GCMRC FY 2004 MONITORING AND RESEARCH WORK PLAN
Comments and Proposed Revisions from Technical Work Group
on the first draft of the 2004 Work Plan dated April 26, 2002

General Comments and Recommendations		
Reference (section; pg. #, etc.)	**TWG Comments/Proposed Revisions**	**GCMRC Recommendation** (for GCMRC use)
Budget Ad Hoc Group Meeting May 15, 2002		
Pg. 1, Introduction – Geographic and Institutional Scope	"100,000 cfs" needs to be changed. Substitute with verbatim language from the Strategic Plan.	Action: Text revised as recommended, see pages 1 and 3.
Pg. 33, Chapter 2 – Scientific Activities – Cultural Resource Monitoring	Where is the cultural monitoring shown? Is not shown in GCMRC budget but is shown under PA Program	At present, cultural monitoring is being conducted by the NPS and the funds are part of Reclamation's budget.
Pg. 46, A1 – Terrestrial Logistical Costs	Questioned the increase from FY02-FY03	Action: Steve will check into this and report back to the Budget AHG. This apparent increase in logistics costs is mostly the result of GCMRC shifting to full cost accounting for project activities in FY03. Logistics costs previously budgeted separately were included as project costs beginning in FY03. In addition some increase in the actual logistical costs are reflected.
Pg. 67, B3 Status & Trends of Downstream Fish	Questioned continued $100K increase after 2003.	Action: Steve will look into this and report back to the Budget AHG. Not sure this is the correct page number. However there is actually a decrease in the total cost of downstream fish monitoring from FY03 to FY04. A portion of this work has been proposed for appropriated funds in FY02 & 03 and those funds have come from reprogrammed or carry over funds in those years. In FY04 all funds are requested from AMP funds due to the critical importance of this work in long term monitoring.
Pg. 79, B6 – IWQP Lake Powell	Why no reduction for Lake Powell Monitoring since GCMRC staff time was moved into downstream water quality.	Steve is not sure but he expects costs to go down but hasn't evaluated. Steve said he can't fully project until they get the Lake Powell modeling results. Amy Cutler (USBR-SLC) needs to extend modeling. Steve gave Amy a list of action items on 5/16/02.

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		*Consider having Amy do a modeling presentation to the TWG. Until the IWQP database and current modeling effort are finished the project is budgeted at its current level.
Pg. 82, B8 Captive Breeding Program	In light of AMWG motion, need to reprogram some FY02 money.	Action: Steve has asked Kerry C. to get some information on Hualapai hatchery. A recent report regarding planning for hatchery and rearing facilities in the Upper Colorado River Endangered Fishes Program has been obtained and some preliminary discussion begun with AGFD regarding capacity in their hatchery system at Bubbling Springs.
General Comment	Consider combining trips to collect information → improve efficiency.	Action: Recommendations under discussion with GCMRC Logistics Coordinator and program staff.
Pg. 137, D8 Experimental Flows	Need better explanation of proposed experimental flows.	Action: As recommended additional text and Table 2.4 added to plan.
Pg. 141, Admin & Procurement costs	Question about need for GCMRC to "purchase" USGS administrative support? Is this a common practice with other USGS regional offices?	Action: All USGS Cost Centers pay for regional administrative support. These costs are normally paid through an assessment. Because GCMRC funding is not subject to USGS assessment, Regional Administrative support is paid directly. Regional administrative support includes warranted contracting services and human resources. Note: GCMRC also paid for Regional Support when they were in the Bureau of Reclamation.
Pg. 160, F7 Aerial Photography	Is it offset somewhere else? If Lidar shown in 03 & o4, is it needed every year? Need for Vegetative Monitoring. Could it be done through remote sensing?	Action: Mike will check into required frequency & report back to the Budget AHG. (see attached table: Estimated periodicity of overflight data sets by project.) Mike is in the process of finalizing reports. Once the reports are done, he'll give to the Program Managers and they will determine their needs.
		Action: TWG needs to provide comments to Ted by May 30 so revisions can be made in time to meet mid-

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		June mailing to AMWG.
TWG Comments on FY2004 Budget – May 17, 2002		
Pg. 36,	Table 2.3 – Cultural Affiliation Study, Summing Error -> rounding	Corrected
Pg. 57-59	Cultural data base plan, unclear if this will develop data management. Protocols.	Clarification made on pg. 58.
Pg. 129, D4	Whole concept is vague, re: tribal outreach, training -> unequal communication re: tribal view3s as opposed to western science	Additional detail added on pg. 130
	Cultural Resource synthesis and status report to be done in-house (GCMRC) → just part of GCMRC responsibility / funds are for workshops to help bring in new data for SCORE Report.	This is correct.
Pg. 135, D7	Cultural Affiliation Study is poorly conceived, tribes not involved in study design → should drop study.	Please see the revised project description on pg. 140.
	Tribes & GCMRC should meet soon to talk about this proposal.	Comment noted and continue to attempt to establish meeting schedule.
	50-60% of aquatic PEP recommendations already completed.	Comment noted.
B7	Project already complete.	GCMRC is uncertain what this comment is about and whether further response is necessary.
General Comment	INs should be identified in tables, cost to accomplish, time to complete.	GCMRC has resolved not to include INs with within Annual Plan documents until INs are finalized by TWG/AMWG. Only goals and MOs which have been approved by AMWG are included within project table.
General Comment	Need to figure out how to incorporate IN sequencing into work plan.	GCMRC has resolved not to include INs with within Annual Plan documents until INs are finalized by TWG/AMWG. Only goals and MOs which have been approved by AMWG are included within project table.
General Comment	Program needs to find financial flexibility to accomplish research requirements (reduce	Reduction of monitoring activities to support additional research is better addressed once INs have been finalized

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	monitoring $?).	and sequencing completed.
C2	Need to reprogram $ to install Paria warming system.	This additional monitoring element is tied directly to experimental flow research and is currently not supported under CORE monitoring. Reprogramming of existing funds to support this element to be considered upon successful completion and testing of early alert system.
	Experimental flows budget should be better defined (multi-year).	Action: Text has been revised within the plan and budget table has been added. Multi-year experimental activities are not yet clearly defined, but are expected to require minimum level of funding per year as shown in budget table.
	Need some evaluation of mudsnail w/respect to food base sampling	Addition language regarding the New Zealand mudsnail has been added to the Aquatic Resources under Current Knowledge in Chapter 1 as well as in the project description for Project B.1.

FY2002 Annual Overflight Description

February 12, 2002

The Grand Canyon Monitoring and Research Center (GCMRC) is proposing the collection of airborne light detection and ranging (LIDAR) data and orthorectified color-infrared digital imagery of the Colorado River corridor from the Glen Canyon dam at Lake Powell to (but not including) Lake Mead. LIDAR and imagery data acquisition includes a 450 kilometer (km) section of the Colorado River plus a total of 36 km of six tributaries. The nominal swath width for each acquisition is 500 meters (m) but is as wide as 1500 m in several areas of small geographic extent. The LIDAR data will be collected at a nominal point spacing of one-meter and will provide 30 centimeter (cm) horizontal and 15 cm vertical topographic accuracy. The imagery data will be collected in stereo with 60 percent forward overlap at a resolution of 18-24 cm and orthorectified and georeferenced to within 0.5 to 2 meters horizontal accuracy.

The collected data will be used for:

1. Monitoring terrestrial, fine-grained sediment movement and storage (e.g., sand bars and river terraces)
2. Monitoring terrestrial, coarse-grained, sediment changes (e.g., cobble bars and debri fans)
3. Mapping terrestrial vegetation types throughout the corridor
4. Characterizing and monitoring terrestrial vegetation habitats for birds and insects
5. Monitoring the quality of camping beaches

In addition, the data sets will be evaluated for:

1. Monitoring aquatic flux and storage of sediment within the main channel
2. Mapping/monitoring aquatic food base and selected water quality parameters
3. Monitoring the effects of runoff and dam releases on archaeological structures

Table 1 provides estimated periodicities for collecting these data sets by project. The data sets will also continue an ecosystem-wide historical record of aerial photography began in 1990 and of topography began in 2000.

The GCMRC is requesting 10 days of steady flows at 8,000 cubic feet per second for this year's overflight. This flow is consistent with the guidelines previously established for projected dam releases in 2002. The projected window of data collection is between May 19 and June 2, 2002 (inclusive). GCMRC feels that 10 days is needed to help insure that the overflight can be completed in the event of equipment failure and/or bad weather. However, exceptional circumstances may prevent the overflight from being completed within the 10 day timeframe.

Questions regarding this description should be directed to Mike Liszewski or Barry Gold of the GCMRC. We can be reached at 928-556-7458 and 928-556-7216 respectively.

Table 1. Estimated periodicity of overflight data sets by project.

[Note: Periodicities are estimates pending completion of data evaluations being done to determine if they meet accuracy requirements and are more cost effective than field data collection and/or reduce the impact of data collection in the ecosystem .]

Project	Data set required	Estimated peridicity
Monitoring terrestrial, fine-grained sediment movement and storage	LIDAR and black and white or color infrared orthophotography	Bi-annual
Monitoring terrestrial, coarse-grained, sediment changes	Black and white or color infrared orthophotography	Annually
Mapping terrestrial vegetation types throughout the corridor	Color infrared orthophotography	Every five years for system-wide, annually for selected areas
Characterizing and monitoring terrestrial vegetation habitats for birds and insects	Color infrared orthophotography	Every five years for system-wide, annually for selected areas
Monitoring the quality of camping beaches	Black and white or color infrared orthophotography	Annually
Potentially monitoring aquatic flux and storage of sediment within the main channel	Black and white or color infrared orthophotography	Bi-annually
Potentially mapping/monitoring aquatic food base and selected water quality parameters	Color infrared orthophotography	Annually
Potentially monitoring the effects of runoff and dam releases on archaeological structures	Black and white or color infrared stereo photography	Annually