

Glen Canyon Dam Technical Work Group
Agenda Item Information
March 16-17, 2009

Agenda Item

FY 2010-11 Preliminary Budget Development

Action Requested

- ✓ Motion requested. (The following motion is provided for TWG consideration. However, no motion is presumed to be made unless and until a TWG member makes the motion in accordance with the TWG Operating Procedures.)

Action: The TWG requests feedback from AMWG on the following proposal for a preliminary FY 2010-11 biennial budget, hydrograph, and issues of concern.

Hydrograph: MLFF with fall steady flows in September and October.

Budget: The February 12, 2009 draft FY 2010-11 preliminary biennial budget with the issues of concern described below.

Issues of concern: include the issues as forwarded by the BAHG and modified by the TWG.

Presenters

Shane Capron, TWG Chair; Dennis Kubly, TWG Co-Chair; John Hamill, Chief GCMRC

Previous Action Taken

- ✓ By BAHG: The BAHG had a series of conference calls and provided a recommendation (attached) for TWG review on the draft initial biennial budget for FY 2010-11. The BAHG reviewed the February 12, 2009 budget version supplied by GCMRC and Bureau of Reclamation (BOR).

Background Information

The purpose of developing a preliminary budget is to describe budget priorities, expected new starts, and to identify funding and scientific issues that need to be resolved. This allows for AMWG input before developing a final budget and workplan. We are not expecting to solve all of our issues at this March TWG meeting, but intend to clearly identify the issues and the steps needed to resolve them. The BAHG proposal provides a list of issues related to the budget and identifies a path for resolution for many of them, some needing AMWG guidance.

An issue that has come up during the process of developing a BAHG proposal is whether we can designate activities as management actions. This resulted in confusion and disagreement on who should fund management actions. The Mainstem Non-native Mechanical Removal project (Line 24) is the prime example of this issue as well as the compliance projects within the cultural program. Please notice that we have a Management Action agenda item for March and have a proposal included which describes a strategy for dealing with the issue this year. The primary outcomes of the Management Action recommendations should be a set of guidelines or criteria for determining what

a management action is from a science/adaptive management perspective and from a policy/funding perspective.

Given our limited time and resources, the TWG cannot solve this issue at the March meeting (see the BAHG recommendation for further discussion of these two items). The Chair plans to have a short discussion of the issue at the beginning of our budget agenda item, take reports, and then move on through the issues of concern presented by the BAHG. Then we will entertain additional issues not identified by the BAHG. The expectation of the Chair is that BAHG members will have identified their issues during the BAHG discussions. We will then move to complete the budget recommendation to AMWG through consensus. If we can complete this task in a reasonable time frame, then we may save additional time to devote to the management action discussion as outlined under the AIF for Management Actions.

Budget Ad Hoc Group (BAHG)
FY 2010-11 Preliminary Budget Recommendation to the Technical Work Group
March 6, 2009

The BAHG had a series of conference calls and provides the following preliminary recommendations and considerations for TWG review on the draft biennial budget for 2010-11. The BAHG reviewed the February 12, 2009 budget version supplied by GCMRC and Bureau of Reclamation (BOR).

Anticipated dam releases

MLFF with fall steady flows in September and October.

This is based on the current 5-year plan (EA and BiOp for 2008-12) which included steady flows in September and October and one High Flow Experiment (HFE). For further discussion see the HFE discussion below (number 15).

FY 2010-11 Budget Recommendation

To forward the February 12, 2009 draft budget to AMWG with the following issues of concern:

Items with specific budget or line item implications:

1. Line 1: CPI could be lower than projected 3%, therefore budgets could be affected. The upper basin RIP has been instructed to consider level funding for 2010 and 2011, and similar concerns have been raised at the NPS. This may need to be adjusted in the final budget recommendation, and could result in program cuts. Another issue that the AMP should consider is the budget creep that occurs with increasing salary costs and other costs which seem to move faster than CPI. The result is that less and less money is available for science. There should be a thorough review of the budget with a discussion of budget creep and what should/could be done to deal with it.
2. Line 15: The TWG chair reimbursement should be expanded to include the ability to pay for limited facilitation when funds are not expended to pay for a TWG Chair.
3. Line 19: Compliance documents. This line item should be funded with the consideration that there may be compliance costs in any given year, but especially in 2012 when new compliance documents will be necessary to consider the next operation period after the 5-year program. If the money is not used in any given year, it should revert to the experimental fund, but be tracked and available for use in the future as a lump sum if needed for our compliance needs in 2012 (e.g., new biological opinion, NEPA, planning post-2012).
4. Line 24: Mainstem Non-native Mechanical Removal. BOR has placed funding for this project in their portion of the FY 2010-11 budget in response to GCMRC removing the project from their proposed budget (see line 74). GCMRC removed the project against the advice of FWS, NPS, and BOR. BOR has added the project for a number of reasons, not the least of which is that the control of non-native fish is a conservation measure in the 2007 and 2008 biological opinions. Fulfilling conservation measures is a term and condition for the successful completion of these non-jeopardy opinions. GCMRC contends that this project qualifies as a "management action", however the GCDAMP has not agreed to conditions or criteria for when an action or project would become a management action. Research questions voiced at the initiation of this project, which include whether these non-native fish are responsible for changes in the humpback chub population, have not been answered and there is no publication that purports to contain the answer to this research question. Fish and Wildlife Service has laid out an argument for using mechanical removal to control numbers of non-native fish, primarily salmonids, at a pre-determined level as part of a continued research experiment, and BOR agrees that this is a viable approach to helping resolve a high priority question of the AMWG.

GCMRC Response: The rationale for GCMRC to lead or budget for an action until it has been proven effective at meeting an AMP goal would quickly lead to elimination of research and monitoring efforts on behalf of the AMP. Under that logic, GCMRC should be responsible for funding and directing a wide variety of management actions that affect the CRE (dam operations, nonnative control, hatchery development, translocation, etc).

The BAHG believes that since this activity was included in the conservation measures within the 2008 Biological Opinion that it must be funded and carried out in 2010 and 2011. If non-native removal remains within the program then the result is that about \$170k (which includes the 18k provided from Reclamation appropriated funds) removed by GCMRC from the budget must be replaced. Since the existing budget is over-committed, GCMRC should return the funding that it removed from the project to balance the FY2010-11 budget. To better understand the implications of doing so, GCMRC should identify where the funds previously allocated to non-native removal have been used in the FY2010-11 budget (see number 15 below).

NEW (Steven Mietz): The amount under line 24 only covers one removal trip; however, current research suggests multiple trips may be needed in 2010 and 2011 to return the trout population to levels described in the 2008 BiOp. The addition of a second trip would increase this line item to approximately \$300k. Any money not used for removal efforts would go into the non-native fish suppression contingency fund. Funding: use the funding which was previously in line 67, and was moved and bundled in line 64, this is about \$115k/year (still short about \$35k). This would remove any funding in 2010-11 for mainstem non-native removal efforts (gear testing and implementation of the non-native control plan). The argument is that money should not be explicitly provided for the implementation of the control plan until the plan is completed and approved. Efforts should be placed on removing non-natives in the vicinity of the LCR (line 24).

Steven Mietz proposed that this project remain in the BOR portion of the budget while Glen Knowles recommended it be moved under Goal 2 along with line 25 (nonnative contingency funding). Glen Knowles requested that funding for line 24 (moved to Goal 2) be provided from line 64 (monitoring mainstem fishes). However, Glen Knowles did not advocate for the increase that Steve Mietz did.

5. Line 74: Removal of this project, Mainstem Non-native Mechanical Removal. There were two primary comments on this line item expressed by GCMRC and by BOR.

BOR: GCMRC has removed this project from their science budget and argues that the GCDAMP budget is a "science" budget, but there is nothing in the program charter or legislation that precludes the budget from addressing environmental compliance, such as commitments for biological opinions. With regard to GCMRC's contention that the field work for this project can be done by a management agency, the Arizona Game and Fish Department (AZGFD) already collects the field data for this project.

GCMRC response: The project has been carried out with AMP funding, logistic, and equipment support from GCMRC.

That is not an issue. What is an issue is that GCMRC has moved forward ahead of the rest of the program in making a determination that cannot be made solely by scientists. The determination must be made by scientists, managers, and stakeholders of the GCDAMP using procedures and lines of communication that are already in place.

It is in that forum that this issue should not be resolved, not through a dismissal of the project as a part of the FY 2010-11 GCDAMP budget.

GCMRC Response: We are using the AMP budget process to communicate and illustrate an important issue. Previous AMP efforts to deal with this as an abstract or hypothetical issue have been unsuccessful. We are bringing out a lingering issue into the open for consideration

and discussion. We believe this is consistent with established procedures and lines of communication.

Reclamation advocates that this project remain in the FY2010-11 budget and that the Fish and Wildlife Service proposal should be considered as a continuation of addressing the original research questions that led to this project. This research has not been completed to our satisfaction by GCMRC.

GCMRC response: Does GCMRC conduct research on a topic until all stakeholders are satisfied that we know enough to move on? We believe additional research related to control methods for mainstem removal of trout is not warranted. As noted above, the affects of reduced level of coldwater non-natives on HBC are being assessed through current monitoring programs.

GCMRC Summary Response to items 4 & 5: GCMRC has determined that cold water non-native removal protocols have been well established. Thus, this is now an activity which should be conducted by an appropriate management agency (e.g., AZGFD, NPS) and funding for the effort should not come from the AMP science budget. GCMRC proposes to continue to support scientific components of the project (e.g., evaluating the humpback chub population response, estimating the size of the trout population in the control reach) but GCMRC believes that cold water non-native fish removal should no longer be considered a scientific activity. As a general rule, once scientifically valid protocols have been developed, your science agency should move on to address priority research questions, not conduct routine monitoring or management actions.

In spite of repeated attempts, the issue of transitioning from research to management (including determining appropriate funding strategies) has not been successfully addressed by the AMP. The issue has significant implications for the AMP in FY 10 and 11 and even larger implications in out-years. Some stakeholders are advocating for increased funding for mainstem nonnative control efforts and the archaeological site treatment program, both of which are compliance and/or management activities. What other compliance and management actions might be proposed in the future? Tamarisk control, sediment augmentation, a TCD, warm water nonnative control, tributary nonnative control, hatchery development, restoration of extirpated species, HBC translocation— using the current power revenue budget to fund these and other potential activities is inconsistent with development and maintenance of a credible research and monitoring program as required by the GCPA. The GCD AMP needs to pursue a broader and expanded funding base that allows for implementation of management and compliance activities in a manner that does not jeopardize the AMP science program.

6. Line 31: Canyon Treatment Plan and Implementation. It is still unresolved whether this should be increased annually by CPI.

7. Lines 55, 62, 64, 82: Unbundle projects. In the 2010-11 budget, a number of research projects were bundled or aggregated into large funded entities. This makes tracking budgets and understanding the costs of individual projects difficult. This is especially true with the proposed bundling of items in Goal 2. The premise seems to be that these are ripe for Core Monitoring and thus should be bundled. We would like to see these projects remain as single projects at least until they are approved as core monitoring. For transparency, it is much easier to follow the work, budgets, and results when projects are smaller and easier to understand.

GCMRC Response: There is no intent to hide anything. Projects working on similar activities were grouped together in Goal 2 in response to two factors:

- 1) The Science Advisors have been calling on GCMRC for years to integrate science activities. Linking up three projects that all sample the same species in the same short reach of river (HBC monitoring in the LCR) and two projects that both work on monitoring the fish community in Grand Canyon (mainstem monitoring and nonnative monitoring)**

seem like very logical examples that follow SA guidance. These are the primary examples of the “bundling” referred to by the BAHG.

- 2) As has been repeatedly stated to the BAHG, a protocol evaluation panel (PEP) for fishes is being conducted in May. It is very reasonable to expect that the PEP will have one or more recommendations that affect how monitoring efforts are allocated. Bundling the LCR and mainstem work into two projects allows everyone (PEP panel, GCMRC, TWG, AMWG) to see how much is currently budgeted for these projects and what would be available to comply with PEP recommendations in the summer of 2009. GCMRC expects that we will have re-budgeting to do in the summer; it seems like busy work to break all of these projects out into individual line items only to redistribute them again in a few months.

8. Line 58 (Q4): Projects under Goal 2 are preliminary pending the PEP recommendation this summer and TWG review and recommendations. However, the current proposal to continue surveys as status-quo is appropriate at this time. However, we should acknowledge that the Fish PEP may result in substantial changes to research and/or monitoring under Goal 2. This should be integrated into our final budget recommendation to AMWG this summer.

GCMRC response: GCMRC intends that the project in Goal 2 will be revised following recommendations of the PEP in summer 2009.

9. Line 77: Hamill. Extirpated species. No funding is specifically being proposed, but some work may be occurring using razorback suckers from upper Lake Mead to repatriate lower reaches of the Colorado River in the Grand Canyon. There is not agreement on whether razorback suckers have been extirpated from Grand Canyon. The Recovery Plan states that razorback suckers are currently only found in Lake Mead, but may (emphasis added; there is not data to support this) extend into the lower reaches of the Colorado River above Lake Mead. Larry Stevens is expected to provide a white paper on extirpated species to the TWG for review at its March meeting (for information only), with further review at the April AMWG meeting.

GCMRC response: BOR is required by the Shortage Criteria BO to investigate whether the lower reaches of the Colorado River below Grand Canyon/above Lake Mead are suitable for razorback sucker. GCMRC has already been approached by BOR for suggestions on specific efforts to pursue to investigate habitat suitability, and GCMRC will continue to participate as time and funding allows, at least in an advisory capacity.

10. Goal 7 (NEW): Diamond Creek NASQAN station discontinuation. TWG will hear a presentation by Bob Hart at our March meeting on this water quality station. The current support for this gage is from outside the program and may not continue. Additional funding sources may need to be identified to continue the operation of this gage. This station provides valuable water quality data collection at the lower part of the Grand Canyon. Unknown funding needs.

GCMRC response: The surface water (stage and discharge) record at this gage will continue and is funded outside the AMP. Records of sediment flux and temperature have been funded through the AMP and will also continue in FY10-11. Bob Hart will explain the discontinued NASQAN sampling and implications. GCMRC believes that the AMP should be fully aware of this situation, but is not advocating for the use of AMP funds for NASQAN data collection in FY 10-11. GCMRC believes that outside funding sources should be developed to support this type of data collection.

11. Goal 10 (NEW): Norm Henderson. GCMRC should develop an economic valuation study for 2010/11 (socio/cultural program area). The purpose would be to quantify the various resource values (market/non-market) for Lake Powell and the river corridor within Grand Canyon and Glen Canyon. Funding source: \$116k should be taken from line 92 in 2010. If costs are anticipated to exceed this amount then the additional amount (total could be about \$150-200K/yr) should be taken equally (as a percentage) from the biology, sediment/quality of water, and DASA program areas. The economic research is a higher priority than arthropod monitoring. This is a critical research need of the program

that has been underfunded. It has also been identified as needed by the previous PEP reviews and by the science advisors.

12. Goal 11 (NEW): Multiple. CRAHG: GCMRC should develop a proposal (RFP) for a project that would develop a geomorphological model to evaluate dam affects on cultural sites. The cost is roughly estimated at about \$200k/year for both 2010 and 2011. The CRAHG did not include a funding source for this project.

Funding source (recommended by Barger/Palmer without input from the CRAHG): reduce the GCMRC science budget by 2.5% across all projects.

GCMRC Response: The AMP has received several recommendations to develop a geomorphic model from previous independent review panels, the most recent recommendation coming from the panel that reviewed the NPS legacy monitoring data. The proposal to develop a geomorphic model is also identified in the MRP. GCMRC is encouraged that the CRAHG is now advocating for the development of a geomorphic model; we look forward to working with the group to define the specific purpose, scope and objectives of a geomorphic model. We believe that within existing funding constraints, the primary focus in FY 2010 and 2011 work plan should be piloting testing the archaeological site monitoring protocols, completing a PEP review, and developing a core monitoring proposal for TWG review. We do not support a 2.5% across the board budget reduction, as this would imply that we can fit in more projects without having to give anything else up.

13. Line 127 (Steve Mietz): A line item should be added under the DASA portion of the budget which utilizes DASA funds to analyze historic aerial photos and determine the best method for use in change detection for sediment resources as a pilot test or proof of concept at a limited number of campsites. This will involve unbundling of a portion of the DASA budget.

GCMRC response: GCMRC has yet to establish priorities for analysis of the historic aerial photos in FY 2010-11—FY 2010-11 priorities will be described in the work plan. NPS' suggestion will be fully considered as we develop the work plan for this project. GCMRC is unclear about the desired scope and objective of the campsite analysis that is being suggested. We are willing to discuss this in more detail with the Park and other interested stakeholders.

14. Line 128 (Steve Mietz): Mike Breedlove's analysis and reporting should unbundled from other line items and included as a separate line item. FY10 should be devoted to reporting and publication of results with an emphasis on how GIS methods/results compare to existing sediment monitoring and where this project fits into the overall sediment program.

GCMRC response: GCMRC has yet to establish priorities for GIS/image analysis in FY 10-11. FY 10-11 priorities will be described in the work plan. NPS' suggestion will be fully considered as we develop the work plan for this project. We are willing to discuss this in more detail with the Park and other interested stakeholders

15. High Flow Experiment (HFE): As described above, the current compliance documents describe an action which included only one HFE from 2009-2012. However, beginning in 2010, approximately \$400k could be available from the experimental fund (Line 22) to support an HFE, and about \$900k in 2011 (if unused in 2010). John Hamill proposed in his budget memo that an HFE study could be undertaken for about \$500k to \$750k (the 2008 HFE cost over \$3 million).

We did receive a number of comments on whether or not an HFE should be considered in the FY 2010-11 budget. Dennis Kubly and Shane Capron (TWG Co-chair and Chair) discussed this thoroughly and have concluded that this is not ripe for TWG discussion. We see three critical components to an HFE decision:

1. Technical: it is entirely appropriate for TWG to review the scientific aspects of a future HFE and those HFEs already completed. The current schedule calls for some reports to be

concluded in late 2009 and the rest in early 2010. Any composite report would occur sometime after that. Therefore, from a technical aspect, TWG will not be able to evaluate the success and scientific merit of the last HFE until early 2010 at the earliest. Ideally, we would evaluate the last HFE before beginning the next one, but this could be influenced by policy choices made by AMWG (see number 3 below).

2. Funding: this is an appropriate discussion for the BAHG and TWG. The amount available in the experimental fund is described above. This is a generally agreed upon approach to put \$500k into the experimental fund each year.
3. Policy: the current policy for an HFE is described in the current compliance documents (2008 EA and BiOP) which provides for only one HFE which was completed in 2008. Any future HFEs would require additional compliance. The BAHG should not consider further impacts to the budget from an HFE in 2010 or 2011 without explicit guidance from AMWG to do so. In part, this is due to the controversial and policy-laden nature of the action. For example, because such limited money is available in the experimental fund, it is likely that an HFE could have substantial impacts to the proposed budget which would likely result in changes in priorities.

Thus, we propose to provide this information to AMWG at their April meeting and get guidance from AMWG as to whether TWG should consider the potential impacts of an HFE on the budget. The BAHG recommends that we add a place-holder line item in the budget for this possibility. This would be for funding needs beyond the availability of funds in the experimental fund.

GCMRC Response - GCMRC recommends that the AMWG and/or DOI need to agree on a process and schedule for determining if and when the next HFE or series of HFEs will be conducted. The crisis planning and compliance that have accompanied AMP/DOI deliberations of past HFEs needs to be avoided. A structured approach and timeline are needed for evaluating the results of past HFE and determining how to proceed from a science and management standpoint. While it is important to fully evaluate all of the learning that has come from the past three high flow experiments, it is clear that additional sand-enriched higher flows and continued long-term monitoring will be needed to answer the primary strategic science question – “Is there a flow only (using only the existing downstream sand supply) operating strategy for rebuilding and maintaining sandbars along the Colorado River below Glen Canyon Dam?” The GCMRC strongly suggests that the AMWG consider and adopt a new, sediment supply criteria for determining when future high flows will be released from Glen Canyon Dam to utilize tributary sand inputs. GCMRC suggests that another important step in planning for future high flows is for the AMWG to develop and recommend to the Department of the Interior, sandbar conditions below the dam that are needed/desired for achieving the goals of their 2003 Strategic Plan; making sure, on the basis of best available science information, that their recommended desired future conditions are both attainable and measurable.

16. Cultural program: three proposals for additional projects were made by the CRAHG with no specific funding source provided: (a) Line 114, add back in \$70k to the NPS, (b) NEW: Preservation Treatments, about \$35-50k, and (c) NEW: Tribal 106 support of about \$100k. These projects are considered by the CRAHG to be important for the support and implementation of management actions/compliance under Section 106. These activities are described in the BOR treatment plan, but are currently not being fully carried out. CRAHG is concerned that this year’s treatment plan is primarily an excavation/data recovery plan and that other important components of the treatment plan are not being implemented with the funding currently available. Further, it may be that the \$500k per/year generally agreed to by AMWG for treatment of these sites may not be sufficient and further work at each of the treated sites is possible. Further, \$70k of the \$500k for treatment is currently being provided to the NPS for their participation in the treatment work. TWG should work with the CRAHG, GCMRC, and BOR to determine the following before proposing a final budget in the summer:

- Provide an explanation of current funding line items (more explicit description of accounting) and how they relate to the treatment plan and necessary compliance, including Lines: 23, 31, 114, and relevant portions of Lines 39-43 (response to BAHG by May 15).

GCMRC Response: GCMRC can not offer comments on details of the funding proposed in lines 23, 31, and 39-43, since these are Reclamation proposals that have not been coordinated with GCMRC. In terms of line item 114, the Cultural R&D project budget will be used to support implementation of a pilot monitoring program using survey-based monitoring protocols at a sample of archaeological sites, as previously defined for Phase II of the Cultural Monitoring R&D project. The survey-based monitoring protocols are designed to directly measure changes in physical attributes at archaeological sites that can tied to the effects to dam operations on the ecosystem. The current cultural monitoring R&D project budget assumes that NPS will cover its own costs associated with conducting NPS compliance monitoring (CRMP monitoring) in FY2010-11, as previously stated by the NPS at the May 2008 AMWG meeting.

- Describe why the CRAHG believes the treatment plan cannot be fully implemented using the current line items described above, specifically the \$500k allocated in Line 3 and ~ \$165k in Line 23 (response to BAHG by May 15).
- Discussions should occur between the NPS/GCMRC/BOR on the necessity of the \$70k for the NPS which was dropped this year from GCMRC's cultural budget (Line 114). DOI agencies should discuss this and determine who is responsible for that funding and provide a response to the BAHG by April 10 via their BAHG members.

General comments and concerns:

17. General comment on core monitoring: This budget assumes that we will have moved forward on core monitoring for a number of Goals under the AMP. Although this is reasonable to consider we feel it is moving too fast. We will begin to consider the General Core Monitoring Plan this summer and from there will have a better idea what may constitute core monitoring. TWG should, within the core monitoring discussion, evaluate cost-effectiveness of current monitoring programs (precision, accuracy, cost trade-offs). GCMRC is planning a core monitoring workshop before the next TWG meeting to discuss the draft plan. TWG should also discuss the TWG role in core monitoring.

GCMRC Response: We are not moving too fast; we are merely attempting to follow the schedule and process identified in the Monitoring and Research Plan. As noted a discussion of the General Core Monitoring Plan will occur this spring/early summer.

18. General comment on the workplan. We are looking for additional clarity in the workplan on staff funding including a current organizational chart. We propose the following: (a) that staff time for individual projects be allocated under those projects, (b) the workplan be oriented in such a way that we can track staff time to 100%, (c) time be allocated in the workplan such that a substantial amount of time, about 20%, is allocated to writing reports and publications, and (d) any new staff additions or deletions be clearly outlined in the budget introduction and appropriate projects.

GCMRC Response: We will provide an updated organization chart to the TWG an AMWG. The level of detail provided in the preliminary and final budget/work plan was discussed and agreed to by the TWG and GCMRC several years ago. The preliminary budget provides a summary of funding by project; more detail will be provided in the work plan that will be developed after the AMWG meeting. Providing information on how GCMRC staff time is allocated among projects is beyond the scope of what we intend to provide; this unnecessary detail that will lead to inappropriate micro management by the TWG. With respect to suggestion c, timely data analysis and reporting is a major focus of the FY 2010-11 budget.

19. General comment on Goal 10. There is a lack of economic analysis capacity in the program to evaluate trade-offs or other economic concerns. Additional capacity should be considered. Unknown

funding needs at this time, perhaps this could be dealt with by adding an economist as a science advisor or using the SAs for specific projects related to economics.

20. Line 74: Glen Knowles. Priorities and funding under Goal 2. GCMRC should provide an explanation of where funding used in FY 2009 for Mainstem Non-native Mechanical Removal has been reallocated within the program.

GCMRC response: There are two primary budget items that received the money previously allocated for the mainstem removal project:

- 1. The salaries at USFWS, AZGFD, and USGS are only going up each year. GCMRC always receives requests for more funding for salaries from the cooperators each year, and USGS salaries also increase.**
- 2. An additional \$25,000 was provided for the remote PIT tag project in 2010 to provide for more equipment and the expertise to install it. This project has, to date, received broad support from the fish cooperators (primarily FWS, AZGFD, GCMRC, and BOR) because of its potential to reduce personnel costs in the future to get the same, or even more, data on the tagged fish (primarily HBC) that use the LCR.**

21. Line 71: Dennis Kubly. GCMRC should provide clarification on when we will get to review a report on this project which was funded from FY07-FY09. The report should relate to the work described in the work plan.

GCMRC response: the current activities of the remote PIT tag project were presented in the FY 2008 Annual Report. GCMRC will continue to prepare annual reporting on this project. This is primarily a test of technology, so extensive scientific reporting is not anticipated. GCMRC and AZGFD can present current activities, results, etc. to TWG at any meeting with sufficient notice. The results of 2009 activities will be presented at the next annual reporting. The desired end result of the project is to add to the number of observations of humpback chub and other PIT-tagged fishes without increasing field time and handling.

22. General comment on accounting. Dennis Kubly. Currently, BOR does not have adequate staff resources to track reports due by GCMRC from the workplan. Thus, there is inadequate tracking of deliverables by the AMP for projects funded by BOR funds. BOR should investigate options to provide staff resources in tracking reports.

Other proposals:

The BAHG received two proposals from CREDA which did not include a budget or funding source. They are provided here for TWG discussion. These do not contain funding amounts, funding sources, and are unclear.

1. Determine effects of varying ramping rates on food base and drift (Kennedy indicated a dramatic increase in numbers and biomass as a HFE occurs and drops to flat when flows decrease).
2. Determine the percent of campsite areas lost due to an increase in riparian vegetation and how much campsite area is actually needed. Also, we have no idea when the available campsite area becomes too small for the number of campers such that it creates a problem (Fairley said that amount of campsite desired as the objective has always been to have "more"). *Question for GCMRC, is this currently being accomplished?*

GCMRC Response: The primary analysis to be undertaken as part of the campsite atlas project in FY10-11 is to evaluate the vegetation encroachment issue using a combination of aerial imagery comparisons and historic oblique photographs. The question as to when a campsite becomes "too small" is ultimately a management decision that needs to be based on explicit NPS management objectives for campsite quality and visitor experience. Clearly, when camps are so small that visitors must sleep cheek-to-jowl like rows of stacked cord wood, the quality of their experience is considerably different (less than optimal) compared to when they have room to spread out over a larger area and have some level of privacy between

individual tent sites; however, to our knowledge, specific measurable target objectives for campsite quality and visitor camping experience have not yet been defined.

Balanced budget:

Over budget:

Line 24: (1) \$165k for nonnative removal (Kubly: GCMRC should find funding for this because they removed it, Knowles: should be funded from line 64),

(2) Mietz would double this to \$300k, funding from line 64 for the increased cost.

Line 114: add back in \$70k to the NPS

NEW: Preservation Treatments, \$50k?

NEW: Tribal 106 support, \$100k

NEW: maintain Diamond Creek NASQAN site

Budget neutral:

NEW: Geomorphological model (RFP) for \$200k in 2010 and 2011, reduce GCMRC by 2.5%

NEW: HFE in 2010 or 2011 based on sediment triggers, \$400-750k from experimental fund

NEW: economic valuation study, \$116k should be taken from line 92 in 2010. If costs are anticipated to exceed this amount then the additional amount (total could be about \$150-200K/yr) should be taken equally (as a percentage) from the biology, sediment/quality of water, and DASA program areas.