

# Review of the General Core Monitoring Plan for the Glen Canyon Dam Adaptive Management Program

GCDAMP Science Advisors

September 2009

# Review Schedule and Procedure

- August, SAs receive CMP for review
- September, complete review
  - Executive Summary, General Comments, Specific Comments, Recommendations
- November, CMP workshop documents to TWG
- December 1 CMP workshop

# Historical Perspectives

- 1968 NAS; Water Crisis in Colorado River Basin
- 1987 NRC Review; River and Dam Management
- 1991 NRC; Symposium on Colorado River and Dam Management
- 1991 NRC; Review of Phase II Draft Integrated Research Plan
- 1992 NRC; GCES Long Term Monitoring Workshop
- 1994 NRC; Review of Draft EIS
- 1994 NRC; Review of Draft Federal Long Term Monitoring Plan
- 1996 NAS; River Resource Management in Grand Canyon
- 1998 NRC; GCDAMP Strategic and Annual Plans
- 1999 NRC; Downstream; A Review of GCDAMP Programs

# Historical Perspectives con't

1994 Review of Draft Federal Long Term Monitoring Plan

1999 Downstream: Review of GCDAMP

- Long term data sets absent due to absence of LTMP
- Excellent concepts of monitoring but limited detail on actual plan activities and procedures
- Clarity needed on how to accomplish integration
- Need improved designs for system approaches

# Historical Perspectives con't

- Programs must evaluate different scales
- Identify candidate core variables early on using ecosystem level multi-species perspectives
- Design overall plan in stages
- Design to minimize impacts from new proposed approaches or budget shifts

# Historical Perspectives con't

- Maximize cost effectiveness and flexibility through external contracts
- Program management independent of any specific management agency
- Should not have blanket delegation of monitoring programs to collaborating agencies. Scientists should design protocols, sampling designs, write assessments etc.
- Annual costs could exceed current budget. Should insure available budget for research studies

# SAs General Comments

- DFCs are not appropriately included to guide plan; and are necessary
- Clean Water Act guidelines not explicitly referenced. Not clear if considered or addressed
- Other than in one or two monitoring areas, not clear how managers and stakeholder groups will explicitly collaborate and integrate programs
- Past monitoring/science information mentioned but not in a manner to specifically guide or support explicit designs

# SAs General Comments con't

- Goals need to be more specific to assign appropriate indicators and protocols
- Strategic science questions need to be included. They are the vehicle to link Goals/Ins to science programs
- Adaptive management process for continued annual involvement of managers in goal prioritization, program integration and general program guidance not clear
- Simplistic qualitative conceptual models absent from process; yet are excellent tools to bridge manager/scientist understanding

# SAs General Comments con't

- System approaches with integrated science programs need more clarity, i.e. physical, biotic, cultural project integration is critical to gain time and space data dependence
- Integrating ongoing science and new management program efforts are necessary
- Development of new remote sensing technology and remotely sensed data is critical to advancing the monitoring program. Clarify how remotely sensed data development is tied to priority needs of managers
- Use of PEPs and new protocol overlap with old is strongly supported

# SAs General Comments con't

- Development of general monitoring program with phased development of individual resource programs is preferred process
- Need to clearly articulate in first chapter, “general” and “specific” CMP designs; provide clear definition of differences
- Greater clarity needed on how differing modeling approaches will be used, i.e. conceptual, predictive, etc