

**Technical Work Group
Phoenix, Arizona
May 30, 2001**

Presiding: Rick Johnson, Chairperson

FINAL

Committee Members Present:

Clifford Barrett, UAMPS
Robert Begay, Navajo Nation
Perri Benemelis, ADWR
Kerry Christensen, Hualapai Tribe
Dave Cohen, Trout Unlimited
Wayne Cook, UCRC
Kurt Dongoske, The Hopi Tribe
Brenda Drye, So. Paiute Consortium
Norm Henderson, GLCA
Amy Heuslein, BIA

Pamela Hyde, Southwest Rivers
Matt Kaplinski, CGRG
Robert King, UDWR
Phillip S. Lehr, Colo. River Comm./NV
Don Metz, USFWS
S. Clayton Palmer, WAPA
Bill Persons, AGFD
Randall Peterson, USBR
Nikolai Ramsey, GCT
Robert Winfree, GRCA

Committee Members Absent:

Jonathan Damp, Pueblo of Zuni
William Davis, CREDA
Christopher Harris, CRBC

Nancy Hornewer, USGS
John Shields, WY State Engineers Office
D. Randolph Seaholm, CWCB

Alternates Present

Leslie James
Wayne Cook

For:

William Davis, CREDA
John Shields, WY State Engineers Office

Other Interested Persons:

Jan Balsom, GCNP
Mary Barger, WAPA
Paul Barrett, USFWS
Gary Burton, WAPA
Nancy Coulam, USBR
Jeffrey Cross, NPS
Joe Falbo, Robert Lynch Law Firm
Barry Gold, USGS/GCMRC
Suzette Homer, Pueblo of Zuni
Susan Hueftle, USGS/GCMRC

Dennis Kubly, USBR
Ruth Lambert, USGS/GCMRC
Lisa Leap, GRNP
Mike Liszewski, USGS/GCMRC
Ted Melis, USGS/GCMRC
Mary Orton, The Mary Orton Company
Barbara Ralston, USGS/GCMRC
Ted Rampton, UAMPS
Tom Ryan, USBR

Recorder: Linda Whetton, USBR

Meeting Opening and Administrative Items

Convened: 9:35 a.m.

Welcome and Administrative:

The Chairperson welcomed the TWG members, alternates, and guests. All introduced themselves. A quorum was established and attendance sheets (*Attachment 1*) were distributed.

Cliff Barrett announced this would be his last time attending a TWG meeting. He expressed his appreciation to the members and said he has enjoyed working with everyone. He and his wife will be going to Vienna, Austria to serve a church mission for two years.

Action Items from March 14-15, 2001 Meeting:

Clayton reported the LSSF Cost Analysis Report is in the technical revision process.

ACTION: Clayton will send the LSSF Cost Analysis Report to the GCMRC for peer review and FYI to the TWG.

Items 1-4: Completed.

Item 5: Dennis said he received a comment from Bill Persons about the interaction between cooperating scientists and GCMRC, particularly where conflict of interest issues might occur. At some point in time, this may need to be revisited.

Items 6-7: Completed. This will be added to the agenda for the next TWG meeting.

Item 8: Barry said this was ongoing up until last Friday. He is going to pass out a memo relative to Matt's concerns and it's also on the agenda for tomorrow morning.

MOTION: Move to approve the March 14-15, 2001, Minutes.

Motion seconded.

Discussion: Corrections were noted. Pam Hyde requested future minutes be more concise.

Public Comments: None

Pending corrections, the minutes were approved.

Strategic Plan - Mary Orton said the Ad Hoc Committee on Strategic Planning met on April 30-May 1 and results from that meeting were distributed to the members (*Attachment 2*). Changes they discussed were incorporated into the revised Strategic Plan (*Attachment 3*) and Vision Narrative (*Attachment 4*). She also distributed copies of a memo (*Attachment 5*) from the Ad Hoc Committee to the TWG with recommended edits on both documents. Comments were recorded on flip charts (*Attachment 6*) and updated after significant issues were discussed.

In order to complete as much work as possible on the Strategic Plan today, the Chairman suggested rewrites to the cultural resource section be assigned to those individuals with expertise in the area. Thus, the Cultural Resource Rewrite Group was formed: Kurt Dongoske, Jan Balsom, Nancy Coulam, Brenda Drye, Mary Barger, Lisa Leap, Robert Begay, and Ruth Lambert.

Other rewriting assignments were made with rewrites to be brought back to the TWG for discussion later today or tomorrow.

ACTION: TWG should send comments on the Strategic Plan Narrative to Mary Orton and Randy Peterson.

Sediment and Research Update - Ted Melis introduced Dr. Jack Schmidt of Utah State University who came to make a presentation on the synthesis project. The project began in 1998 with a focus to look at the entire system from the dam down to Phantom Ranch in a very detailed way - historical assessment of all hydrologic, geomorphic, and sediment transport data available from pre and post-dam sources. Dr. Schmidt has been working on this in one form or another for over a decade. The project has been funded for the past three fiscal cycles as part of the GCMRC program.

Dr. Schmidt said one of the fundamental notions is that the dam has irreversibly and progressively caused sandbar erosion in Grand Canyon. With that in mind, it was decided a review of all historical data was needed to determine if that was a correct assumption. He said he would present his findings based on how the system currently works and tell it as a story so it makes sense to people. He proceeded with a PowerPoint presentation entitled, "The Bed and the Banks" (*Attachment 7*).

Sediment Ad Hoc Group Report - Matt Kaplinski distributed copies of a report by Emmett M. Laursen entitled, "On Sediment Transport Through the Grand Canyon" (*Attachment 8a*) and copies of several diagrams (*Attachment 8b*). He referred to one diagram which showed the sediment budget model Tim Randle and others prepared which indicated that under many of the flow regimes, the alternatives in the EIS sediment would accumulate in the system over multiple years. However, recent work done by David Topping has proven sediment transport relationships are not stable. In fact, depending on the grain size on the bed of the channel, greater amounts of sediment are transported. In another diagram (Figure 2), the sediment transport is initially greater and when the system is depleted of fine sediment, the sediment transport drops off and on the back end of the flood, the sediment transport is lower. The effect of that is the same simple analysis of the sediment budget Tim Randle did for the EIS. Using the newly refined version of how sediment is transported into and out of the system, the earlier EIS method under estimates the amount of sediment transport and therefore over estimates the amount of sediment stored within the system which results in a sediment budget that is negative, meaning there is more going out than there is coming in. Matt said one thing to remember about

the budget analyses is that it's a one dimensional model of inputs and outputs and doesn't take into account exchanges between, into, and out of eddies, up on the sandbars, and up into the higher elevations.

Matt said the ad hoc group's charge was to review the latest research, make a report to the TWG (**Attachment 8c**), and respond to findings presented in a memo written by Rubin, Topping, et. al. to the GCMRC. He reviewed the group's recommendations:

Recommendation #1: Implement releases above power-plant capacity discharge immediately after substantial inputs of fine sediment from tributaries.

The Ad Hoc Group believes this cannot be implemented at this time but that it might eventually need to be tested experimentally if other alternatives fail. They also believe other dam release options exist that might promote potential eddy storage in ways that better conserve tributary inputs. However, if testing of such alternative flow actions fail to achieve program goals, this recommendation should be considered as the next possible experimental action.

Recommendation #2: Maintain low flows following fine-sediment inputs until releases above peak power-plant discharge can be implement.

The Ad Hoc Group believes this option has technical merit and should be considered by the Experimental Flows Ad Hoc Group in their deliberations on flows to meet the intent of the experimental flow provisions of the 1995 Biological Opinion.

Recommendation #3: Add sediment downstream from the dam.

The Ad Hoc Group believes this option is currently untenable. However, should the research and monitoring results from the suggested program of fine-sediment focused experimental flows determine there is no other option, sediment augmentation should be seriously evaluated by stakeholders as the only option for sediment-resource sustainability.

Matt said the committee will take comments from the TWG and then finalize the report. He asked the members to send their comments to him within the next two weeks.

ACTION: TWG should send comments on the Sediment Report to Matt by June 13, 2001. Matt will bring a response document to the next TWG meeting.

Experimental Flow Ad Hoc Group Report - Randy said the Experimental Flows Ad Hoc Group met yesterday. Since Matt covered much of the information regarding the experimental flow proposals, he would talk about where the group is and who they think they are.

The Experimental Flows Ad Hoc Group knows there are high priority experimentation needs.

They view those as Biological Opinion experimentation, a program of experimental flows and a need to test BHBFs. Both result from environmental compliance commitments. The BO flows from the 1994 Biological Opinion and the commitment for additional BHBF testing from the Interim Surplus Criteria EIS.

As an ad hoc group, they listed their assumptions about what they think they know about the resources involved and will be receiving verification about those assumptions from the GCMRC. Since Ted Melis and Barbara Ralston were involved in discussions with the group, the group believes their assumptions to be correct. Randy said the group is on the right track in formulating some hypotheses or questions resulting from those assumptions. The group has launched into the design of some experimentation but thus far has focused primarily on BHBFs. They are now trying to expand consideration to all resources in terms of unknowns and hypotheses which would then feed into a refining of the experimental flow design or an expansion of the design and the possibility that additional experiments are required.

The succeeding flows post experiments are extraordinarily important in terms of how they affect the outcome of the experiment, how long beaches last, conditions for the Humpback Chub following an 8.23 maf release year, etc. The experiments make some assumptions linking the BO to BHBFs, even though the group hasn't fully considered what the BO flows might look like. There are some contingencies that high flows would be contingent on a positive outcome of something else. They might approach this from a risk based point of view where less risky experiments would be tried first. There is some indication that a one-day repeat of a 45K flow might make a lot of sense because it would reveal more about the coarse condition of bed and eddy sediments. So if the first day of a 45K test were fundamentally different from the results of a first day of the 1996 event, that might be enough to stop everything.

AMP Budget Update - Randy reported the Budget Ad Hoc Group has had several conference calls and prepared a memo (*Attachment 9*) based on those discussions. It is recommending principles and a proposed adjustment to the 2002 budget should there be a shortfall in 2002. At the current time there could be one because the USGS has not included the \$1M large rivers initiative in their budget which would help fund the program. They are committed to providing \$250K of funding so that leaves a shortfall of \$750K. He said Barry would explain adjustments to the science program expected in 2002. They would recommend the TWG support the use of the principles in the prioritization process, or especially when deferring work from year to year based on available dollars.

USGS Budget Update - Barry said the principles were used to see if they could meet the potential shortfall which might occur in 2002 if \$750K doesn't materialize. He and Randy looked at their budgets and came up with a set of activities to be deferred. They are also going to defer some equipment demands, delay some personnel actions, and do a few other things. They are proposing to defer some work in the area of remote sensing, but are assuming they will be able to carry forward money that would've been spent in 2001 to do the LIDAR. With respect to

modeling sand (an RFP for this year), they had hoped to initiate it in 2001 but the recommendation they got from the Peer Review Panel was that they had no good proposals initially. Ted Melis, Barbara Ralston, and Ruth Lambert rewrote it so it was a much more integrated proposal. The solicitation was sent out again but to a wider mailing list in an effort to get better proposals. However, they're going to slow down the award process as they used the 2001 money to get that project started in 2002, which allows them to slide the 2002 money to 2003. The only project they are proposing to not start is the new terrestrial project. Because they are a little slow on the INs, they don't have the necessary information. The project was put in the budget when they anticipated having the INs already developed and ready to start.

Randy looked at his budget and since there was funding in similar areas (SAB, compliance reports), he thinks there is \$45,000 in his budget that can be deferred. Their task was to try and come up with \$750,000 which would be deferred. They worked with the Ad Hoc Group to develop a set of principles and there is \$800,000 for potential activities which could be deferred. They think they can do it without compromising the integrity of the program although they did include a caveat that some referrals slow down full implementation which could have an effect in the out years.

MOTION: Adopt the budget report as written, including the principles and their application to 2002.

Motion seconded.

Discussion.

Public Comments: None

Voting: Yes = 19 No = 0

Abstained = 1 Matt Kaplinski: I don't think we should cut anything.

Motion passed.

IWQP Response from GCMRC - Barry said in January 2001, Jim Ruane gave the TWG a presentation on the PEP recommendations for the Integrated Water Quality Program in advance of GCMRC receiving the report. Shortly after, the GCMRC got the draft report and have now delivered the second step in the process. They requested comments from the TWG but only received comments from two members. They prepared a "Response to IWQP PEP Recommendations" document (*Attachment 10a*) which lists each of the recommendations and how the GCMRC proposes to respond.

Susan Hueftle made a PowerPoint presentation (*Attachment 10b*) in conjunction with the report. She said the recommendations will be prioritized in how the GCMRC adopts them. Developing the model is very important and one of their first priorities is to adopt those issues which will speed up development of the model. As the model is validated, they will shift some of the programmatic emphasis from upstream to downstream and develop a more efficient and effective program to help the TWG make better decisions. The implementation pivots on the AMP, GCMRC, and their evaluations. Most of their funding is coming from O&M funds for the

reservoir work they do which might change as they shift downstream.

Barry said there will be a period of discussion and then they will revise the IWQP Plan and bring it back to the TWG for final review.

ACTION: TWG to send comments on the IWQP Response document to Serena Mankiller (smankiller@usgs.gov) by **Friday, June 29**. Depending on the nature of comments, Barry will send an e-mail to the TWG.

LSSF Study Cost Analysis - Due to the need for more work on the Strategic Plan, it was decided to reschedule this topic for the next TWG meeting. However, Clayton did provide copies of the PowerPoint presentation (*Attachment 11*) he was going to make.

Strategic Plan (continued). Mary Orton passed out additional definitions to the Strategic Plan. (*Attachment 12*). The members continued to discuss significant issues and rewriting assignments. The Flip Charts (refer to Attachment 6) were updated accordingly.

Adjourned: 5:15 p.m.

**Technical Work Group
Phoenix, Arizona
May 31, 2001**

Presiding: Rick Johnson, Chairperson

FINAL

Committee Members Present:

Clifford Barrett, UAMPS
Robert Begay, Navajo Nation
Kerry Christensen, Hualapai Tribe
Dave Cohen, Trout Unlimited
Wayne Cook, UCRC
Kurt Dongoske, The Hopi Tribe
Brenda Drye, So. Paiute Consortium
Amy Heuslein, BIA Hyde, Southwest Rivers

Pamela Hyde, Southwest Rivers
Matt Kaplinski, CGRG
Robert King, UDWR
S. Clayton Palmer, WAPA
Bill Persons, AGFD
Randall Peterson, USBR
Nikolai Ramsey, GCT
Robert Winfree, GRCA

Committee Members Absent:

Robert Begay, Navajo Nation
Perri Benemelis, ADWR
Jonathan Damp, Pueblo of Zuni
William Davis, CREDA
Christopher Harris, CRBC
Norm Henderson, GLCA

Norm Hornewer, USGS
Phillip S. Lehr, Colo. River Comm./NV
Don Metz, USFWS
D. Randolph Seaholm, CWCB
John Shields, WY State Engineers Office

Alternates Present

Leslie James
Wayne Cook
Paul Barrett
Suzette Homer

For:

William Davis, CREDA
John Shields, WY State Engineers Office
Don Metz, USFWS
Jonathan Damp, Pueblo of Zuni

Other Interested Persons:

Jan Balsom, GCNP
Mary Barger, WAPA
Gary Burton, WAPA
Nancy Coulam, USBR
Jeffrey Cross, NPS
Joe Falbo, Robert Lynch Law Firm
Barry Gold, USGS/GCMRC
Dennis Kubly, USBR

Ruth Lambert, USGS/GCMRC
Lisa Leap, GRNP
Mike Liszewski, USGS/GCMRC
Mary Orton, The Mary Orton Company
Barbara Ralston, USGS/GCMRC
Ted Rampton, UAMPS
Tom Ryan, USBR

Recorder: Linda Whetton, USBR

Convened: 8:05 a.m.

Basin Hydrology - Tom Ryan stated it's another below average year. Last year there was 4.35 maf of runoff into Lake Powell in April-July, which was 56% of average. The current forecast is for 71% of average, April-July inflow. He passed out copies of the following graphs:

Attachment 13a (Colorado River Basin Precipitation) shows the distribution of precipitation in WY 2001. It started out pretty well in October but with the exception of the San Juan, it has been pretty low every since with the exception of April. It was thought that April might make a difference in the runoff forecast but in the final show, it hasn't really helped much.

Attachment 13b (Upper Colorado Inflow Forecasts) is a map of the Upper Colorado River Basin which shows inflow forecasts at the CRSP units. There is a gradient of dry to the north and wetter to the south. Navajo had a 122% of average inflow forecast so there is good runoff down there. There is a little runoff in the upper Green and the aggregate for Lake Powell is 71%, 5.5 maf.

Attachment 13c (2001 Upper Colorado Snowpack and Lake Powell Inflow Forecast) is a timeline of the basinwide snowpack and inflow forecasts for April-July. It started out well and then we went dry, a little bit of moisture in December and then hung in there around 75-80% for quite a few months. There were no big storms just little shots of moisture keeping the basin in the below average range. The month of April actually started out well with a couple weeks of precipitation but unfortunately there were also a couple periods of warm dry windy weather. The benefits gained by the precipitation and the increased snowpack were lost by the windy events which also caused a great loss of snowpack. The snowpack dropped off significantly from there.

Attachment 13d (2001 Lake Powell Unregulated Inflow) is a plot which shows unregulated inflow into Lake Powell. We're looking at an earlier than average runoff and probably going to 1.85 maf in May which is actually above the volume forecasted for May but it's almost a certainty that June will be much less than what was forecasted. It may be more like 5.2 to 5.0 maf below. The trend right now is down. There is runoff occurring at higher levels upstream so it is going to be going up again.

Attachment 13e (Emergency Releases at Glen Canyon). There were emergency releases at GCD, one on May 7 and another on May 8. This graph indicates what happened on May 7. Generation was increased on that day by about 350 megawatts above pre-scheduled values, which is approximately 8,000 cfs. It was held there for about four hours and then ramped down by 1500 cfs an hour. There is a concern that a similar situation that occurred at Grand Coolee where there was a continual Stage 3 emergency last winter that caused releases above what normally would be scheduled on Grand Coolee to just continue through the winter months could happen at GCD. Reclamation wants to preserve its water and has told the California entities that once they've used up that amount of energy, they have to pay it back so that we don't lose water in the system and can meet our contractual obligations to other CREDA customers.

Attachment 13f (Glen Canyon Dam Hourly Releases, May 29 through June 30, 2001) - depicts current ROD operation going from a 6,600 up to 12,600 cfs. This shows an even step pattern of what is being done from May 29 - June 30. On Sundays, it's going from 6600 off peak to 8,000 on peak.

Attachment 13h (Glen Canyon Releases, Based on May 2001 Final Forecast) - If we get to an 8.23 maf release year and the forecast drops by another 150,000 acre-feet (which is likely), the operation will probably be 600 in June, 800 in July, 800 in August, and 447 in September, which would bring us to 8.23 for the year.

Attachment 13i (Projected Lake Powell Water Surface Elevations, Based on May 2001 Final Forecast). These are probably optimistic. The under May forecasted inflow, Lake Powell would reach 3,676 feet in July. The June forecast will likely be forecasting less inflow.

Aerial Photography and LIDAR - Barry Gold said they are not going to propose to do the LIDAR under current conditions. They would need more time and when they weighed the risks of being in the middle of the LIDAR, knowing there could be an emergency release for California that would once again compromise the data, it didn't make sense to push forward to accomplish it. They are proposing the standard aerial photography they do every year, the monitoring data. The only change in the protocol is that they are changing the time. They had been doing it either Memorial Day or Labor Day. An analysis of the shadowing data suggests the closer they can do it to the summer solstice, the better quality the data is. In fact, some of the slides shown by Jack Schmidt yesterday were good examples of where the shadowing loses the data that they really want to be looking at. They are proposing to do it 4.5 days using a digital camera, collecting both black and white, and color infrared.

They laid out three options for accomplishing the work in a memo (**Attachment 14**) they prepared for Rick Gold's signature (Update: Memo was signed 6/12/01 and e-mailed to TWG on 6/14/01):

Option 1: Request 4-5 days of 8,000 cfs flows during the last two to three weeks of June. There is the assumption of emergency releases for California that they will have to pay back. That payback will be used as the means for steadying flows at 8,000. By doing it on a weekend, contiguous with a Monday/Tuesday, there would be no impact to power customers because the power would be replaced from California. They have a couple of concerns: 1) They are going to be operating under a short lead time so if they can't give the vendor two weeks notice, it will bump the price up by about \$15,000 to get the aerial photography, and 2) If the emergencies don't materialize, they may have to put the vendor on standby and incur a "kill fee."

Option 2: Request 4.5 days of 8,000 cfs constant flows between June 30-July 4. This option would provide a little bit more planning and similarly use some of the California payback. Although the payback should occur within a given month, this option is a little more challenging.

Option 3: Request 10 days of 8,000 cfs constant flows from Sept 1-10. This is the least favored option by GCMRC because the dataset could be compromised by weather and shadowing.

Information Needs - Barbara Ralston distributed copies of a handout (*Attachment 15a*) which explained the structure GCMRC used to develop the "Draft Information Needs for 2001-2006 Strategic Plan." She said Ted would make his presentation first. Ted said the goal was to have the Strategic Plan prepared so it could be presented to the AMWG in January 2002 for approval. They needed to have the INs done to fit into their Strategic Plan as well as into their 2003 Annual Science Plan. It is also required for the strategic planning process for the AMP. A memo was mailed in March 2001 describing the plan which Ted reviewed briefly. He listed the activities they have been working on since the March-April timeframe and what is planned for the next six months (*Attachment 15b*). Ted said he didn't attend the cultural meeting in May and asked Ruth to update the members on what had transpired.

Ruth said April was a busy month for the cultural representatives with attendance at annual meetings and river trips. A meeting was held at the beginning of May and she distributed some draft INs which had been discussed at that meeting. One of the comments made was that cultural INs really need to be interwoven with all the MOs and INs. She is waiting for additional comments which will be incorporated into a revised version and mailed out next week. Relative to the recreational INs, people had other time commitments so a mailout was done. She will incorporate those comments as well and hopefully send out within the next couple of weeks.

Ted said if the August workshop can be arranged, it would be done with everyone and all resource areas would be involved. If they want to stay on their timeline for the Strategic Plan and want to provide draft INs to the AMP and the TWG, they need to do something in August. The TWG reviewed the potential dates for the workshop and determined that **August 8-9, 2001** (Wed-Thu) would be the best time. He will make arrangements for the workshop to be held in Flagstaff, Arizona, and will send an Excel spreadsheet to the TWG members (electronically) which will allow them to comment on all the existing draft INs.

Ruth requested all cultural INs be sent to her as soon as possible based on the draft she sent out on May 8.

ACTION: TWG to provide comments on the Information Needs to Serena Mankiller (smankiller@usgs.gov) by June 21, 2001. Depending on the nature of comments, Barry will send an e-mail to the TWG.

Strategic Plan (cont.) - Mary said the goal today would be to address comments on the Vision Narrative and then go back and look at all the materials/rewrites people were asked to prepare.

Tribal Authority within the CRE - Mary said she drafted some language on tribal authority within the Colorado River Ecosystem per a discussion with Robert Begay at yesterday's meeting. She discussed with Robert this morning and he had one minor change. Since he had to attend another meeting, Mary presented the writeup to the TWG. The TWG discussed and the rewrite was proposed as a motion.

MOTION: When AMP activities take place on tribal lands or have the potential to affect tribal resources, there may be access and other issues for the AMP. This pertains to the Navajo Nation, the Havasupai Tribe, and the Hualapai Tribe. In order for the AMP to carry out its monitoring and research functions in these areas, these issues may need to be resolved, probably in other forums. Compliance with tribal laws is also an important consideration as the AMP proceeds. Consultation through AMWG and TWG meetings with all affected tribes is vital to ensure accomplishment of AMP goals while minimizing negative impacts to the tribes.

Motion seconded.

Discussion.

Public Comments: None

Motion passed. Mary reviewed the remaining issues and rewrites with the members:

Rewrite - Move Organic Act (Attachment 20a) - Bob Winfree said on pages 3-4 of the Narrative, the plan was to delete the reference to the Glen Canyon and Grand Canyon Management Plan. There had been an earlier comment to include the Organic Act in that section. Instead they would be incorporated in the NPS section later (p. 14) so he did those rewrites. Pages 3-4 show the deletions with the second page shows containing two main changes: 1) Pointing out that national parks and national recreational areas are under the same type of guidelines for operations. What differs is the specific authorizing legislation for each park service in it. 2) At the bottom of p. 16, he incorporated comments about general management plan, specifically referencing the Glen Canyon Management Plan. On the top of p.17, there was earlier reference to specific implementation plans at Grand Canyon and he just inserted them there. (*Attachment 16a*).

Rewrite - Trust Responsibilities (*Attachment 16b*) Kurt said the language would be included at the end of the section under "Protocols and Procedures," that is highlighted in Tribal Consultation and Coordination. The proposed language would be inserted after the third paragraph on page 19 on line 17. The members discussed and changed accordingly.

Rewrite - NHPA, Section 106 Compliance (*Attachment 16c*) - Kurt passed out copies of a new rewrite which replaces the Programmatic Agreement section (p. 13, lines 20-46; and p. 14 lines 1-4). It is now more specific and more accurate. The members discussed and changed accordingly.

Desired Future Conditions: Cultural Resources (*Attachment 16d*) - Nancy Coulam said the group attempted to incorporate everyone's concerns with the language that was developed on the river to make it a more coherent document. It was decided that it should be submitted as alternative language for the next review.

Agenda Update. The Chairman did a time check and recommended the members continue working on the Strategic Plan and that several items on the agenda (Science Symposium review,

legislative and budget updates, and the KAS Expert Panel Report) be postponed until the next TWG meeting. It was decided to continue working on the Strategic Plan. In regards to the KAS Expert Panel Report, Rick said that in the past some people have felt it could be done as a big group while others felt it could be done as an ad hoc group. Since it was not going to be addressed today, he wondered if an ad hoc group should be formed and have the group bring something to the next TWG meeting.

MOTION: Move to establish an ad hoc group to evaluate the KAS Expert Panel Report and comments and produce a draft response from TWG to AMWG.

Motion seconded.

Discussion.

Public Comments: None

Voting: Unanimous

Motion Passed.

Members: Paul Barrett, Gary Burton, Bill Davis, Rick Johnson, Dennis Kubly, Bill Persons, Bob Winfree (chairman), and someone from the GCMRC.

ACTION: The KAS Ad Hoc Group will send their report to the TWG by **July 20, 2001.**

The Chairman reviewed the next steps for the Strategic Plan:

- Ad Hoc Committee on Strategic Planning will incorporate the comments from today's meeting and produce a Response to Comments document (if necessary)
- Text will be moved around to make the document flow better and improve readability
- The polished document will be sent to the TWG by mid-July. Anyone wanting to submit additional comments (language not comments) will need to do before the Aug. 7 meeting.
- In August, have everyone embrace the integrated document as it stands and forward to the AMWG for approval at the next AMWG meeting.

Budget and Legislative Updates - Rick said he wasn't aware of anything presently happening.

Future Agenda Items: Rick asked the members to send him an e-mail with their suggestions.

Next Meeting: August 7, 2001

**Location: Residence Inn by Marriott
3440 N. Country Club Drive
Flagstaff, Arizona**

Adjourned: 12:25 p.m.

General Key to Adaptive Management Program Acronyms

| | |
|---|---|
| ADWR - Arizona Department of Water Resources | LCR - Little Colorado River |
| AF - Acre Feet | LCRMCP: Lower Colorado River Multi-Species Conservation Program |
| AGFD - Arizona Game & Fish Department | MAF - Million Acre Feet |
| AGU - American Geophysical Union | MA - Management Action |
| AMP - Adaptive Management Program | MO - Management Objective |
| AMWG - Adaptive Management Work Group | NAAO - Native American Affairs Office |
| AOP - Annual Operating Plan | NAU - Northern Arizona University (Flagstaff, AZ) |
| BA - Biological Assessment | NEPA - National Environmental Policy Act |
| BE - Biological Evaluation | NGS - National Geodetic Survey |
| BHBF - Beach/Habitat-Building Flow | NHPA - National Historical Preservation Act |
| BHMF - Beach/Habitat Maintenance Flow | NPS - National Park Service |
| BHTF - Beach/Habitat Test Flow | NRC - National Research Council |
| BIA - Bureau of Indian Affairs | NWS - National Weather Service |
| BO - Biological Opinion | O&M - Operations & Maintenance (USBR funding) |
| BOR - Bureau of Reclamation | PA - Programmatic Agreement |
| CAPA - Central Arizona Project Assn. | PEP - Protocol Evaluation Panel |
| cfs - cubic feet per second | Powerplant Capacity - 31,000 cfs |
| CRBC - Colorado River Board of California | Reclamation - United States Bureau of Reclamation |
| CRCN - Colorado River Commission of Nevada | RFP - Request For Proposals |
| CREDA - Colorado River Energy Distributors Assn. | RPA - Reasonable and Prudent Alternative |
| CRSP - Colorado River Storage Project | SAB - Science Advisory Board |
| CWCB - Colorado Water Conservation Board | Secretary('s) - Secretary of the Interior |
| DBMS - Data Base Management System | SWCA - Steven W. Carothers Associates |
| DOI - Department of the Interior | TCD - Temperature Control Device (for Glen Canyon Dam water releases) |
| EA - Environmental Assessment | TCP - Traditional Cultural Property |
| EIS - Final Environmental Impact Statement | TES - Threatened and Endangered Species |
| ESA - Endangered Species Act | TWG - Glen Canyon Technical Work Group (a subcommittee of the AMWG) |
| FACA - Federal Advisory Committee Act | UCR - Upper Colorado Region (of the USBR) |
| FEIS - Final Environmental Impact Statement | UCRC - Upper Colorado River Commission |
| FRN - Federal Register Notice | UDWR - Utah Division of Water Resources |
| FWS - United States Fish & Wildlife Service | USBR - United States Bureau of Reclamation |
| GCD - Glen Canyon Dam | USFWS - United States Fish & Wildlife Service |
| GCMRC - Grand Canyon Monitoring and Research Center | USGS - United States Geological Survey |
| GCNP - Grand Canyon National Park | WAPA - Western Area Power Administration |
| GCNRA - Glen Canyon National Recreation Area | WY - Water Year (a calendar year) |
| GCPA - Grand Canyon Protection Act | |
| HBC - Humpback Chub (endangered native fish) | |
| HMF - Habitat Maintenance Flow | |
| HPP - Historic Preservation Plan | |
| IEDA - Irrigation and Electrical Districts Association of Arizona | |
| IN - Information Need (stakeholder) | |
| IT - Information Technology (GCMRC program) | |
| KAS - Kanab ambersnail (endangered native snail) | |
| KAWG - Kanab Ambersnail Work Group | |