

See Issue #5 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 #6 for a description of a new process designed to ensure directions are clear and workload is considered before an assignment is accepted.

22. GCMRC budget latitude and accountability

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. One of the challenges presented in this regard is the fact that the AMWG only meets two to three times per year and therefore cannot always address issues quickly, including urgent budgetary issues. When GCMRC makes needed budget adjustments, AMWG might perceive such actions as constituting unilateral and unauthorized changes by GCMRC to approved budgets and research plans.

Recommendation

The GCMRC will give periodic updates on its operations and budget to the Secretary's Designee, AMWG, and TWG, including an annual accomplishments report, semi-annual budget reports, and reports on projects that have been deferred or significantly delayed. The BWP will include contingency projects that will be funded if surplus funds arise. GCMRC has the latitude to make budget adjustments of up to 5 percent of its total budget to accomplish work specified in the BWP. No new AMP projects will be implemented by GCMRC or Reclamation without first consulting with the TWG chair and vice-chair and the Secretary's Designee. The Secretary's Designee will determine whether consultation with the AMWG is needed.

23. 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 (Department of the Interior, 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 (AGFD), 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. 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 who 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.

Recommendation

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 Reclamation 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, near shore ecology). 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 will provide appropriate opportunities for agencies with statutory responsibilities to be involved in the science development and contracting or agreement process.

GCMRC and Reclamation 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.).

24. GCMRC 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 Policy Act (NEPA) compliance documents), believing that this protects the agency's ability to function as an impartial science provider.

Recommendation

GCMRC will ensure that any negative impacts from AMP-related research activities are monitored, documented, and addressed in a timely fashion in accordance with applicable federal and state laws. GCMRC will address NEPA, Endangered Species Act (ESA), and National Historic Protection Act (NHPA) compliance, and NPS/Tribal research permitting processes, 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.

25. 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.

Recommendation

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 Reclamation 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 Reclamation 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.

26. 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.

Recommendation

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, land and resource management agencies and other AMP stakeholders are annually invited and encouraged to notify Reclamation of all such activities, so they can be included in the BWP. Information about these activities will be incorporated into the AMP work plan and budget development process.

Bureau of Reclamation (Reclamation)

27. Reclamation collaboration and coordination

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. Reclamation also needs to be open and available to all AMP stakeholders and groups.

Recommendation

Communication will in part be facilitated by the schedule discussed under Issue #5. 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.

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 BWP, 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.

The TWG Chair and GCMRC Chief will be involved in the AMWG agenda development process. AMWG members will be sent a list of potential agenda items with a request for additions via email several weeks before the deadline to mail the agenda packets. AMWG agendas will be developed to provide sufficient time for careful consideration of workload impacts, option evaluations, and conflict resolution. The Secretary's Designee makes the final decision on the AMWG agenda.

The TWG Chair and Vice-Chair, the Executive Coordinator of the Science Advisors, and the Chief or Deputy Chief of GCMRC will work cooperatively to develop the TWG agenda. TWG members will be asked at the end of each meeting for suggestions of agenda items for future meetings. A draft agenda will be sent to TWG members six weeks in advance, with a week to send in additions to the agenda via email. The final TWG agenda will be sent out three weeks in advance of the meeting, and the final packet will be available on the web 10 days in advance of the meeting.

28. 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 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 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).

Note that the Record of Decision (U.S. Department of the Interior, 1996, p. 11) references and incorporates the above paragraph, as well as the rest of pages 33-43 of the FEIS.

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).

Recommendation

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.

Reclamation must make sure that the views of both PA signatories and AMWG recommendations are considered in reaching final decisions in the PA forum. It should be the intent of each of these groups to work collaboratively to accomplish the purposes of the PA, the Grand Canyon Protection Act (GCPA), the FEIS, and the ROD.

Reclamation and the NPS must work closely and collaboratively to meet their NHPA obligations. Other entities also have a role in AMP cultural resources issues. A cultural resources ad hoc group of the TWG (CRAHG) was created to help facilitate between the PA signatories and the AMP. In addition, GCMRC's role is to develop a scientifically based monitoring program to assess the effects of dam operations on cultural resources in the CRE, in order to "ensure [its] integration with other facets of the long-term monitoring and research program" (Reclamation, 1995, p. 37).

Science Advisors (SAs)

29. Clarity of Science Advisors comments

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

Recommendation

The SAs maintain their independence from GCMRC to ensure their reviews are objective and unbiased. The SAs do not maintain regular contact with GCMRC scientists. All review comments, no matter how critical, are documented in the SAs formal report.

The SAs implemented a “Rapid Review Process” in 2005 to ensure consistent high quality reviews, in a two to three week period, of 50- to 150-page science documents by the eight SAs. The protocols include the following steps:

- The Executive Coordinator develops a prospectus that includes review goals, questions, process, schedule, and requested general and specific comments, recommendations, etc.
- Each SA sends a written review to the Executive Coordinator, who drafts a report that incorporates all comments.
- If the SAs review comments are contradictory, the SAs themselves – not the Executive Coordinator – make the decision about what is included in the final report. This ensures that the final report accurately incorporates and reflects the comments from all the advisors.

This approach has increased review clarity and quality for the AMP

30. Tracking responses to Science Advisors’ reviews

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.

Recommendation

There is no requirement for GCMRC to formally report to the SAs or TWG changes made in documents or programs in direct response to SA reviews. However, GCMRC does on many reviews report to TWG or includes in its documents how it has responded to SA reviews. To respond to this issue, two changes will be made in SA operating procedures to further clarify changes addressed by GCMRC as follows.

1. At TWG meetings following completion of a specific SA review or reviews, the SA Executive Coordinator and GCMRC Chief will summarize SA review recommendations and changes made by GCMRC to respond to the SA review(s).
2. The SA Executive Coordinator in his/her annual program report to TWG and AMWG will summarize key changes in science plans/programs that were made in response to SA reviews.

In addition, GCMRC will report to AMWG, as appropriate, on the changes instigated based on SAs recommendations, and all SAs’ comments will be posted on the GCMRC website on a separate page to be developed in FY09.

31. Science Advisor 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.

Recommendation

The SAs and SA Executive Coordinator agree that for them to maintain highest quality review and advisory service to the AMP, they must be independent, free of conflict of interest and bias, both individually and as a group. In addition, they individually must be recognized as high quality professional scientists.

These values are maintained in the program through use of the following guidelines.

- The SA Executive Coordinator position is competed nationally as a senior scientist position to the general science community. The position award is based on high quality science ability and accomplishment.
- The eight-discipline Science Advisors are recruited nationally from a pool of hundreds of senior scientists. Appointments are proposed by the GCMRC Chief and approved by the AMWG based on the highest quality science credentials.
- The SA protocols and operating procedures specify explicit criteria to assure independence and eliminate bias and conflict from the SA group and its review process.
- All SAs must sign and adhere to explicit USGS requirements addressing conflict of interest and independence

32. Science Advisors' review of the AMP

Concern exists over timely completion of the overall review of AMP effectiveness by the SAs. 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.

Recommendation

The SAs review of the AMP was completed in January 2007 and reported to the TWG in April 2007. The report will be presented to the AMWG upon request.

APPENDIX - 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; Department of the Interior, 1995, p. 36).
- ❑ FEIS: *The AMWG would be . . . supported by a . . . technical work group* (Reclamation, 1995, p. 36).
- ❑ AMWG Charter: *The AMWG may have workgroups or subgroups that the Committee and the Secretary’s Designee deems necessary for the purpose of compiling information or conducting research.* (Kempthorne, 2008, p. 4).
- ❑ 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* (Department of the Interior, 1995, p. 37).
- ❑ Strategic Plan (see also Department of the Interior, 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 (Department of the Interior 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 AMWG may have workgroups or subgroups that the Committee and the Secretary's Designee deems necessary for the purpose of compiling information or conducting research.* (Kempthorne, 2008, p. 4).
- ❑ 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* (Department of the Interior, 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* (Department of the Interior, 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*

. . . (Department of the Interior, 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 including those contained in the Glen Canyon Dam Environmental Impact Statement Record of Decision (GCDEIS ROD) and subsequent related decisions.*

c. Recommend the framework for the AMP policy, goals, and direction.

d. 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 Grand Canyon National Park and Glen Canyon National Recreation Area were established, including but not limited to natural and cultural resources, and visitor use.

e. Review and provide input on the report identified 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 provide advice on 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 Act.

g. Facilitate input and coordination of information from stakeholders to the Secretary to assist in meeting consultation requirements under Section 1804 (c) of the Act.

h. Monitor and report on all program activities undertaken to comply with applicable laws, including permitting requirements. (Kempthorne, 2008, pp. 1-2).

- 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* (Department of the Interior, 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; Department of the Interior, 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* (Department of the Interior, 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 (Department of the Interior 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 including those contained in the Glen Canyon Dam Environmental Impact Statement Record of Decision (GCDEIS ROD) and subsequent related decisions.

c. Recommend the framework for the AMP policy, goals, and direction.

d. 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 Grand Canyon National Park and Glen Canyon National Recreation Area were established, including but not limited to natural and cultural resources, and visitor use.

e. Review and provide input on the report identified 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 provide advice on 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 Act.

g. Facilitate input and coordination of information from stakeholders to the Secretary to assist in meeting consultation requirements under Section 1804 (c) of the Act.

h. Monitor and report on all program activities undertaken to comply with applicable laws, including permitting requirements. (Kempthorne, 2008, pp. 1-2).

- 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 . . . (Department of the Interior, 1995, p. 37).*
- AMWG Charter: *The AMWG will recommend suitable monitoring and research programs and make recommendations to the Secretary. (Kempthorne, 2008, 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 (Department of the Interior 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* (Department of the Interior, 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 . . . (Department of the Interior, 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 Department of the Interior, 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 (Department of the Interior, 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 (Department of the Interior, 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 (Department of the Interior, 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 (Department of the Interior, 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 (Department of the Interior, 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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